

ATX PRODUCT CATALOG 001



 **Appleton**[®]




EMERSON[®]
Industrial Automation

TRUST THE ATX LINE OF PRODUCTS TO PROTECT PEOPLE, FACILITIES AND PRODUCTIVITY.

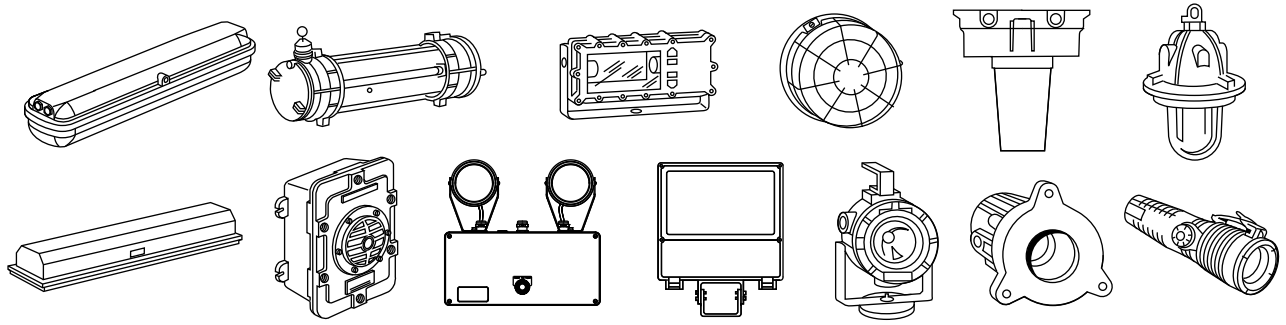
The ATX brand of hazardous location products for IEC and ATEX environments are now part of Appleton – a premier brand of electrical products in the North American market. As one brand under Emerson Industrial Automation, we can now offer a truly global line of premier electrical products that provide protection against harsh environments and the presence of dust, vapors and gas in hazardous locations.

ATX products, like Appleton's, help create peace of mind in the workplace – whether it's a petrochemical plant, a power plant, pulp and paper mills or any industrial location. These products help ensure operations maintain maximum productivity and safety.

Choose from a vast breadth of Flameproof and Increased Safety products that meet rigorous Zone 1-2 and 21-22 ratings – from lighting to plugs and sockets to junction boxes, panelboards, control stations and cable glands. Our engineers have developed innovations across all product lines, making Appleton's ATX the premier provider of electrical products for use in IEC and ATEX locations.

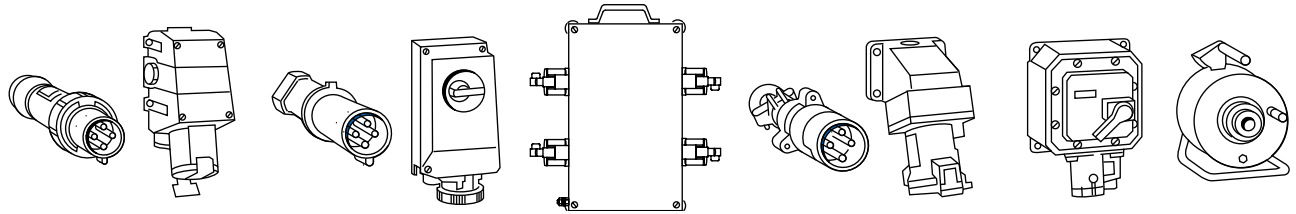


LIGHTING (PP. 3-138)



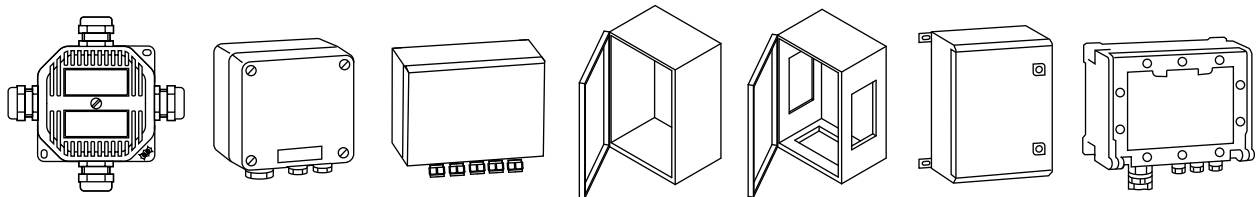
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PLUGS & SOCKETS (PP. 139-174)



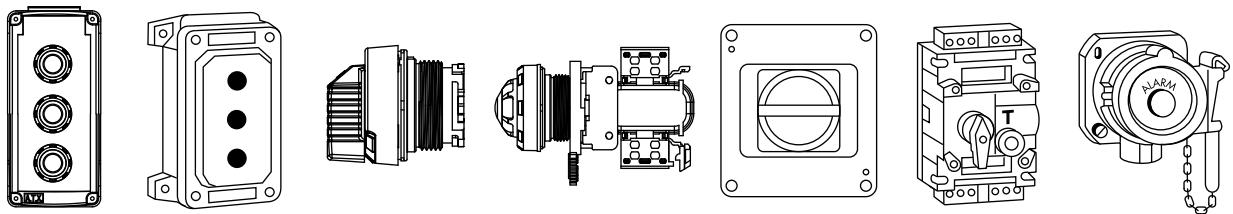
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JUNCTION BOXES & ENCLOSURES (PP. 175-248)



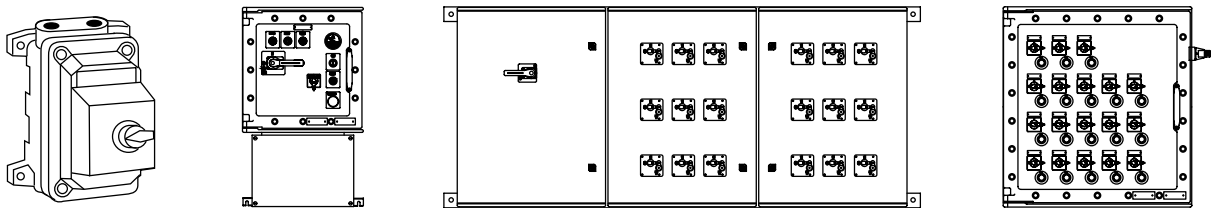
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CONTROL STATIONS & SWITCHES (PP. 249-374)



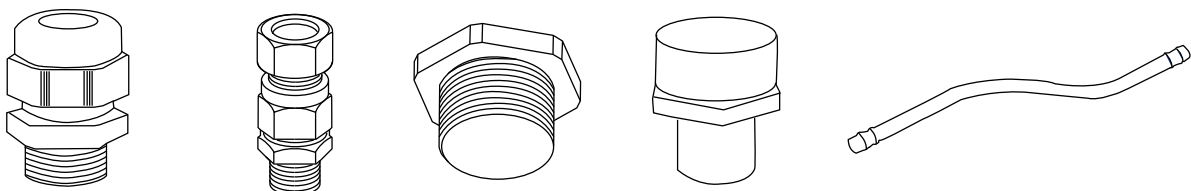
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HAZARDOUS LOCATIONS GUIDE (PP. G1-G57)

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UPGL	UPGL	316
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US36R	US36R	318
US37P	US37P	318
US37R	US37R	318
US38P	US38P	318
US38R	US38R	318
US39P	US39P	318
US39R	US39R	318
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LIGHTING

Whenever interior and exterior industrial areas need safe, reliable lighting to protect people, facilities and ensure productivity, Appleton's ATX lighting fixtures are the right choice. From petrochemical refineries to offshore platforms to grain storage areas, food processing plants and the production floors of virtually any type of manufacturing, Appleton's ATX fixtures are there, withstanding every type of challenge, environmental condition and hazard inherent to those environments.

Appleton's ATX line of **Flameproof and Increased Safety Lighting for Zone 1-2 and 21-22 locations** features intelligent engineering and simplicity of design that makes our products easy to install and maintain.

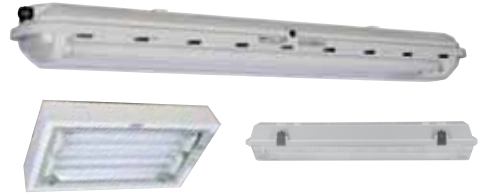
From our fluorescent fixtures to HID to our new LED technology, Appleton's ATX line of lighting products delivers unparalleled protection across your facility. We ensure they meet or exceed their rated capabilities even in the most extreme conditions. That's why facility engineers around the world have turned to Appleton's ATX line for lighting products that improve efficiencies while protecting workers.



LIGHTING

Fluorescent Lighting

3-42



Incandescent & HID Lighting

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Portable Lighting

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Emergency Lighting

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Signaling Products

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Lighting: Fluorescent Lighting

Description	Page
FE Series Nonmetallic Fluorescent Lighting Fixtures, Standard and Emergency Battery Back-Up – Increased Safety	4-17
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RE Series Recessed Fluorescent Lighting Fixtures, Standard and Emergency Back-Up – Increased Safety	25-32
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FE Series



2 x 58 W 2 x 36 W 2 x 18 W

FD Series



2 x 58 W 2 x 36 W 2 x 18 W

RE Series



2 x 36 W Recessed 4 x 18 W Recessed 4 x 18 W Surface Mounting

FN Series



2 x 58 W 2 x 36 W 2 x 18 W

FL Series



2 x 58 W 2 x 18 W

Lighting: Fluorescent Lighting

FE Series: Nonmetallic Fluorescent Lighting Fixtures, Standard and Emergency Battery Back-Up – Increased Safety



2 x 58 W



2 x 36 W



2 x 18 W

Compliance Data:

ATEX - IECEx:



Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IECEx	CE
Ex de IIC Ex demb IIC	T5 to T4	Ex tD A21	T75°C	IP66/67 – IK10

Power and Voltage:

18 W / 36 W /58 W	110 to 254 Vac/Vdc +/- 10% 50/60 Hz	Lamp Type
1, 2, 3 Lamp Versions		Fluorescent T8 (G13) & T8 (Fa6)

Operating Temperature:

-40°C to +55°C			
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Lighting: Fluorescent Lighting

FE Series: Nonmetallic Fluorescent Lighting Fixtures, Standard and Emergency Battery Back-Up – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

IP66/67 – IK10

LIGHTING

Applications:

- Can be installed in hazardous areas designated as Zone 1, 2, 21 and 22.
- For use in locations where a high degree of corrosion resistance is required.
- For indoor/outdoor use where protection against dirt, water and moisture is necessary.
- Typical applications include oil refineries, petrochemical facilities, pulp and paper mills, food processing plants, warehouses, underground tunnels and general manufacturing facilities.

Features:

- Corrosion-resistant fiberglass reinforced polyester body and hinged polycarbonate lens.
- High impact resistance housing (20 Joules – IK10) from -40°C to +55°C ambient temperature and wind profile for use in extreme offshore and onshore environments.
- Latch assembly and elastomer gasket seals against water and dust ingress, IP66/67.
- Easily accessed for maintenance using Allen key or straight blade screwdriver.
- Central opening with unique patented release system to prevent damage.
- Hinged parabolic reflector for high lumen output efficiency.
- Vibration resistant spring loaded lampholders for bi-pin (G13) or mono-pin (Fa6) versions.
- Positive safety switch disconnects power to lamps and ballast to allow maintenance in hazardous locations.
- Electronic multi-tap ballast 110 to 254 Vac/Vdc +/- 10% 50/60 Hz, for global applications. High power factor electronic ballast (>0.95). EOL (End Of Life) protection in accordance to the latest EN/IEC 60079-7 standard.
- Two channel ballast prevents dark areas by allowing one lamp to remain lit if one fails.

- Ballast plug-in with Ex e connector for quick and error-free maintenance.
- Available in 3 hours emergency version, including multi-tap ballast with built-in monthly self test. Test results through multi-colored LED.
- Ex e battery with plug-in connector for maintenance in hazardous location.

Standard Materials of Fixture:

- Fiberglass reinforced polyester housing.
- Polycarbonate lens.
- Elastomer gasket.
- Highly reflective white polycarbonate internal reflector.

Standard Materials of Mounting Accessories:

- Mounting accessories available in different materials such as gray painted aluminum, zinc plated steel, galvanized steel or 316 stainless steel.

Options:

- Silicone coating for added protection in H₂S hydrogen sulfide environments.
- Without safety switch.
- Level gauge light fitting.
- 316 stainless steel fixing inserts.

Catalog Number Logic:

FE Lamp Type: B = Bi-pin (G13) M = Mono Pin (Fa6)	X Number of Lamps: 1 = Single 2 = Double 3 = Three Lamps	X Wattage: 18 = 18 Watt 36 = 36 Watt 58 = 58 Watt	XX Mounting Version: P = Pole Mount (1) S = Surface/Suspension Mount Standard Wiring T = Surface/Suspension Mount Through Wiring L = Surface/Suspension Mount Dual Loop in/out Through Wiring (single phase)	X Cable Type: A = Armored M20 N = Unarmored M25 U = Unarmored M20	X Options: (options must be listed alphabetically) C = Silicon Coating for Diffuser E = 3H Emergency (combined) – Battery 6 V - 4 Ah E7 = 3H Emergency (combined) – Battery 6 V - 7 Ah (2) L = Level Gauge Light Fitting (3) N = No Switch (4) X = 4 Entries (5)
Series: FE = FE Series Zone 1, 2, 21 & 22 ATEX / IEC Certified	Voltage: BU = 110 to 254 Vac/Vdc 50/60 Hz BK = 220 to 240 Vac/Vdc 50/60 Hz				

(1) Only 2 x 18 W and 2 x 36 W with M25 entry versions
 (2) Only 36 W and 58 W emergency versions
 (3) Only for single standard versions
 (4) Only for standard versions
 (5) Only for S, T and L mounting versions

Lighting: Fluorescent Lighting

FE Series: Nonmetallic Fluorescent Lighting Fixtures, Standard and Emergency Battery Back-Up – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

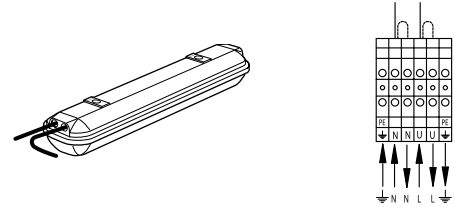
IP66/67 – IK10

Ordering Information – Standard Version:

Surface/Suspension Mounting and Standard Wiring Version:

Connection via 1 x 6 terminals.

Capacity (flexible/solid): 4 mm²/6 mm².



Unarmored Version - Bi-pin (G13):

Three M25 threaded entries, two at one end and one at opposite end, supplied with one M25 polyamide cable gland (dia. 8 to 18.5 mm) and two M25 polyamide plugs.

Number of Lamps	Power (W)	Lamp Type	Voltage (V)	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
1	18	G13	110/254	5.5	32.3	FEB118BUSN	091547 or 096547
2	18	G13	110/254	5.5	32.3	FEB218BUSN	091548 or 096548 or 096363
1	36	G13	110/254	7.9	54.2	FEB136BUSN	091553 or 096553
2	36	G13	110/254	7.9	54.2	FEB236BUSN	091555 or 096555 or 096364
3	36	G13	110/254	9.9	54.2	FEB336BUSN	091534 or 096534
1	58	G13	110/254	9	65	FEB158BUSN	091372 or 096372
2	58	G13	110/254	9	65	FEB258BUSN	091373 or 096373
3	58	G13	110/254	11	65	FEB358BUSN	091542 or 096542

Armored Version - Bi-pin (G13):

Two M20 threaded entries with brass earth continuity plate at one end and one M20 plugged clearance entry, supplied with two M20 polyamide plugs.

Number of Lamps	Power (W)	Lamp Type	Voltage (V)	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
1	18	G13	110/254	5.5	32.3	FEB118BUSA	091535 or 096535
2	18	G13	110/254	5.5	32.3	FEB218BUSA	091538 or 096538 or 096374
1	36	G13	110/254	7.9	54.2	FEB136BUSA	091543 or 096543
2	36	G13	110/254	7.9	54.2	FEB236BUSA	091545 or 096545 or 096375
3	36	G13	110/254	9.9	54.2	FEB336BUSA	091539 or 096539
1	58	G13	110/254	9	65	FEB158BUSA	091342 or 096342
2	58	G13	110/254	9	65	FEB258BUSA	091343 or 096343
3	58	G13	110/254	11	65	FEB358BUSA	091549 or 096549

Unarmored Version - Mono-pin (Fa6):

Three M25 threaded entries, two at one end and one at opposite end, supplied with one M25 polyamide cable gland (dia. 8 to 18.5 mm) and two M25 polyamide plugs.

Number of Lamps	Power (W)	Lamp Type	Voltage (V)	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
2	18	Fa6	110/254	5.5	32.3	FEM218BUSN	091579 or 096579
2	36	Fa6	110/254	7.9	54.2	FEM236BUSN	091588 or 096588
2	58	Fa6	110/254	9	65	FEM258BUSN	091550 or 096550

Armored Version - Mono-pin (Fa6):

Two M20 threaded entries with brass earth continuity plate at one end and one M20 plugged clearance entry supplied with two M20 polyamide plugs.

Number of Lamps	Power (W)	Lamp Type	Voltage (V)	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
2	18	Fa6	110/254	5.5	32.3	FEM218BUSA	091367 or 096367
2	36	Fa6	110/254	7.9	54.2	FEM236BUSA	091369 or 096369
2	58	Fa6	110/254	9	65	FEM258BUSA	091382 or 096382

Lighting: Fluorescent Lighting

FE Series: Nonmetallic Fluorescent Lighting Fixtures, Standard and Emergency Battery Back-Up – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

IP66/67 – IK10

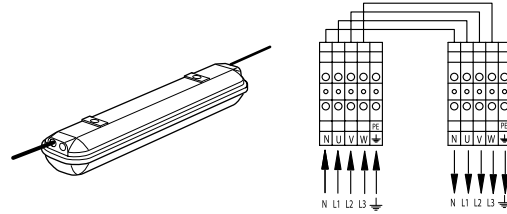
LIGHTING

Ordering Information – Standard Version – Continued:

Surface/Suspension Mounting and Through Wiring Version (three phase)

Connection via 2 x 5 terminals.

Capacity (flexible/solid): 4 mm²/6 mm².



Unarmored Version - Bi-pin (G13):

Three M25 threaded entries, two at one end and one at opposite end, supplied with two M25 polyamide cable gland (dia. 8 to 18.5 mm) and one M25 polyamide plug.

Number of Lamps	Power (W)	Lamp Type	Voltage (V)	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
2	18	G13	110/254	5.5	32.3	FEB218BUTN	091518 or 096518
2	36	G13	110/254	7.9	54.2	FEB236BUTN	091525 or 096525
2	58	G13	110/254	9	65	FEB258BUTN	091383 or 096383

Armored Version - Bi-pin (G13):

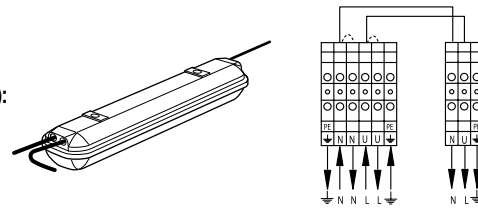
Two M20 threaded entries with brass earth continuity plate at one end and one M20 threaded entry with brass earth continuity plate at opposite end, supplied with one M20 polyamide plug.

Number of Lamps	Power (W)	Lamp Type	Voltage (V)	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
2	18	G13	110/254	5.5	32.3	FEB218BUTA	091350 or 096350
2	36	G13	110/254	7.9	54.2	FEB236BUTA	091515 or 096515
2	58	G13	110/254	9	65	FEB258BUTA	091353 or 096353

Surface/Suspension Mounting and Dual Loop In/Out Through Wiring Version (single phase):

Connection via 1 x 6 terminals and 1 x 3 terminals.

Capacity (flexible/solid): 4 mm²/6 mm².



Unarmored Version - Bi-pin (G13):

Three M25 entries, two at one end and one at opposite end, supplied with two M25 polyamide cable glands (dia. 8 to 18.5 mm) and one M25 polyamide plug.

Number of Lamps	Power (W)	Lamp Type	Voltage (V)	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
2	18	G13	110/254	5.5	32.3	FEB218BULN	–
2	36	G13	110/254	7.9	54.2	FEB236BULN	–
2	58	G13	110/254	9	65	FEB258BULN	–

Armored Version - Bi-pin (G13):

Two M20 threaded entries with brass earth continuity plate at one end and one M20 threaded entry with brass earth continuity plate at opposite end, supplied with one M20 polyamide plug.

Number of Lamps	Power (W)	Lamp Type	Voltage (V)	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
2	18	G13	110/254	5.5	32.3	FEB218BULA	091307 or 096307
2	36	G13	110/254	7.9	54.2	FEB236BULA	091308 or 096308
2	58	G13	110/254	9	65	FEB258BULA	091309 or 096309

Lighting: Fluorescent Lighting

FE Series: Nonmetallic Fluorescent Lighting Fixtures, Standard and Emergency Battery Back-Up – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

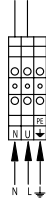
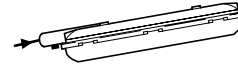
IP66/67 – IK10

Ordering Information – Standard Version – Continued:

Pole Mounting Version

Connection via 1 x 3 terminals.

Capacity (flexible/solid): 4 mm²/6 mm².



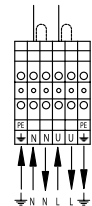
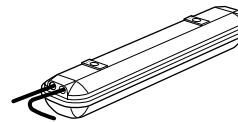
For mounting on dia. 42 mm pole or tubular wall-mounting support, supplied with one integrated M25 polyamide cable gland (dia. 8 to 18.5 mm).

Number of Lamps	Power (W)	Lamp Type	Voltage (V)	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
2	18	G13	110/254	6.2	34.1	FEB218BUPN	091390 or 096390
2	36	G13	110/254	8.7	54.2	FEB236BUPN	091391 or 096391

Level Gauge Tank Light - Surface/Suspension Mounting with Standard Wiring:

Connection via 1 x 6 terminals.

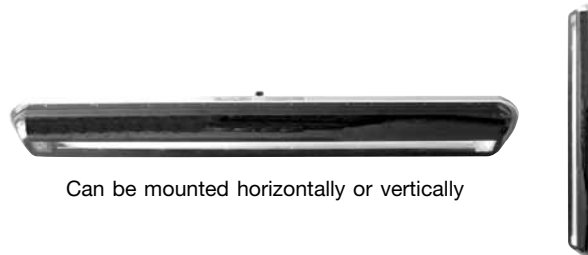
Capacity (flexible/solid): 4 mm²/6 mm².



Unarmored Version - Bi-pin (G13):

Three M25 entries, two at one end and one at opposite end, supplied with one M25 polyamide cable gland (dia. 8 to 18.5 mm) and two M25 polyamide plugs.

Number of Lamps	Power (W)	Lamp Type	Voltage (V)	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
1	18	G13	110/254	5.5	32.3	FEB118BUSNL	091531 or 096531
1	36	G13	110/254	7.9	54.2	FEB136BUSNL	091532 or 096532
1	58	G13	110/254	9	65	FEB158BUSNL	091533 or 096533



Can be mounted horizontally or vertically

Lighting: Fluorescent Lighting

FE Series: Nonmetallic Fluorescent Lighting Fixtures, Standard and Emergency Battery Back-Up – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

IP66/67 – IK10

LIGHTING

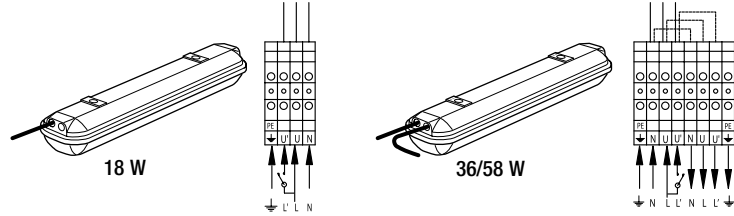
Ordering Information – Emergency Version:

Surface/Suspension Mounting and Standard Wiring

Connection via 1 x 4 terminals for 18 W version.

Connection via 1 x 8 terminals for 36 W & 58 W versions.

Capacity (flexible/solid): 4 mm²/6 mm².



Unarmored Version - Bi-pin (G13):

Three M25 entries, two at one end and one at opposite end, supplied with one M25 polyamide cable gland (dia. 8 to 18.5 mm) and two M25 polyamide plugs.

Number of Lamps	Power (W)	Lamp Type	Voltage (V)	Weight (kg)	Volume (dm ³)	Duration (Hours)	Battery Capacity	Catalog Number	Old Catalog Number
2	18	G13	110/254	7.3	32.3	3 H	4Ah	FEB218BUSNE	091370 or 096370
2	36	G13	110/254	9.6	54.2	3 H	4Ah	FEB236BUSNE	091371 or 096371
2	36	G13	110/254	9.6	54.2	3 H	7Ah	FEB236BUSNE7	-
3	36	G13	110/254	11.6	54.2	3 H	4Ah	FEB336BUSNE	091384 or 096384
2	58	G13	110/254	10.7	65	3 H	4Ah	FEB258BUSNE	091354 or 096354
2	58	G13	110/254	10.7	65	3 H	7Ah	FEB258BUSNE7	-
3	58	G13	110/254	12.7	65	3 H	4Ah	FEB358BUSNE	091394 or 096394

Armored Version - Bi-pin (G13):

Two M20 threaded entries with brass earth continuity plate at one end and one M20 plugged clearance entry, supplied with two M20 polyamide plugs.

Number of Lamps	Power (W)	Lamp Type	Voltage (V)	Weight (kg)	Volume (dm ³)	Duration (Hours)	Battery Capacity	Catalog Number	Old Catalog Number
2	18	G13	110/254	7.3	32.3	3 H	4 Ah	FEB218BUSAE	091340 or 096340
2	36	G13	110/254	9.6	54.2	3 H	4 Ah	FEB236BUSAE	091341 or 096341
2	36	G13	110/254	9.6	54.2	3 H	7 Ah	FEB236BUSAE7	-
3	36	G13	110/254	11.6	54.2	3 H	4 Ah	FEB336BUSAE	091385 or 096385
2	58	G13	110/254	10.7	65	3 H	4 Ah	FEB258BUSAE	091344 or 096344
2	58	G13	110/254	10.7	65	3 H	7 Ah	FEB258BUSAE7	-
3	58	G13	110/254	12.7	65	3 H	4 Ah	FEB358BUSAE	091395 or 096395

Unarmored Version - Mono-pin (Fa6):

Three M25 entries, two at one end and one at opposite end, supplied with one M25 polyamide cable gland (dia. 8 to 18.5 mm) and two M25 polyamide plugs.

Number of Lamps	Power (W)	Lamp Type	Voltage (V)	Weight (kg)	Volume (dm ³)	Duration (Hours)	Battery Capacity	Catalog Number	Old Catalog Number
2	18	Fa6	110/254	7.6	32.3	3 H	4 Ah	FEM218BUSNE	096910
2	36	Fa6	110/254	9.9	54.2	3 H	4 Ah	FEM236BUSNE	096911
2	36	Fa6	110/254	9.9	54.2	3 H	7 Ah	FEM236BUSNE7	-
2	58	Fa6	110/254	11	65	3 H	4 Ah	FEM258BUSNE	096912
2	58	Fa6	110/254	11	65	3 H	7 Ah	FEM258BUSNE7	-

Armored Version - Mono-pin (Fa6):

Two M20 threaded entries with brass earth continuity plate at one end and one M20 plugged clearance entry, supplied with two M20 polyamide plugs.

Number of Lamps	Power (W)	Lamp Type	Voltage (V)	Weight (kg)	Volume (dm ³)	Duration (Hours)	Battery Capacity	Catalog Number	Old Catalog Number
2	18	Fa6	110/254	7.6	32.3	3 H	4 Ah	FEM218BUSAE	096920
2	36	Fa6	110/254	9.9	54.2	3 H	4 Ah	FEM236BUSAE	096921
2	36	Fa6	110/254	9.9	54.2	3 H	7 Ah	FEM236BUSAE7	-
2	58	Fa6	110/254	11	65	3 H	4 Ah	FEM258BUSAE	096922
2	58	Fa6	110/254	11	65	3 H	7 Ah	FEM258BUSAE7	-

Lighting: Fluorescent Lighting

FE Series: Nonmetallic Fluorescent Lighting Fixtures, Standard and Emergency Battery Back-Up – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

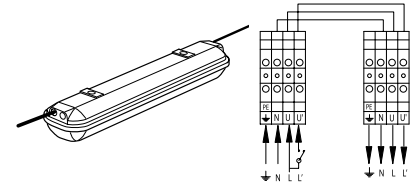
IP66/67 – IK10

Ordering Information – Emergency Version – Continued:

Surface/Suspension Mounting and Through Wiring Version

Connection via 2 x 4 terminals.

Capacity (flexible/solid): 4 mm²/6 mm².



Unarmored Version - Bi-pin (G13):

Three M25 entries, two at one end and one at opposite end, supplied with two M25 polyamide cable glands (dia. 8 to 18.5 mm) and one M25 polyamide plug.

Number of Lamps	Power (W)	Lamp Type	Voltage (V)	Weight (kg)	Volume (dm ³)	Duration (Hours)	Battery Capacity	Catalog Number	Old Catalog Number
2	18	Bi-pin	110/254	7.3	32.3	3 H	4 Ah	FEB218BUTNE	091380 or 096380
2	36	Bi-pin	110/254	9.6	54.2	3 H	4 Ah	FEB236BUTNE	091381 or 096381
2	36	Bi-pin	110/254	9.6	54.2	3 H	7 Ah	FEB236BUTNE7	-
2	58	Bi-pin	110/254	10.7	65	3 H	4 Ah	FEB258BUTNE	-
2	58	Bi-pin	110/254	10.7	65	3 H	7 Ah	FEB258BUTNE7	-

Armored Version - Bi-pin (G13):

Two M20 threaded entries with brass earth continuity plate at one end and one M20 threaded entry with brass earth continuity plate at opposite end, supplied with one M20 polyamide plug.

Number of Lamps	Power (W)	Lamp Type	Voltage (V)	Weight (kg)	Volume (dm ³)	Duration (Hours)	Battery Capacity	Catalog Number	Old Catalog Number
2	18	Bi-pin	110/254	7.3	32.3	3 H	4 Ah	FEB218BUTAE	-
2	36	Bi-pin	110/254	9.6	54.2	3 H	4 Ah	FEB236BUTAE	-
2	36	Bi-pin	110/254	9.6	54.2	3 H	7 Ah	FEB236BUTAE7	-
2	58	Bi-pin	110/254	10.7	65	3 H	4 Ah	FEB258BUTAE	-
2	58	Bi-pin	110/254	10.7	65	3 H	7 Ah	FEB258BUTAE7	-

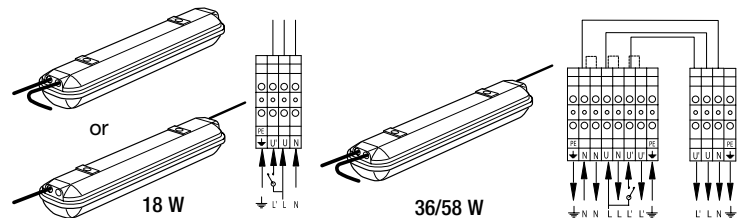
Surface/Suspension Mounting and Dual Loop

In/Out Through Wiring Version (single phase)

Connection via 1 x 4 double deck terminals for 18 W version.

Connection via 1 x 8 terminals and 1 x 4 terminals for 36 W & 58 W versions.

Capacity (flexible/solid): 4 mm²/6 mm².



Unarmored Version - Bi-pin (G13):

Three M25 entries, two at one end and one at opposite end, supplied with two M25 polyamide cable glands (dia. 8 to 18.5 mm) and one M25 polyamide plug.

Number of Lamps	Power (W)	Lamp Type	Voltage (V)	Weight (kg)	Volume (dm ³)	Duration (Hours)	Battery Capacity	Catalog Number	Old Catalog Number
2	18	Bi-pin	110/254	7.6	32.3	3 H	4 Ah	FEB218BULNE	-
2	36	Bi-pin	110/254	9.9	54.2	3 H	4 Ah	FEB236BULNE	-
2	36	Bi-pin	110/254	9.9	54.2	3 H	7 Ah	FEB236BULNE7	-
2	58	Bi-pin	110/254	10.7	65	3 H	4 Ah	FEB258BULNE	-
2	58	Bi-pin	110/254	10.7	65	3 H	7 Ah	FEB258BULNE7	-

Armored Version - Bi-pin (G13):

Two M20 threaded entries with brass earth continuity plate at one end and one M20 threaded entry with brass earth continuity plate at opposite end, supplied with one M20 polyamide plug.

Number of Lamps	Power (W)	Lamp Type	Voltage (V)	Weight (kg)	Volume (dm ³)	Duration (Hours)	Battery Capacity	Catalog Number	Old Catalog Number
2	18	Bi-pin	110/254	7.6	32.3	3 H	4 Ah	FEB218BULAE	091330 or 096330
2	36	Bi-pin	110/254	9.9	54.2	3 H	4 Ah	FEB236BULAE	091331 or 096331
2	36	Bi-pin	110/254	9.9	54.2	3 H	7 Ah	FEB236BULAE7	-
2	58	Bi-pin	110/254	10.7	65	3 H	4 Ah	FEB258BULAE	091332 or 096332
2	58	Bi-pin	110/254	10.7	65	3 H	7 Ah	FEB258BULAE7	-

Lighting: Fluorescent Lighting

FE Series: Nonmetallic Fluorescent Lighting Fixtures, Standard and Emergency Battery Back-Up – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

IP66/67 – IK10

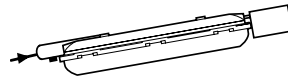
LIGHTING

Ordering Information – Emergency Version – Continued:

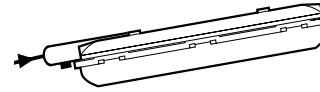
Pole Mounting Version

Connection via 1 x 4 terminals.

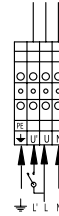
Capacity (flexible/solid): 4 mm²/6 mm².



18 W - Actual Size 2'



36 W - Actual Size 4'


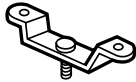


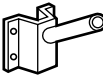




For mounting on dia. 42 mm pole or tubular wall-mounting support, supplied with one x M25 polyamide cable gland (dia. 8 to 18.5mm).

Number of Lamps	Power (W)	Lamp Type	Voltage (V)	Weight (kg)	Volume (dm ³)	Duration (Hours)	Battery Capacity	Catalog Number	Old Catalog Number
2	18	Bi-pin	110/254	10	54.2	3 H	4 Ah	FEB218BUPNE	091392 or 096392
2	36	Bi-pin	110/254	10.4	54.2	3 H	4 Ah	FEB236BUPNE	091393 or 096393
2	36	Bi-pin	110/254	10.4	54.2	3 H	7 Ah	FEB236BUPNE7	-

Note: 2 x 18 W is supplied with external battery pack (see dimensional data).

Accessories:

	Description	Catalog Number	Old Catalog Number	Pack
	Fixing Brackets Set of two brackets for surface installation			
	Zinc plated steel	FEFBZ	096596	1
	316 stainless steel	FEFBS	096589	1
	Brackets for Surface Mounting Set of two			
	Aluminum (gray painted)	FESBA	096597	1
	316 stainless steel	FESBS	096590	1
	M8 Ring Bolts Set of two			
	Zinc plated steel	FERBM8Z	096594	1
	Half Clamps Brackets for Pole Mounting Set of two			
	Dia. 42 to 49 mm pole (1-1/4" to 1-1/2" tube)			
	Zinc plated steel	FEHC49Z	096593	1
	316 stainless steel	FEHC49S	096793	1
	Dia. 60 mm pole (2" tube)			
	Zinc plated steel	FEHC60Z	096591	1
	316 stainless steel	FEHC60S	096791	1
	Wall Mounting Adaptor For pole mounting version (dia. 42 mm)			
	Galvanized steel	FEWMG	096595	1
	Hinged Brackets Set of two brackets for adjusting luminaire			
	Aluminum	FEHBA	096598	1
	316 stainless steel	FEHBS	096574	1
	Fall Prevention Kit Safety chain retains fixture temporarily to ease installation			
	For M25 cable entry	FESCM25	096405	1
	For M20 cable entry	FESCM20	096406	1
	Adaptor for Fa8 tube on Fa6 Lampholder	096905	096905	1

Lighting: Fluorescent Lighting

FE Series: Nonmetallic Fluorescent Lighting Fixtures, Standard and Emergency Battery Back-Up – Increased Safety

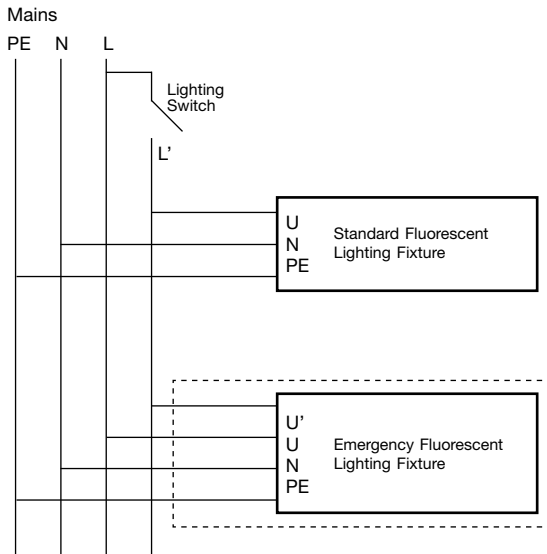
Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

IP66/67 – IK10

Wiring Diagram:



Emergency Function Diagram:

Two Lamp Version

Mains	Lighting Switch ON	Lighting Switch OFF
ON		
OFF		

Three Lamp Version

Mains	Lighting Switch ON	Lighting Switch OFF
ON		
OFF		

LED status:

Color	Indication	Function
Green	LED glows LED blinks	Batteries are connected Batteries are charged
Red	LED blinks	Batteries are not connected or defect
Yellow	LED blinks	Batteries are charging and discharging during automatic cycle

Emergency Light Duration:

Version	Battery Capacity	Duration	Emergency Light Output
2 x 18 W	4 Ah – 6 V	3 hours	45%
2 x 36 W	4 Ah – 6 V	3 hours	15%
	7 Ah – 6 V	3 hours	25%
2 x 58 W	4 Ah – 6 V	3 hours	9%
	7 Ah – 6 V	3 hours	15%

Lighting: Fluorescent Lighting

FE Series: Nonmetallic Fluorescent Lighting Fixtures, Standard and Emergency Battery Back-Up – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

IP66/67 – IK10

LIGHTING

Compliances:

Hazardous Area	Gas	Dust
Certified Type	FLe	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081 Ex II 2 G	CE 0081 Ex II 2 D
Symbol of Protection ATEX	Ex de IIC or Ex demb IIC (emergency version)	Ex tD A21
Symbol of Protection IEC		
T Rating	T5(1) to T4	N.A.
Surface Temperature	N.A.	75°C
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50201	
ATEX Certificate	LCIE 07 ATEX 6017	
IECEx Certificate	IECEx LCI 04.0017	
Other Certifications	GOST, Marine Listed UL 1598A	
Index of Protection	IP66/67	
Impact Resistance (shock)	IK10	

(1) with ceiling position use at +40°C ambient temperature

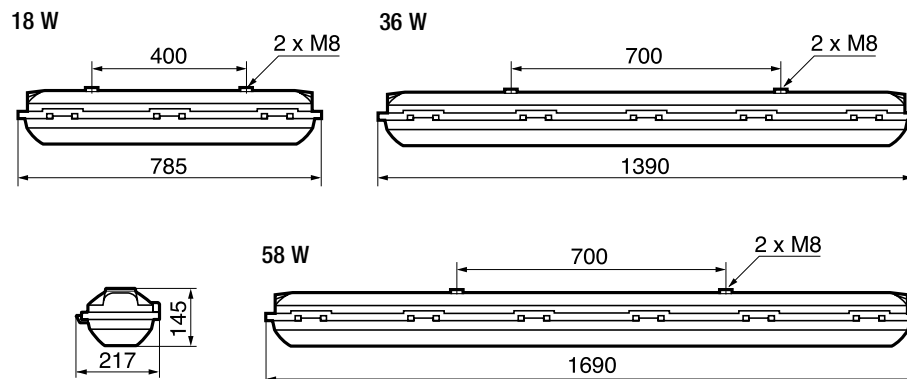
Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 60079-7; 60079-18; 61241-0; 61241-1
Product Standards	EN / IEC 60598-1; 60598-2-22
EMC Standards	EN / IEC 55015; 61547
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Dimensions (mm):

Fluorescent Lighting Fixtures:

Surface/Suspension Mounting



Lighting: Fluorescent Lighting

FE Series: Nonmetallic Fluorescent Lighting Fixtures, Standard and Emergency Battery Back-Up – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

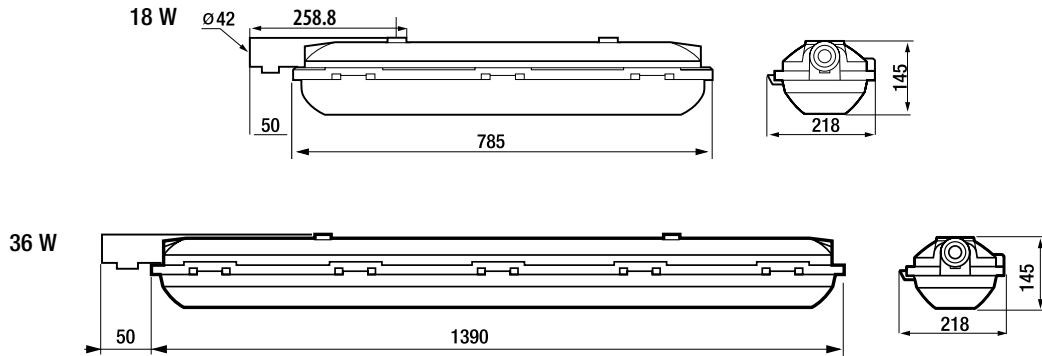
ATEX / IECEx

IP66/67 – IK10

Dimensions (mm) – Continued:

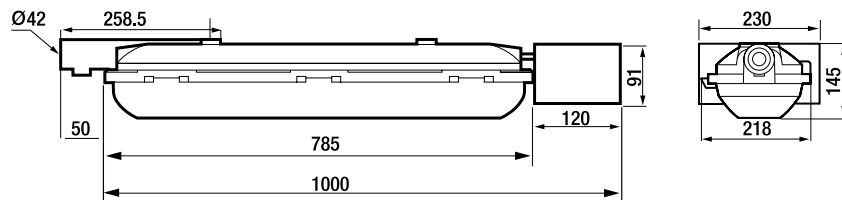
Fluorescent Lighting Fixtures:

Pole Mounting



18 W Emergency Pole Mounting:

18 W Emergency Pole Mounting



Fixing Accessories:

Set of two quick fixing brackets for ease of surface mounting Zinc plated steel or stainless steel



Lighting: Fluorescent Lighting

FE Series: Nonmetallic Fluorescent Lighting Fixtures, Standard and Emergency Battery Back-Up – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

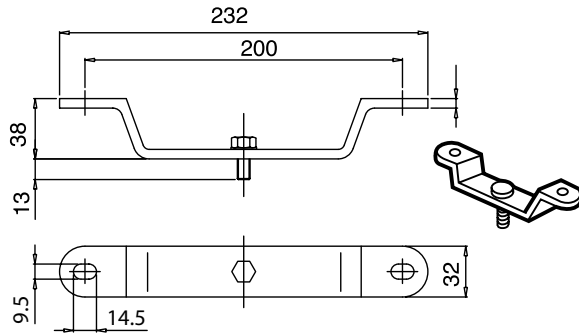
ATEX / IECEx

IP66/67 – IK10

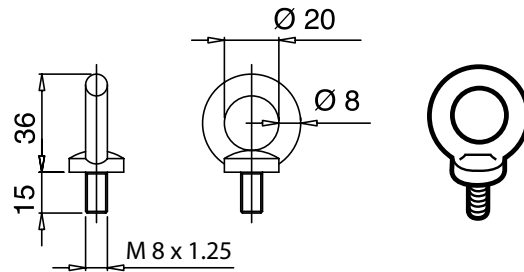
LIGHTING

Fixing Accessories – Continued:

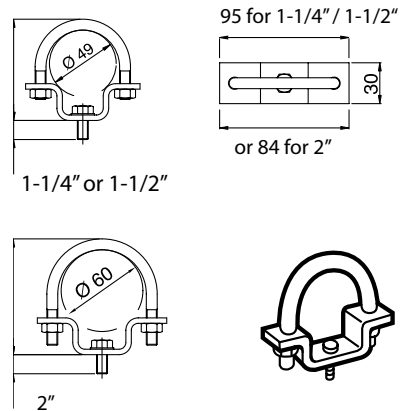
Set of two brackets for surface mounting.
Gray painted aluminum or stainless steel.



Set of two ring bolts.
Zinc plated steel.



Set of two clamps for pole dia. 42 mm to 60 mm (1-1/4" to 2").
Zinc plated steel or stainless steel.



Lighting: Fluorescent Lighting

FE Series: Nonmetallic Fluorescent Lighting Fixtures, Standard and Emergency Battery Back-Up – Increased Safety

Zone 1 & 2 – 21 & 22

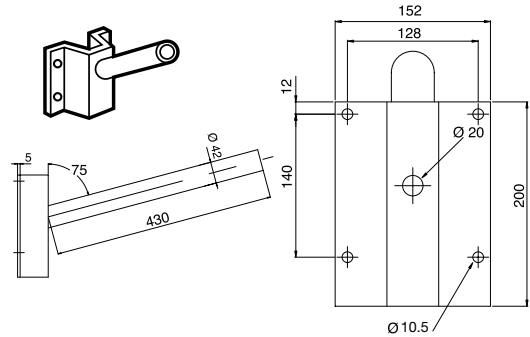
II 2 GD

ATEX / IECEx

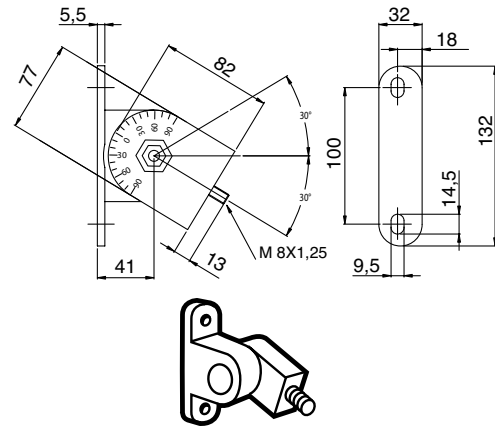
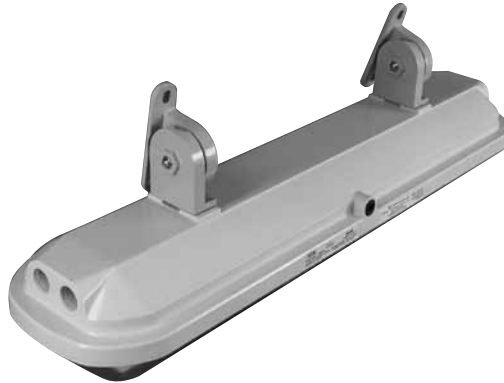
IP66/67 – IK10

Fixing Accessories – Continued:

42 mm dia. galvanized steel wall mounting pole.



Set of two hinged brackets for adjusting luminaire.
Gray painted aluminum or stainless steel.

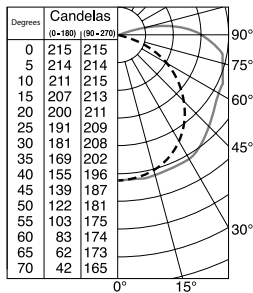


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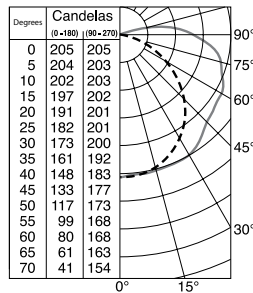
Polar curves for a 1000 lm flux, according to NF C 71-120
Luminaire symbol according to NF C 71-121

--- Longitudinal
— Transverse

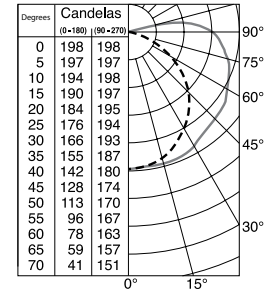
1 x 18 W
Efficiency 94.8%
NF C 71-121: 0.86 H + 0.09 T



1 x 36 W
Efficiency 89.3%
NF C 71-121: 0.81 H + 0.08 T



1 x 58 W
Efficiency 87.5%
NF C 71-121: 0.80 H + 0.07 T



Lighting: Fluorescent Lighting

FE Series: Nonmetallic Fluorescent Lighting Fixtures, Standard and Emergency Battery Back-Up – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

IP66/67 – IK10

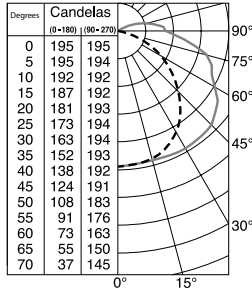
LIGHTING

Photometric Data – Continued:

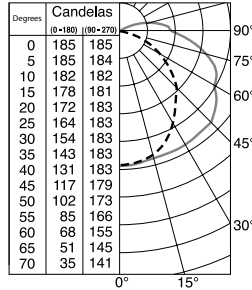
Polar curves for a 1000 lm flux, according to NF C 71-120
Luminaire symbol according to NF C 71-121

--- Longitudinal
— Transverse

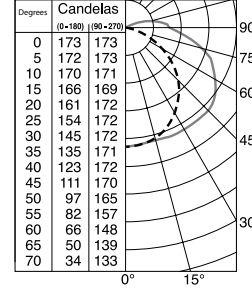
2 x 18 W
Efficiency 85.1%
NF C 71-121: 0.78 H + 0.08 T



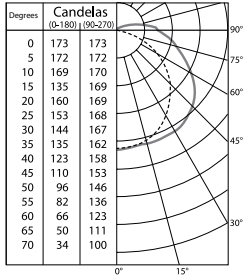
2 x 36 W
Efficiency 80.5%
NF C 71-121: 0.73 H + 0.07 T



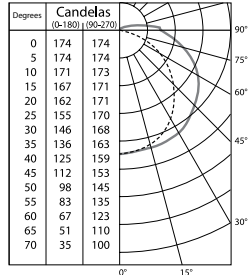
2 x 58 W
Efficiency 76.9%
NF C 71-121: 0.70 H + 0.07 T



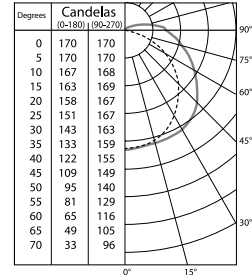
3 x 18 W
Efficiency 68.1%
NF C 71-121: 0.63 G + 0.05 T



3 x 36 W
Efficiency 68.1%
NF C 71-121: 0.63 G + 0.07 T



3 x 58 W
Efficiency 65.6%
NF C 71-121: 0.61 H + 0.04 T



North American CEC/NEC Certification:

In a separate, comprehensive catalog, Appleton also offers a complete line of products for hazardous locations, fully tested to NEC and CEC standards. Ask your local representative about the Appleton brand or visit the Appleton web site at: www.appletonelec.com for details.

Compliances:

- Class I, Div. 2, Groups A, B, C & D.
- Class II, Div. 2, Groups E & G.
- Marine Type Electric Fixture Outside Type (Salt Water).
- NEMA 4X

Materials:

- Fiberglass reinforced polyester housing.
- Polycarbonate lens.
- Stainless steel hubs.

Features:

- No tools required to access lamps.
- Integral switch disconnects power to ballast and lamps when lens is opened.

Wattage Range:

- (2) or (4) 40 W F40VX PL Fluorescent.
- (2) 32 W T8 Linear Fluorescent.
- (2) 44 W T8-H0 Linear Fluorescent.



Fluorescent Luminaire "FV Series"

- (2) 40 W T12 Linear Fluorescent.
- (2) 60 W T12-H0 Linear Fluorescent.
- (3) 32 W T8 Linear Fluorescent.

Input Voltage and Frequency:

- 120 V, 60 Hz
- 277 V, 60 Hz
- Others upon request

Refer to Appleton Master Catalog Section F3 for more information.

Lighting: Fluorescent Lighting

FD Series: Cylindrical Fluorescent Lighting Fixtures, Standard and Emergency Battery Back-Up – Flameproof



2 x 58 W



2 x 36 W



2 x 18 W

Compliance Data:

ATEX – IECEx:



Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IECEx	CE
Ex d IIB – Ex d IIC Ex d IIB+H2	T6 to T4	Ex tD A21	T78°C to T130°C	IP66/68 (10 meters)

Power and Voltage:

18 W / 36 W / 58 W	Multiple Voltages	Lamp Type
1, 2, 3 Lamp Versions	220 V-60 Hz / 230 V-60 Hz / 230 V-50 Hz / 240 V-50 Hz 110 to 254 Vac/Vdc +/- 10% 50/60 Hz	Fluorescent: T8 (G13) – T5 (G5) Compact Fluorescent: TC-L (2G11)

Operating Temperature:

-20°C to +55°C

Lighting: Fluorescent Lighting

FD Series: Cylindrical Fluorescent Lighting Fixtures, Standard and Emergency Battery Back-Up – Flameproof

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

IP66/68

LIGHTING

Applications:

- Can be installed in hazardous areas designated as Zone 1, 2, 21 and 22.
- For use in locations where a high degree of corrosion resistance is required.
- For indoor/outdoor use where protection against dirt, water and moisture is necessary.
- Typical applications include oil refineries, petrochemical facilities, pulp and paper, mills, painting, sewage and water treatment facilities, warehouses, underground tunnels and general manufacturing facilities.

Features:

- Impact resistant borosilicate glass sealed tube.
- Easy access to lamps through gray painted Zamak threaded entry cap.
- Supplied with O-ring for improved ingress protection.
- Corrosion-resistant gray painted Zamak.
- Supplied with energy efficient and self induction ferromagnetic ballast on a removable gear tray.
- Quick and easy installation of fluorescent lighting fixtures with 2G11 and G13 lamp holders.
- Supplied with external and internal ground/earth connection.
- Fixture supplied with one M20 blanking plug.
- Easy connection to wire and disconnect with plug-in terminal blocks.
- Bi-pin (G13) 18 & 36 W magnetic ballast versions operate at +70°C ambient temperature with T4 rating.
- Magnetic ballast versions 230 V 50 Hz or 240 V 50 Hz or 220 V 60 Hz or 230 V 60 Hz.
- Electronic ballast versions 110 to 254 Vac/Vdc 50/60 Hz.
- 3 hour emergency version with automatic self test every month
- Plug in battery pack (6 V 4 Ah) is easy to remove for maintenance.



2 x 58 W



2 x 36 W



2 x 18 W

Standard Material of Fixtures:

- Gray painted Zamak end caps and cover.
- Borosilicate glass tube.
- Nitrile (NBR) O-ring gasket.
- White powder coated galvanized steel internal reflector.

Standard Material of Mounting Accessories:

- Several accessories in different material such as zinc plated steel, galvanized steel or 316 stainless steel.

Options:

- 3 lamp versions.
- 8 W fluorescent (Bi-pin G5) available, see section HBDC series.

Catalog Number Logic:

FD	X	X	XX	X	X	X
Series: Zone 1 & 2 - 21 & 22 ATEX / IEC certified	Number of Lamps: 1 = Single 2 = Double 3 = Three Lamps		Wattage: 18 = 18 Watt 36 = 36 Watt 58 = 58 Watt	Voltage (50/60 Hz): Standard versions: AA = 220 Vac 60 Hz AC = 230 Vac 60 Hz XC = 230 Vac 50 Hz X3 = 240 Vac 50 Hz BU = 110 to 254 Vac/Vdc 50/60 Hz	Cable Entry: M = Metric M20 N = NPT 3/4"	Options: (Options must be listed alphabetically) E = 3h Emergency (combined) – Battery 6 V 4 Ah
Lamp Type: B = Bi-pin (G13) Fluorescent C = Compact Fluorescent (2G11) F = Bi-pin (G5) Fluorescent				Emergency versions: BU = 110 to 254 Vac/Vdc 50/60 Hz		

Lighting: Fluorescent Lighting

FD Series: Cylindrical Fluorescent Lighting Fixtures, Standard and Emergency Battery Back-Up – Flameproof

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

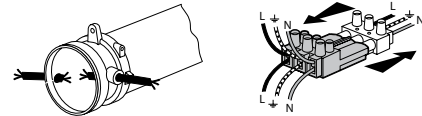
IP66/68

Ordering Information – Standard Versions:

Two M20 threaded entries, supplied with one M20 aluminum blanking plug.
 Connection via 1 x 3 double deck terminals.
 Capacity (flexible/solid): 0.75 mm² to 2.5 mm².

For Bi-pin (G13) Fluorescent Lamps - T8 (26 mm) or T12 (38 mm)

230 V - 50 Hz – Magnetic Ballast – Starter Ignition
 Compensated power supply – power factor > 0.9



No. of Lamps	Power (W)	Gas Group	Model	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
1	18	IIC	0.6	9	58	FDB118XCM	–	1
2	18	IIC	0.6	9.7	58	FDB218XCM	–	1
1	36	IIB+H2	1.2	14.7	99	FDB136XCM	–	1
2	36	IIB+H2	1.2	15.3	99	FDB236XCM	–	1
1	58	IIB	1.5	17	119	FDB158XCM	–	1
2	58	IIB	1.5	18.2	119	FDB258XCM	–	1

240 V - 50 Hz – Magnetic Ballast – Starter Ignition
 Compensated power supply – power factor > 0.9

1	18	IIC	0.6	9	58	FDB118X3M	094826	1
2	18	IIC	0.6	9.7	58	FDB218X3M	094829	1
1	36	IIB+H2	1.2	14.7	99	FDB136X3M	094827	1
2	36	IIB+H2	1.2	15.3	99	FDB236X3M	094830	1
1	58	IIB	1.5	17	119	FDB158X3M	094828	1
2	58	IIB	1.5	18.2	119	FDB258X3M	094831	1

220 V - 60 Hz – Magnetic Ballast – Starter Ignition
 Compensated power supply – power factor > 0.9

2	18	IIC	0.6	9.7	58	FDB218AAM	094809	1
2	36	IIB+H2	1.2	15.3	99	FDB236AAM	094810	1
2	58	IIB	1.5	18.2	119	FDB258AAM	094811	1

230 V - 60 Hz – Magnetic Ballast – Starter Ignition
 Compensated power supply – power factor > 0.9

2	18	IIC	0.6	9.7	58	FDB218ACM	094818	1
2	36	IIB+H2	1.2	15.3	99	FDB236ACM	094819	1
2	58	IIB	1.5	18.2	119	FDB258ACM	094820	1

Lighting: Fluorescent Lighting

FD Series: Cylindrical Fluorescent Lighting Fixtures, Standard and Emergency Battery Back-Up – Flameproof

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

IP66/68

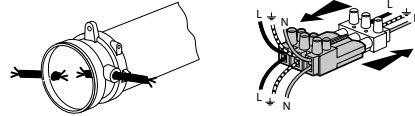
LIGHTING

Ordering Information – Standard Versions – Continued:

For Bi-pin (G13) Fluorescent Lamps - T8 (26 mm) or T12 (38 mm)

110 to 254 Vac/Vdc 50/60 Hz – Electronic Ballast

Power factor > 0.95



No. of Lamps	Power (W)	Gas Group	Model	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
2	18	IIC	0.6	9.7	58	FDB218BUM	091807 or 094807	1
2	36	IIB	1.2	15.3	99	FDB236BUM	091808 or 094808	1
3	36	IIB	1.2	16.3	99	FDB336BUM	–	1
1	58	IIB	1.5	17	119	FDB158BUM	091812 or 094812	1
2	58	IIB	1.5	18.2	119	FDB258BUM	091813 or 094813	1
3	58	IIB	1.5	19.2	119	FDB358BUM	–	1

For 2G11 Compact Fluorescent Lamps – TC-L

230 V - 50 Hz – Magnetic Ballast – Starter Ignition

Compensated power supply – power factor > 0.9 – Lamps supplied

1	18	IIC	0.3	9	58	FDC118XCM	–	1
2	18	IIC	0.3	9.7	58	FDC218XCM	–	1
1	36	IIB+H2	0.6	14.7	99	FDC136XCM	–	1
2	36	IIB+H2	0.6	15.3	99	FDC236XCM	–	1

Emergency Versions:

Two M20 threaded entries, supplied with one M20 aluminum blanking plug.

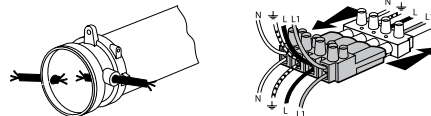
Connection via 1 x 4 double deck terminals.

Capacity (flexible/solid): 0.75 mm² to 2.5 mm².

For Bi-pin (G13) Fluorescent Lamps – T8 (26mm) or T12 (38mm)

110 to 254 Vac/Vdc 50/60 Hz – Electronic Ballast

3 hour duration - battery pack 6 V 4 Ah - Power factor >0.95 - Self test every month.



No. of Lamps	Power (W)	Gas Group	Model	Line Output	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
2	18	IIC	0.6	29%	11.6	58	FDB218BUME	091815 or 094815	1
2	36	IIB	1.2	16%	17.2	99	FDB236BUME	091816 or 094816	1
2	58	IIB	1.5	11%	20.2	119	FDB258BUME	091817 or 094817	1

Lighting: Fluorescent Lighting

FD Series: Cylindrical Fluorescent Lighting Fixtures, Standard and Emergency Battery Back-Up – Flameproof



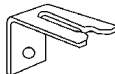

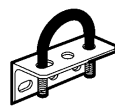

Zone 1 & 2 – 21 & 22

II 2 GD

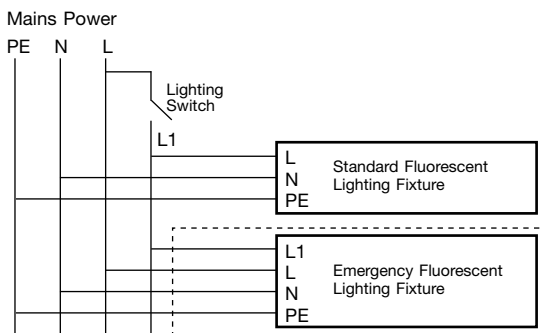
ATEX / IECEx

IP66/68


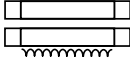
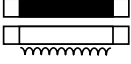

Accessories:

Description	Catalog Number	Old Catalog Number	Pack
External Reflector – White Painted Galvanized Steel			
 Model 0.3	FDER1G	094868	1
Model 0.6	FDER2G	094869	1
Model 1.2	FDER3G	094870	1
Model 1.5	FDER4G	094871	1
Protective Guard – Zinc Plated Steel			
 Model 0.3	FDPG1Z	094872	1
Model 0.6	FDPG2Z	094873	1
Model 1.2	FDPG3Z	094874	1
Model 1.5	FDPG4Z	094875	1
Fixing Brackets for Ease of Surface Installation – Set of Two			
 Zinc plated steel	FDFBZ	094897	1
316 stainless steel	FDFBS	094889	1
Surface Mounting Brackets – Set of Two			
 Zinc plated steel	FDSBZ	094898	1
316 stainless steel	FDSBS	094890	1
Half Clamp Brackets for Pole Mounting – Set of Two			
 dia. 42 to 49 mm pole (1-1/4" to 1-1/2" tube)	FDHC49Z	094899	1
Zinc plated steel	FDHC49S	094892	1
316 stainless steel			
 dia. 60 mm pole (2" tube)	FDHC60Z	094891	1
Zinc plated steel	FDHC60S	094893	1
316 stainless steel			
Fall Prevention Kit			
1.20 M stainless steel chain	FDSCS	093819	1

Wiring Diagram:



Emergency Function Diagram:

Mains	Lighting Switch OFF	Lighting Switch ON
Switched ON		
Switched OFF		

LED status:

Color	Indication	Function
Green	Blinking 1:1	Mains good, battery quick charging
	ON	Mains good, battery trickle charging
Red	Blinking 1:1	No battery connected or something is defective
	Flashing 1:10	Mains faulty, battery empty or lamp defective
	ON	Mains faulty, output ON
	OFF	No mains, battery completely empty
Yellow	Blinking 1:1	Mains good, performing self test
	ON	Result of self test was not good

Lighting: Fluorescent Lighting

FD Series: Cylindrical Fluorescent Lighting Fixtures, Standard and Emergency Battery Back-Up – Flameproof

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

IP66/68

Compliances:

Hazardous Area	Gas	Dust
Certified Type	FLd	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081 Ex II 2 G	CE 0081 Ex II 2 D
Symbol of Protection ATEX	Ex d IIB / Ex d IIB+H2 Ex d IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	See table	N.A.
Surface Temperature	N.A.	See table
Ambient Temperature	-20°C to +55°C	
CE Declaration of Conformity	50203	
ATEX Certificate	LCIE 97 ATEX 6012	
IECEx Certificate	IECEx LCI 04.0018	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66/68	
Impact Resistance (shock)	IK08	
Internal Volume	> 2 dm ³ (2 liters)	

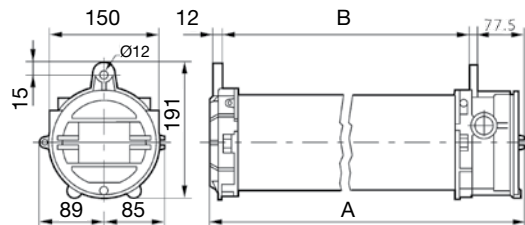
Standards:

Ex standards	EN / IEC 60079-0; 60079-1; 61241-0; 61241-1
Product standards	EN / IEC 60598-1; 60598-2-22
EMC standards	EN / IEC 55015; 61547
Other standards	EN / IEC 60529 (IP); 62262 (IK)

T Rating (Gas) and Surface Temperature (Dust) Table:

Model	Lamp Type	Gas – T Rating					Dust – Surface Temperature	
		Without External Reflector			With External Reflector		Without External Reflector	With External Reflector
		Ta =+40°C	Ta =+55°C	Ta =+70°C	Ta =+40°C	Ta =+55°C		
0.3	Compact Fluorescent 2G11 18 W max.	T6	T5	N.A.	T5	T4	95°C	130°C
0.6	a) Fluorescent G13 Magnetic Ballast 1 x 18 W / 2 x 18 W	T6	T5	T4	T6	T5	97°C	95°C
	b) Fluorescent G13 Electronic Ballast 1 x 18 W / 2 x 18 W / 3 x 18 W	T6	T6	N.A.	T6	T5	78°C	95°C
	c) Compact Fluorescent 2G11 1 x 36 W 2 x 36 W	T6	T5	N.A.	T6 T5	T4	95°C	130°C
1.2	a) Fluorescent G13 Magnetic Ballast 1 x 36 W / 2 x 36 W	T6	T5	T4	T6	T5	110°C	95°C
	b) Fluorescent G13 Electronic Ballast 1 x 36 W / 2 x 36 W / 3 x 36 W	T6	T6	N.A.	T6	T6	78°C	80°C
1.5	a) Fluorescent G13 Magnetic Ballast 1 x 58 W / 2 x 58 W	T6	T6	N.A.	T6	T5	80°C	95°C
	b) Fluorescent G13 Electronic Ballast 1 x 58 W / 2 x 58 W / 3 x 58 W	T6	T5	N.A.	T6	T5	84°C	95°C

Dimensions (mm):



Model	A	B
0.3	430	335
0.6	745	650
1.2	1365	1260
1.5	1655	1560

Lighting: Fluorescent Lighting

FD Series: Cylindrical Fluorescent Lighting Fixtures, Standard and Emergency Battery Back-Up – Flameproof

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEX

IP66/68

LIGHTING

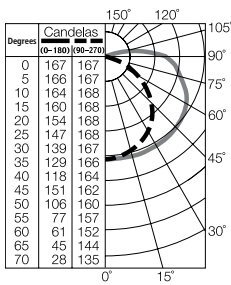
Photometric Data:

Polar curves for a 1000 lm flux, according to NF C 71-120
Luminaire symbol according to NF C 71-121

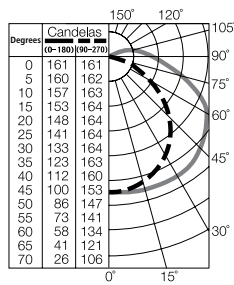
--- Longitudinal
— Transverse

Bi-pin (G13) Fluorescent Lighting Fixtures

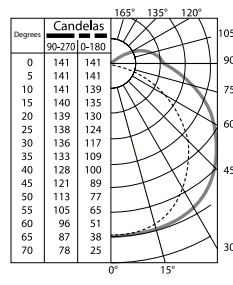
1 x 18 W
Efficiency 75.3%
NF C 71-121/0: 0.69 H + 0.06 T



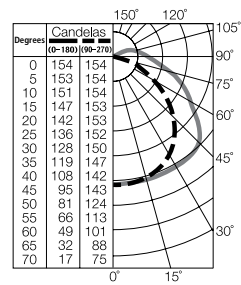
2 x 18 W
Efficiency 68.1%
NF C 71-121: 0.63 G + 0.06 T



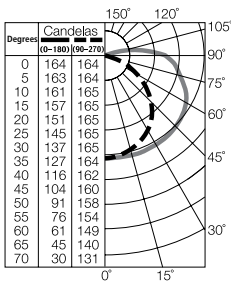
3 x 18 W
Efficiency 57%
NF C 71-121: 0.50 G + 0.07 T



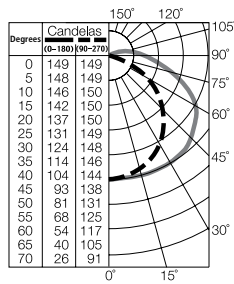
2 x 18 W
Efficiency 56.2%
NF C 71-121: 0.52 G + 0.04 T



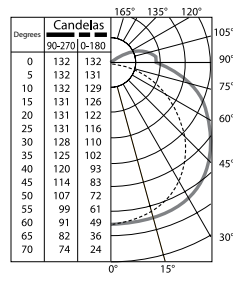
1 x 36 W
Efficiency 74.3%
NF C 71-121/0: 0.69 H + 0.05 T



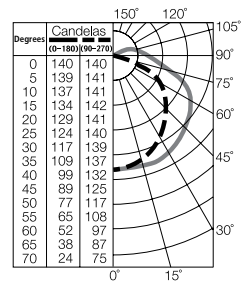
2 x 36 W
Efficiency 61.5%
NF C 71-121: 0.57 G + 0.04 T



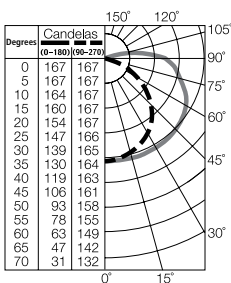
3 x 36 W
Efficiency 53.3%
NF C 71-121: 0.47 G + 0.06 T



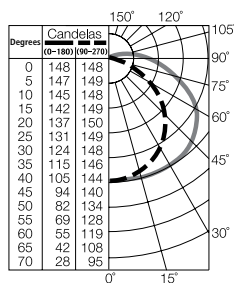
2 x 36 W
Efficiency 53.6%
NF C 71-121: 0.50 G + 0.04 T



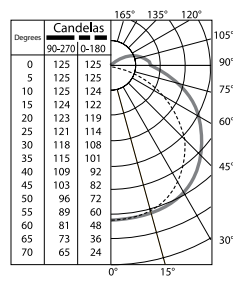
1 x 58 W
Efficiency 74.5%
NF C 71-121/0: 0.70 H + 0.05 T



2 x 58 W
Efficiency 61.3%
NF C 71-121: 0.57 H + 0.04 T



3 x 58 W
Efficiency 48.5%
NF C 71-121: 0.44 G + 0.05 T



Lighting: Fluorescent Lighting

RE Series: Recessed Fluorescent Lighting Fixtures, Standard and Emergency Back-Up – Increased Safety



4 x 18 W Surface Mounting



2 x 36 W Recessed



Compliance Data:

ATEX – IECEx:

Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IECEX	CE
Ex de IIC or Ex demb IIC (emergency version)	T6 to T4	Ex tD A21	T 75°C	IP66 - IK09/10

Technical Data:

18 W 36 W 58 W	1, 2, 3 & 4 Lamp Versions	Fluorescent T8 (Bi-pin G13)	110 to 254 Vac/Vdc +/- 10% 50/60 Hz
Recessed or Surface Mounting		Painted or Stainless Steel	Front Access

Operating Temperatures:

-20°C to +55°C

Lighting: Fluorescent Lighting

RE Series: Recessed Fluorescent Lighting Fixtures, Standard and Emergency Back-Up – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

IP66 - IK09/10

Applications:

- Designed for flush or surface mounting; most specifically clean room environments where a seamless smooth ceiling is mandatory.
- Typical applications include: the food industry, chemical plants, pharmaceuticals and delicate electronic manufacturing such as the aerospace industry.
- Ideal for rigorous corrosive environments, involving water, dust and extreme temperature variations.
- Can be installed in hazardous areas designated as Zone 1, 2, 21 and 22.

Features:

- One-piece welded steel housing with integral frame to seal out contaminants.
- Allows recessed mounting in permanent ceilings from 55 mm to 130 mm (2" to 5" approximately).
- Frameless tempered (safety) 5 mm (1/4") thick lens. Lens secured to housing by internal metallic hinges and secured with captive 316L stainless steel screws, allowing for easy lamp replacement and fixture maintenance.
- Positive safety switch and new Ex e battery with plug-in connector for safety and easy maintenance in hazardous locations.
- Designed for ease of installation and maintenance.
- Bi-pin G13 lampholder.
- Also available as surface mounting version.
- New ballast:
 - EOL (End Of Life) protection in accordance to the latest EN 60079-7 standard
 - Multi-tap 110 to 254 Vac/Vdc +/-10% 50/60 Hz
 - Two channel standard ballast (if one lamp fails the second lamp remains in operation)
 - Ex e plug-in connector for rapid and error free maintenance
 - Self test on 3 hours duration emergency version
 - High power factor electronic ballast (>0.95)

Termination/Wiring:

- Terminal capacity: 4 mm² (flexible) or 6 mm² (solid).
- Loop in/Loop out: One terminal block
 - Standard version: 2 (L) + 2 (N) + 2 (PE)

- Emergency version: 2 (LP) + 2 (L) + 2 (N) + 2 (PE)
- Through wired: Two terminal blocks (one at each end)
 - Standard version: 2 (L) + 2 (N) + 2 (PE)
1 (L) + 1 (N) + 1 (PE)
 - Emergency version: 2 (LP) + 2 (L) + 2 (N) + 2 (PE)
1 (LP) + 1 (L) + 1 (N) + 1 (PE)

PE: Earth N: Neutral L: Live
LP: Permanent Live for emergency version

Cable Entries:

- Three clearance holes for M20 cable gland supplied with M20 polyamide cable gland (cable dia. 6.5 to 14.5 mm) and M20 polyamide blanking plug as below quantity:

Version	Cable Gland	Blanking Plug	Nickel Plated Brass Locknut
Loop	1	2	3
Through	2	1	3

- One M6 earth stud.

Standard Materials:

- One-piece white powder epoxy painted welded steel housing and integral frame.
- 5 mm thick tempered safety lens.
- Silicone 4 lips gasket completely sealed and contained in the fixture.
- White polycarbonate multi-parabolic internal reflector.
- Polyamide cable gland and blanking plug.

Standard Finishes:

- White powder epoxy paint

Options:

- 316L stainless steel housing and integral frame, natural finish.
- Through wiring.
- White powder epoxy painted steel reflector.

Catalog Number Logic:

RE	B	X	XX	XX	X	X	X
Series:	Number of Lamps: 1 = 1 Lamp 2 = 2 Lamps 3 = 3 Lamps 4 = 4 Lamps	Voltage: BU = 110 to 254 Vac/Vdc 50/60 Hz B3 = 100 to 130 Vac/Vdc 50/60 Hz BK = 220 to 254 Vac/Vdc 50/60 Hz	Mounting/Access: F = Recessed Lighting/Front Access (U Shape) M = Surface mounting Lighting	Termination/Wiring: L = Loop In/Loop Out T = Through wired (2)	Lamp Type: B = Bi-pin (G13)	Wattage: 18 = 18 Watt 36 = 36 Watt 58 = 58 Watt	Options: E = 3 H Emergency (combined) - Battery 6 V - 4 Ah E1 = 1 H 30 Emergency (combined) - Battery 6 V - 7 Ah E7 = 3H Emergency (combined) - Battery 6 V - 7 Ah N = No switch (3) P = White painted steel internal reflector (1) S = 316L Stainless steel housing

(1) = As standard for 18 W emergency version and 4 lamp version
(2) = T/W and Loop in/Loop out - 3 cores (single phase)
(3) = Only for standard versions

Lighting: Fluorescent Lighting

RE Series: Recessed Fluorescent Lighting Fixtures, Standard and Emergency Back-Up – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

IP66 - IK09/10

LIGHTING

Ordering Information:

Recessed — 110/254 Vac/Vdc 50/60 Hz — Front access — White Painted Steel Housing

Version	Wiring	Reflector	Weight (Kg)	Volume (dm ³)	Catalog Number
Standard Version — Bi-pin Lamps (G13)					
2 x 18 W	Loop	Polycarbonate	14	64	REB218BUFL
2 x 18 W	Through	Polycarbonate	14	64	REB218BUFT
4 x 18 W	Loop	White Painted Steel	21	93	REB418BUFLP
4 x 18 W	Through	White Painted Steel	21	93	REB418BUFTP
2 x 36 W	Loop	Polycarbonate	19	108	REB236BUFL
2 x 36 W	Through	Polycarbonate	19	108	REB236BUFT
4 x 36 W	Loop	White Painted Steel	29	158	REB436BUFLP
4 x 36 W	Through	White Painted Steel	29	158	REB436BUFTP
2 x 58 W	Loop	Polycarbonate	22	130	REB258BUFL
2 x 58 W	Through	Polycarbonate	22	130	REB258BUFT
4 x 58 W	Loop	White Painted Steel	32	190	REB458BUFLP
4 x 58 W	Through	White Painted Steel	32	190	REB458BUFTP



3 Hours Emergency Version — Bi-pin Lamps (G13)

2 x 18 W	Loop	Polycarbonate	14	64	REB218BUFLEP
2 x 18 W	Through	Polycarbonate	14	64	REB218BUFTEP
4 x 18 W	Loop	White Painted Steel	21	93	REB418BUFLEP
4 x 18 W	Through	White Painted Steel	21	93	REB418BUFTEP
2 x 36 W	Loop	Polycarbonate	19	108	REB236BUFLE
2 x 36 W	Through	Polycarbonate	19	108	REB236BUFTE
4 x 36 W	Loop	White Painted Steel	29	158	REB436BUFLEP
4 x 36 W	Through	White Painted Steel	29	158	REB436BUFTEP
2 x 58 W	Loop	Polycarbonate	22	130	REB258BUFLE
2 x 58 W	Through	Polycarbonate	22	130	REB258BUFTE
4 x 58 W	Loop	White Painted Steel	32	190	REB458BUFLEP
4 x 58 W	Through	White Painted Steel	32	190	REB458BUFTEP

For non-recessed lighting, please replace letter "F" with letter "M" as per Catalog number logic.

Example: REB218BUFL becomes REB218BUML.

Accessories:

	Description	Weight (Kg)	Volume (dm ³)	Catalog Number
	Ceiling Mounting Brackets - Set of Two			
	Zinc plated steel	2.00		RECMST
	316 stainless steel	2.00		RECMSS
	M8 Eye Bolts - Set of Four			
	Zinc plated steel	0.25		REEBST
	316 stainless steel	0.25		REEBSS
	Fixing Brackets - Set of Four			
	Zinc plated steel	0.60		REFBST
	316 stainless steel	0.60		REFBSS

Lighting: Fluorescent Lighting

RE Series: Recessed Fluorescent Lighting Fixtures, Standard and Emergency Back-Up – Increased Safety

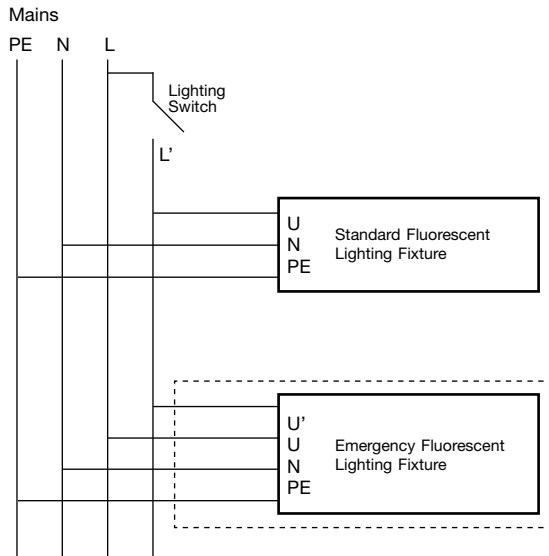
Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

IP66 - IK09/10

Wiring Diagram:



Emergency Function Diagram:

Two Lamp Version

Mains	Lighting Switch ON	Lighting Switch OFF
ON		
OFF		

Three Lamp Version

Mains	Lighting Switch ON	Lighting Switch OFF
ON		
OFF		

LED status:

Color	Indication	Function
Green	LED glows LED blinks	Batteries are connected Batteries are charged
Red	LED blinks	Batteries are not connected or defect
Yellow	LED blinks	Batteries are charging and discharging during automatic cycle

Emergency Light Duration:

Version	Battery Capacity	Duration	Emergency Light Output
2 x 18 W	4 Ah – 6 V	3 hours	45%
2 x 36 W	4 Ah – 6 V	3 hours	15%
	7 Ah – 6 V	3 hours	25%
2 x 58 W	4 Ah – 6 V	3 hours	9%
	7 Ah – 6 V	3 hours	15%

Lighting: Fluorescent Lighting

RE Series: Recessed Fluorescent Lighting Fixtures, Standard and Emergency Back-Up – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

IP66 - IK09/10

Compliances:

Hazardous Area	Gas	Dust
Certified Type	RE	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081 (II 2 G)	CE 0081 (II 2 D)
Symbol of Protection ATEX	Ex de IIC / Ex demb IIC (emergency version)	Ex tD A21
Symbol of Protection IEC		
T Rating	T6 to T4 (see table)	N.A.
Surface Temperature	N.A.	T75°C
Ambient Temperature	-20°C ≤ Ta ≤ +55°C	
CE Declaration of Conformity	50276	
ATEX Certificate	LCIE 07 ATEX 6104	
IECEx Certificate	IECEx LCI 07.0019	
Other Certifications	–	
Index of Protection	IP66	
Impact Resistance (shock)	IK09 or IK10 depending on version	

T Ratings:

Version	Ceiling Position			Wall Position		
	Ambient Temperature			Ambient Temperature		
	+40°C	+50°C	+55°C	+40°C	+50°C	+55°C
2 x 18 W (1)	T6	T5	T5	T5	T5	T4
2 x 18 W Emergency (1)	T5	T4	T4	T5	T5	T4
3 x 18 W	T5	T4	T4	T4	T4	T4
4 x 18 W	T5	T4	T4	T5	T4	T4
2 x 36 W (1)	T5	T4	T4	T5	T4	T4
2 x 36 W Emergency (1)	T5	T4	T4	T5	T4	T4
3 x 36 W	T4	T4	T4	T4	T4	T4
4 x 36 W	T5	T4	T4	T5	T4	T4
2 x 58 W (1)	T4	T4	T4	T4	T4	T4
2 x 58 W Emergency (1)	T4	T4	T4	T4	T4	T4
3 x 58 W	T4	T4	T4	T4	T4	T4
4 x 58 W	T4	T4	T4	T4	T4	T4

(1) T rating for single lamp version is the same as twin lamp version.

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 60079-7; 60079-18; 61241-0; 61241-1
Product Standards	EN / IEC 60598-1; 60598-2-22
EMC Standards	EN / IEC 55015; 61547
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Lighting: Fluorescent Lighting

RE Series: Recessed Fluorescent Lighting Fixtures, Standard and Emergency Back-Up – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

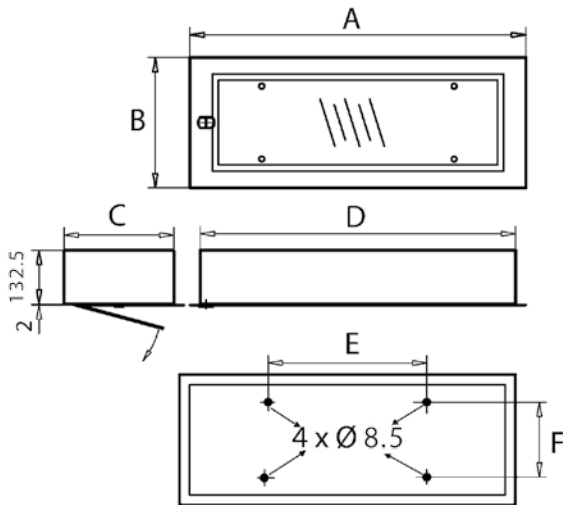
ATEX / IECEx

IP66 - IK09/10

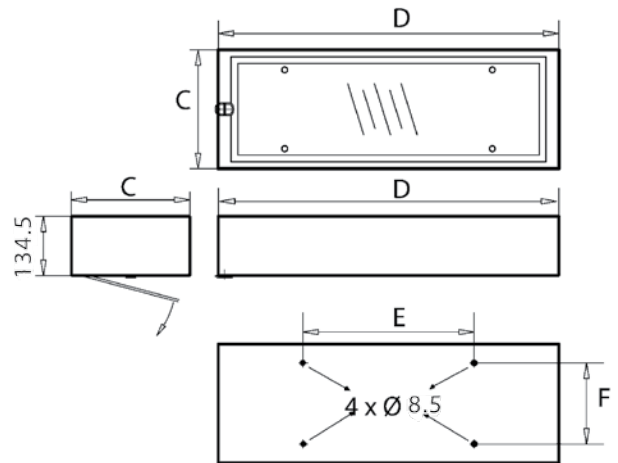
Dimensions (mm):

Versions	Dimensions (mm)							
	A	B	C	D	E	F	G	H
18 W (1, 2, 3 lamps)	826	320	270	776	390	184	786	280
18 W (4 lamps)	826	490	440	776	390	354	786	450
36 W (1, 2, 3 lamps)	1436	320	270	1386	1000	184	1396	280
36 W (4 lamps)	1436	490	440	1386	1000	354	1396	450
58 W (1, 2, 3 lamps)	1736	320	270	1686	1300	184	1696	280
58 W (4 lamps)	1736	490	440	1686	1300	354	1696	450

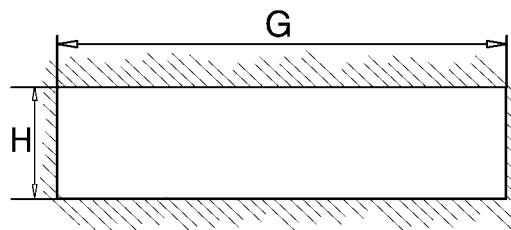
Recessed Luminaire



Surface Mounting Luminaire



Ceiling Cut-out



Lighting: Fluorescent Lighting

RE Series: Recessed Fluorescent Lighting Fixtures, Standard and Emergency Back-Up – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

IP66 - IK09/10

LIGHTING

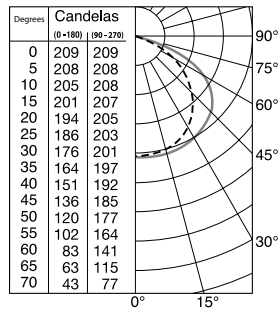
Photometric Data:

Polar curves for a 1000 lm flux, according to NF C 71-120
Luminaire symbol according to NF C 71-121

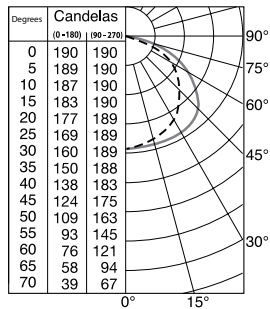
--- Longitudinal
— Transverse

18 W Versions with Polycarbonate Reflector:

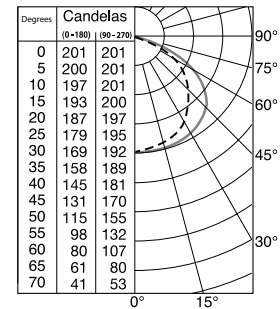
1 x 18 W
Efficiency 67.1%
NF C 71-121: 0.67 E



2 x 18 W
Efficiency 62%
NF C 71-121: 0.62 E

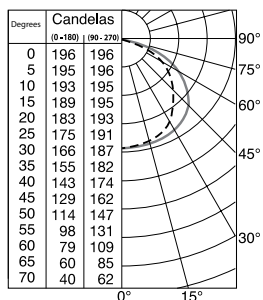


3 x 18 W
Efficiency 61.2%
NF C 71-121: 0.61 E

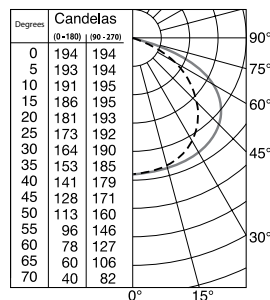


18 W Versions with Painted Steel Reflector:

2 x 18 W
Efficiency 60.5%
NF C 71-121: 0.60 F

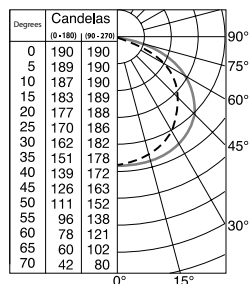


4 x 18 W
Efficiency 63.7%
NF C 71-121: 0.63 E



36 W Versions with Painted Steel Reflector:

4 x 36 W
Efficiency 61.5%
NF C 71-121: 0.61 E



Lighting: Fluorescent Lighting

RE Series: Recessed Fluorescent Lighting Fixtures, Standard and Emergency Back-Up – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

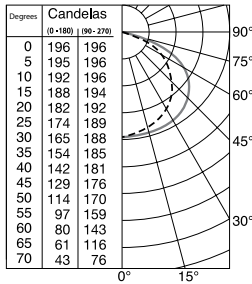
ATEX / IECEx

IP66 - IK09/10

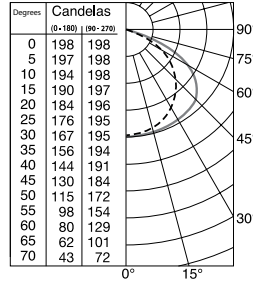
Photometric Data – Continued:

36 W Versions with Polycarbonate Reflector:

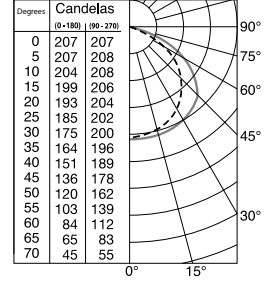
1 x 36 W
Efficiency 64.4%
NF C 71-121: 0.64 E



2 x 36 W
Efficiency 64.8%
NF C 71-121: 0.64 E

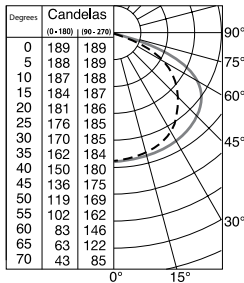


3 x 36 W
Efficiency 63.7%
NF C 71-121: 0.63 F

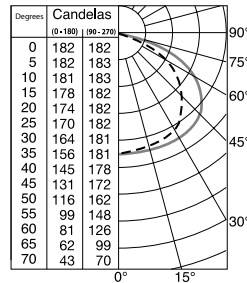


58 W Versions with Polycarbonate Reflector:

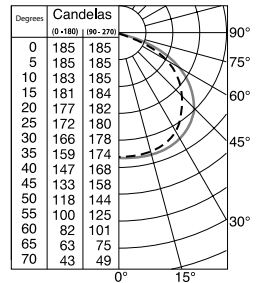
1 x 58 W
Efficiency 64.9%
NF C 71-121: 0.65 E



2 x 58 W
Efficiency 61.8%
NF C 71-121: 0.62 E



3 x 58 W
Efficiency 57.8%
NF C 71-121: 0.58 E



Lighting: Fluorescent Lighting

FN Series: Heavy Duty Nonmetallic Fluorescent Lighting Fixtures Standard and Emergency Back-Up – Zone 2 - 21 & 22



2 x 58 W



2 x 36 W



2 x 18 W

Compliance Data:

ATEX – IEC:



Zone 2 – 21 & 22	ATEX	II 2 D and II 3 GD	IEC	CE
Ex nR II or Ex nA II	T6 to T4	Ex tD A21	T75°C	IP66/67 -IK10

Power and Voltage:

18 W / 36 W / 58 W	110 to 254 Vac/Vdc +/- 10% 50/60 Hz	Lamp Type
1, 2, 3 Lamp Versions		Fluorescent T8 (G13) and PL Compact (2G11)

Operating Temperatures:

-40°C to +55°C

Lighting: Fluorescent Lighting

FN Series: Heavy Duty Nonmetallic Fluorescent Lighting Fixtures Standard and Emergency Back-Up – Zone 2 - 21 & 22

Zone 2 - 21 & 22

⊗ II 3 GD and ⊗ II 2 D

ATEX / IECEx

IP66/67 - IK10

Applications:

- Can be installed in hazardous areas designated as Zone 2, 21 and 22.
- For use in locations where a high degree of corrosion resistance is required.
- For indoor/outdoor use where protection against dirt, water and moisture is necessary.
- Typical applications include oil refineries, petrochemical facilities, pulp and paper mills, food processing plants, warehouses, underground tunnels and general manufacturing facilities.

Features:

- Corrosion-resistant fiberglass reinforced polyester body and hinged polycarbonate lens.
- High impact resistance housing (20 Joules - IK10) from -40°C to +55°C ambient temperature and wind profile for use in extreme offshore and onshore environments.
- Latch assembly and elastomer gasket seals against water and dust ingress, IP66/67.
- Easily accessed for maintenance using Allen key or straight blade screw driver.
- Central opening with unique patented release system to prevent damage.
- Hinged parabolic reflector for high lumen output efficiency.
- Vibration resistant spring loaded lampholders for Bi-pin (G13) or mono-pin (Fa6) versions.
- Electronic multi-tap ballast 110 to 254 Vac/Vdc +/- 10% 50/60 Hz, for global applications. High power factor electronic ballast (>0.95). EOL (End Of Life) protection in accordance to the latest EN/IEC 60079-7 standard.
- Also available with electronic ballast 220/240 Vac/Vdc +/- 10% 50/60 Hz. High power factor electronic ballast (>0.95). EOL.
- Available in 3 hours emergency version, including multi-tap ballast with built-in monthly self test. Test results through multi-color LED.

Standard Material of Fixtures:

- Fiberglass reinforced polyester housing.
- Polycarbonate lens.
- Elastomer gasket.
- Highly reflective white polycarbonate internal reflector.

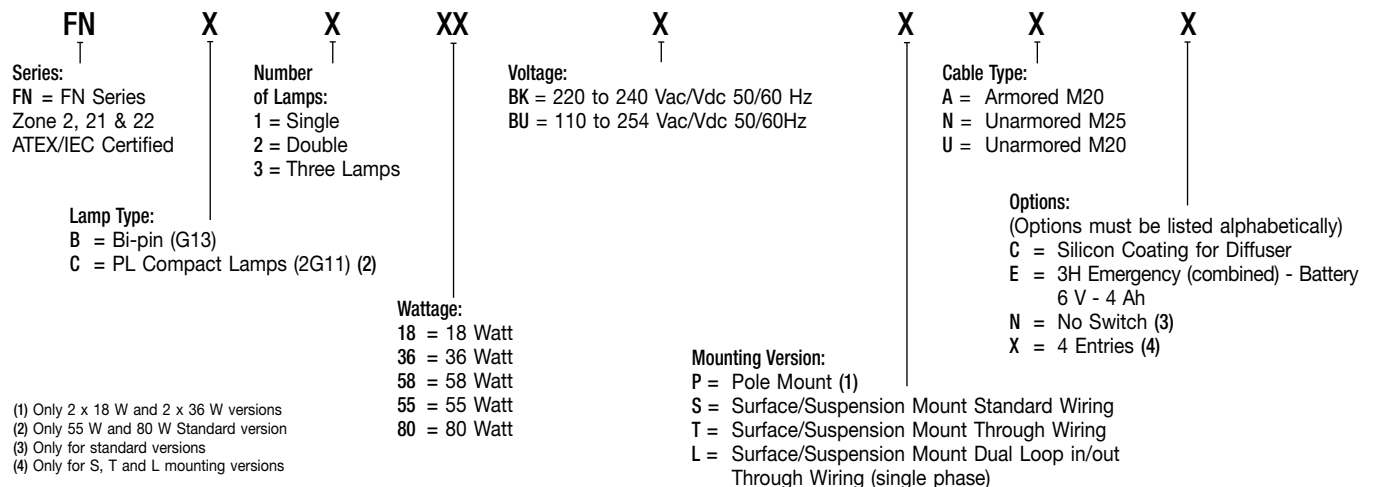
Standard Material of Mounting Accessories:

- Mounting accessories available in different materials such as gray painted aluminum, zinc plated steel, galvanized steel or 316 stainless steel.

Options:

- Silicone coating for added protection in H₂S hydrogen sulfide environments.
- Without safety switch.
- Level gauge light fitting.
- 316 stainless steel fixing inserts.

Catalog Number Logic:



(1) Only 2 x 18 W and 2 x 36 W versions
 (2) Only 55 W and 80 W Standard version
 (3) Only for standard versions
 (4) Only for S, T and L mounting versions

Lighting: Fluorescent Lighting

FN Series: Heavy Duty Nonmetallic Fluorescent Lighting Fixtures Standard and Emergency Back-Up – Zone 2 - 21 & 22

Zone 2 - 21 & 22

II 3 GD and II 2 D

ATEX / IECEx

IP66/67 - IK10

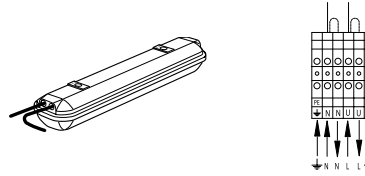
LIGHTING

Ordering Information – Standard Version:

Surface/Suspension Mounting and Standard Wiring Version:

Connection via 1 x 6 terminals.

Capacity (flexible/solid): 4 mm²/6 mm².



Unarmored Version - Bi-pin (G13):

Three M25 threaded entries, two at one end and one at opposite end, supplied with one M25 polyamide cable gland (dia. 8 to 18.5 mm) and two M25 polyamide blanking plugs.

Number of Lamps	Power (W)	Lamp Type	Voltage (V)	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
2	18	G13	220/240	5.5	32.3	FNB218BKSN	096336
2	18	G13	110/254	5.5	32.3	FNB218BUSN	091336
2	36	G13	220/240	7.9	54.2	FNB236BKSN	096337
2	36	G13	110/254	7.9	54.2	FNB236BUSN	091337
2	58	G13	220/240	9	65	FNB258BKSN	096339
2	58	G13	110/254	11	65	FNB258BUSN	091339

Armored Version - Bi-pin (G13):

Two M20 threaded entries with brass earth continuity plate at one end and one M20 plugged clearance entry, supplied with two M20 polyamide plugs.

Number of Lamps	Power (W)	Lamp Type	Voltage (V)	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
2	18	G13	220/240	5.5	32.3	FNB218BKSAN	096346
2	18	G13	110/254	5.5	32.3	FNB218BUSAN	091346
2	36	G13	220/240	7.9	54.2	FNB236BKSAN	096347
2	36	G13	110/254	7.9	54.2	FNB236BUSAN	091347
2	58	G13	220/240	9	65	FNB258BKSAN	096349
2	58	G13	110/254	11	65	FNB258BUSAN	091349

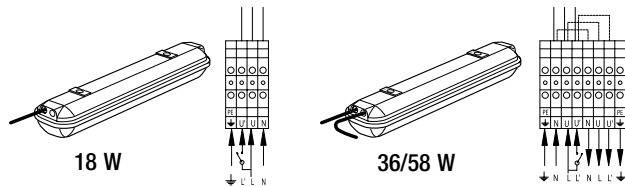
Ordering Information – Emergency Version:

Surface/Suspension Mounting and Standard Wiring

Connection via 1 x 4 terminals for 18 W version.

Connection via 1 x 8 terminals for 36 W & 58 W versions.

Capacity (flexible/solid): 4 mm²/6 mm².



Unarmored Version - Bi-pin (G13):

Three M25 entries, two at one end and one at opposite end, supplied with one M25 polyamide cable gland (dia. 8 to 18.5 mm) and two M25 polyamide blanking plugs.

Number of Lamps	Power (W)	Lamp Type	Voltage (V)	Weight (kg)	Volume (dm ³)	Duration (Hours)	Battery Capacity	Catalog Number	Old Catalog Number
2	18	G13	110/254	7.3	32.3	3 H	4 Ah	FNB218BUSNEN	096327
2	36	G13	110/254	9.6	54.2	3 H	4 Ah	FNB236BUSNEN	096328
2	58	G13	110/254	10.7	65	3 H	4 Ah	FNB258BUSNEN	096329

Armored Version - Bi-pin (G13):

Two M20 threaded entries with brass earth continuity plate at one end and one M20 plugged clearance entry, supplied with two M20 polyamide plugs.

Number of Lamps	Power (W)	Lamp Type	Voltage (V)	Weight (kg)	Volume (dm ³)	Duration (Hours)	Battery Capacity	Catalog Number	Old Catalog Number
2	18	G13	110/254	7.3	32.3	3 H	4 Ah	FNB218BUSAEN	096356
2	36	G13	110/254	9.6	54.2	3 H	4 Ah	FNB236BUSAEN	096357
2	58	G13	110/254	10.7	65	3 H	4 Ah	FNB258BUSAEN	096358

Lighting: Fluorescent Lighting

FN Series: Heavy Duty Nonmetallic Fluorescent Lighting Fixtures Standard and Emergency Back-Up – Zone 2 - 21 & 22







Zone 2 - 21 & 22

⊕ II 3 GD and ⊕ II 2 D

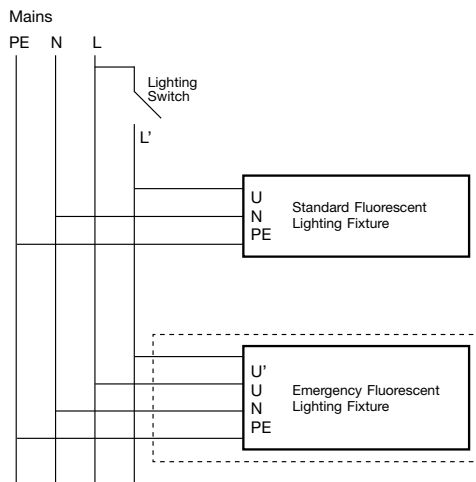
ATEX / IECEx

IP66/67 - IK10

Ordering Information – Accessories:

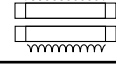

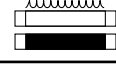
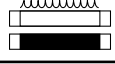
	Description	Catalog Number	Old Catalog Number	Pack
	Fixing Brackets Set of two brackets for ease of surface installation			
	Zinc plated steel	FEFBZ	096596	1
	316 stainless steel	FEFBS	096589	1
	Brackets for Surface Mounting Set of two			
	Aluminum (gray painted)	FESBA	096597	1
	316 stainless steel	FESBS	096590	1
	M8 Ring Bolts Set of two			
	Zinc plated steel	FERBM8Z	096594	1
	Half Clamps Brackets for Pole Mounting Set of two			
	dia. 42 to 49 mm pole (1-1/4" to 1-1/2" tube)			
	Zinc plated steel	FEHC49Z	096593	1
	60 mm OD (2" tube)	FEHC49S	096793	1
	dia. 60 mm pole (2" tube) 42 to 49 mm			
	Zinc plated steel	FEHC60Z	096591	1
	316 stainless steel	FEHC60S	096791	1
	Wall Mounting Adapter For pole mounting version (dia. 42 mm)			
	Galvanized steel	FEWMG	096595	1
	Hinged Brackets Set of two brackets for adjusting luminaire			
	Aluminum	FEHBA	096598	1
	316 stainless steel	FEHBS	096574	1

Wiring Diagram:

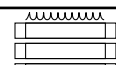
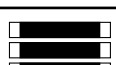

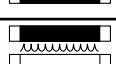


Emergency Function Diagram:

Two Lamp Version

Mains	Lighting Switch ON	Lighting Switch OFF
ON		
OFF		

Three Lamp Version

Mains	Lighting Switch ON	Lighting Switch OFF
ON		
OFF		

Lighting: Fluorescent Lighting

FN Series: Heavy Duty Nonmetallic Fluorescent Lighting Fixtures Standard and Emergency Back-Up – Zone 2 - 21 & 22

Zone 2 - 21 & 22

⊕ II 3 GD & ⊕ II 2 D

ATEX / IECEx

IP66/67 - IK10

LIGHTING

LED status:

Color	Indication	Function
Green	LED glows LED blinks	Batteries are connected Batteries are charged
Red	LED blinks	Batteries are not connected or defect
Yellow	LED blinks	Batteries are charging and discharging during automatic cycle

Compliances:

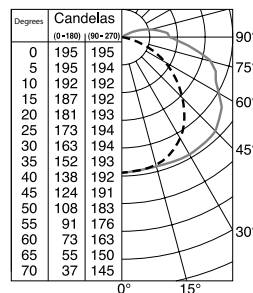
Hazardous Area	Gas	Dust
Certified Type	FLd	
Zones	2	21 & 22
Conforming to ATEX 94/9/CE	CE ⊕ II 3 G	CE ⊕ II 2 D CE ⊕ II 3 D
Symbol of Protection ATEX	Ex nR II or Ex nA II	Ex tD A21
Symbol of Protection IEC		
T Rating	T6 to T4	N.A.
Surface Temperature	N.A.	T75°C
Ambient Temperature	-40°C ≤ Ta ≤ +55°C	
CE Declaration of Conformity	50212/50225	
ATEX Certificate	LCIE 03 ATEX 6072/6166	
IECEx Certificate	IECEx LCI 04.0021	
Other Certifications	GOST, Marine listed UL 1598A	
Index of Protection	IP66/67	
Impact Resistance (shock)	IK10	

Standards:

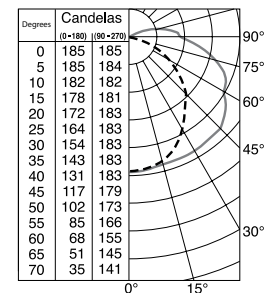
Ex standards	EN / IEC 60079-15; 61241-0; 61241-1
Product standards	EN / IEC 60598-1; 60598-2-22
EMC standards	EN / IEC 55015; 61547
Other standards	EN / IEC 60529 (IP); 62262 (IK)

Photometric Data:

2 x 18 W
Efficiency 85.1%
NF C 71-121: 0.78 H + 0.08 T



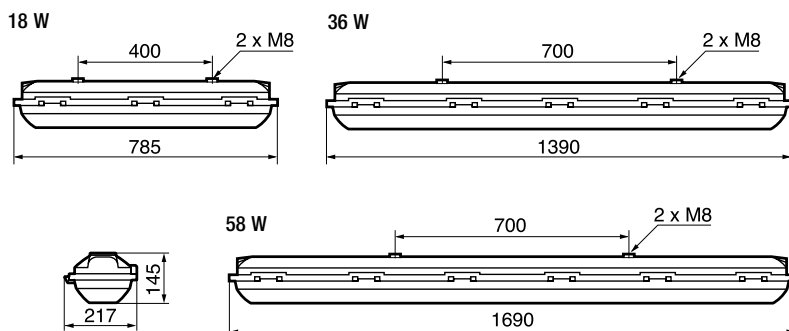
2 x 36 W
Efficiency 80.5%
NF C 71-121: 0.73 H + 0.07 T



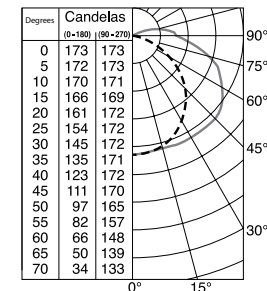
Dimensions (mm):

Fluorescent Lighting Fixtures:

Surface/Suspension Mounting



2 x 58 W
Efficiency 76.9%
NF C 71-121: 0.70 H + 0.07 T



Lighting: Fluorescent Lighting

FL Series: Light Duty Nonmetallic Fluorescent Lighting Fixtures, Standard and Emergency Battery Back-Up – Zone 2 & 22



2 x 58 W



2 x 18 W

Compliance Data:

ATEX – IEC:



Zone 2 – 22	ATEX	II 3 GD	IEC	CE
Ex nR II or nA II	T6 or T5 or T4	Ex tD A22	T80°C to 100°C	IP65/67

Power and Voltage:

18 W / 36 W / 58 W	1 & 2 Lamp Versions	Multiple Voltages	Lamp Type: Fluorescent T8 (G13)
--------------------	---------------------	-------------------	---------------------------------

Operating Temperatures:

-20°C to +55°C

Lighting: Fluorescent Lighting

FL Series: Light Duty Nonmetallic Fluorescent Lighting Fixtures, Standard and Emergency Battery Back-Up – Zone 2 & 22

Zone 2 & 22

II 3 GD

ATEX - IEC IP65/67

LIGHTING

Applications:

- Light duty luminaire ideal for commercial and light industrial locations including hazardous areas designated as Zone 2 or 22 environments.
- Typical applications include oil refineries petrochemical plants, pulp and paper mills, tunnels and other light duty manufacturing locations.

Features:

- Utilizes two 26 mm (T8) bi-pin fluorescent lamps.
- Fiberglass reinforced polyester housing.
- Instant start 95% power factor ballast.
- Available in various lengths and wattages ranging from 18 to 58. Pre-impregnated fiberglass reinforced white polyester housing.
- Closing system using stainless steel clips.
- Electrostatically applied white powder painted steel reflector provides optimal lighting distribution.
- Poured-in-place elastomer gasket secures IP65 / 67 ingress protection.

Standard Material of Fixtures:

- Fiberglass reinforced polyester (FRP) housing.
- Polycarbonate lens.
- White powder painted sheet steel reflector.
- Elastomer gasket.
- Polycarbonate lampholders.

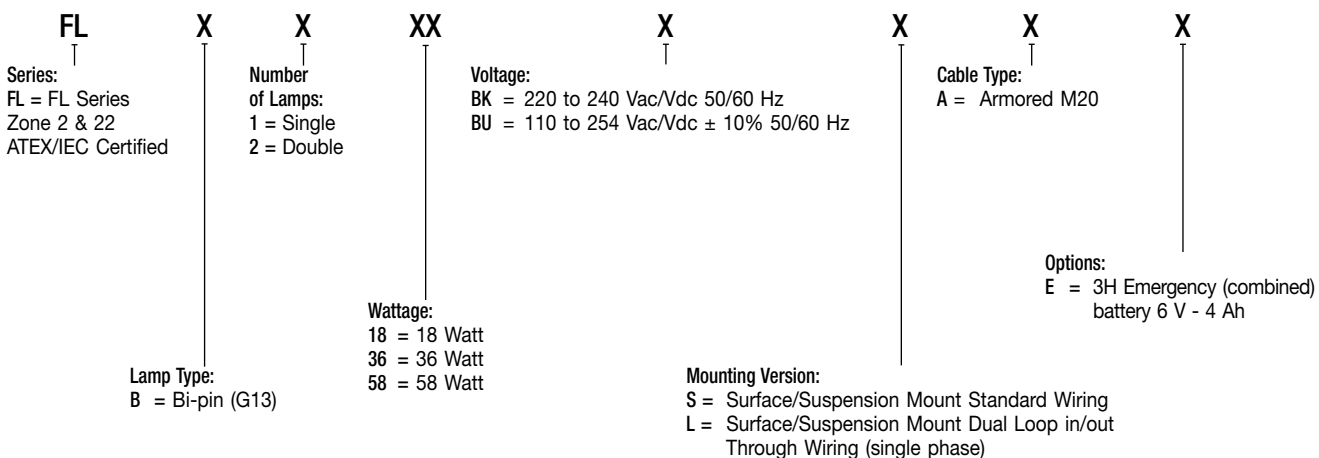
Standard Material of Mounting Accessories:

- Mounting accessories available in different materials such as gray painted aluminum, zinc plated steel, galvanized steel or 316 stainless steel.

Options:

- Available in 3 hours emergency version, including multi-tap ballast with built-in monthly self test. Test results through multi-colored LED.
- Plug-in battery pack is easy to remove for maintenance.
- Battery voltage is 6 volts and 4 Ah capacity.
- One fluorescent tube remains lit for up to 3 hours and up to 29% light intensity for 18 watt, 15% for 36 watt and 9% for 58 watt.
- All emergency units supplied with cut off switch to battery when fixture is opened.

Catalog Number Logic:



Lighting: Fluorescent Lighting

FL Series: Light Duty Nonmetallic Fluorescent Lighting Fixtures, Standard and Emergency Battery Back-Up – Zone 2 & 22

Zone 2 & 22

II 3 GD

ATEX - IEC IP65/67

Ordering Information:

Standard Version for Armored and Unarmored cable

Supplied with one M20 cable entry at each end plus two locknuts, two earth continuity and one blanking plug. Also supplied with one 2 x (3 x 2.5 mm²) max. flexible or rigid connection terminal block.






Number of Lamps	Watts	Voltage (V)	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack.
1	18	220/240	2.3	22.3	FLB118BKSA	300244	1
2	18	220/240	2.3	22.3	FLB218BKSA	300245	1
2	18	110/254	2.3	22.3	FLB218BUSA	300145	1
1	36	220/240	2.8	38	FLB136BKSA	300246	1
1	36	110/254	2.8	38	FLB136BUSA	300146	1
2	36	220/240	3.6	38	FLB236BKSA	300247	1
2	36	110/254	3.6	38	FLB236BUSA	300147	1
1	58	220/240	3.4	45	FLB158BKSA	300248	1
1	58	110/254	3.4	45	FLB158BUSA	300148	1
2	58	220/240	4.4	45	FLB258BKSA	300249	1
2	58	110/254	4.4	45	FLB258BUSA	300149	1

Emergency Version for Armored and Unarmored cable

Supplied with one M20 entries with earth continuity at each end. Also supplied with two M20 locknuts and one blanking plug. Equipped with one 2 x (5 x 2.5 mm²) max. flexible or rigid connection terminal block

Number of Lamps	Watts	Voltage (V)	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack.
2	18	110/254	4.5	22.3	FLB218BUSAE	300235	1
2	36	110/254	7.0	38	FLB236BUSAE	300237	1
2	58	110/254	7.5	45	FLB258BUSAE	300239	1

Accessories:

Description	Catalog Number	Old Catalog Number	Description	Catalog Number	Old Catalog Number
Half Clamp Brackets for Pole Mounting Set of two			Hinged Brackets Set of two brackets for adjusting luminaire		
 Dia. 42 to 49 mm pole (1-1/4" to 1-1/4" tube)			 Aluminum (gray painted)	FEHBA	096598
Zinc plated steel	FEHC49Z	096593	316 stainless steel	FEHBS	096574
316 stainless steel	FEHC49S	096793	Fixing Brackets Set of two brackets for ease of surface installation		
Zinc plated steel	FEHC60Z	096591	 Zinc plated steel	FEFBZ	096596
316 stainless steel	FEHC60S	096791	316 stainless steel	FEFBS	096589
M8 Ring Bolts Set of two			Fall Prevention Kit Retains fixture temporarily to ease installation		
 Zinc plated steel	FERBM8Z	096594	For M20 cable entry	FESCM20	096406
Brackets for Surface Mounting Set of two					
 Aluminum (gray painted)	FESBA	096597			
316 stainless steel	FESBS	096590			

Lighting: Fluorescent Lighting

FL Series: Light Duty Nonmetallic Fluorescent Lighting Fixtures, Standard and Emergency Battery Back-Up – Zone 2 & 22

Zone 2 & 22

⊕ II 3 GD

ATEX - IEC IP65/67

Compliances:

Hazardous Area	Gas	Dust
Certification Type	Efn (Standard Version) / Efn-EM (Emergency Version)	
Zones	2	22
Conforming to ATEX 94/9/CE	CE ⊕ II 3G	CE ⊕ II 3D
Symbol of Protection ATEX	Ex nR II or Ex nA II	Ex tD A22
Symbol of Protection IEC		
T Rating	T4 for nA protection mode. See temperature chart for nR protection mode	N.A.
Surface Temperature	N.A.	See Temperature Chart
Ambient Temperature	-20°C ≤ Ta ≤ +55°C	
CE Declaration of Conformity	50213/50219	
ATEX Certificate	LCIE 08.6005X / LCIE 08.6063X	
IEC Certificate	LCIE Ex 08.007X / LCIE Ex 08.008X	
Other Certifications	-	
Index of Protection (solid and liquid)	IP65 / 67	
Impact Resistance (shock)	-	
Time Before Opening	10mn	

Standards:

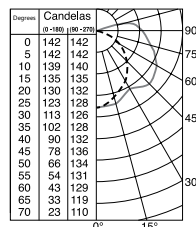
Ex Standards	EN / IEC 60079-15; 61241-0; 61241-1
Product Standards	EN / IEC 60598-1; 60598-2-22
EMC Standards	EN / IEC 55015; 61547
Other Standards	EN / IEC 60529 (IP)

Photometric Data:

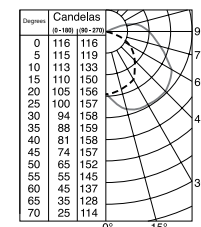
Polar curves for a 1000 lm flux, according to NF C 71-120
Luminaire symbol according to NF C 71-121

--- Longitudinal
— Transverse

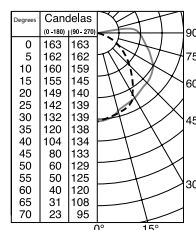
1 x 18 W
Efficiency 67.8%
NF C 71-121: 0.58 H + 0.09 T



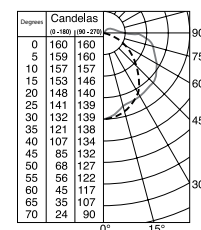
2 x 18 W
Efficiency 68.9%
NF C 71-121: 0.60 H + 0.09 T



2 x 36 W
Efficiency 64.1%
NF C 71-121: 0.57 H + 0.07 T



2 x 58 W
Efficiency 63.6%
NF C 71-121: 0.56 H + 0.07 T



Temperature Chart:





















Version	Dust	Gas		
	Surface Temp.	T Rating for Ta = +40°C	T Rating for Ta = +50°C	T Rating for Ta = +55°C
1 x 18 W	+75°C	T6	T6	T6
2 x 18 W		T6	T5	T5
1 x 36 W	+83°C	T6	T6	T5
2 x 36 W		T6	T6	T5
1 x 58 W	+91°C	T5	T5	T5
2 x 58 W		T5	T5	T5

Emergency Function Diagram:

Emergency function 2 tubes

	Main power on	Main power off
Fluorescent luminaire ON		
Fluorescent luminaire OFF		

Notes:

Description	Page		
LDP Series Wellglass Luminaires – Flameproof	44-46	LDP Series	 LDP2M20
LDM Series HID Wellglass Luminaires – Flameproof	47-49	LDM Series	 LDM Version
LDB, LDG & LDR Series HID Wellglass Luminaires – Flameproof	50-55	LDB, LDG & LDR Series	 LDB Version
LN Series Wellglass Luminaires – Zone 2 & 22	56-65	LN Series	 Ceiling Mounting  Wall Mounting
PB, PC & PL Series Floodlights – Flameproof	66-71	PB, PC & PL Series	 Ex de IIB Type PB  Ex de IIC Type PC  Ex de IIB Type PL
PN Series Floodlights – Zone 2, 21 & 22	72-76	PN Series	 M Size
HBE Series Round Bulkhead – Increased Safety	77-79	HBE Series	 HBERI15
HBN Series Round Bulkhead – Flameproof	80-81	HBN Series	 HBNRI15
HBD Series Bulkhead – Flameproof	82-84	HBD Series	 Round Bulkhead  Oval Bulkhead
HBDC Series Cylindrical Bulkhead – Flameproof	85-87	HBDC Series	 Sodium Version  Fluorescent Version
HBDA Series Rectangular Bulkhead – Flameproof	88-89	HBDA Series	 Fluorescent Version
HRD Series Tank Inspection Lights – Flameproof	90-92	HRD Series	 IIB Version  IIC Version (50 W)  IIC Version (20 W)  IIB Version Fitted with DN

Lighting: Incandescent & HID Lighting
LDP Series: Wellglass Luminaires – Flameproof



LDP2M20

Compliance Data:



ATEX - IEC:

Zone 1 & 2, 21 & 22	ATEX	II 2 GD	IEC	CE
Ex d IIC	T6 to T3	Ex tD A21	T85°C to T145°C	IP66 – IK08

Lamp Type and Watts:

Incandescent	Compact Fluorescent		Halogen	Mixed	
Up to 200 W	18 W to 25 W		70 W to 150 W	160 W	

Operating Temperature:

-40°C to +50°C

Lighting: Incandescent & HID Lighting

LDP Series: Wellglass Luminaires – Flameproof

Zone 1 & 2 - 21 & 22

II 2 GD

ATEX / IEC

IP66 - IK08

LIGHTING

Applications:

- For use in hazardous locations such as plants where plastics, paints, thinners and petrochemicals are manufactured.
- Ideal for street lighting on refinery sites or oil depots and for tank lighting purposes.

Features:

- Permissible lamps (not supplied):
 - 18 to 25 W compact fluorescent lamps
 - 70 to 150 W halogen lamps
 - up to 200 W incandescent lamps
 - up to 160 W mixed lamps
- E27 lamp holder.
- Threaded flame path.
- Connection to lampholder (2 x 2.5 mm²) or to terminal block (2 x 2.5 mm²) supplied for through-wiring application.

- Suspension via integrated eye bolt for side cable entry versions.
- Supplied with one blanking plug for side cable entry versions.

Standard Material of Fixtures:


- Gray painted marine grade aluminum alloy body and bezel.
- Internal aluminum reflector.






Side Cable Entry Version

Ordering Information:

Flameproof Wellglass Luminaires for Hazardous Areas – Ex d IIC – LDP Series

	Cable Entries	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
	2 x M20 side entries	5	35.3	LDP2M20	094736	1
	2 x 3/4" NPT side entries	5	35.3	LDP2075	094737	1
	1 x 3/4" NPT top entry	5	35.5	LDP1075	094738	1

Accessories:

	Description	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
	Protective Guard Zinc plated steel protective guard	0.4	97	LDPG1Z	094773	1
	Hinged Bracket Zinc plated steel hinged bracket for installation on flat surface	1.4	3.5	LDPHBZ	094776	1
	External Reflector External white polyester reflector	3.2	97	LDER1P	094769	1

Lighting: Incandescent & HID Lighting

LDP Series: Wellglass Luminaires – Flameproof

Zone 1 & 2 - 21 & 22

II 2 GD

ATEX / IEC

IP66 - IK08

Compliances:

Hazardous Area	Gas	Dust
Certified Type	AB14	
Zones	1 – 2	21 – 22
Conforming to ATEX 94/9/CE	CE 0081 II 2 G	CE 0081 II 2 D
Symbol of Protection ATEX	Ex d IIC	Ex tD A21
Symbol of Protection IEC		
T rating	See table 1	–
Surface Temperature	–	See table 2
Ambient Temperature	-40°C to +50°C	
CE Declaration of Conformity	50231	
ATEX Certificate	LCIE 02 ATEX 6053	
IEC Certificate	LCIE Ex 02.004	
Other Certifications	GOST	
Index of Protection (solid & liquid)	IP66	
Impact Resistance (shock)	IK08	
Internal Volume (dm ³)	> 2 dm ³ (2 liters)	

Table 2: Surface Temperature for Dust

Power and Source	Ambient Temperature	
	Ta = +50°C	
	Surface Temperature	Cable Entry Temperature
18 W Compact Fluorescent	85°C	–
20 W Compact Fluorescent	85°C	–
25 W Compact Fluorescent	85°C	–
70 W Halogen	130°C	90°C
150 W Halogen	145°C	95°C
160 W Mixed	145°C	125°C
100 W Incandescent	145°C	125°C
200 W Incandescent	145°C	125°C

Standards:

EX Standards	EN / IEC 60079-0; 60079-1; 61241-0; 61241-1
Product Standards	EN / IEC 60598-1
EMC Standards	EN / IEC 55015; 61547
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Table 1: T Rating for Gas

Power and Source	Ambient Temperature			
	Ta = +40°C		Ta = +50°C	
	T Rating	Cable Entry Temperature	T Rating	Cable Entry Temperature
18 W Compact Fluor.	T6	–	T5	–
20 W Compact Fluor.	T6	–	T5	–
25 W Compact Fluor.	T6	–	T5	–
70 W Halogen	T4	–	T3	90°C
150 W Halogen	T4	85°C	T3	95°C
160 W Mixed	T4	115°C	T3	125°C
100 W Incandescent	T4	115°C	T3	125°C
200 W Incandescent	T4	115°C	T3	125°C

Photometric Data:

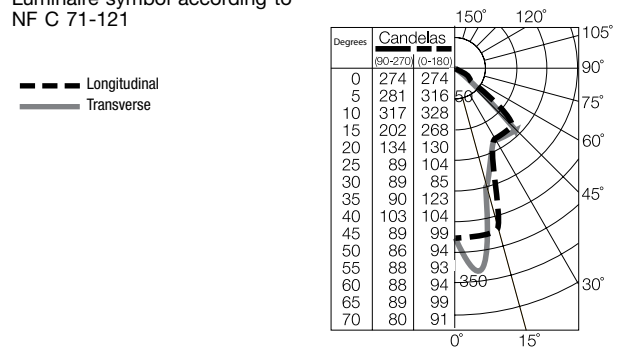
Polar curves for a 1000 lm flux, according to NF C 71-120

Luminaire symbol according to NF C 71-121

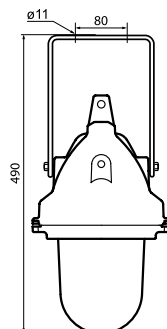
200 W incandescent

Efficiency 66.5%

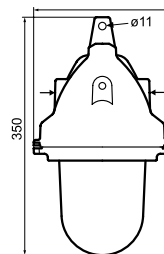
NF C 71-121: 0.60 H + 0.06 T



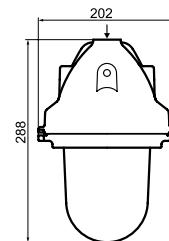
Dimensions (mm):



Side Cable Entries with Hinged Bracket



Side Cable Entries



Top Cable Entry

Lighting: Incandescent & HID Lighting
LDM Series: HID Wellglass Luminaires – Flameproof



LDM Version



LDM Version with Guard

Compliance Data:

ATEX - IECEx:



Zone 1 & 2, 21 & 22	ATEX	II 2 GD	IECEx	CE
Ex de IIC	T6 to T3	Ex tD A21	T80°C to T195°C	IP66/67 – IK08

Lamp Type and Watts:

HP Sodium	Mercury	Halogen	Mixed	Incandescent	Compact Fluo.
70 W	80 W to 125 W	150 W	160 W	Up to 200 W	18 W

Operating Temperature:

-40°C to +55°C

Lighting: Incandescent & HID Lighting

LDM Series: HID Wellglass Luminaires – Flameproof

Zone 1 & 2 - 21 & 22

Ex II 2 GD

ATEX / IEC

IP66/67 - IK08

Applications:

- For use in hazardous locations such as plants where plastics, paints, thinners and petrochemicals are manufactured.
- Ideal for street lighting on refinery sites or oil depots and for tank lighting purposes.

Features:

- E27 lamp holder.
- High temperature internal wiring.
- Threaded flame path.
- Stainless steel fastenings.
- Closed by screwing on bezel.
- Operates in any position.
- Easy and efficient wiring due to separate Ex e terminal box with wiring onto two captive terminals capacity 2 x 6 mm².
- External earth terminal capacity 4 mm².

- 2 x 20 mm clearance holes through-wire cable entries supplied with one Ex e unarmored cable gland (sealing dia. 6.5 to 14.5 mm) and one blanking plug and two M20 locknuts.

Standard Material of Fixtures:


- Gray painted marine grade aluminum alloy body and bezel.
- Internal aluminum reflector.



LDM Version




Ordering Information:



Flameproof Wellglass Luminaires for Hazardous Areas – Ex de IIC – LDM Series

	Lamp Wattages	Voltage (+/- 10%)	Lamp Type		Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
			Ellipsoidal	Tubular				
	High Pressure Sodium							
	70 W (1) for lamp with built-in ignitor	230/240 Vac 50 Hz	X	X	9	30	LDML70AG1XJ	095013
	150 W (1)	230/240 Vac 50 Hz	X	X	9	30	LDML15AG1XJ	–
	Mercury Vapor							
	80 W (1)	230/240 Vac 50 Hz	–	–	9	30	LDMM80AG1XJ	095001
	125 W (1)	230/240 Vac 50 Hz	–	–	9	30	LDMM12AG1XJ	095005
	Compact Fluorescent							
	18 W		–	–	7.5	30	LDMF18AG1	095000
	Incandescent							
	200 W max. 150 W halogen or 160 W mixed lamps can be used		–	–	7.5	30	LDMI20AG1	095003

Note: Wellglass luminaires supplied with 1 x M20 Ex e cable gland (dia. 6.5 to 14.5 mm) and 1 x M20 blanking plug. Lamps are not supplied.
(1) Ballast supplied.

Accessories:

Description	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
 Protective Guard Zinc plated steel protective guard	0.4	9	LDMHBZ	095079	1
 External Reflector External white polyester reflector	3.2	97	LDER1P	094769	1
 Hinged Bracket Zinc plated steel hinged bracket for installation on flat surface	3.4	3	LDPHBZ	094776	1

Description	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
 Eyebolt Zinc plated steel M10 eyebolt for suspension	0.1	0.2	LDRBM10Z	095081	1
 Mounting Strap Gray painted aluminum	0.9	0.6	LDMSPA	095082	1

Lighting: Incandescent & HID Lighting

LDM Series: HID Wellglass Luminaires – Flameproof

Zone 1 & 2 - 21 & 22

II 2 GD

ATEX / IECEx

IP66/67 - IK08

Compliances:

Hazardous Area	Gas	Dust
Certified Type	LTd (model LT1d)	
Zones	1 – 2	21 – 22
Conforming to ATEX 94/9/CE	CE 0081 II 2 G	CE 0081 II 2 D
Symbol of Protection ATEX	Ex de IIC	Ex tD A21
Symbol of Protection IEC		
T rating	See table 1	–
Surface Temperature	–	See table 2
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50246	
ATEX Certificate	LCIE 02 ATEX 6165	
IECEx Certificate	IECEx LCI Ex 04.0019	
Other Certifications	GOST	
Index of Protection (solid & liquid)	IP66/67	
Impact Resistance (shock)	IK08	

Table 1: T Rating for Gas

Power and Source	Ambient Temperature					
	Lighting Downwards			Lighting Upwards		
	Ta = +40°C	Ta = +50°C	Ta = +55°C	Ta = +40°C	Ta = +50°C	Ta = +55°C
18 W Compact Fluor.	T6	T6	T6	T6	T5	T5
150 W Halogen	T4	T4	T4	T4	T3	T3
70 W HP Sodium	T5	T4	T4	T4	T4	T4
80 W Mercury	T4	T4	T4	T4	T4	T4
125 W Mercury	T3	T3	T3	T3	T3	T3
160 W Mixed	T3	T3	T3	T3	T3	T3
100 W Incandescent	T4	T3	T3	T3	T3	T3
200 W Incandescent	T4	T3	T3	T3	T3	T3

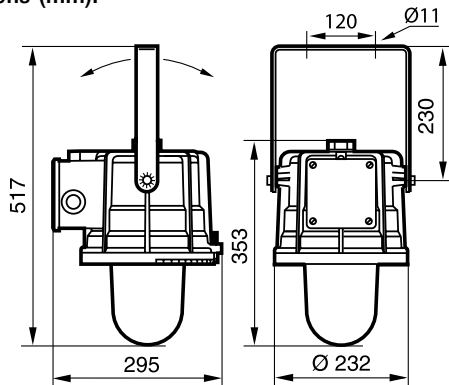
Table 2: Surface Temperature for Dust

Power and Source	Ambient Temperature	
	Ta = +55°C	
	Lighting Downwards	Lighting Upwards
18 W Compact Fluorescent	80°C	95°C
150 W Halogen	130°C	195°C
70 W HP Sodium	130°C	130°C
80 W Mercury	130°C	130°C
125 W Mercury	195°C	195°C
160 W Mixed	195°C	195°C
100 W Incandescent	195°C	195°C
200 W Incandescent	195°C	195°C

Standards:

EX Standards	EN / IEC 60079-0; 60079-1; 60079-7; 61241-0; 61241-1
Product Standards	EN / IEC 60598-1
EMC Standards	EN / IEC 55015; 61547
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

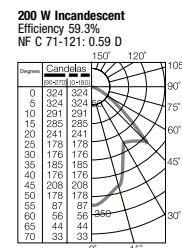
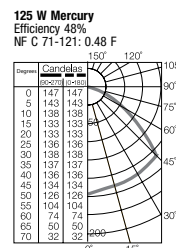
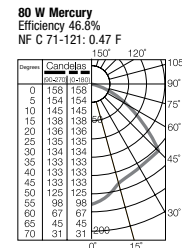
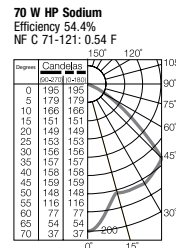
Dimensions (mm):



LDM Version with Hinged Bracket

Photometric Data:

Polar curves for a 1000 lm flux, according to NF C 71-120
Luminaire symbol according to NF C 71-121



Lighting: Incandescent & HID Lighting

LDB, LDG and LDR Series: HID Wellglass Luminaires – Flameproof



LDB Version



LDB Version with Guard

Compliance Data:

ATEX - IECEx:



Zone 1 & 2, 21 & 22	ATEX	II 2 GD	IECEx	CE
Ex de IIB or IIC	T6 to T2	Ex tD A21	T80°C to T290°C	IP66/67 – IK08

Lamp Type and Watts:

HP Sodium	Mercury	Metal Halide	Mixed	Incandescent	Induction
100 W to 400 W	250 W	250 W & 400 W	250 W	300 W to 500 W	85 W

Operating Temperature:

-40°C to +55°C

Lighting: Incandescent & HID Lighting

LDB, LDG and LDR Series: HID Wellglass Luminaires – Flameproof

Zone 1 & 2 - 21 & 22

II 2 GD

ATEX / IECEx

IP66/67 - IK08

LIGHTING

Applications:

- For use in hazardous locations such as plants where plastics, paints, thinners and petrochemicals are manufactured.
- Ideal for street lighting on refinery sites or oil depots and for tank lighting purposes.

Features:

- Compensated power supply.
- Power factor ≥ 0.9
- Flat joint for IIB version, threaded joint for IIC version.
- E40 lamp holder with lock thread.
- High temperature internal wiring.
- Operates in any position subject to lamp type.
- Easy and efficient wiring due to separate Ex e terminal box with wiring onto two captive terminals capacity $2 \times 6 \text{ mm}^2$ and two internal earth terminals capacity 6 mm^2 .
- External earth terminal capacity 4 mm^2 .

- 2 x 20 mm clearance holes through-wire cable entries supplied with one Ex e unarmored cable gland (sealing dia. 6.5 to 14.5 mm) and one blanking plug and two M20 locknuts.

Standard Material of Fixtures:

- Gray painted marine grade aluminum alloy body and bezel.
- Internal aluminum reflector.
- White painted zinc plated steel external reflector.



LDB Version



LDB Version with Guard

Ordering Information:

Flameproof Wellglass Luminaires for Hazardous Areas – Ex de IIB – LDB Series

Lamp Wattages	Voltage (+/- 10%)	Lamp Type		Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
		Ellipsoidal	Tubular				
Electro Magnetic Induction							
85 W (1)	230/240 Vac 50/60 Hz	–	–	22	86.7	LDBQ85AG2BJ	095024
Service life 60,000 hours.							
High Pressure Sodium							
100 W (1)	230/240 Vac 50 Hz	X	X	22	86.7	LDBL10AG2XJ	095025
150 W (1)	230/240 Vac 50 Hz	X	X	22.5	86.7	LDBL15AG2XJ	095023
250 W (1)	230/240 Vac 50 Hz	X	X	22.5	86.7	LDBL25AG2XJ	095021
Metal Halide							
250 W (1)	230/240 Vac 50 Hz	X	X	22.5	86.7	LDBH25AG2XJ	095026
Mercury Vapor							
250 W (1)	230/240 Vac 50 Hz	–	–	22.5	86.7	LDBM25AG2XJ	095019
Incandescent							
300 W to 500 W		–	–	19	86.7	LDBI30AG2	095017
250 W mixed lamps can be used.							



Flameproof Wellglass Luminaires for Hazardous Areas – Ex de IIC – LDG series

Electro Magnetic Induction							
85 W (1)	230/240 Vac 50/60 Hz	–	–	22	86.7	LDGQ85AG2BJ	094720
Service life 60,000 hours.							
High Pressure Sodium							
100 W (1)	230/240 Vac 50 Hz	X	X	22	86.7	LDGL10AG2XJ	094721
150 W (1)	230/240 Vac 50 Hz	X	X	22.5	86.7	LDGL15AG2XJ	094722
250 W (1)	230/240 Vac 50 Hz	X	X	22.5	86.7	LDGL25AG2XJ	094723
Metal Halide							
250 W (1)	230/240 Vac 50 Hz	X	X	22.5	86.7	LDGH25AG2XJ	094724
Mercury Vapor							
250 W (1)	230/240 Vac 50 Hz	–	–	22.5	86.7	LDGM25AG2XJ	094725
Incandescent							
300 W to 500 W		–	–	19	86.7	LDGI30AG2	094726
250 W mixed lamps can be used							



Note: Wellglass luminaires supplied with 1 x M20 Ex e cable gland (dia. 6.5 to 14.5 mm) and 1 x M20 blanking plug. Lamps are not supplied except for Induction version.
(1) Ballast supplied.

Lighting: Incandescent & HID Lighting

LDB, LDG and LDR Series: HID Wellglass Luminaires – Flameproof

Zone 1 & 2 - 21 & 22

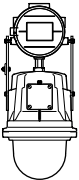
Ex II 2 GD

ATEX / IECEx

IP66/67 - IK08






Ordering Information – Continued:

Flameproof Wellglass Luminaires for Hazardous Areas – Ex de IIC – LDR Series

	Lamp Wattages	Voltage (+/- 10%)	Lamp Type		Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
			Ellipsoidal	Tubular				
	High Pressure Sodium							
	400 W (1)	220/230/240 Vac 50 Hz	X	X	31	144	LDRL40AG2XJ	–
	Metal Halide							
	400 W (1)	220/230/240 Vac 50 Hz	X	X	31	144	LDRH40AG2XJ	–

Note: Wellglass luminaires supplied with 1 x M20 Ex e cable gland (dia. 6.5 to 14.5 mm) and 1 x M20 blanking plug.
Lamps are not supplied.
(1) Ballast supplied.

Accessories:

	Description	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
	Protective Guard Zinc plated steel protective guard	1.2	27	LDPG2Z	095078	1
	External Reflector White painted steel reflector	3.4	108	LDER2Z	095077	1
	White polyester reflector	2.5	108	LDER2P	–	1
	Hinged Bracket Zinc plated steel hinged brackets for installation on flat surface					
	For LDB or LDG series	3.4	8	LDGHBZ	095080	1
	For LDR series	3.4	8	LDRHBZ	–	1
	Eyebolts Zinc plated steel eyebolt for suspension					
	M10 for LDB or LDG series	0.1	0.2	LDRBM10Z	095081	1
	M16 for LDR series	0.1	0.2	LDRBM16Z	–	–
	Mounting Strap Zinc plated steel mounting straps					
	For LDB or LDG series	0.9	0.6	LDGSBZ	095083	1
	For LDR series	0.9	0.6	LDRSBZ	–	1

Lighting: Incandescent & HID Lighting

LDB, LDG and LDR Series: HID Wellglass Luminaires – Flameproof

Zone 1 & 2 - 21 & 22

⊕ II 2 GD

ATEX / IECEx

IP66/67 - IK08

Compliances:

Hazardous Area	Gas	Dust
Certified Type	LTd (model LT2d)	
Zones	1 – 2	21 – 22
Conforming to ATEX 94/9/CE	CE 0081⊕II 2 G	CE 0081⊕II2 D
Symbol of Protection ATEX	Ex de IIB (LDB series)	Ex tD A21
Symbol of Protection IEC	Ex de IIC (LDG and LDR series)	
T rating	See table 1	–
Surface Temperature	–	See table 2
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50246	
ATEX Certificate	LCIE 02 ATEX 6165	
IECEx Certificate	IECEx LCI Ex 04.0019	
Other Certifications	GOST	
Index of Protection (solid & liquid)	IP66/67	
Impact Resistance (shock)	IK08	

Table 1: T Rating for Gas

Power and Source	Ambient Temperature			
	Lighting Downwards		Lighting Upwards	
	Ta = +40°C	Ta = +55°C	Ta = +40°C	Ta = +55°C
85 W Induction	T6	T6	T6	T5
100 W HP Sodium	T6	T5	T5	T4
150 W HP Sodium	T6	T5	T4	T4
250 W HP Sodium	T4	T4	T3	T3
250 W Metal Halide	T4	T4	T4	T3
250 W Mercury	T4	T4	T3	T3
250 W Mixed	T4	T4	T3	T3
300 W Incandescent	T5	T4	T3	T3
500 W Incandescent	T3	T3	T3	T2
400 W HP Sodium	T4	T3	NA	NA
400 W Metal Halide	T4	T3	NA	NA

NA: Not Applicable

Table 2: Surface Temperature for Dust

Power and Source	Ambient Temperature	
	Ta = +55°C	
	Lighting Downwards	Lighting Upwards
85 W Induction	80°C	95°C
100 W HP Sodium	95°C	130°C
150 W HP Sodium	95°C	130°C
250 W HP Sodium	130°C	195°C
250 W Metal Halide	130°C	195°C
250 W Mercury	130°C	195°C
250 W Mixed	130°C	195°C
300 W Incandescent	130°C	195°C
500 W Incandescent	195°C	290°C
400 W HP Sodium	134°C	NA
400 W Metal Halide	134°C	NA

Standards:

EX Standards	EN / IEC 60079-0; 60079-1; 60079-7; 61241-0; 61241-1
Product Standards	EN / IEC 60598-1
EMC Standards	EN / IEC 55015; 61547
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Lighting: Incandescent & HID Lighting

LDB, LDG and LDR Series: HID Wellglass Luminaires – Flameproof

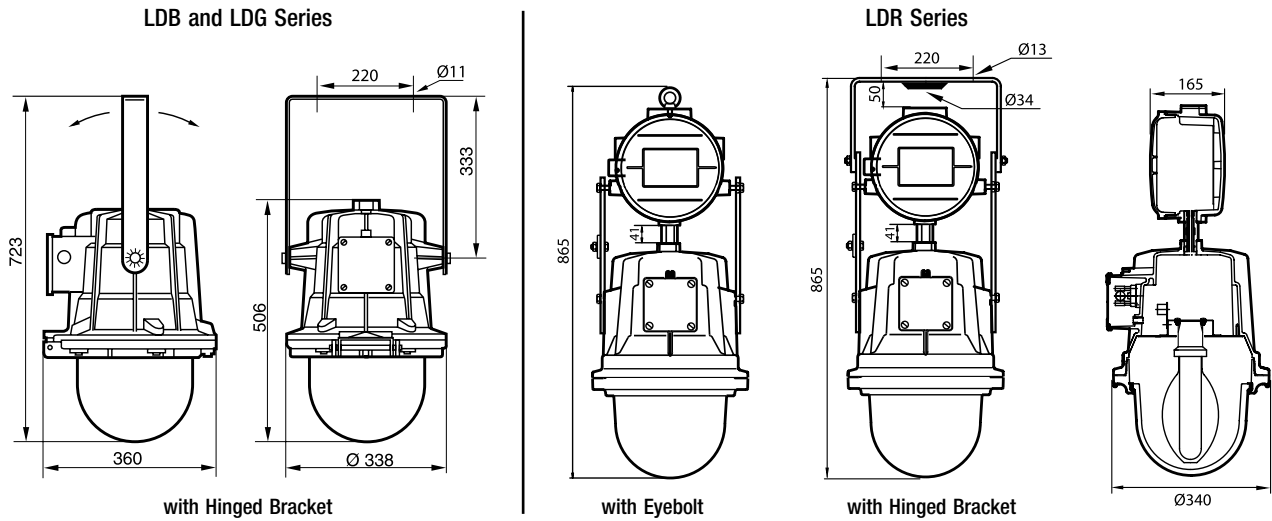
Zone 1 & 2 - 21 & 22

II 2 GD

ATEX / IECEx

IP66/67 - IK08

Dimensions (mm):



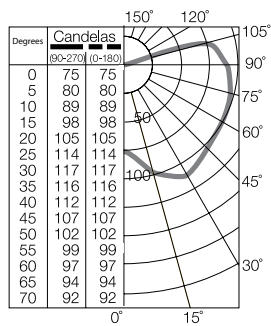
Photometric Data:

Polar curves for a 1000 lm flux, according to NF C 71-120

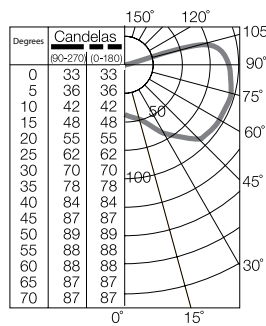
Luminaire symbol according to NF C 71-121

--- Longitudinal
— Transverse

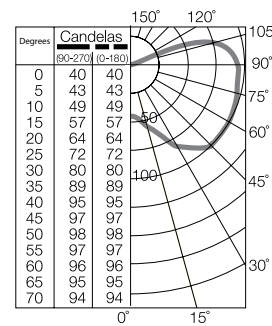
85 W Induction
Efficiency 85.9%
NF C 71-121: 0.62 J + 0.24 T



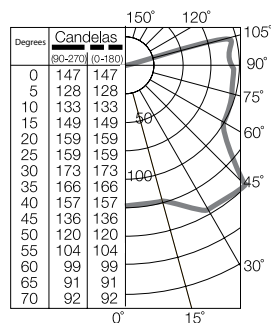
150 W HP Sodium
Efficiency 70.6%
NF C 71-121: 0.50 J + 0.20 T



250 W HP Sodium
Efficiency 79.3%
NF C 71-121: 0.56 J + 0.23 T



500 W Incandescent
Efficiency 98%
NF C 71-121: 0.71 H + 0.28 T



Lighting: Incandescent & HID Lighting

LDB, LDG and LDR Series: HID Wellglass Luminaires – Flameproof

Zone 1 & 2 - 21 & 22

II 2 GD

ATEX / IECEx

IP66/67 - IK08

LIGHTING

North American CEC/NEC Certification:

In a separate, comprehensive catalog, Appleton also offers a complete line of products for hazardous locations, fully tested to NEC and CEC standards. Ask your local representative about the Appleton brand or visit the Appleton web site at: www.appletonelec.com for details.

Compliances:

- Class I, Div. 1 and 2, Groups C & D.
- Class II, Div. 1 and 2, Groups E, F & G.
- Class III.
- Marine type electric fixture outside type (salt water).
- Suitable for use in wet locations.

Materials:

- Housing: copper-free aluminum with epoxy powder coat.
- Globe: heat resistant glass.
- Reflectors: fiberglass reinforced polyester.
- Gaskets: silicone rubber.

Features:

- Electrical connection block in mounting hood to facilitate installation and maintenance.
- Corrosion resistant.
- Floodlight versions also available.

Wattage Range:

- 35 W — 400 W high pressure sodium.
- 50 W — 400 W metal halide (Canada only).
- 100 W — 400 W mercury vapor (Canada only).
- 175 W — 400 W pulse start metal halide.

Input Voltage and Frequency:

- 120 V, 60 Hz
- 208 V, 60 Hz
- 240 V, 60 Hz
- 277 V, 60 Hz
- 480 V, 60 Hz
- Others upon request

Refer to Appleton Master Catalog Section G1 for more information.



Code•Master™

Lighting: Incandescent & HID Lighting

LN Series: Wellglass Luminaires – Zone 2 & 22



Ceiling Mounting



25° Stanchion Mounting
with Guard KGU2



Wall Mounting



Straight Stanchion Mounting
with Guard KPGU400

Compliance Data:

ATEX - IEC:



Zone 2 & 22	ATEX	II 3 GD	IEC	CE
Ex nR II	T4 or T3	Ex tD A22	T113°C to T191°C	IP66

Lamp Types & Watts:

High Pressure Sodium	Metal Halide	Mercury Vapor	Halogen	Incandescent
70 W to 400 W	150 W to 400 W	125 W to 400 W	100 W & 150 W	100 W & 150 W

Operating Temperatures:

-40°C to +55°C

Lighting: Incandescent & HID Lighting

LN Series: Wellglass Luminaires – Zone 2 & 22

Zone 2 & 22

II 3 GD

ATEX / IEC IP66

LIGHTING

Applications:

- Enclosed and gasketed factory sealed LN series wellglass luminaires are suitable for use in marine and wet locations and in areas where flammable gases, vapors or combustible dusts are present under conditions defined by the IEC as Zone 2 & 22.
- Suitable for use in applications where energy efficient, high lumen output is required.
- For use in non-hazardous locations where severe weather conditions, excessive moisture, dirt, dust, corrosive atmosphere or high ambient temperatures are encountered.
- Typical applications include pulp and paper mills, processing plants, chemical plants, oil refineries, foundries, manufacturing plants, storage areas, waste and sewage treatment, and other areas where dust, water, dirt and rough usage are a problem.

Features:

- Power supply 230/240 V (+6% - 10%) 50 Hz.
- Instant relighting with auxiliary halogen lamps, depending on model (lamps not supplied).
- Fast relighting for 70 W and 150 W sodium: 5 to 30 seconds depending on the duration of the mains power supply failure.
- Connection via terminal block (2 x 4 mm² max.).
- Superior corrosion-resistance: copper-free (less than 0.4 of 1% copper) die-cast mounting hoods, ballast housing and guards have a gray epoxy powder coat, electrostatically applied for complete and uniform protection.
- Wide choice of light sources: high pressure sodium, metal halide, mercury vapor and incandescent.
- Six mounting arrangements to suit any lighting layout – pendant, ceiling, wall bracket, angled or straight stanchion and pendant cone (for dust applications).
- Hinge has high lip for added safety during installation and servicing. Hinge and bolt construction assures 360° compression at all points on ballast housing gasket for positive sealing. Swing away design of captive bolt and nut simplifies servicing.

- All fixtures designed to perform in a -40°C ambient temperature up to +55°C.
- Standard dome or 30° angle reflectors made of fiberglass reinforced white polyester. Highly resistant to corrosive atmospheres and vented to improve fixture cooling characteristics.
- Fixture housing mounting hoods and guards are die-cast copper-free aluminum with epoxy powder coat finish.
- All exposed hardware is stainless steel and captive. Stainless thread inserts in the ballast bodies prevent “freezing” of the screws that affix guards and reflectors, simplifying removal for service.
- One-piece ballast housing for each component provides even heat dissipation for cooler operation and longer ballast life.
- Fixture bodies are provided with two silicone rubber O-Ring style gaskets that will stay flexible and assure even compression around their circumference. They easily withstand high temperatures, moisture, dirt and dust for worry free operation.

Standard Materials:

- High temperature silicon gasket.
- Die-cast aluminum (copper-free 4/10 of 1% max.) mounting hoods and ballast bodies.
- Stainless steel hardware and catch assemblies.
- Heat and impact resistant internally fluted glass globe.

Standard Materials of Accessories:

- Fiberglass reinforced polyester white reflector.
- Guards are polyester powder coat finished cast copper-free aluminum (LN1 & LN2 sizes) or stainless steel (LN3 & LN4 sizes).

Finishes:

- Mounting hoods, ballast bodies and guards are epoxy powder coat finish, electrostatically applied for complete, uniform surface protection.
- White polyester finish reflectors.

Catalog Number Logic:

LN	X	X	X	XX	X	X	XX	X
Series:	Mounting:	Lamp Type:	Lamp Power:	Globe:	Options:			
LN = LN Series Zone 2, 22 ATEX/IEC Certified	A = Pendant (Rigid Mounting) C = Ceiling D = Pendant Cone F = Pendant (Flexible Mounting) R = Straight Stanchion S = 25° Angled Stanchion W = Wall	H = Metal Halide L = Sodium M = Mercury Vapor Q = Induction Z = Halogen/ Incandescent	70 = 70 W 80 = 80 W 85 = 85 W (Induction only) 10 = 100 W 12 = 125 W 15 = 150 W 25 = 250 W 40 = 400 W	G2 = Glass Globe VPGL-2HR G4 = Glass Globe VPGL-4HR	P = PTFE Coating			
Body Size:						Hub Size:	Voltage:	
1 = Size 1 (MLBG) 2 = Size 2 (KPB) 3 = Size 3 (KPBR) 4 = Size 4 (KPB400)						A = M20 2 = 3/4" NPT 3 = 1" NPT 4 = 1-1/4" NPT 5 = 1-1/2" NPT	XA = 220 Vac 50 Hz (Magnetic Ballast) XJ = 230/240 Vac 50 Hz (Magnetic Ballast)	

Lighting: Incandescent & HID Lighting

LN Series: Wellglass Luminaires – Zone 2 & 22

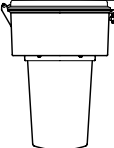
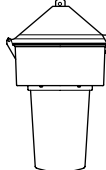
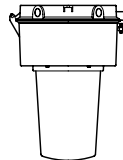
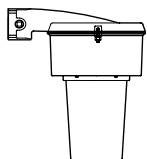
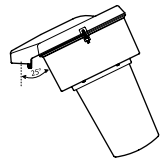
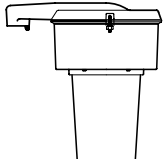
Zone 2 & 22

II 3 GD

ATEX / IEC IP66

Ordering Information:

70 W, 100 W, 150 W, 250 W and 400 W High Pressure Sodium - 230/240 Vac 50 Hz

Fixing Type	Cable Entry	Lampholder	Lamp Watts	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
Pendant							
	1 x 3/4" NPT	E27	70 W	7.4	39.0	LN1AL702G2XJ	095059
		E40	100 W	9.0	55.0	LN2AL102G2XJ	095140
		E40	150 W	9.0	55.0	LN2AL152G2XJ	095066
		E40	250 W	16.0	70.0	LN3AL252G4XJ	095050
		E40	400 W	19.0	85.2	LN4AL402G4XJ	095051
Pendant Cone							
	1 x 3/4" NPT	E27	70 W	7.4	39.0	LN1DL702G2XJ	-
		E40	100 W	9.0	55.0	LN2DL102G2XJ	-
		E40	150 W	9.0	55.0	LN2DL152G2XJ	-
		E40	250 W	16.0	70.0	LN3DL252G4XJ	-
		E40	400 W	19.0	85.2	LN4DL402G4XJ	-
Ceiling							
	5 x 1" NPT with: - 4 x 1" NPT fitted plugs - 2 x 1" NPT-M20 adaptors - 2 x M20 plugs	E27	70 W	7.4	39.0	LN1CL70AG2XJ	095029
		E40	100 W	9.0	55.0	LN2CL10AG2XJ	095132
		E40	150 W	9.0	55.0	LN2CL15AG2XJ	095067
		E40	250 W	16.0	70.0	LN3CL25AG4XJ	095030
		E40	400 W	19.0	85.2	LN4CL40AG4XJ	095031
Wall							
	5 x 1" NPT with: - 4 x 1" NPT fitted plugs - 2 x 1" NPT-M20 adaptors - 2 x M20 plugs	E27	70 W	7.4	39	LN1WL70AG2XJ	095060
		E40	100 W	9.0	55	LN2WL10AG2XJ	095148
		E40	150 W	9.0	55	LN2WL15AG2XJ	095068
		E40	250 W	16.0	70	LN3WL25AG4XJ	095040
		E40	400 W	19.0	85.2	LN4WL40AG4XJ	095041
25° Angled Stanchion							
	1 x 1-1/4" NPT	E27	70 W	7.4	39.0	LN1SL704G2XJ	095061
		E40	100 W	9.0	55.0	LN2SL104G2XJ	095241
		E40	150 W	9.0	55.0	LN2SL154G2XJ	095069
		E40	250 W	16.0	70.0	LN3SL254G4XJ	095246
		E40	400 W	19.0	85.2	LN4SL404G4XJ	095249
Straight Stanchion							
	1 x 1-1/4" NPT	E27	70 W	7.4	39.0	LN1RL704G2XJ	095255
		E40	100 W	9.0	55.0	LN2RL104G2XJ	095256
		E40	150 W	9.0	55.0	LN2RL154G2XJ	095259
		E40	250 W	16.0	70.0	LN3RL254G4XJ	095264
		E40	400 W	19.0	85.2	LN4RL404G4XJ	095267

Lighting: Incandescent & HID Lighting

LN Series: Wellglass Luminaires – Zone 2 & 22

Zone 2 & 22

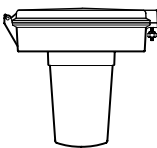
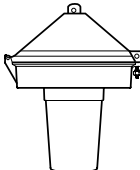
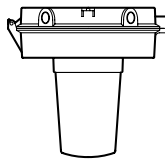
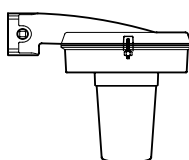
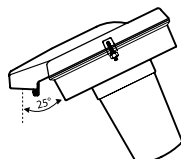
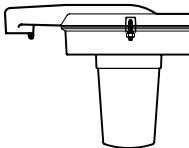
II 3 GD

ATEX / IEC IP66

LIGHTING

Ordering Information - Continued:

100 W and 150 W Incandescent or Halogen

Fixing Type	Cable Entry	Lampholder	Lamp Watts	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
Pendant							
	1 x 3/4" NPT	E27	100 W	7.4	39.0	LN1AZ102G2	095141
		E27	150 W	7.4	39.0	LN1AZ152G2	095145
Pendant Cone							
	1 x 3/4" NPT	E27	100 W	7.4	39.0	LN1DZ102G2	-
		E27	150 W	7.4	39.0	LN1DZ152G2	-
Ceiling							
	5 x 1" NPT with: - 4 x 1" NPT fitted plugs - 2 x 1" NPT-M20 adaptors - 2 x M20 plugs	E27	100 W	7.4	39.0	LN1CZ10AG2	095133
		E27	150 W	7.4	39.0	LN1CZ15AG2	095137
Wall							
	5 x 1" NPT with: - 4 x 1" NPT fitted plugs - 2 x 1" NPT-M20 adaptors - 2 x M20 plugs	E27	100 W	7.4	39.0	LN1WZ10AG2	095215
		E27	150 W	7.4	39.0	LN1WZ15AG2	095218
25° Angled Stanchion							
	1 x 1-1/4" NPT	E27	100 W	7.4	39.0	LN1SZ104G2	095242
		E27	150 W	7.4	39.0	LN1SZ154G2	095245
Straight Stanchion							
	1 x 1-1/4" NPT	E27	100 W	7.4	39.0	LN1RZ104G2	095257
		E27	150 W	7.4	39.0	LN1RZ154G2	095262

Lighting: Incandescent & HID Lighting

LN Series: Wellglass Luminaires – Zone 2 & 22

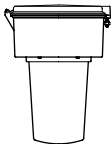
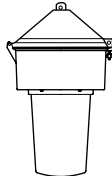
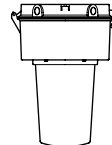
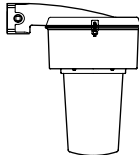
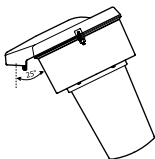
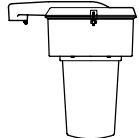
Zone 2 & 22

II 3 GD

ATEX / IEC IP66

Ordering Information - Continued:

125 W, 250 W and 400 W Mercury Vapor - 230/240 Vac 50 Hz

Fixing Type	Cable Entry	Lampholder	Lamp Watts	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
Pendant							
	1 x 3/4" NPT	E27	125 W	7.4	39.0	LN1AM122G2XJ	095142
		E40	250 W	14.0	70.0	LN3AM252G4XJ	095052
		E40	400 W	19.0	85.2	LN4AM402G4XJ	095147
Pendant Cone							
	1 x 3/4" NPT	E27	125 W	7.4	39.0	LN1DM122G2XJ	-
		E40	250 W	14.0	70.0	LN3DM252G4XJ	-
		E40	400 W	19.0	85.2	LN4DM402G4XJ	-
Ceiling							
	5 x 1" NPT with: - 4 x 1" NPT fitted plugs - 2 x 1" NPT-M20 adaptors - 2 x M20 plugs	E27	125 W	7.4	39.0	LN1CM12AG2XJ	095134
		E40	250 W	14.0	70.0	LN3CM25AG4XJ	095032
		E40	400 W	19.0	85.2	LN4CM40AG4XJ	095139
Wall							
	5 x 1" NPT with: - 4 x 1" NPT fitted plugs - 2 x 1" NPT-M20 adaptors - 2 x M20 plugs	E27	125 W	7.4	39.0	LN1WM12AG2XJ	095216
		E40	250 W	14.0	70.0	LN3WM25AG4XJ	095219
		E40	400 W	19.0	85.2	LN4WM40AG4XJ	095221
25° Angled Stanchion							
	1 x 1-1/4" NPT	E27	125 W	7.4	39.0	LN1SM124G2XJ	095243
		E40	250 W	14.0	70.0	LN3SM254G4XJ	095247
		E40	400 W	19.0	85.2	LN4SM404G4XJ	095251
Straight Stanchion							
	1 x 1-1/4" NPT	E27	125 W	7.4	39.0	LN1RM124G2XJ	095258
		E40	250 W	14.0	70.0	LN3RM254G4XJ	095265
		E40	400 W	19.0	85.2	LN4RM404G4XJ	095268

Lighting: Incandescent & HID Lighting

LN Series: Wellglass Luminaires – Zone 2 & 22

Zone 2 & 22

II 3 GD

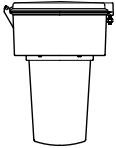
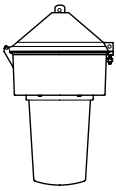
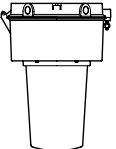
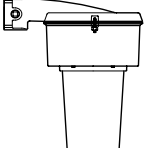
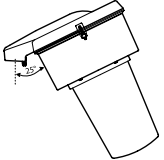
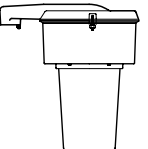
ATEX / IEC

IP66

LIGHTING

Ordering Information - Continued:

150 W, 250 W and 400 W Metal Halide - 230/240 Vac 50 Hz

Fixing Type	Cable Entry	Lampholder	Lamp Watts	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
Pendant							
	1 x 3/4" NPT	E40	150 W	9.0	55.0	LN2AH152G2XJ	095143
		E40	250 W	16.0	70.0	LN3AH252G4XJ	095146
		E40	400 W	19.0	85.2	LN4AH402G4XJ	095054
Pendant Cone							
	1 x 3/4" NPT	E40	150 W	9.0	55.0	LN2DH152G2XJ	-
		E40	250 W	16.0	70.0	LN3DH252G4XJ	-
		E40	400 W	19.0	85.2	LN4DH402G4XJ	-
Ceiling							
	5 x 1" NPT with: - 4 x 1" NPT fitted plugs - 2 x 1" NPT-M20 adaptors - 2 x M20 plugs	E40	150 W	9.0	55.0	LN2CH15AG2XJ	095136
		E40	250 W	16.0	70.0	LN3CH25AG4XJ	095138
		E40	400 W	19.0	85.2	LN4CH40AG4XJ	095034
Wall							
	5 x 1" NPT with: - 4 x 1" NPT fitted plugs - 2 x 1" NPT-M20 adaptors - 2 x M20 plugs	E40	150 W	9.0	55.0	LN2WH15AG2XJ	095217
		E40	250 W	16.0	70.0	LN3WH25AG4XJ	095220
		E40	400 W	19.0	85.2	LN4WH40AG4XJ	095222
25° Angled Stanchion							
	1 x 1-1/4" NPT	E40	150 W	9.0	55.0	LN2SH154G2XJ	095244
		E40	250 W	16.0	70.0	LN3SH254G4XJ	095248
		E40	400 W	19.0	85.2	LN4SH404G4XJ	095252
Straight Stanchion							
	1 x 1-1/4" NPT	E40	150 W	9.0	55.0	LN2RH154G2XJ	095261
		E40	250 W	16.0	70.0	LN3RH254G4XJ	095266
		E40	400 W	19.0	85.2	LN4RH404G4XJ	095269

Lighting: Incandescent & HID Lighting

LN Series: Wellglass Luminaires – Zone 2 & 22

Zone 2 & 22




II 3 GD

ATEX / IEC

IP66

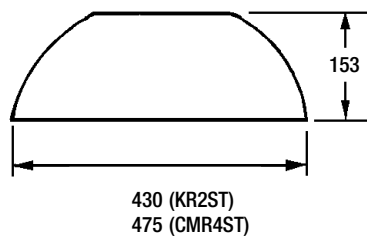
Ordering Information - Continued:

Accessories:

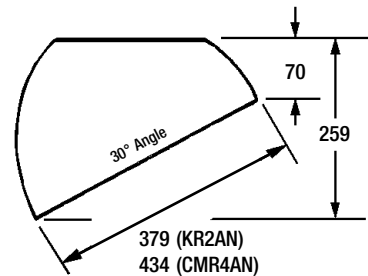
	Description	Catalog Number	Old Catalog Number
	Dome Reflectors: White fiberglass reinforced polyester		
	for LN1 and LN2 sizes	KR2ST	095070
	for LN3 and LN4 sizes	CMR4ST	095076
	30° Reflectors: White fiberglass reinforced polyester		
	for LN1 and LN2 sizes	KR2AN	095071
	for LN3 and LN4 sizes	CMR4AN	095072
	Guards:		
	Aluminum for LN1 and LN2 sizes	KRGU2	095073
	Stainless steel for LN3 and LN4 sizes	KPGU400	095074

Reflector and Guard Dimensions (mm):

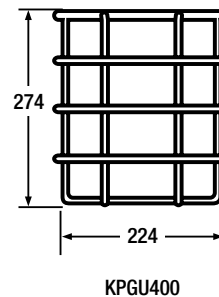
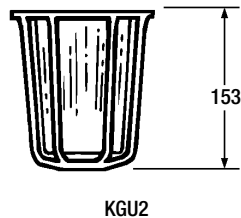
Standard Dome Reflectors



30° Angle Reflectors



Guards



Lighting: Incandescent & HID Lighting

LN Series: Wellglass Luminaires – Zone 2 & 22

Zone 2 & 22

⊕ II 3 GD

ATEX / IEC

IP66

LIGHTING

Compliances:

Hazardous Area	Gas	Dust
Certified Type	LN	
Zones	2	22
Conforming to ATEX 94/9/CE	CE ⊕ II 3 G	CE ⊕ II 3 D
Symbol of Protection ATEX	Ex nR II	Ex tD A22
Symbol of Protection IEC		
T Rating	See Table No. 1	N.A.
Surface Temperature	N.A.	See Table No. 2
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50217	
ATEX Certificate	LCIE 08 ATEX 6036X	
IEC Certificate	LCIE Ex 08.003X	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact Resistance (shock)	Use only in low risk of mechanical areas	

Standards:

Ex standards	EN / IEC 60079-0; 60079-15; 61241-0; 61241-1
Product standards	EN / IEC 60598-1
EMC standards	EN / IEC 55015; 61547
Other standards	EN / IEC 60529 (IP)

Table No. 1

		Ambient Temperatures		
		+40°C	+50°C	+55°C
70 W HPS	T Rating	T4	T4	T4
100 W HPS	T Rating	T4	T3	T3
100 W Incandescent	T Rating	T4	T3	T3
100 W Halogen	T Rating	T4	T3	T3
125 W Mercury	T Rating	T4	T3	T3
150 W HPS	T Rating	T4	T3	T3
150 W Halide	T Rating	T4	T3	T3
150 W Incandescent	T Rating	T4	T3	T3
150 W Halogen	T Rating	T4	T3	T3
250 W HPS	T Rating	T4	T4	T3
250 W Halide	T Rating	T4	T3	T3
250 W Mercury	T Rating	T4	T3	T3
400 W HPS	T Rating	T3	T3	T3
	Cable T°	–	84°C	89°C
400 W Halide	T Rating	T3	T3	T3
	Cable T°	–	82°C	87°C
400 W Mercury	T Rating	T3	T3	T3
	Cable T°	–	84°C	89°C

Table No. 2

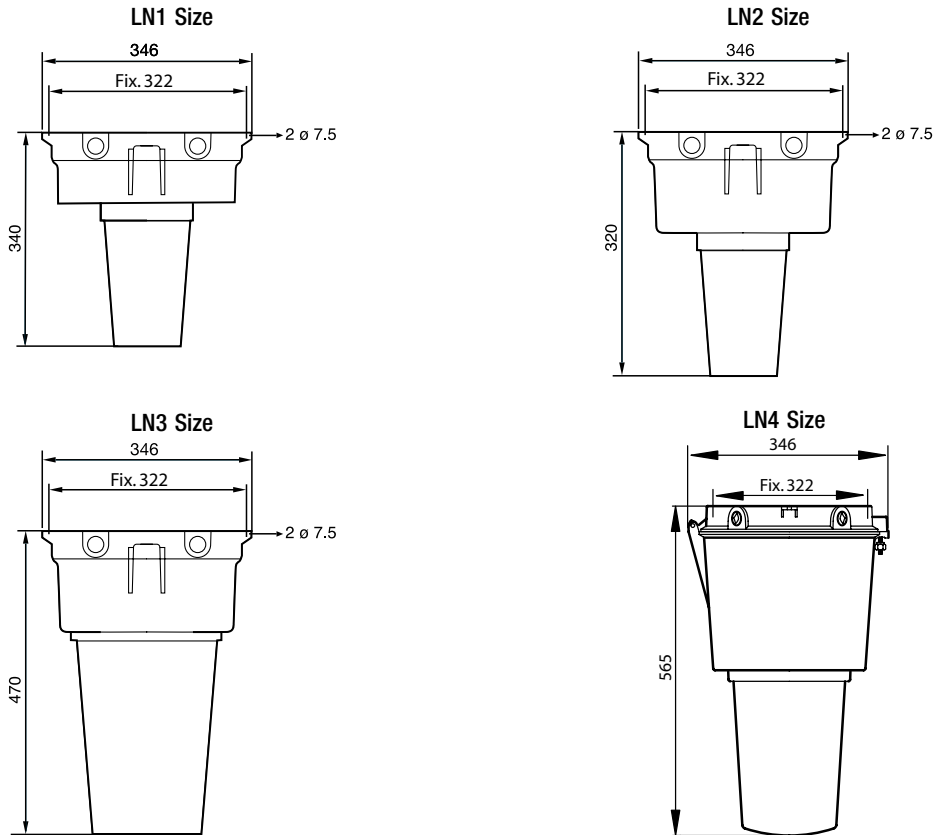
	Dust Surface Temperature for Ambient T° = +55°C	Cable Temperature for Ambient T° = +55°C
70 W HPS	113°C	–
100 W HPS	143°C	–
100 W Incandescent	143°C	–
100 W Halogen	143°C	–
125 W Mercury	143°C	–
150 W HPS	143°C	–
150 W Halide	143°C	–
150 W Incandescent	143°C	–
150 W Halogen	143°C	–
250 W HPS	137°C	–
250 W Halide	143°C	–
250 W Mercury	143°C	–
400 W HPS	167°C	89°C
400 W Halide	171°C	87°C
400 W Mercury	171°C	89°C

Lighting: Incandescent & HID Lighting

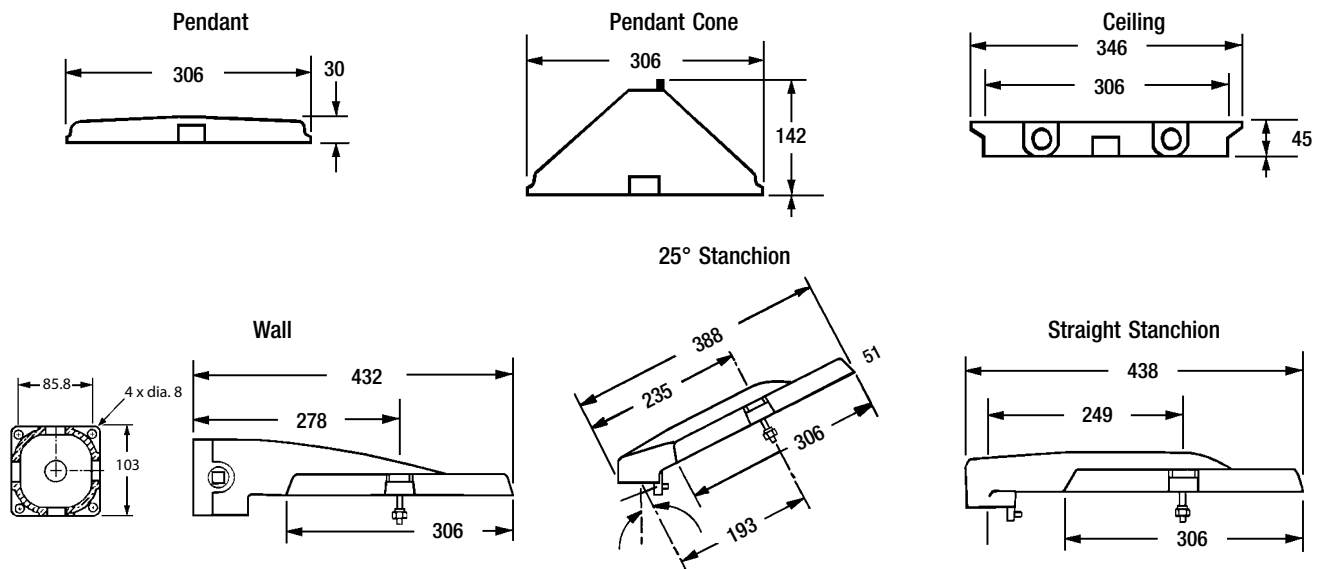
LN Series: Wellglass Luminaires – Zone 2 & 22

Zone 2 & 22
 II 3 GD
 ATEX / IEC
 IP66

Dimensions (mm):
 Ceiling Versions:



Mounting Hoods for All Sizes:



Lighting: Incandescent & HID Lighting

LN Series: Wellglass Luminaires – Zone 2 & 22

Zone 2 & 22

II 3 GD

ATEX / IEC

IP66

LIGHTING

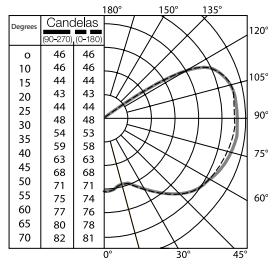
Photometric Data:

Polar curves for a 1000 lm flux, according to NF C 71-120
Luminaire symbol according to NF C 71-121

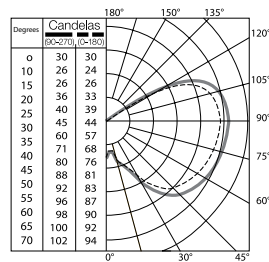
--- Longitudinal
— Transverse

High Pressure Sodium

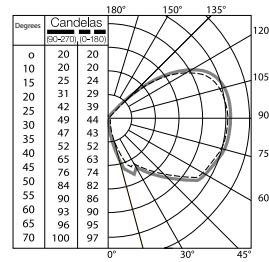
70 W HP Sodium
Efficiency 74.6%



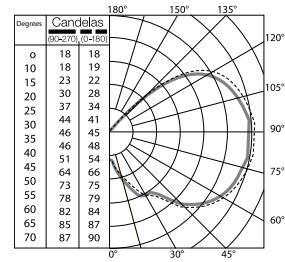
150 W HP Sodium
Efficiency 87.3%



250 W HP Sodium
Efficiency 89.1%

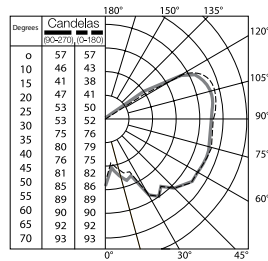


400 W HP Sodium
Efficiency 82.3%

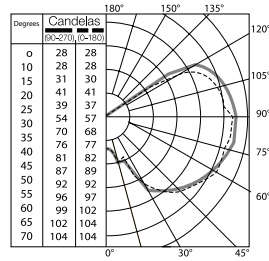


Metal Halide

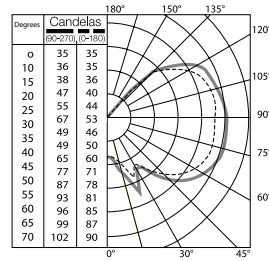
150 W Metal Halide
Efficiency 82.4%



250 W Metal Halide
Efficiency 96.2%

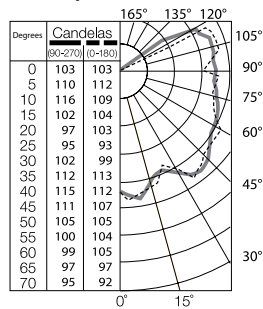


400 W Metal Halide
Efficiency 89.8%



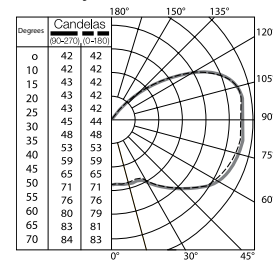
Incandescent or Halogen

150 W HP Incandescent Halogen
Efficiency 90.6%



Mercury Vapor

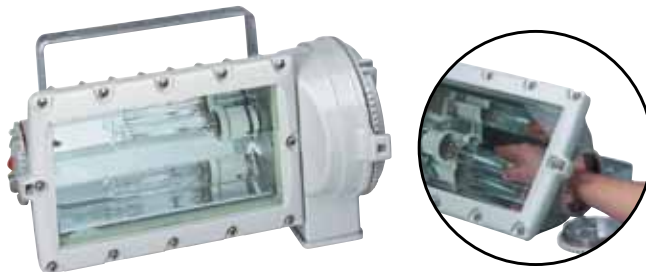
250 W Mercury Vapor
Efficiency 76%



Lighting: Incandescent & HID Lighting
 PB, PC & PL Series: Floodlights – Flameproof



Ex de IIB Type PB



Ex de IIC Type PC



Ex de IIB Type PL
 Low Temperature Rating

Compliances:

ATEX - IEC:



Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IECEX	CE
Ex de IIB (PB and PL) Ex de IIC (PC)	T4 to T1	Ex tD A21	T130°C to T378°C	IP66 (Type PB) IP66/67 (PL and PC)

Type of Lamps and Wattages:

High Pressure Sodium	Metal Halide	Mercury Vapor	Halogen	
150-600 W	150-400 W	250-400 W	70-500-1000 W	

Operating Temperature:

-20°C to +55°C (Type PB)
-20°C to +55°C (Type PC) (-25°C as an option)
-40°C to +55°C (Type PL)

Lighting: Incandescent & HID Lighting

PB, PC & PL Series: Floodlights – Flameproof

Zone 1 & 2 - 21 & 22
 II 2 GD
 ATEX / IECEx
 IP66 or IP66/67 - IK10

LIGHTING

Applications:

- Designed for large area lighting in industrial outdoor and indoor hazardous areas.
- Ideal for use in Zones 1 and 2 and 21 and 22 in the oil and gas industry; i.e. refineries, pipelines, warehouses, offshore platforms and drilling rigs.

Features:

- Gray epoxy painted light marine grade aluminum housing and door.
- Fast and easy lamp replacement via threaded cover on the side of the fixture (Types PB and PC). The cover is fitted with a short safety chain.
- Lampholder can be easily field-adjustable for either a narrow or wide beam.
- Fixtures operate safely in high ambient temperatures up to +55°C and in low ambient temperature up to -40°C (-25°C for PC type and -40°C for PL type).
- Electrical components (ballast, ignitor and capacitor) are thermally separated from the lighting compartment with a bulkhead (Type PB) or with an insulating protection (Types PC and PL), providing extended life.
- Easy and efficient wiring due to separate Ex e terminal box with wiring onto 2 captive terminals 2 x 6 mm²; 2 internal earth terminals capacity 6 mm² and 1 external earth terminal capacity 4 mm².
- 2 x 20 mm clearance holes throughwire cable entries supplied with:
 - One Ex e unarmored cable gland (sealing dia. 6.5 to 14.5 mm)
 - One blanking plug
 - Two M20 locknuts.
- For use with either tubular or ellipsoidal shape lamps. See ordering information for details.
- Choice of mounting with galvanized hinged bracket fixed mounting or tube/pole mounting with galvanized brackets.
- Toughened glass factory-sealed into the floodlight body (Types PC and PL) or factory-sealed into the cover frame (Type PL).
- Operates in any position (except Type PL, to be used only for wall-mounting or down lighting applications).
- Reversible hinge allows for fixture access from either side.

- E40 or H3 lampholders for the 2 x 70 W Vac/Vdc halogen version.
- Internal symmetric reflector.

Standard Materials:

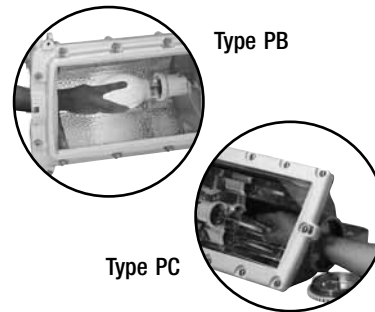
- Housing and door: copper free marine-grade aluminum alloy, painted gray.
- Lens: toughened safety glass.
- Reflector: bright highly polished aluminum.
- Stainless steel bolts.
- Polyamide cable gland and blanking plug.
- Nickel plated brass locknut.

Standard Finishes:

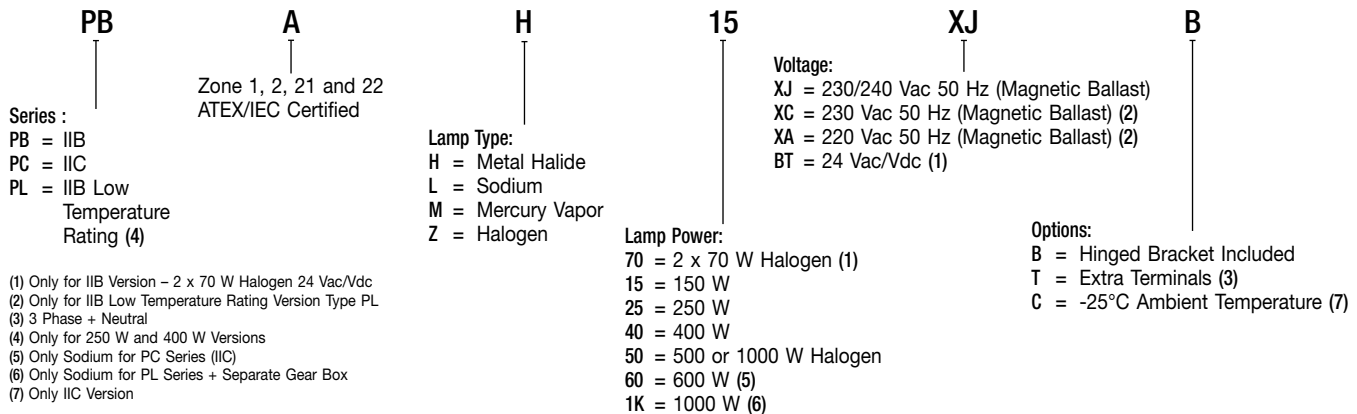
- Housing and door: gray epoxy powder paint.

Options:

- Other voltages, please consult factory.
- Terminal block with 2 more terminals for wiring with 3 phases plus Neutral in 380/415 V (loop in/loop out wiring possible): add "T" at the end of the catalog number.
- Screwed-on overhead diffuser out of galvanized steel with black painting (see accessories).
- Screwed-on zinc-coated protection guard for Types PB and PC (see accessories).
- 1000 W HP Sodium (Type PL) with separate Ex d housing for ballast.



Catalog Number Logic:



Lighting: Incandescent & HID Lighting

PB, PC & PL Series: Floodlights – Flameproof

Zone 1 & 2 - 21 & 22

II 2 GD

ATEX / IECEx

IP66 or IP66/67 - IK10

Ordering Information:

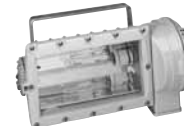


Ex de IIB Floodlight - PB Series

Lamp Wattages	Lampholder	Voltage (+/-10%)	Lamp Type Ellipsoidal	Tubular	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
High Pressure Sodium								
150 W	E40	230/240 V 50 Hz	x	x	29.3	79.4	PBAL15XJB	095166 + 095193
250 W	E40	230/240 V 50 Hz	x	x	30.3	79.4	PBAL25XJB	095169 + 095193
400 W	E40	230/240 V 50 Hz	-	x	31.8	79.4	PBAL40XJB	095179 + 095193
Mercury Vapor								
250 W	E40	230/240 V 50 Hz	x	x	29.3	79.4	PBAM25XJB	095167 + 095193
400 W	E40	230/240 V 50 Hz	-	x	29.8	79.4	PBAM40XJB	095173 + 095193
Metal Halide								
250 W	E40	230/240 V 50 Hz	x	x	30.3	79.4	PBAH25XJB	095168 + 095193
400 W	E40	230/240 V 50 Hz	-	x	31.8	79.4	PBAH40XJB	095177 + 095193
Halogen								
500/1000 W	E40	230/240 V 50 Hz	-	x	26.3	79.4	PBAZ50B	095184 + 095193
2 x 70 W	H3	24 Vac/Vdc 50 Hz	-	-	27.3	79.4	PBAZ70BTB*	095165 + 095193

Note : Floodlights supplied with hinged mounting bracket, 1 plug, 1 M20 cable gland (dia. 6.5 to 14.5 mm). Lamps are not included.

* Supplied with 2 x 70 W H3 bulbs, 24 Vac/Vdc



Ex de IIC Floodlight - PC Series

Lamp Wattages	Lampholder	Voltage (+/-10%)	Lamp Type Ellipsoidal	Tubular	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
High Pressure Sodium								
150 W	E40	230/240 V 50 Hz	x	x	29.0	104.4	PCAL15XJB	095155 + 095194
250 W	E40	230/240 V 50 Hz	x	x	30.0	104.4	PCAL25XJB	095156 + 095194
400 W	E40	230/240 V 50 Hz	-	x	32.0	104.4	PCAL40XJB	095157 + 095194
600 W	E40	230/240 V 50 Hz	-	x	35.0	104.4	PCAL60XJB	095160 + 095194
Mercury Vapor								
250 W	E40	230/240 V 50 Hz	x	x	30.0	104.4	PCAM25XJB	095162 + 095194
400 W	E40	230/240 V 50 Hz	-	x	30.5	104.4	PCAM40XJB	095158 + 095194
Metal Halide								
250 W	E40	230/240 V 50 Hz	x	x	30.0	104.4	PCAH25XJB	095163 + 095194
400 W	E40	230/240 V 50 Hz	-	x	32.0	104.4	PCAH40XJB	095159 + 095194
Halogen								
500/1000 W	E40	230/240 V 50 Hz	-	x	27.0	104.4	PCAZ50B	095161 + 095194

Note : Floodlights supplied with hinged mounting bracket, 1 plug, 1 M20 cable gland (dia. 6.5 to 14.5 mm). Lamps are not included.



Ex de IIB Floodlight - PL Series

Lamp Wattages	Lampholder	Voltage (+/-10%)	Lamp Type Ellipsoidal	Tubular	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
High Pressure Sodium								
250 W	E40	230/240 V 50 Hz	x	x	37.5	104.4	PLAL25XJB	095276 + 095285
400 W	E40	220 V 50 Hz	x	x	37.5	104.4	PLAL40XAB	095277 + 095285
Halogen								
500/1000 W	E40	230/240 V 50 Hz	-	x	34.0	104.4	PLAZ50B	095283 + 095285

Note: Floodlights supplied with hinged mounting bracket, 1 plug, 1 M20 cable gland (dia. 6.5 to 14.5 mm). Lamps are not included.

Lighting: Incandescent & HID Lighting

PB, PC & PL Series: Floodlights – Flameproof

Zone 1 & 2 - 21 & 22

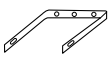
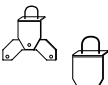


⊕ II 2 GD



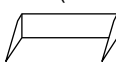
ATEX / IECEx

IP66 or IP66/67 - IK10

LIGHTING

Accessories and Spare Parts:

Type	Catalog Number	Old Catalog Number
Galvanized Steel Hinged Brackets		
 Type PB	PBHBG	095193
Type PL	PLHBG	095285
Type PC	PCHBG	095194
Pole/Tube Mounting Galvanized Steel Brackets		
 Type PB/PL	1-1/4" to 1-1/2"	PNHC49G 095284
	2"	PNHC60G 095286
 Type PC	1-1/4" to 1-1/2"	PCHC49G 095171
	2"	PCHC60G 095189
Flat Surface Mounting Galvanized Steel Brackets		
 Type PB/PL	PNSBG	095197
Type PC	PCSBG	095188

Type	Catalog Number	Old Catalog Number
400 W Mercury Vapor Lamp		
Tubular	LM400E40	094895
Screwed-on Overhead Diffuser		
 Type PB	PBGDG	095191
Type PC	PCGDG	095186
Screwed-on Protective Guard		
 Type PB	PBPGZ	095195
Type PC	PCPGZ	095187
Visor (secured with 2 screws)		
 Type PC only	PCVG	095185

Compliances:

Hazardous Area	Gas	Dust
Certified Type	Pjd	
Zones	1 and 2	21 and 22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of protection ATEX	Ex de IIB (Type PB et PL) Ex de IIC (Type PC)	Ex tD A21
Symbol of protection IEC		
Temperature Rating	See tables	NA
Surface temperature	NA	See tables
Ambient temperature	-20°C ≤ Ta ≤ +55°C (Type PB and PC) (-25°C for PC Type as an option) -40°C ≤ Ta ≤ +55°C (Type PL)	
CE Declaration of conformity	50207	
ATEX Certificate	LCIE 99 ATEX 6002	
IECEx Certificate	IECEx LCI 04.0020	
Other Certifications	GOST	
Index of protection (solids and liquids)	IP66 (Type PB) IP66/67 (Types PC and PL)	
Impact resistance (shock)	IK10	

Temperature Rating Chart: Types PB - PC

Lamp Wattage	Gas			Dust Surface Temperature
	Temperature Rating According to Ta			
	+40°C	+50°C	+55°C	
2 x 70 W - H3 (1)	T4	T4	T4	130°C
150 W Sodium	T4	T3	T3	145°C
250 W Sodium	T3	T3	T3	195°C
250 W Metal Halide	T3	T3	T3	197°C
250 W Mercury Vapor	T3	T3	T3	194°C
400 W Sodium	T3	T3	T3	189°C
400 W Metal Halide	T3	T3	T3	193°C
400 W Mercury Vapor	T3	T3	T3	195°C
600 W Sodium	T2	T2	T2	257°C
500 W Halogen	T2	T2	T2	267°C
1000 W Halogen	T1	T1	T1	378°C

Temperature Rating Chart: Type PL

Lamp Wattage	Gas			Dust Surface Temperature
	Temperature Rating According to Ta			
	+40°C	+50°C	+55°C	
150 W Sodium	T4	T3	T3	145°C
250 W Sodium	T4	T3	T3	145°C
250 W Metal Halide	T3	T3	T3	197°C
250 W Mercury Vapor	T3	T3	T3	194°C
400 W Sodium	T4	T3	T3	144°C
400 W Metal Halide	T3	T3	T3	193°C
400 W Mercury Vapor	T3	T3	T3	195°C
600 W Sodium	T2	T2	T2	257°C
500 W Halogen	T2	T2	T2	267°C
1000 W Halogen	T1	T1	T1	378°C

Lighting: Incandescent & HID Lighting

PB, PC & PL Series: Floodlights – Flameproof

Zone 1 & 2 - 21 & 22

II 2 GD

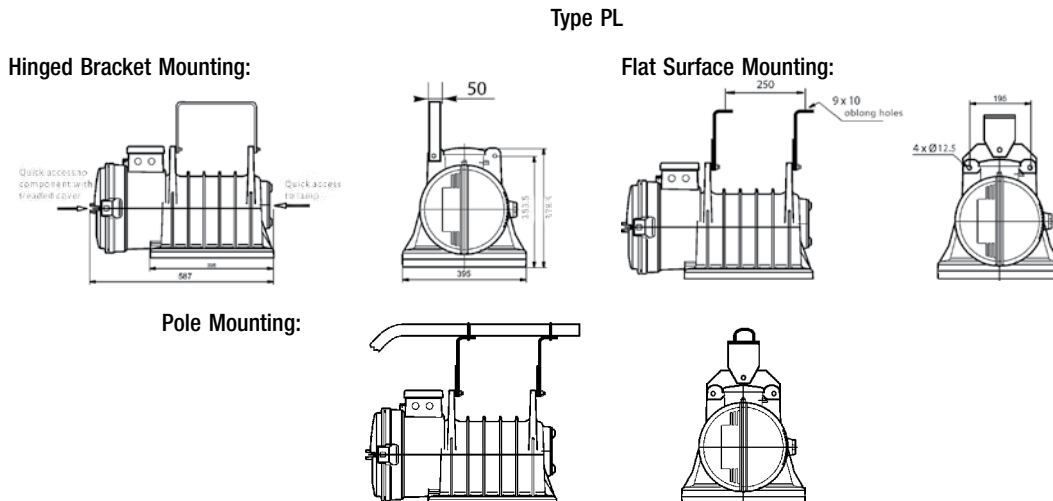
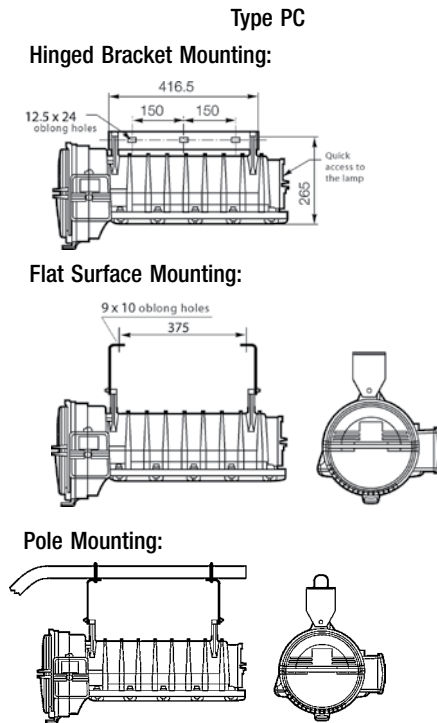
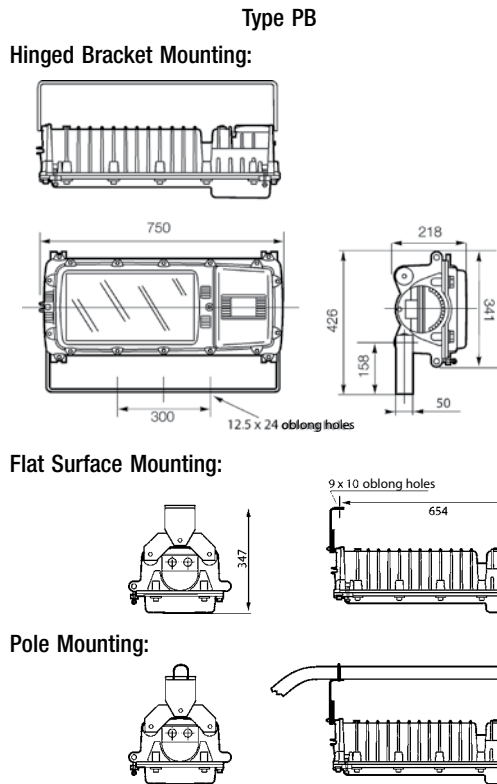
ATEX / IECEx

IP66 or IP66/67 - IK10

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 60079-7; 61241-0; 61241-1
Product Standards	EN / IEC 60598-1
EMC Standards	EN / IEC 55015; 61547
Other Standards	EN / IEC 60529 (IP), 62262 (IK)

Dimensions (mm):



Lighting: Incandescent & HID Lighting

PB, PC & PL Series: Floodlights – Flameproof

Zone 1 & 2 - 21 & 22

II 2 GD

ATEX / IECEx

IP66 or IP66/67 - IK10

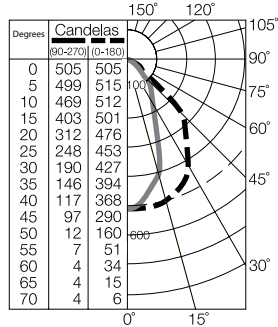
LIGHTING

Photometric Data for Types PB and PC:

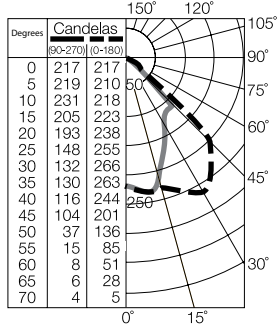
Polar curves for a lumen output of 1000 lm, as per NF C 71-120
Luminaire symbol as per NF C 71-121

--- Longitudinal
— Transverse

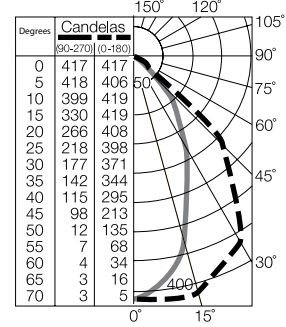
Narrow beam Metal Halide 250 W
Efficiency 68.3%
NF C 71-121: 0.68B



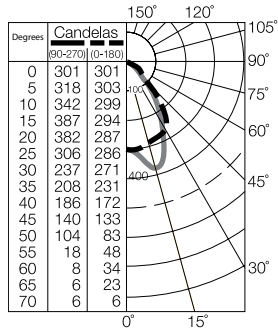
Narrow beam Metal Halide 400 W
Efficiency 49.3%
NF C 71-121: 0.49C



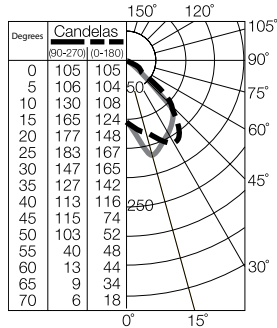
Narrow beam Halogen 1000 W
Efficiency 59.2%
NF C 71-121: 0.59B



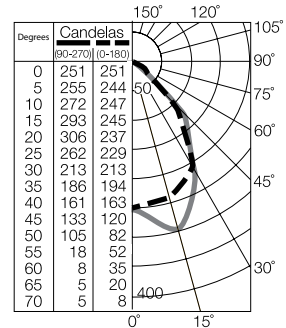
Wide beam Metal Halide 250 W
Efficiency 67.9%
NF C 71-121: 0.68C



Wide beam Metal Halide 400 W
Efficiency 46.7%
NF C 71-121: 0.46C



Wide beam Halogen 1000 W
Efficiency 57.7%
NF C 71-121: 0.57C



*400 W Metal Halide: Efficiency rate lower than 250 W due to thermal deflector between glass and lamp, requested for T3.

North American CEC/NEC Certification:

- AEx/Ex de IIB IP 66 (Type PB only) cCSAus Ex de IIB IP 66 (Type PB only).
- 175 W Metal Halide and Pulse Start Metal Halide.
- Safety starter.

Lighting: Incandescent & HID Lighting

PN Series: Floodlights – Zone 2, 21 & 22



L Size



M Size

Compliance Data:

ATEX - IEC



Zone 2, 21 & 22	II 2 D - II 3 GD	ATEX	IEC	CE
Ex nR II - Ex tD A21	T4 or T3 or T2	IP66	IK08	Ex tD A21

Lamp Types & Watts:

High Pressure Sodium	Metal Halide	Mercury Vapor		
70 W to 1000 W	150 W to 1000 W	250 W to 400 W		

Operating Temperatures:

-40°C to +55°C (Up to 400 W Zone 2 - 22)	-40°C to +50°C (1000 W Zone 2 - 22)	-20°C to +40°C (Up to 400 W for Zone 21)	
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Lighting: Incandescent & HID Lighting

PN Series: Floodlights – Zone 2, 21 & 22

Zone 2, 21 & 22

II 2 D - II 3 GD

ATEX / IECEx

IP66 - IK07/08

Applications:

- Powerful, efficient floodlights for large areas such as industrial complexes, ship loading areas rated for in hazardous areas.

Features:

- Highly efficient, integrally ballasted floodlight. Has compact, lightweight, yet rugged die-cast aluminum construction; simple installation and maintenance.
- Integral ballast 230/240 V, 50 Hz
- Lens: thermal-shock and impact resistance glass
- Socket: E40 (E27 for 70 W HPS version), porcelain
- Reflectors: double segment compound parabolic with Alzack® finish for maximum efficiency.
- Mounting: yoke mount – zinc plated steel yoke with architectural bronze polyester finish.

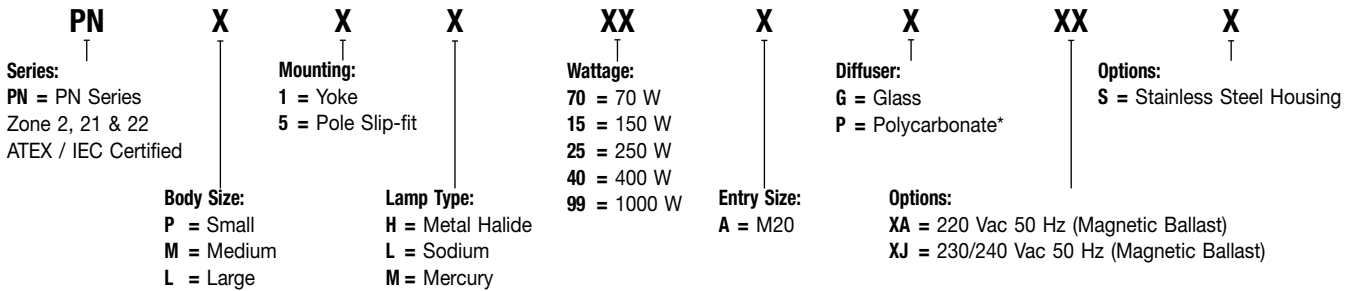
Standard Material of Fixtures:

- Housing: pressure-cast copper free aluminum with architectural bronze polyester finish.
- Lens door: pressure cast copper free aluminum, secured with captive stainless steel screws. Has architectural bronze polyester finish.
- Gasket: heavy duty, high temperature, long life silicone rubber, firmly seated.

Standard Material of Accessories:

- Gasket: heavy duty, high temperature, long life silicone rubber, firmly seated.

Catalog Number Logic:



*Zone 2-22 doesn't exist with polycarbonate diffuser.
400 W Zones 21-22 and 1000 W Zones 2-22 only with large body (suffix G).

Ordering Information:

Standard with Lamp Glass Sealed on Frame:

Type	Weight (kg)	Volume (dm ³)	Permissible lamps (not supplied)	Body Size	Catalog Number	Old Catalog Number	Pack
70 W HP Sodium	12.1	62.5	Ovoid/Tubular	Medium	PNM1L70AGXJ	095033	1
150 W HP Sodium	12.9	62.5	Ovoid/Tubular	Medium	PNM1L15AGXJ	095036	1
250 W HP Sodium	14.3	62.5	Ovoid/Tubular	Medium	PNM1L25AGXJ	095042	1
400 W HP Sodium	16	62.5	Ovoid/Tubular	Medium	PNM1L40AGXJ	095043	1
400 W HP Sodium	–	–	Ovoid/Tubular	Large	PNL1L40AGXJ	095287	1
150 W Metal Halide	12.9	62.5	Ovoid/Tubular	Medium	PNM1H15AGXJ	095037	1
250 W Metal Halide	14.3	62.5	Ovoid/Tubular	Medium	PNM1H25AGXJ	095046	1
400 W Metal Halide	16	62.5	Tubular	Medium	PNM1H40AGXJ	095047	1
400 W Metal Halide	–	–	Ovoid/Tubular	Large	PNL1H40AGXJ	095288	1
250 W Mercury Vapor	12.9	62.5	Ovoid	Medium	PNM1M25AGXJ	095044	1
400 W Mercury Vapor	13.8	62.5	Ovoid/Tubular	Medium	PNM1M40AGXJ	095045	1

With External Polycarbonate Weatherproof Protection

Type	Weight (kg)	Volume (dm ³)	Permissible lamps (not supplied)	Body Size	Catalog Number	Old Catalog Number	Pack
70 W HP Sodium	13.2	62.5	Ovoid/Tubular	Medium	PNM1L70APXJ	095088	1
150 W HP Sodium	14	62.5	Ovoid/Tubular	Medium	PNM1L15APXJ	095097	1
250 W HP Sodium	15.4	62.5	Ovoid/Tubular	Medium	PNM1L25APXJ	095098	1
400 W HP Sodium	–	–	Ovoid/Tubular	Large	PNL1L40APXJ	095291	1
150 W Metal Halide	14	62.5	Ovoid/Tubular	Medium	PNM1H15APXJ	095094	1
250 W Metal Halide	15.4	62.5	Ovoid/Tubular	Medium	PNM1H25APXJ	095096	1
400 W Metal Halide	–	–	Ovoid/Tubular	Large	PNL1H40APXJ	095292	1
250 W Mercury Vapor	14	62.5	Ovoid	Medium	PNM1M25APXJ	095095	1

Lighting: Incandescent & HID Lighting

PN Series: Floodlights – Zone 2, 21 & 22



Zone 2, 21 & 22

Ex II 2 D - Ex II 3 GD

ATEX / IECEx

IP66 - IK07/08

Accessories

	Description	Catalog Number	Old Catalog Number	Pack
	Fall Prevention Kit (1.20 m stainless steel chain) for M20 cable entry	FESCM20	096406	1
				
GSF-20	Slipfitter Adapter Size fits medium body	GSF20	-	1
GAM-8-SF	Size fits large body	GAM8SF	-	1

Compliances: Size M

Hazardous Area	Gas	Dust	Dust
Certification Type	PJn		
Zones	2	22	21
Conforming to ATEX 94/9/CE	CE Ex 3 G	CE Ex II 3 D	CE Ex I 2 D
Symbol of Protection ATEX	Ex nR II	Ex tD A22	Ex tD A21
Symbol of Protection IEC			
T Rating	T2 to T4	NA	NA
Surface Temperature	NA	T117°C to T228°C	T65°C to T136°C
Ambient Temperature	-40°C to +55°C		-20°C to 40°C
CE Declaration of Conformity	50215		50251
ATEX Certificate	LCIE 08 ATEX 6035X		LCIE 02 ATEX 6246X
IECEx Certificate	IECEx LCI 04.0015		NA
Other Certifications	GOST		NA
Index of Protection (solid and liquid)	IP66		
Impact Resistance (shock)	IK07		IK07 with glass diffuser IK08 with polycarbonate diffuser

Compliances: Size G

Hazardous Area	Gas	Dust	Dust
Certification Type	PJn		
Zones	2	22	21
Conforming to ATEX 94/9/CE	CE Ex II 3 G	CE Ex II 3 D	CE 008 Ex II 2 D
Symbol of Protection ATEX	Ex nR II	Ex tD A22	Ex tD A21
Symbol of Protection IEC			
T Rating	T3	NA	NA
Surface Temperature	NA	T187°C to T192°C	T121°C to T182°C
Ambient Temperature	-40°C to +50°C		-20°C to +40°C
CE Declaration of Conformity	50215		50274
ATEX Certificate	LCIE 08 ATEX 6035X		LCIE 02 ATEX 6246X
IECEx Certificate	IECEx LCI 04.0015		NA
Other Certifications	GOST		NA
Index of Protection (solid and liquid)	IP66		
Impact Resistance (shock)	IK07		IK07 with glass diffuser IK08 with polycarbonate diffuser

Lighting: Incandescent & HID Lighting

PN Series: Floodlights – Zone 2, 21 & 22

Zone 2, 21 & 22

II 2 D - II 3 GD

ATEX / IECEx

IP66 - IK07/08

LIGHTING

TABLE N°1 – Zone 21 (Dust)

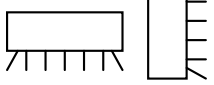
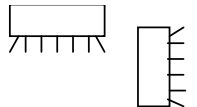
	Operating Position	Dust Surface Temperatures for Ta = +40°C		Time Before Opening
				
	Lamp and Power	Glass Diffuser	Polycarbonate Diffuser	
Body Size: M	70 W Sodium	75°C	65°C	50 mm
	150 W Sodium	101°C	91°C	25 mm
	250 W Sodium	127°C	117°C	15 mm
	250 W Metal Halide	123°C	113°C	15 mm
	250 W Mercury	136°C	131°C	15 mm
Body Size: L	400 W Sodium	126°C	121°C	30 mm
	1000 W Sodium	177°C	-	30 mm
	1000 W Metal Halide	182°C	-	30 mm

TABLE N°2 – Zone 2 (Gas)

	Lamp and Power	T Rating for Ta = +40°C	T Rating for Ta = +50°C	T Rating for Ta = +55°C
Body Size: M	70 W Sodium	T4	T4	T4
	150 W Sodium	T4	T4	T4
	150 W Metal Halide	T4	T4	T4
	250 W Sodium	T3	T3	T3 (Cable T° = 82°C)
	250 W Metal Halide	T3	T3	T3
	250 W Mercury	T3	T3	T3 (Cable T° = 81°C)
	400 W Sodium	T3	T3 (Cable T° = 87°C)	T2 (Cable T° = 92°C)
	400 W Metal Halide	T2	T2 (Cable T° = 84°C)	T2 (Cable T° = 89°C)
	400 W Mercury	T2	T2 (Cable T° = 84°C)	T2 (Cable T° = 89°C)
Body Size: L	1000 W Sodium	T3	T3	-
	1000 W Metal Halide	T3	T3	-

TABLE N°3 – Zone 22 (Dust)

	Lamp and Power	T Rating for Ta = +40°C	T Rating for Ta = +50°C	T Rating for Ta = +55°C
Body Size: M	70 W Sodium	117°C	-	-
	150 W Sodium	130°C	-	-
	150 W Iodure	128°C	-	-
	250 W Sodium	160°C	-	Cable T° = 82°C
	250 W Iodure	175°C	-	-
	250 W Mercury	181°C	-	Cable T° = 81°C
	400 W Sodium	198°C	Cable T° = 87°C	Cable T° = 92°C
	400 W Iodure	228°C	Cable T° = 84°C	Cable T° = 89°C
	400 W Mercury	227°C	Cable T° = 84°C	Cable T° = 89°C
Body Size: L	1000 W Sodium	187°C (for Ta = +50°C)	Cable T° = 90°C	-
	1000 W Iodure	192°C (for Ta = +50°C)	Cable T° = 90°C	-

Lighting: Incandescent & HID Lighting

PN Series: Floodlights – Zone 2, 21 & 22

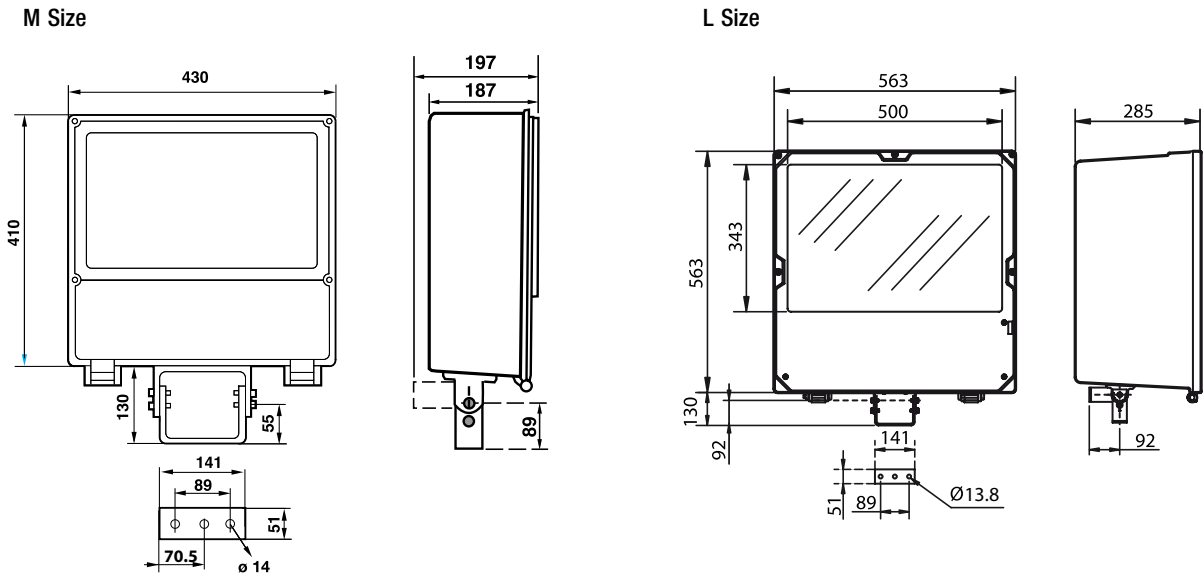
Zone 2, 21 & 22

Ex II 2 D - Ex II 3 GD

ATEX / IECEx

IP66 - IK07/08

Dimensions (mm)



Standards

Ex Standards	EN / IEC 60079-0 ; 60079-15 ; 61241-0; 61241-1
Product Standards	EN / IEC 60598-1
EMC Standards	EN / IEC 55015; 61547
Other Standards	EN / IEC 60529 (IP)

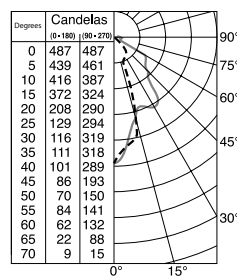
Photometric Data:

Polar curves for a 1000 lm flux, according to NF C 71-120

Luminaire symbol according to NF C 71-121

--- Longitudinal
 — Transverse

70 W HP Sodium Efficiency 74.6%



Lighting: Incandescent & HID Lighting
HBE Series: Round Bulkhead – Increased Safety



HBERI15 + HBEPGZ

Compliance Data:

ATEX - IEC:



Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IEC	CE
Ex e II	T1 to T4	Ex tD A21	T102°C to T137°C	IP65

Lamp Type and Power:

Incandescent	Mixed			
60 W to 150 W	100 W			

Operating Temperature:

-40°C to +50°C

Lighting: Incandescent & HID Lighting

HBE Series: Round Bulkhead – Increased Safety

Zone 1 & 2 - 21 & 22

⊕ II 2 GD

ATEX / IEC

IP65

Applications:

For illumination of:

- Stairways
- Small areas
- Emergency exit

Features:

- For incandescent lamps 60 to 150 W max. and mixed lamp 100 W max. (lamps not supplied).
- E27 lampholder.
- Screw locking mechanism.
- Operating positions see table 1.
- Connection to lampholder via two 2 x 2.5 mm² terminals.
- Internal earth two terminals 2 x 2.5 mm² and external earth terminal 1 x 4 mm² clamp.
- 3 x M20 threaded cable entries. Supplied with one cable gland (dia 6.5 to 14.5 mm) and two blanking plugs.

Standard Materials of Fixtures:

- Gray painted aluminum alloy body.
- Glass diffuser.
- Silicone sealing gasket.

Standard Materials of Accessories:

- Zinc plated steel guard.
- Polyamide cable gland and blanking plug.



HBERI150 + HBEPGZ

Ordering Information:

Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
3	15	HBERI15	095850	1

Accessories:

Description	Catalog Number	Old Catalog Number	Pack
Protective guard	HBEPGZ	095855	1
Spare lampglass	HBEGD	095856	1

Compliances:

Hazardous Area	Gas	Dust
Certified Type	HBe150	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of protection ATEX	Ex e II	Ex tD A21
Symbol of protection IEC		
T rating	See table 1	N.A.
Surface Temperature	N.A.	T102°C to T137°C
Ambient Temperature	-40°C to +50°C	
CE Declaration of Conformity	50244	
ATEX Certificate	LCIE 02 ATEX 6228X	
IEC Certificate	LCIE Ex 02.023X	
Other Certifications	–	
Index of protection (solid & liquid)	IP65	
Impact resistance (shock)	–	

Standards:

Ex standards	EN / IEC 60079-0; 60079-7; 61241-0; 61241-1
Product standards	EN / IEC 60598-1
EMC standards	–
Other standards	EN / IEC 60529 (IP)

Lighting: Incandescent & HID Lighting

HBE Series: Round Bulkhead – Increased Safety

Zone 1 & 2 - 21 & 22

II 2 GD

ATEX / IEC

IP65

LIGHTING

Table 1: Dust and Gas

Power and Type	Dust Surface T° for Ta = +50°C	Gas				Operating Positions
		For Ta = +40°C		For Ta = +50°C		
		T Rating	T° at Cable Entry	T Rating	T° at Cable Entry	
60 W Incandescent	102°C	T2	N.A.	T2	N.A.	Any Position
		T3	N.A.	T3	N.A.	
		T4	N.A.	T4	N.A.	
75 W Incandescent	107°C	T2	N.A.	T2	N.A.	Any Position
		T3	N.A.	T3	N.A.	
		T4	N.A.	T4	N.A.	
100 W Incandescent	117°C	T2	N.A.	T2	83°C	Any Position
		T3	N.A.	T3	83°C	
		T3	N.A.	T3	N.A.	
100 W Mixed	137°C	T1	90°C	T1	100°C	Any Position
		T3	90°C	T2	100°C	
		T3	N.A.	T3	N.A.	
150 W Incandescent	130°C	T2	82°C	T2	92°C	Any Position
		T3	82°C	T3	92°C	
		T3	N.A.	T3	N.A.	

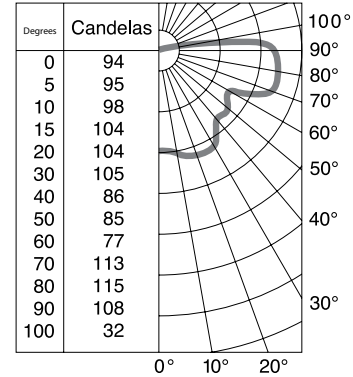
N.A.: Not Applicable, no need for high temperature cable for cable entry temperature less than +80°C

Photometric Data:

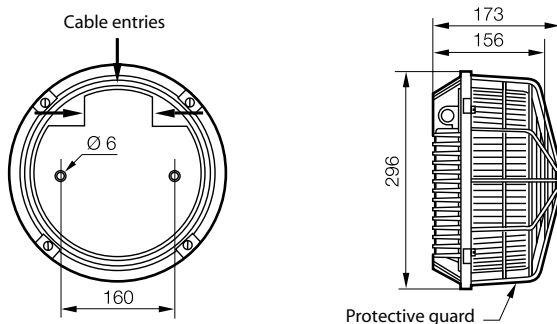
Polar curves for a 1000 lm flux, according to NF C 71-120:

Luminaire symbol according to NF C 71-121

150 W Incandescent : 0,62 J + 0,10 T



Dimensions (mm):



Lighting: Incandescent & HID Lighting

HBN Series: Round Bulkhead – Flameproof



HBNRI15 + HBEPGZ

Compliance data:

ATEX - IEC:



Zone 2 and 22	ATEX	II 3 GD	IEC	CE
Ex nR II	T3 to T5	Ex tD A22	T101°C to T131°C	IP65

Lamp Type and Power:

Incandescent	Mixed	Mercury		
60 W to 150 W	100 W	80 W		

Operating Temperatures:

-20°C to +50°C
-20°C to +40°C (Mercury)

Lighting: Incandescent & HID Lighting

HBN Series: Round Bulkhead – Flameproof

Zone 2 & 22

Ex II 3 GD

ATEX / IEC

IP65

Applications:

For illumination of:

- Stairways
- Small areas
- Emergency exit

Features:

- For incandescent lamps 60 W to 150 W maximum, mixed lamp 100 W maximum, mercury 80 W maximum (remote mercury ballast not supplied). Lamps not supplied.
- E27 lampholder.
- Screw locking mechanism.
- Operates in all positions.

- Connection to lampholder via two 2 x 2.5 mm² terminals.
- Internal earth two terminals 2 x 2.5 mm². External earth 1 x 4 mm².
- Three M20 entries in “T” formation. Supplied with one M20 cable gland (dia. 6.5 to 14.5 mm) and two M20 blanking plugs.

Standard Materials of Fixtures:

- Gray painted aluminum alloy body.
- Glass diffuser.
- Silicone sealing gasket.

Standard Materials of Accessories:

- Zinc plated steel guard.
- Polyamide cable gland and blanking plug.

Ordering Information:

Power	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
60 to 150 W Incandescent 100 W mixed	3	15	HBNRI15	096901	1

Accessories:

Description	Catalog Number	Old Catalog Number	Pack
Protective guard	HBEPGZ	095855	1
Spare lampglass	HBEGD	095856	1

Compliances:

Hazardous Area	Gas	Dust
Certified Type	HBN150	
Zones	2	22
Conforming to ATEX 94/9/CE	CE Ex II 3 G	CE Ex II 3 D
Symbol of Protection ATEX	Ex nR II	Ex tD A22
Symbol of Protection IEC		
T Rating	See table 1	N.A.
Surface Temperature	N.A.	See table 1
Ambient Temperature	-20°C Ta +50°C -20°C Ta +40°C (80 W mercury)	
CE Declaration of Conformity	50220	
ATEX Certificate	LCIE 03 ATEX 6167X	
IEC Certificate	LCIE Ex 03.026X	
Other Certifications	-	
Index of Protection (solid & liquid)	IP65	
Impact Resistance (shock)	-	

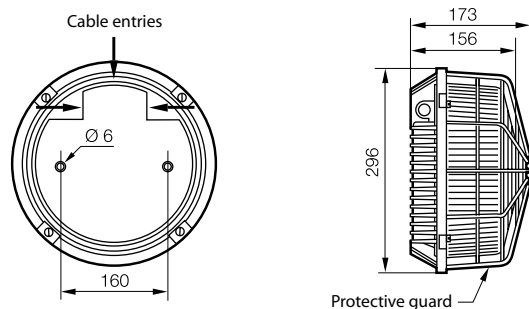
Table 1: Dust and Gas

Power and Type	Dust Surface T° for Ta = +50°C	Gas		T° at Cable Input
		T Rating for Ta = +40°C	T Rating for Ta = +50°C	
60 W Incandescent	101°C	T5	T4	-
75 W Incandescent	104°C	T5	T4	-
80 W Mercury	131°C (for Ta = +40°C)	T3	-	-
100 W Incandescent	114°C	T4	T4	83°C
100 W mixed	125°C	T4	T4	100°C
150 W Incandescent	120°C	T4	T4	92°C

Standards:

Ex Standards	EN / IEC 60079-0; 60079-15; 61241-0; 61241-1
Product Standards	EN / IEC 60598-1
EMC Standards	EN / IEC 55015; 61547
Other Standards	EN / IEC 60529 (IP)

Dimensions (mm):

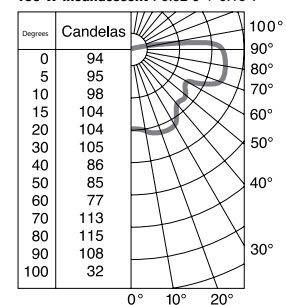


Photometric Data:

Polar curves for a 1000 lm flux, according to NF C 71-120

Luminaire symbol according to NF C 71-121

150 W Incandescent : 0.62 J + 0.10 T



Lighting: Incandescent & HID Lighting

HBD Series: Bulkhead – Flameproof



HBDR
Round Bulkhead



HBDO
Oval Bulkhead

Compliance Data:

ATEX – IEC:

HBDR Series:



Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IEC	CE
Ex d IIC	T6 to T3	Ex tD A21	T60°C to T149°C	IP66 – IK08

HBDO Series:

Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	CEI	CE
Ex d IIB	T6 or T4	Ex tD A21	T76°C to T119°C	IP66 – IK08

Lamp Type and Power:

Incandescent	Compact Fluorescent	Mixed		
60 W to 200 W	7 W to 23 W	160 W		

Operating Temperature:

HBDR: -40°C to +55°C
HBDO: -20°C to +40°C

Lighting: Incandescent & HID Lighting

HBD Series: Bulkhead – Flameproof

Zone 1, 2, 21 & 22

II 2 GD

ATEX / IEC

IP66 - IK08

Applications:

For illumination of:

- Stairways
- Small areas
- Emergency exit

Features:

HBD Series:

- Lamps (not supplied):
 - Incandescent 200 W maximum
 - Compact Fluorescent 23 W maximum
 - Mixed 160 W maximum
- E27 lampholder.
- Threaded flameproof joint.
- Operates on ceiling and wall.
- Fixing by two integrated brackets.
- Connection to lampholder via two terminals 2.5 mm².
- Internal earth two terminals 2.5 mm².
- External earth one 4 mm².
- 3 x M20 threaded entries in “T” formation.
- Supplied with two blanking plugs M20.

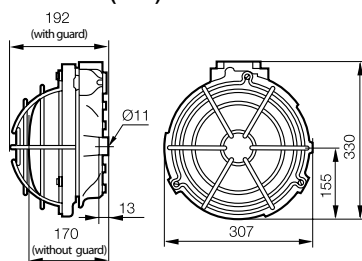
Standard Materials:

- Gray painted aluminum body and bezel.
- Sealed toughened lamp glass.

Standard Materials of Accessories:

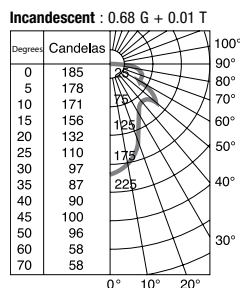
- Zinc plated steel protective guard.

Dimensions (mm):



Photometric Data:

Polar curves for a 1000 lm output according to NF C 71-120 Luminaire symbol according to NF C 71-121



Ordering Information:



Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
7.5	23.4	HBDR	094754	1

Accessories:

Protective guard	HBDRPGZ	095091	1
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Compliances:

Hazardous Area	Gas	Dust
Certified Type	HBRd	
Zones	1 – 2	21 – 22
Conforming to ATEX 94/9/CE	CE 0081 II 2 G	CE 0081 II 2 D
Symbol of Protection ATEX	Ex d IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	See Table 1	N.A.
Surface Temperature	N.A.	See Table 2
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50242	
ATEX Certificate	LCIE 02 ATEX 6163	
IEC Certificate	LCIE Ex 02.014	
Other Certifications	GOST	
Index of Protection (solid & liquid)	IP66	
Impact Resistance (shock)	IK08	
Internal Volume	> 2 dm ³ (2 liters)	

Table 1: T-Rating for Gas

Power and Type	Ambient Temperature		Operating Positions					
			Ceiling			Wall		
	40°C	50°C	55°C	40°C	50°C	55°C		
8 W Compact Fluor.	T Rating		T6					
15 W Compact Fluor.	T Rating		T6					
23 W Compact Fluor.	T Rating		T6		T5			T4
100 W Incandescent	T Rating		T5	T4	T5	T4		
200 W Incandescent	T Rating		T4					
	T° at cable entry		-	84°C	89°C	-	84°C	89°C
100 W Mixed	T Rating		T4					
160 W Mixed	T Rating		T3					
	T° at cable entry		-	87°C	92°C	-	87°C	92°C

Table 2: Surface Temperature for Dust

Power and Type	Operating Positions			
	Ceiling		Wall	
	Surface T° for Ta = +55°C	T° at Cable Entry Ta = 55°C	Surface T° for Ta = +55°C	T° at Cable Entry Ta = 55°C
8 W Compact Fluor.	60°C	-	70°C	-
15 W Compact Fluor.	64°C	-	76°C	-
23 W Compact Fluor.	69°C	-	96°C	-
100 W Incandescent	105°C	-	105°C	-
200 W Incandescent	130°C	89°C	130°C	89°C
100 W Mixed	130°C	-	130°C	-
160 W Mixed	149°C	92°C	149°C	92°C

No need for high temperature cable for cable entry temperature less than +80°C.

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 61241-0; 61241-1
Product Standards	EN / IEC 60598-1
EMC Standards	-
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Lighting: Incandescent & HID Lighting

HBD Series: Bulkhead – Flameproof

Zone 1, 2, 21 & 22

Ex II 2 GD

ATEX / IEC

IP66 - IK08

Applications:

For illumination of:

- Stairways
- Small areas
- Emergency exit

Features:

HBD Series:

- Lamps (not supplied):
 - Incandescent 60 W to 100 W maximum
 - Compact fluorescent 15 W maximum
- E27 lampholder.
- Operates in any position.
- Fixing by two integrated brackets.
- For incandescent 60 W & 100 W a high temperature cable 106°C is required.
- Connection to lampholder via two terminals 2.5 mm².
- Internal earth two terminals 2.5 mm².
- External earth one 4 mm².
- 2 x M20 threaded entries through feed.
- Supplied with one blanking plug M20.

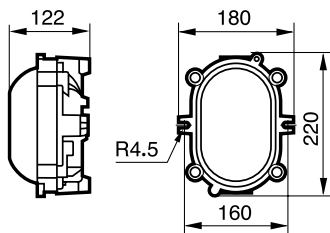
Standard Materials:

- Gray painted aluminum body and bezel.
- Sealed toughened lamp glass.

Standard Materials of Accessories:

- Zinc plated steel protective guard.

Dimensions (mm):

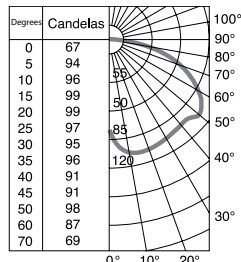


Photometric Data:

Polar curves for a 1000 lm output according to NF C 71-120

Luminaire symbol according to NF C 71-121

Incandescent: 0.68 H



Ordering Information:



Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
3	9	HBD0	094709	1

Accessories:

Type	Catalog Number	Old Catalog Number	Pack
Protective guard	HBDOPGZ	094770	1
Terminal block for through wiring 2 x 2.5 mm ² with high temperature sleeve	094784	094784	1

Compliances:

Hazardous Area	Gas	Dust
Certified Type	HBD0d	
Zones	1 – 2	21 – 22
Conforming to ATEX 94/9/CE	CE 0081 Ex II 2 G	CE 0081 Ex II 2 D
Symbol of Protection ATEX	Ex d IIB	Ex tD A21
Symbol of Protection IEC		
T Rating	See Table 1	N.A.
Surface Temperature	N.A.	See Table 2
Ambient Temperature	-20°C to +40°C	
CE Declaration of Conformity	50234	
ATEX Certificate	LCIE 02 ATEX 6162	
IEC Certificate	LCIE Ex 02.013	
Other Certifications	GOST	
Index of Protection (solid & liquid)	IP66	
Impact Resistance (shock)	IK08	
Internal Volume	> 2 dm ³ (2 liters)	

Table 1: Gas

Power and Type	Temperature class for Ta = +40°C	T° at cable input for Ta = +40°C
7 W Compact Fluor.	T6	–
11 W Compact Fluor.		–
15 W Compact Fluor.		–
60 W Incandescent	T4	106°C
100 W Incandescent		106°C

Table 2: Dust

Power and Type	Temperature class for Ta = +40°C	T° at cable input for Ta = +40°C
7 W Compact Fluor.	76°C	–
11 W Compact Fluor.		–
15 W Compact Fluor.		–
60 W Incandescent	119°C	106°C
100 W Incandescent		106°C

No need for high temperature cable for cable entry temperature less than +80°C.

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 61241-0; 61241-1
Product Standards	EN / IEC 60598-1
EMC Standards	–
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Lighting: Incandescent & HID Lighting
HBDC Series: Cylindrical Bulkhead – Flameproof



70 W Sodium Version



Compact Fluorescent Version



Compliance Data:

ATEX – IECEx

Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IECEx	CE
Ex d IIC	T6 to T4	Ex tD A21	T95°C to T130°C	IP66/68 (10 meters)

Lamp Type and Power:

Incandescent	Compact Fluorescent	Fluorescent	HP Sodium	
2x40 W	20 Max	8 W	70 W	

Operating Temperature:

-20°C to +55°C
-40°C to +50°C (70 W HP Sodium)

Lighting: Incandescent & HID Lighting

HBDC Series: Cylindrical Bulkhead – Flameproof

Zone 1, 2, 21 & 22

Ex II 2 GD

ATEX / IEC

IP66/68 (10M) - IK08

Applications:

- For illumination of:
- Stairways
 - Small areas
 - Emergency exit

Features:

- For lamps:
 - 70 W high pressure sodium (ovoid type E27 lampholder)
 - 18/20 W compact fluorescent lamp (E27 lampholder)
 - 2x40 W incandescent lamp (E27 lampholder)
 - 8 W fluorescent bulb (G5 lampholder) (lamp supplied)
- Lamps are not supplied except for 8 W fluorescent bulb.
- HPS version: compensated power supply 230/240 V 50 Hz (+/-10%) with power factor 0.9.
- Connection to plug-in terminal block via 2x 3 terminals 2.5 mm².
- Operates in any position.
- Threaded access cover with O-ring seal.
- Two integrated mounting lugs.
- 1 external earth via 4 mm² bracket.
- 2 threaded cable entries.
- Supplied with 1 plug M20 (cable gland not supplied).

Standard Material of Fixtures:

- Zamak end cap and cover, anticorrosion treated and painted gray.
- Toughened glass sealed tube.

Standard Material of Accessories:

- Galvanized steel external reflector painted white.
- Zinc plated steel protective guard.
- Fixing accessories available in 316 stainless steel or zinc plated steel.
- Fall prevention fixing kit in stainless steel.

Catalog Number Logic

HBDC	X	X	XX	XXX
Series		Quantity of Lamps:		Voltage:
		1 = One Lamp		02A = 24 Vac 50/60 Hz
		2 = Two Lamp	Power:	02D = 24 Vdc
Lamp Type :			40 = 40 W (1)	04A = 48 Vac 50/60 Hz
I = Incandescent			18 = 18/20 W (2)	04D = 48 Vdc
F = Fluorescent			70 = 70 W (3)	11A = 110 Vac 50/60 Hz
L = High Pressure Sodium			08 = 8 W Fluorescent	11D = 110 Vdc
				24A = 230/240 Vac 50/60 Hz (4)
				24B = 230/240 Vac/Vdc 50/60 Hz












(1) Incandescent Lamp
 (2) Compact Fluorescent Lamp
 (3) High Pressure Sodium Lamp (HP)
 (4) 50 Hz only for the 70 W HPS Version

Ordering Information:

Lamp	Lampholder	Voltage	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Packing
2x40 W Inc (1)	E27	-	7.1	31	HBDCI240	094716	1
70 W HP Sodium (1)	E27	230/240 Vac 50 Hz	7.1	33	HBDCI17024A	094717	1
1x8 W Fluo	G5	24 Vdc	8.3	31	HBDCF10802D	094730	1
1x8 W Fluo	G5	48 Vdc	8.3	31	HBDCF10804D	094731	1
1x8 W Fluo	G5	110 Vdc	8.3	31	HBDCF10811D	094732	1
1x8 W Fluo	G5	230/240 Vac 50/60 Hz	8.3	31	HBDCF10824B	094733	1
		198/254 Vdc					
2x8 W Fluo	G5	230/240 Vac 50/60 Hz	8.3	31	HBDCF20824B	094734	1
		198/254 Vdc					
1x18/20 W Compact Fluo (1)	E27	-	7.1	33	HBDCF118	094718	1

(1) lamp not supplied

Accessories:

	Catalog Number	Old Catalog Number	Packing
 External reflector in galvanized steel (painted white) (not compatible with 70 W HPS version)	FDER1G	094866	1
 Protective guard in zinc plated steel	FDPG1Z	094872	1
 Protective guard in zinc plated steel for 70 W HPS version	FDPG5Z	094876	
 Quick one-hand fixing (Set of 2 brackets) in zinc plated steel	FDFBZ	094897	1
 Quick one-hand fixing (Set of 2 brackets) in 316 stainless steel	FDFBS	094889	1
 Fixing unit on flat surface (Set of 2 brackets) in zinc plated steel	FDSBZ	094898	1
 Fixing unit on flat surface (Set of 2 brackets) in 316 stainless steel	FDSBS	094890	1
 Fixing unit for 1 1/2 (Ø49 mm) or 1 1/4 (Ø42 mm) tube in zinc plated steel	FDHC49Z	094899	1
 Fixing unit for 1 1/2 (Ø49 mm) or 1 1/4 (Ø42 mm) tube in 316 stainless steel	FDHC49S	094892	1
 Fixing unit for 2 (Ø60 mm) tube in zinc plated steel	FDHC60Z	094891	1
 Fixing unit for 2 (Ø60 mm) tube in 316 stainless steel	FDHC60S	094893	1
Fall prevention fixing kit (1,2 m chain) in stainless steel	FDSCS	093819	1

Lighting: Incandescent & HID Lighting

HBDC Series: Cylindrical Bulkhead – Flameproof

Zone 1, 2, 21 & 22

⊕ II 2 GD

ATEX / IEC

IP66/68 (10M) - IK08

Compliances:

Hazardous Area	Gas	Dust
Certified Type	FLd	
Zones	1 – 2	21 – 22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of protection ATEX	Ex d IIC	Ex tD A21
Symbol de protection IEC		
T Rating	See Table	NA
Surface Temperature	NA	See Table
Ambient Temperature	-20°C ≤ Ta ≤ +55°C -20°C ≤ Ta ≤ +55°C for 70W HPS	
CE Declaration of conformity	50203	
ATEX Certificate	LCIE 97 ATEX 6012	
IEC Certificate	IECEx LCI 04.0018	
Other Certifications	GOST	
Index of protection (solid & liquid)	IP 66 / 68 (10 m)	
Impact resistance (shock)	IK08	
Internal Volume	> 2 dm ³ (2 liters)	

Photometric Data:

Polar curves for a 1000 lm flux, according to NF C 71-120 Luminaire symbol according to NF C 71-121

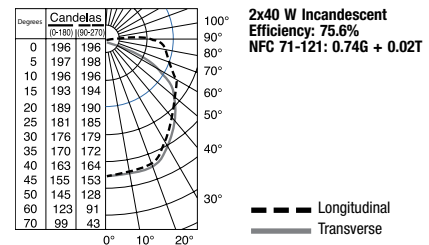
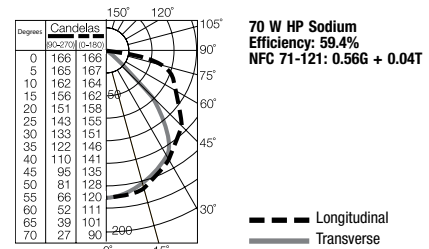


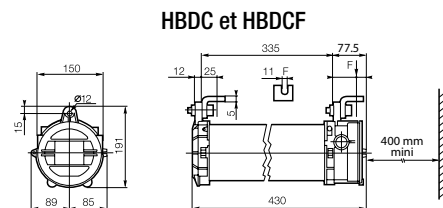
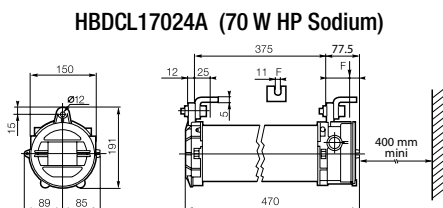
Table:

Versions	Dust		Gas			
	Surface Temperature		T rating			
	Without External Reflector	With External Reflector	Without External Reflector		With External Reflector	
			Ta=+40°C	Ta=+55°C	Ta=+40°C	Ta=+55°C
Incandescent lamp (2x40 W)	95°C	95°C	T5	T5	T5	T5
Compact Fluorescent lamp (20 W max)	95°C	130°C	T6	T5	T5	T4
Fluorescent (8 W - G5 lampholder)	95°C	130°C	T6	T5	T5	T4
High Pressure Sodium Lamp (70 W ovoid)	122°C	-	T4 for Ta = +50°C		-	-

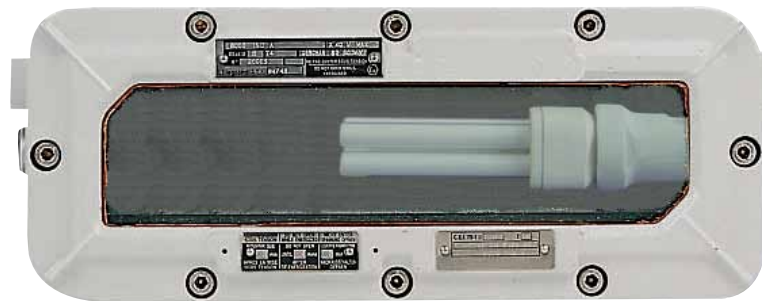
Standards:

Ex Standards	EN / IEC 60079-0 ; 60079-1 ; 61241-0 ; 61241-1
Product Standards	EN / IEC 60598-1
EMC Standards	/
Other Standards	EN / IEC 60529 (IP) ; 62262 (IK)

Dimensions (mm):



Lighting: Incandescent & HID Lighting
HBDA Series: Rectangular Bulkhead – Flameproof



Compact Fluorescent Version

Compliance Data:



ATEX – IEC:

Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IEC	CE
Ex d IIB+H2	T6 Fluorescent or T4 Incandescent	Ex tD A21	T85°C or T135°C	IP66 – IK09

Lamp Type and Power:

Compact Fluorescent	Incandescent	
1 x 18 / 20 W	2 x 40 W	

Operating Temperature:

-20°C to +40°C

Lighting: Incandescent & HID Lighting

HBDA Series: Rectangular Bulkhead – Flameproof

Zone 1 & 2 - 21 & 22

II 2 GD

ATEX / IEC

IP66 - IK09

LIGHTING

Applications:

For illumination of:

- Stairways
- Small areas
- Emergency exit

Features:

- Lamps (not supplied):
 - Incandescent 2 x 40 W
 - Compact fluorescent 1 x 18 / 20 W
- E27 lampholder.
- Operates in any position.

- Fixing by 2 brackets.
- Connection on two terminals 1 x 4 mm².
- Internal earth 1 x 4 mm².
- External earth 1 x 4 mm².
- Two M20 threaded entries.
Supplied with one aluminum blanking plug.

Standard Materials of Fixtures:

- Gray painted cast aluminum body.
- Sealed toughened lamp glass.



Compact Fluorescent Version

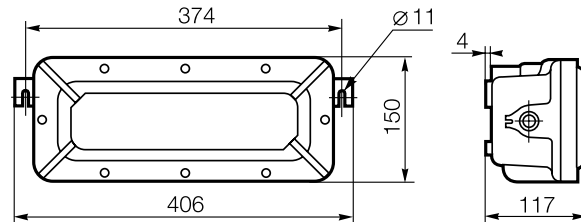
Ordering Information:

Lamp (not supplied)	Cable Entries	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
1 x 18/20 W Compact Fluorescent	M20	5.7	9	HBDAF118	094749	1
2 x 40 W Incandescent	M20	5.7	9	HBDAI240	094748	1

Compliances:

Hazardous Area	Gas	Dust
Certified Type	BRI40	
Zones	1 – 2	21 – 22
Conforming to ATEX 94/9/CE	CE 0081 II 2 G	CE 0081 II 2 D
Symbol of Protection ATEX	Ex d IIB+H2	Ex td A21
Symbol of Protection IEC		
T Rating	T4 Incandescent T6 Compact Fluor.	N.A.
Surface Temperature	N.A.	T135°C Incandescent T85°C Compact Fluor.
Ambient Temperature	-20°C to +40°C	
CE Declaration of Conformity	50252	
ATEX Certificate	LCIE 03 ATEX 6098X	
IEC Certificate	LCIE Ex 03.009X	
Other Certifications	–	
Index of Protection (solid & liquid)	IP 66	
Impact Resistance (shock)	IK09	
Internal Volume	> 2 dm ³ (2 liters)	

Dimensions (mm):

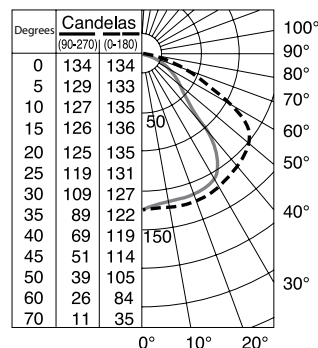


Photometric Data:

Polar curves for a 1000 lm output according to NF C 71-120

Luminaire symbol according to NF C 71-121

--- Longitudinal
— Transverse



Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 61241-0; 61241-1
Product Standards	EN / IEC 60598-1
EMC Standards	–
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Lighting: Incandescent & HID Lighting
HRD Series: Tank Inspection Lights – Flameproof



IIB Version



IIC Version (50 W)



IIC Version (20 W)



IIB Version Fitted with
 DN Model Sightglass Fitting

Compliances:

ATEX - IEC:



Zone 1&2 – 21&22	II 2 GD	ATEX	IEC	CE
Ex d IIB or Ex de IIC	T3 or T4	Ex tD A21	T130°C to T200°C	IP65 or IP66

Electrical Data:

Power		Frequency	
20 W to 50 W Halogen	40 W to 100 W Incandescent	50/60 Hz	

Operating Temperature:

-40°C to +40°C (IIB version)
-20°C to +40°C (IIC version)

Lighting: Incandescent & HID Lighting

HRD Series: Tank Inspection Lights – Flameproof

Zone 1 & 2 - 21 & 22

⊕ II 2 GD

ATEX / IEC

IP65 or IP66

LIGHTING

Applications:

- Designed to illuminate the internals of boilers, tanks, bunkers, silos, mixers, separators, pipelines and other vessels or reactors that are normally closed.
- For use in hazardous areas where ignitable vapors, gases or highly combustible dusts are present.
- For installation in chemical and petrochemical plants, refineries and other process industries.

Features:

Type IIB version:

- 40 W to 100 W incandescent or 50 W halogen lamp (lamp not supplied).
- Internal aluminum reflector.
- Operates in any position.
- E27 lampholder.
- Terminals: 2.5 mm².
- Internal and external earth: 2.5 mm².
- High temperature cable to be used.
- Fixing by three integrated lugs.
- One M20 threaded cable entry.

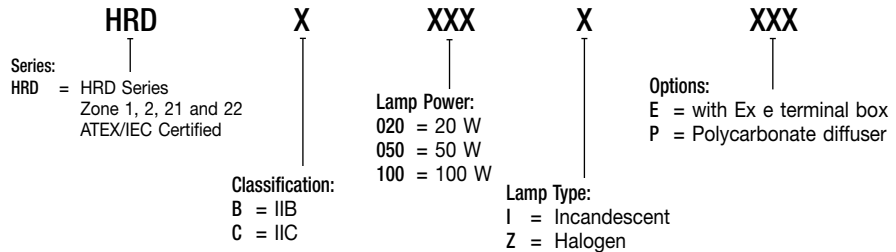
Type IIC version:

- 20 W to 50 W halogen lamp (lamp supplied).
- Internal aluminum reflector.
- Operates in any position.
- G4 lampholder for 20 W and BA 15d for 50 W.
- Power supply: 230 V 50/60 Hz.
- Fitted with transformer 230/12 V for 12 V halogen lamp.
- Terminals: 2.5 mm² terminals.
- Internal earth: 2.5 mm².
- External earth: 4 mm².
- Supplied with a set of rocker hinges for mounting with DN 50 to DN 150 sightglass fittings (according to DIN 28 120).
- One M20 threaded cable entry (via increased safety "e" box).

Standard Materials:

- Gray painted marine grade aluminum alloy body and bezel.
- Toughened sealed lamp glass.
- Internal aluminum reflector.

Catalog Number Logic:



Ordering Information:

Description	Type	Weight kg	Volume (dm ³)	Catalog Number	Old Catalog Number
40 W to 100 W incandescent or 50 W halogen (1)	IIB	2.9	8.1	HRDB100I	0947 47
20 W halogen (2) 230 V 50/60 Hz	IIC	2.3	3.0	HRDC020ZE	0947 40
50 W halogen (2) 230 V 50/60 Hz	IIC	4.0	3.6	HRDC050ZE	0947 41

(1) Can also be used with compact fluorescent lamp.

(2) Lamp supplied.

Compliances: IIB version

Hazardous Area	Gas	Dust
Certified Type	HRCd	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of protection ATEX	Ex d IIB	Ex tD A21
Symbol of protection IEC		
T Rating	T4 to T3 (see table 1)	N.A.
Surface Temperature	N.A.	T130°C to T195°C (see table 1)
Ambient Temperature	-40°C to +40°C	
CE Declaration of Conformity	50241	
ATEX Certificate	LCIE 02 ATEX 6232	
IEC Certificate	LCIE Ex 02.028	
Other Certifications	–	
Index of protection (solid & liquid)	IP66	
Impact resistance (shock)	IK08	
Internal Volume	< 2 dm ³ (2 liters)	

Table 1

Catalog Number	Version	Power and Source	Ambient Temperature = +40°C		
			T Rating	Gas	Dust
				Cable Temperature	Surface Temperature
HRDB100I (lamp not supplied)	IIB	40 W Incandescent	T4	N.A.	+130°C
		60 W Incandescent	T3	+87°C	+137°C
		100 W Incandescent	T3	+107°C	+195°C
		50 W Halogen	T3	+82°C	+149°C

N.A.: Not Applicable, no need for high temperature cable for cable entry temperature less than +80°C.

Lighting: Incandescent & HID Lighting

HRD Series: Tank Inspection Lights – Flameproof

Zone 1 & 2 - 21 & 22

II 2 GD

ATEX / IEC

IP65 or IP66

Compliances - Continued:

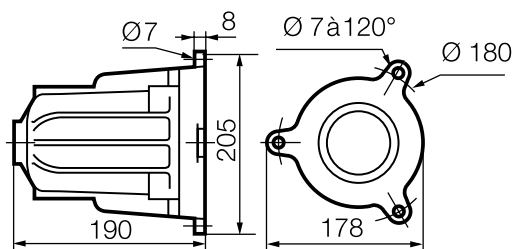
IIC version

Hazardous Area	Gas	Dust
Certified Type	HRC 20WH (20W) HRC 50 (50W)	
Zones	1-2	21-22
Conforming to ATEX 94/9/CE	CE 0081 II 2 G	CE 0081 II 2 D
Symbol of protection ATEX	Ex de IIC	Ex td A21
Symbol of protection IEC		
T Rating	T4 (20W) T3 (50W)	N.A.
Surface Temperature	N.A.	T130°C (20W) T195°C (50W)
Ambient Temperature	-20°C to +40°C	
CE Declaration of Conformity	50260 (20W) 50661 (50W)	
ATEX Certificate	LCIE 03 ATEX 6110 (20W) LCIE 03 ATEX 6109 (50W)	
IEC Certificate	N.A.	
Other Certifications	-	
Index of protection (solid & liquid)	IP65	
Impact resistance (shock)	-	

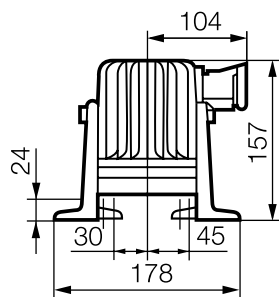
Standards:

Ex standards	EN / IEC 60079-0; 60079-1; 60079-7; 61241-0; 61241-1
Product standards	EN / IEC 60598-1
EMC standards	EN / IEC 55015; 61547
Other standards	EN / IEC 60529 (IP); 62262 (IK)

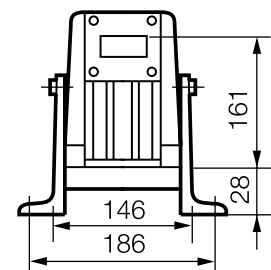
Dimensions (mm):



HRDB100I



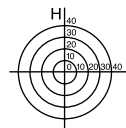
HRDC020ZE



HRDC050ZE

Photometric Data:

IIC versions: Isolux curve



		20 W Version		Illuminance E (lux)				
Height (m)	Position	Distance (cm)						
			0	10	20	30	40	
1	L		3000	1000	125	-	-	
	H		3000	900	75	-	-	
2	L		1150	750	300	100	50	
	H		1150	750	300	100	50	

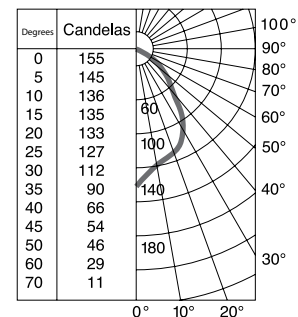
		50 W Version		Illuminance E (lux)				
Height (m)	Position	Distance (cm)						
			0	10	20	30	40	
1	L		12000	2300	375	50	-	
	H		12000	2700	250	50	-	
2	L		2550	1550	600	200	-	
	H		2550	1800	800	200	-	

IIB versions:

Polar curves for a lumen output of 1000 lm flux,
according to NF C 71-120

Luminaire symbol as per NF C 71-121

100 W Incandescent



Description	Page
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TCH Series	94-96
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Safety Flashlights – Increased Safety

TCH Series



TCH1



TCH2

HLD Series	97-98
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Handlamp – Flameproof

HLD Series



PJ Series	99-100
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Portable Floodlight – Flameproof

PJ Series



PJ7002B

Lighting: Portable Lighting
TCH Series: Safety Flashlights – Increased Safety



TCH1 (Single Lens)



TCH2 (Dual Lens)



Compliances:



ATEX - IEC:

Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IEC	CE
Ex eib IIC	T4	Ex tD A21	T95°C (TCH1) T130°C (TCH2)	IP66 (TCH1) IP66/68 (TCH2)

Operating Temperature:

-20°C to +40°C (TCH1)				
-20°C to +55°C (TCH2)				

Lighting: Portable Lighting

TCH Series: Safety Flashlights – Increased Safety

Zone 1 & 2 - 21 & 22

II 2 GD

ATEX / IEC

IP66 (TCH1) IP66/68 (TCH2)

LIGHTING

Applications:

- To provide maintenance staff with task specific portable lighting in Zone 1 hazardous areas.
- Ideal for persons requiring task specific portable lighting in refineries, oil and gas process and chemical plants.

Features:

Type TCH1:

- Luminescent switch facilitates locating flashlight in dark.
- Can be used to transmit a Morse code.
- Halogen version provides twice the lumen output of incandescent lamps.
- Hook for hands free operation.
- Uses R20 or LR20 batteries (not included).
- Supplied with 1 lamp.

Type TCH2:

- Dual optics (one at the end and one on the side) permitting:
 - Focused beam for safe movement.
 - Wide angle side beam for task specific focused lighting.
- Ergonomic design permits easy manipulation: User can select one of the two beams with one hand.
- Two beams can be switched on separately and not simultaneously.
- Should one lamp fail, the second lamp will still provide illumination.
- Flashlight is stable when placed upright on a horizontal surface.
- Pocket clip allows for hands free work.
- Luminescent ring allows easy locating of flashlight in dark.
- Suspension hook for hands free use.
- Uses 2 R20 or LR20 batteries (not included).
- Supplied with one halogen lamp for main beam and one incandescent lamp for side beam.
- Supplied with one special opening tool.

Material:

Type TCH1:

- Housing made from shockproof and antistatic polyamide.
- Polished internal reflector.
- Polycarbonate lens.
- Stainless steel hardware.
- Luminescent switch.

Type TCH2:

- Black polycarbonate housing.
- Polished internal reflector.
- Polycarbonate lens.
- Stainless steel hardware.
- Luminescent ring.



TCH1



TCH2

Ordering Information:

Number of Lamps	Type of Lamps (included)	Number of Battery Cells (not included)	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
1	Incandescent 2.5 V – 0.3 A	2	0.4	3.4	TCH12C	095102	2
1	Incandescent 3.7 V – 0.3 A	3	0.4	3.4	TCH13C	095103	2
1	Halogen 2.8 V – 0.5 A	2	0.4	3.4	TCH12H	095105	2
2	Halogen 2.8 V – 0.5 A and Incandescent 2.5 V – 0.3 A	2	0.4	1.9	TCH22M	095100	1

Lighting: Portable Lighting

TCH Series: Safety Flashlights – Increased Safety

Zone 1 & 2 - 21 & 22
 II 2 GD
 ATEX / IEC
 IP66 (TCH1) IP66/68 (TCH2)

Spare Lamps for Replacement (Lamp Holder P13, 5S):

Type of lamp		Catalog Number	Old Catalog Number	Pack
Incandescent (PR6)	2.5 V – 0.3 A	TCHL25C	095236	10
Incandescent (PR6)	3.7 V – 0.3 A	TCHL37C	095235	10
Halogen (HPR01)	2.8 V – 0.5 A	TCHL28H	095239	10

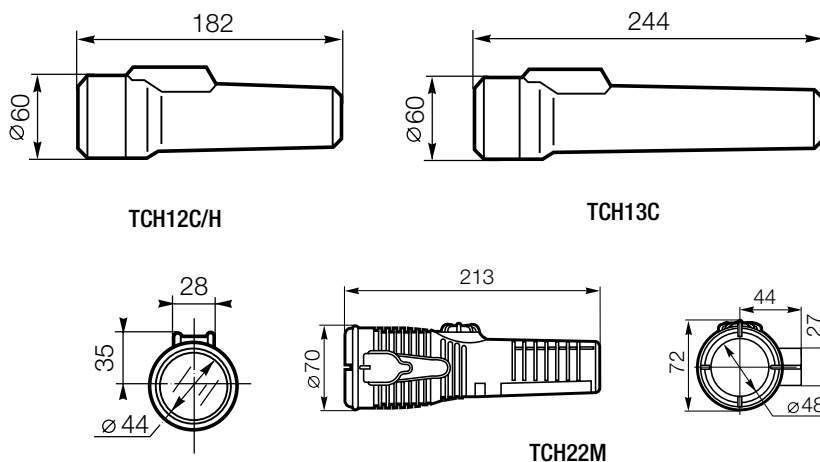
Compliances:

Hazardous Area	Gas		Dust	
	TCH1	TCH2	TCH1	TCH2
Certified Type	1–2		21–22	
Zones	CE 0081 II 2 G		CE 0081 II 2 D	
Conforming to ATEX 94/9/CE	Ex eib IIC		Ex tD A21	
Symbol of Protection ATEX				
Symbol of Protection IEC				
T Rating	T4	See Table	N.A.	
Surface Temperature	N.A.		95°C	130°C
Ambient Temperature	-20°C ≤ Ta ≤ +40°C	-20°C ≤ Ta ≤ +55°C	-20°C ≤ Ta ≤ +40°C	-20°C ≤ Ta ≤ +55°C
CE Declaration of Conformity	50259	50238	50259	50238
ATEX Certificate	LCIE 03 ATEX 6064	LCIE 02 ATEX 6229	LCIE 03 ATEX 6064	LCIE 02 ATEX 6229
IEC Certificate	LCIE Ex 03.010	LCIE Ex 02.024	LCIE Ex 03.010	LCIE Ex 02.024
Other Certifications	–	–	–	–
Ingress Protection (solid and liquid)	IP66	IP66/68 (25m)	IP66	IP66/68 (25m)

Standards:

Ex Standards	EN / IEC 60079-0; 60079-7; 60079-11; 61241-0; 61241-1
Product Standards	EN / IEC 60598-1
Other Standards	EN / IEC 60529 (IP)

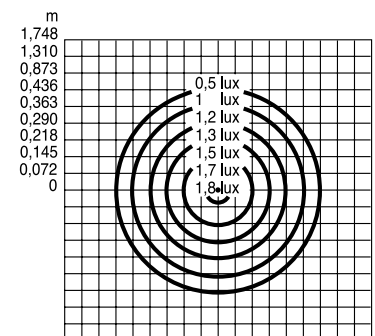
Dimensions (mm):



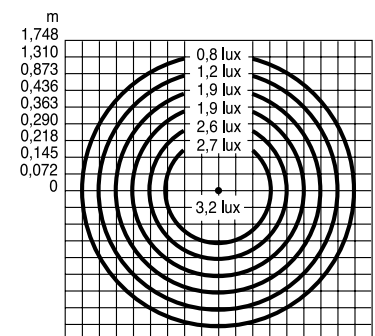
T Rating Table

Type of Lamp	For -20°C ≤ Ta ≤ +40°C	For +40°C ≤ Ta ≤ +55°C
Incandescent PR6	T4	T4
Krypton PR102	T4	T4
Halogen HPR52	T4	T3
Halogen HPR01	T4	T4

Photometric Data:



Catalog Number TCH12C (at 25 meters)
Incandescent



Catalog Number TCH13C (at 25 meters)
Incandescent

Lighting: Portable Lighting
HLD Series: Handlamp – Flameproof



Compliance Data:

ATEX - IEC:



Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IEC	CE
Ex d IIC	T5-T4-T3	Ex tD A21	T110°C to T138°C	IP66

Electrical Data:

Voltage	Incandescent Lamp	Halogen Lamp	Frequency	
12-24 V	75 W Maximum	55 W - 70 W	50/60 Hz Vac/Vdc	

Operating Temperature:

-20°C to +55°C

Lighting: Portable Lighting

HLD Series: Handlamp – Flameproof

Zone 1 & 2 - 21 & 22

⊕ II 2 GD

ATEX / IEC

IP66

Applications:

- To provide maintenance staff with task specific portable lighting in Zone 1 hazardous locations.
- Ideal for persons requiring task specific portable lighting in refineries, oil and gas process and chemical plants.

Features:

- To be supplied with SELV (Service Extra Low Voltage) 24 Vac or 30 Vdc.
- 75 W maximum for incandescent lamp.
- 70 W maximum for halogen lamp.
- E27 lamp holder for incandescent lamp (not supplied).
- PK22S lamp holder for H3 lamp (supplied).
- Connection via two terminals 1 x 2.5 mm².
- One M20 threaded entry.
- Protective guard.
- Fitted with suspension hook.

Standard Material of Fixtures:

- Gray painted aluminum alloy body and bezel.
- Sealed borosilicate lamp glass.
- White zinc plated steel protective guard.

Ordering Information:

Power and Voltage	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
75 W max. for incandescent lamp	2.8	13	HLD7502B	094792
55 W halogen 12 Vac/Vdc*	2.8	13	HLD5501B	–
70 W halogen 24Vac/Vdc*	2.8	13	HLD7002B	–

(*) Lamp supplied

Compliances:

Hazardous Area	Gas	Dust
Certified Type	Bld	
Zones	1-2	21-22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex d IIC	Ex td A21
Symbol of Protection IEC		
T rating	T3 to T5 (see table 1)	N.A.
Surface Temperature	N.A.	T110°C to T138°C (see table 1)
Ambient Temperature	-20°C to +55°C	
CE Declaration of Conformity	50240	
ATEX Certificate	LCIE 02 ATEX 6164	
IEC Certificate	LCIE Ex 02.015	
Other Certificates	–	
Index of Protection (solid and liquid)	IP66	
Impact resistance (shock)	–	
Internal Volume	< 2 dm ³ (2 liters)	

Table 1:

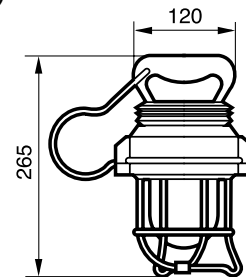
Type	Ambient T°	Gas				Surface Temperature
		Lamp glass facing up		Lamp glass facing down		
		Ta = +40°C	Ta = +55°C	Ta = +40°C	Ta = +55°C	
40 W Incandescent	T rating	T5	T4	T5	T4	110°C
	Cable T°	56°C	71°C	66°C	81°C	N.A.
60 W Incandescent	T Rating	T4	T4	T4	T4	130°C
	Cable T°	61°C	76°C	73°C	88°C	N.A.
75 W Incandescent	T Rating	T4	T3	T4	T4	138°C
	Cable T°	67°C	82°C	79°C	94°C	N.A.
55 W Halogen	T Rating	T4	T4	T4	T4	122°C
	Cable T°	67°C	82°C	79°C	94°C	N.A.
70 W Halogen	T Rating	T4	T4	T4	T4	122°C
	Cable T°	67°C	82°C	79°C	94°C	N.A.

Cable temperature less than +80°C, no need for high temperature cable.

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 61241-0; 61241-1
Product Standards	EN / IEC 60598-1
EMC Standards	–
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

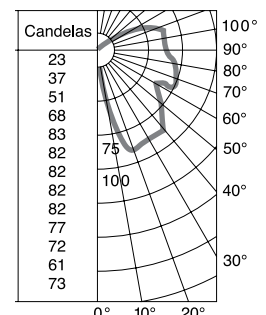
Dimensions (mm):



Photometric Data:

Polar curves for a 1000 lm output, according to NF C 71-120

Luminaire symbol according to NF C 71-121



Lighting: Portable Lighting

PJ Series: Portable Floodlight – Flameproof



PJ7002B

Compliance Data:

ATEX - IEC:



Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IEC	CE
Ex d IIC	T4-T3	Ex tD A21	T120°C to T142°C	IP66 / IK10

Electrical Data:

Power	55 W Halogen	70 W Halogen		
Voltage	12 Vac/Vdc	24 Vac/Vdc	110 Vac 50/60 Hz	230 Vac 50/60 Hz

Operating Temperature:

-40°C to +55°C

Lighting: Portable Lighting

PJ Series: Portable Floodlight – Flameproof

Zone 1 & 2 - 21 & 22

⊕ II 2 GD

ATEX / IEC

IP66 - IK10

Applications:

- Typical applications include aircraft manufacturing and maintenance facilities, refineries, chemical and petrochemical plants and where the permanent mounting of a fixture is not practical.

- Internal earth connection 1 x 2.5 mm².
- External earth connection 1 x 4 mm².
- One M20 threaded rear entry.
- Operates in any position.
- Installed on cradle to allow horizontal and vertical adjustment.

Features:

- 55-70 W H3 halogen lamp.
- PK22S lamp holder.
- Connection via two terminals 1 x 2.5 mm².

Standard Material of Fixtures:

- Gray painted marine grade aluminum alloy body and bezel.
- Sealed toughened lamp glass.
- Plastic covering on carrying handle.

Catalog Number Logic:

PJ
↑
Series

XX
↑
Lamp Type:
55 = 55 W Halogen
70 = 70 W Halogen

XXX
↑
Supply Voltage:
01B = 12 Vac/Vdc
02B = 24 Vac/Vdc
11A = 110 Vac 50/60 Hz
23A = 230 Vac 50/60 Hz

Ordering Information:

Power and Voltage	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
55 W Halogen 12 Vac/Vdc	8	27	PJ5501B	095149
70 W Halogen 24 Vac/Vdc	8	27	PJ7002B	095150
70 W Halogen 110 V 50/60 Hz (2)	8	27	PJ7011A	095152
70 W Halogen 230 V 50/60 Hz (1)	8	27	PJ7023A	095153

(1) With transformer 230/24 V (+6% -10%) (2) With transformer 110/24 V (+6% -10%)

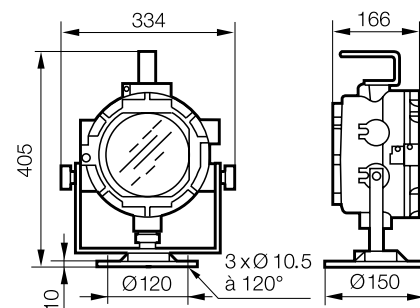
Compliances:

Hazardous Area	Gas	Dust
Certified Type	PJ70	
Zones	1-2	21-22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of protection ATEX	Ex d IIC	Ex tD A21
Symbol of protection IEC		
T rating	T3 to T4 (see table 1)	N.A.
Surface Temperature	N.A.	T120°C to T142°C (see table 1)
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50239	
ATEX Certificate	LCIE 02 ATEX 6227	
IEC Certificate	LCIE Ex 02.020	
Other Certificates	-	
Index of Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	
Internal Volume	> 2 dm ³ (2 liters)	

Table 1:

Power	Position	Gas			Dust
		Temperature Rating			
		Ta = +40°C	Ta = +50°C	Ta = +55°C	Surface Temp at Ta = +55°C
55/70 W Halogen		T4	T3	T3	142°C
		T4	T4	T3	135°C
		T4	T4	T4	120°C

Dimensions (mm):





Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 61241-0; 61241-1
Product Standards	EN / IEC 60598-1
EMC Standards	EN / IEC 55015; 61547
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

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ATX Product Catalog

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Description	Page	
FDBAES Series Self-Contained Emergency Lighting Units with Self-Test System – Flameproof	102-106	FDBAES Series  Fluorescent Switched Version Incandescent Unswitched Version Fluorescent Unswitched Version
FDES Series Self-Contained Emergency Lighting Units – Flameproof	107-110	FDES Series  2 x 8 W Fluorescent Sustained
FNES Series Self-Contained Emergency Lighting with Self-Test System – Zone 2 - 21 & 22	111-113	FNES Series  1 x 8W Fluorescent Version with Labels
Signaling Labels Self-Adhesive Labels for Emergency Lighting Units	114-115	Self-Adhesive Labels  0949 10 0949 15 0949 19
ELS Series Self-Contained Emergency Lighting Unit	116-117	ELS Series 

Lighting: Emergency Lighting

FDBAES Series: Self-Contained Emergency Lighting Units with Self-Test System – Flameproof



Fluorescent Switched Version



Incandescent Unswitched Version



Fluorescent Unswitched Version

Compliances:

ATEX - IECEx:



Zone 1 & 2 – 21 & 22	ATEX	II 2 G / D	IECEx	CE
Ex d IIC	T6	Ex tD A21	T80°C	IP66/68 - IK08

Electrical Data:

Power & Lamp Type	Voltage	Frequency	Duration	
1 x 8 W Fluorescent 2 x 3 W Incandescent	230 Vac	50/60 Hz	1 hour	

Operating Temperature:

-40°C to +55°C (Refer to (1) on page 105)

Lighting: Emergency Lighting

FDBAES Series: Self-Contained Emergency Lighting Units with Self-Test System – Flameproof

Zone 1 & 2 - 21 & 22

II 2 GD

ATEX / IECEx

IP66/68 - IK08

LIGHTING

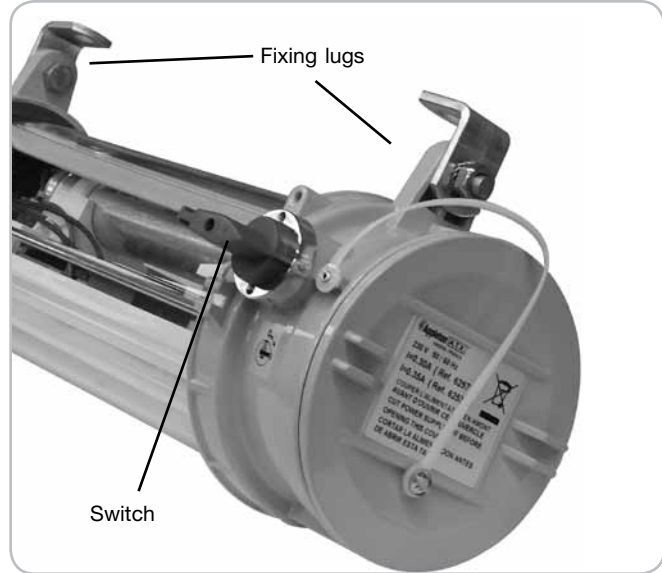
Applications:

- Provides adequate lighting and/or visual indication of access on exit routes during an evacuation in a hazardous environment.
- Can be installed in hazardous areas designated as Zone 1, 2, 21 and 22.
- Typical applications include oil refineries, petrochemical plants, pulp and paper mills.

Features:

All versions:

- Power supply 230 Vac 50/60 Hz.
 - 1 hour duration.
 - Threaded access cover with O-ring seal.
 - Can be maintained in hazardous areas as an internal switch cuts off battery supply automatically once the cover is unscrewed and opened.
 - Interchangeable flameproof battery pack.
 - 4.8 V - 4 Ah (Fluorescent version)
 - 3.6 V - 4 Ah (Incandescent version)
 - Padlockable switch is available on switched models which individually cuts off power supply and remote control.
 - Charge indicator by 4 nos yellow LEDs (life time over 10 years).
 - Operates in any position.
 - Non-maintained 8 W fluorescent or 2 x 3 W incandescent lamp versions (lamps supplied).
 - Connection to plug-in terminal block via 2 x 5 x 2.5 mm² terminals.
 - Supplied with two fixing lugs.
 - Automatic built-in self-test system (SATI) with memorization of tests indicated by LEDs.
 - Using a microprocessor and an internal clock, the unit will carry out automatic tests.
 - Weekly test: Lamp check during 6 seconds.
 - Quarterly test: Emergency operation and lamp check for 1 hour.
 - Can be remotely controlled and checked without switching the mains off with remote control unit from Legrand (Catalog Number 03901) or URA (Catalog Number 095448 and 095450) manufacturers.
 - The remote control unit installed in a safe area or inside a flameproof box allows manual ignition of all the units (max. 300 units) for visual inspection of their operation.
- Addressable versions (consult factory):
- Providing the regulatory control of the emergency lighting units and centralizing information coming from those units on a computerized management system.



- Operating without any special line, communication between units and the control system is realized via mains-borne signals on the remote control line.
- Capacity: one control system for 200 emergency lighting units.
- Max. capacity: 1000 emergency lighting units with boosters.

Standard Material of Fixtures:

- Anti-corrosive gray painted Zamak end caps and cover.
- Nitrile O-ring seal.
- Sealed toughened glass.

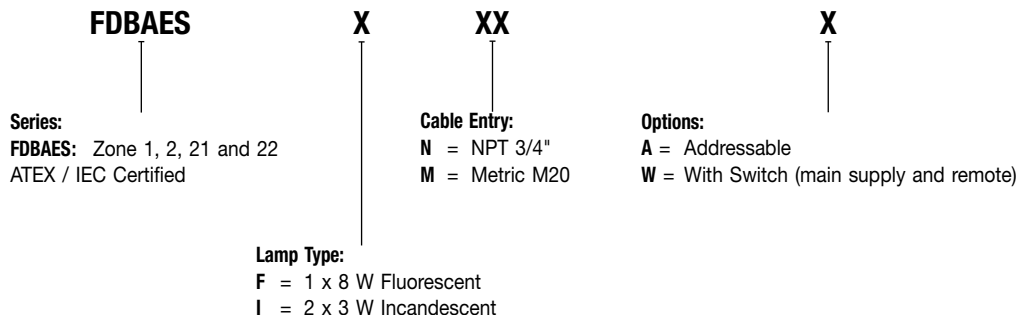
Standard Material of Accessories:

- Zinc plated steel or 316 stainless steel fixing brackets.
- White painted galvanized steel.
- Zinc plated steel guard.

Options:

- Addressable monitoring software, please consult factory.
- Low temperature application, please consult factory.

Catalog Number Logic:



Lighting: Emergency Lighting

FDBAES Series: Self-Contained Emergency Lighting Units with Self-Test System – Flameproof

Zone 1 & 2 - 21 & 22

Ex II 2 GD

ATEX / IECEx

IP66/68 - IK08

Ordering Information:

Unswitched Version – 1 hour duration – Non-maintained – Two threaded cable entries with one blanking plug

Type	Power & Lamp	Lumen Output	Cable Entries	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Space Lighting	1 x 8 W Fluorescent	415 lm	3/4" NPT M20	8.1	37.1	FDBAESFN	094959	1
						FDBAESFM	–	1
Escape Route Lighting	2 x 3 W Incandescent	63 lm	3/4" NPT M20	8.1	37.1	FDBAESIN	094966	1
						FDBAESIM	–	1

Switched Version – 1 hour duration – Non-maintained – One threaded cable entry

Type	Power & Lamp	Lumen Output	Cable Entries	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Space Lighting	1 x 8 W Fluorescent	415 lm	3/4" NPT M20	10	40.4	FDBAESFNW	094958	1
						FDBAESFMW	–	1
Escape Route Lighting	2 x 3 W Incandescent	63 lm	3/4" NPT M20	10	40.4	FDBAESINW	094965	1
						FDBAESIMW	–	1

Addressable & Unswitched Version – 1 hour duration – Non-maintained – Two threaded cable entries with one blanking plug

Type	Power & Lamp	Lumen Output	Cable Entries	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Space Lighting	1 x 8 W Fluorescent	415 lm	3/4" NPT M20	8.1	37.1	FDBAESFNA	094955	1
						FDBAESFMA	–	1
Escape Route Lighting	2 x 3 W Incandescent	63 lm	3/4" NPT M20	8.1	37.1	FDBAESINA	094967	1
						FDBAESIMA	–	1

Addressable & Switched Version – 1 hour duration – Non-maintained – One threaded cable entry

Type	Power & Lamp	Lumen Output	Cable Entries	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Space Lighting	1 x 8 W Fluorescent	415 lm	M20	10	40.4	FDBAESFMAW	–	1
Escape Route Lighting	2 x 3 W Incandescent	63 lm	M20	10	40.4	FDBAESIMAW	–	1

Lighting: Emergency Lighting

FDBAES Series: Self-Contained Emergency Lighting Units with Self-Test System – Flameproof

Zone 1 & 2 - 21 & 22








⊕ II 2 GD

ATEX / IECEx

IP66/68 - IK08

LIGHTING

Accessories:

Picture	Description	Catalog Number	Old Catalog Number
	Reflector White painted galvanized steel	FDER5G	094866
	Protective Guard Zinc plated steel	FDPG5Z	094876
	Fixing Brackets – set of two brackets for ease of surface installation Zinc plated steel 316 stainless steel	FDFBZ FDFBS	094897 094889
	Surface Mounting Brackets – set of two Zinc plated steel 316 stainless steel	FDSBZ FDSBS	094898 094890
	Half Clamps – set of two Zinc plated steel versions: 1-1/4" (dia. 42mm) to 1-1/2" (dia. 49mm) 2" (dia. 60mm)	FDHC49Z FDHC60Z	094899 094891
	316 stainless steel versions: 1-1/4" (dia. 42mm) to 1-1/2" (dia. 49mm) 2" (dia. 60mm)	FDHC49S FDHC60S	094892 094893
	Spare Lamps 8W fluorescent G5	LF008G5	094990
	3 W - 3.6 V - 1 A incandescent, BA9S	LI003BA9S	094995
	Fall Prevention Kit 1.20 m stainless steel chain	FDSCS	093819

Compliances:

Hazardous Area	Gas	Dust
Certification Type	FLd	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex d IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	T6	N.A.
Surface Temperature	N.A.	T80°C
Ambient Temperature	-40°C to +55°C (1)	
CE Declaration of Conformity	50203	
ATEX Certificate	LCIE 97 ATEX 6012	
IECEx Certificate	IECEx LCI 04.0018	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66/68	
Impact Resistance (shock)	IK08	
Internal Volume	> 2 dm ³ (2 liters)	

(1) Optimum operating temperature for battery is -5°C to +30°C

Standards:

Ex standards	EN / IEC 60079-0; 60079-1; 61241-0; 61241-1
Product standards	EN / IEC 60598-1; 60598-2-22 - NFC 71800; 71820
EMC standards	EN / IEC 55015; 61547
Other standards	EN / IEC 60529 (IP); 62262 (IK)

Lighting: Emergency Lighting

FDBAES Series: Self-Contained Emergency Lighting Units with Self-Test System – Flameproof

Zone 1 & 2 - 21 & 22

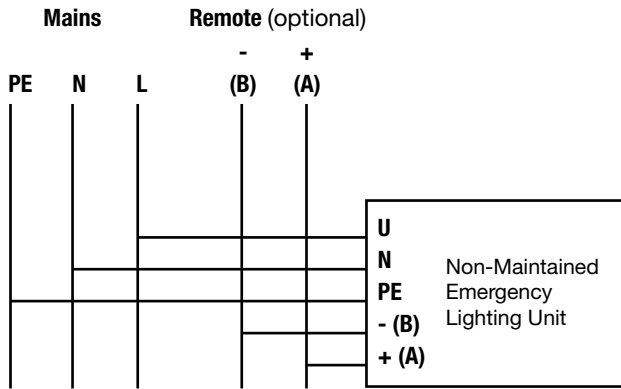
II 2 GD

ATEX / IECEx

IP66/68 - IK08

Technical Data:

Electrical Wiring Diagram:

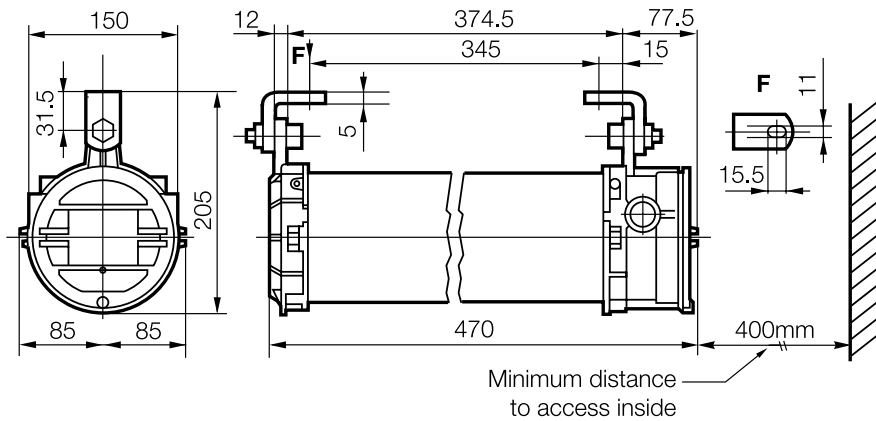


Emergency Function Diagram:

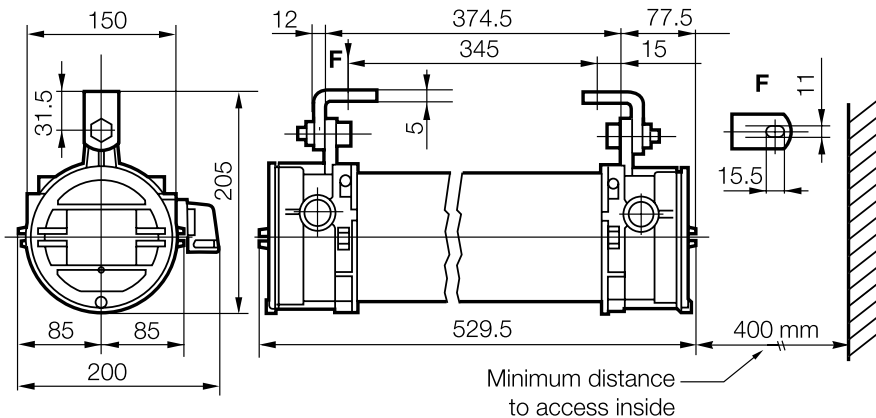
Mains status	Non-maintained	
	1 x 8 W Fluo.	2 x 3 W Inc.
Mains Switched ON		
Mains Switched OFF		

Dimensions (mm):

Unswitched Versions:



Switched Versions:



Lighting: Emergency Lighting

FDES Series: Self-Contained Emergency Lighting Units – Flameproof



2 x 8 W Fluorescent Sustained

Compliances:

ATEX - IECEx:



Zone 1 & 2 – 21 & 22	ATEX	II 2 G / D	IECEx	CE
Ex d IIC	T6	Ex tD A21	T80°C	IP66/68 – IK08

Electrical Data:

Power & Lamp Type	Voltage	Frequency	Duration	
8 W Fluorescent (1 or 2 lamps)	110 V to 240 Vac	50/60 Hz	3 hours	

Operating Temperature:

-40°C to +55°C (Refer to (1) on page 109)

Lighting: Emergency Lighting

FDES Series: Self-Contained Emergency Lighting Units – Flameproof

Zone 1 & 2 - 21 & 22

II 2 GD

ATEX / IECEx

IP66/68 - IK08

Applications:

- Provides adequate lighting and/or visual indication of access on exit routes during an emergency evacuation in a hazardous environment.
- Can be installed in hazardous areas designated as Zone 1, 2, 21 and 22.
- Typical applications include oil refineries, petrochemical plants, pulp and paper mills.

Features:

- Power supply from 110 to 240 Vac 50/60 Hz versions.
- 3-hour duration.
- Threaded access cover with O-ring seal.
- Operates in any position.
- 8 W Fluorescent (1 or 2 lamps supplied).
- Charge indicator by 1 red LED (life time over 10 years).
- Termination 3 or 4 x 2.5 mm² terminals.
- Supplied with two fixing lugs.

Standard Material of Fixtures:

- Anti-corrosive, gray painted Zamak end caps and cover.
- Nitrile O-ring seal.
- Sealed toughened glass.

Standard Material of Accessories:

- Zinc plated steel or 316 stainless steel fixing brackets.
- White painted galvanized steel.
- Zinc plated steel guard.



2 x 8 W Fluorescent Sustained

Catalog Number Logic:

FDES	X	XX	X	X
Series:	Number of Lamps:	Lamp Power (W):	Voltage:	Version:
Zone 1, 2, 21 and 22 ATEX / IEC Certified	1 2	0 8 = 8 W Fluorescent	1 = 110 Vac 50/60 Hz 2 = 127 Vac 50/60 Hz 3 = 230/240 Vac 50/60 Hz 4 = 230/240 Vac 50 Hz	N = Non-Maintained M = Maintained S = Sustained

Ordering Information:

3-hour duration – two M20 threaded cable entries with one M20 blanking plug

Type	Lumen Output	Voltage	Frequency	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
1 x 8 W Fluorescent Non-Maintained	230 lm	230/240 Vac	50/60 Hz	7.8	36	FDES1083N	094956	1
		127 Vac	50/60 Hz			FDES1082N	091957	1
		110 Vac	50/60 Hz			FDES1081N	091956	1
1 x 8 W Fluorescent Maintained	180 lm	230/240 Vac	50 Hz	7.8	36	FDES1084M	094961	1
		127 Vac	50/60 Hz			FDES1082M	091960	1
		110 Vac	50/60 Hz			FDES1081M	091961	1
2 x 8 W Fluorescent Sustained	230 lm	230/240 Vac	50 Hz	7.8	36	FDES2084S	094962	1

Lighting: Emergency Lighting

FDES Series: Self-Contained Emergency Lighting Units – Flameproof

Zone 1 & 2 - 21 & 22








⊕ II 2 GD

ATEX / IECEx

IP66/68 - IK08

LIGHTING

Accessories:

Picture	Description	Catalog Number	Old Catalog Number
	Reflector White painted galvanized steel	FDER1G	094868
	Protective Guard Zinc plated steel	FDPG1Z	094872
	Fixing Brackets: Set of two for ease of surface installation Zinc plated steel 316 stainless steel	FDFBZ FDFBS	094897 094889
	Surface Mounting Brackets: Set of two Zinc plated steel 316 stainless steel	FDSBZ FDSBS	094898 094890
	Half Clamps: Set of two Zinc plated steel versions: 1-1/4" (dia. 42mm) to 1-1/2" (dia. 49mm) 2" (dia. 60mm) 316 stainless steel versions: 1-1/4" (dia. 42mm) to 1-1/2" (dia. 49mm) 2" (dia. 60mm)	FDHC49Z FDHC60Z FDHC49S FDHC60S	094899 094891 094892 094893
	Spare Lamps 8 W fluorescent G5	LF008G5	094990
	Fall Prevention Kit 1.20 m stainless steel chain	FDSCS	093819

Compliances:

Hazardous Area	Gas	Dust
Certification Type	FLd	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex d IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	T6	N.A.
Surface Temperature	N.A.	T80°C
Ambient Temperature	-40°C to +55°C (1)	
CE Declaration of Conformity	50203	
ATEX Certificate	LCIE 97 ATEX 6012	
IECEx Certificate	IECEx LCI 04.0018	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66/68	
Impact Resistance (shock)	IK08	
Internal Volume	> 2 dm ³ (2 liters)	

(1) Optimum operating temperature for battery is -5°C to +30°C

Standards:

Ex standards	EN / IEC 60079-0; 60079-1; 61241-0; 61241-1
Product standards	EN / IEC 60598-1; 60598-2-22
EMC standards	EN / IEC 55015; 61547
Other standards	EN / IEC 60529 (IP); 62262 (IK)

Lighting: Emergency Lighting

FDES Series: Self-Contained Emergency Lighting Units – Flameproof

Zone 1 & 2 - 21 & 22

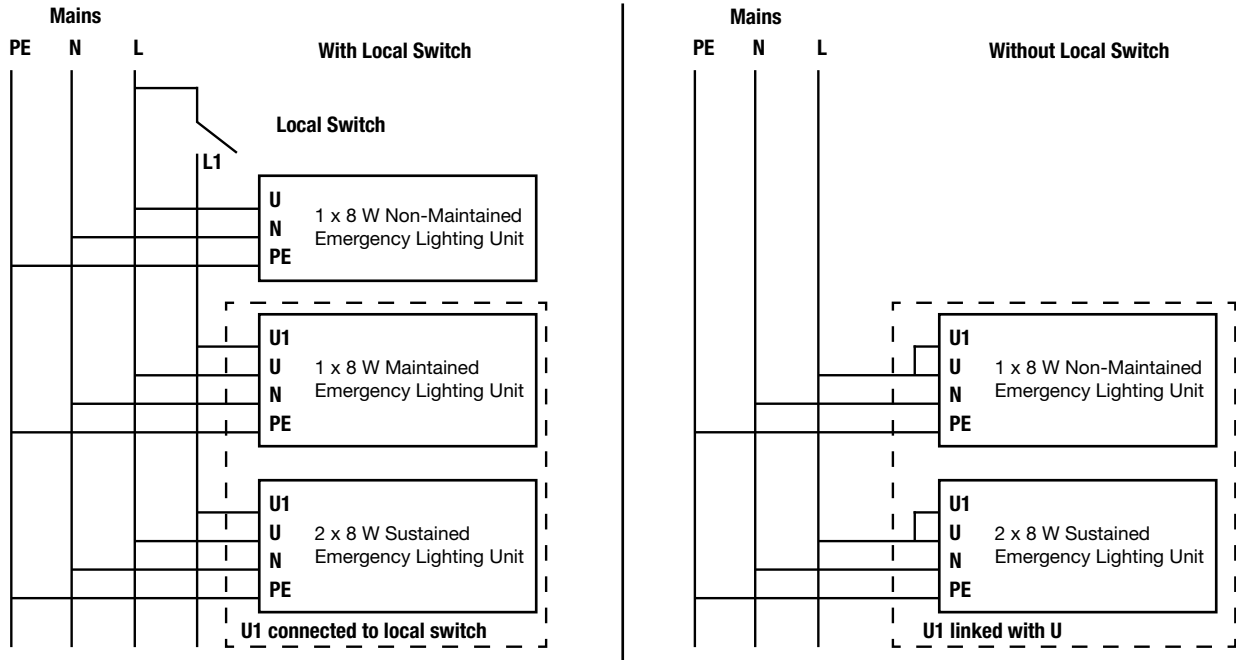
II 2 GD

ATEX / IECEx

IP66/68 - IK08

Technical Data:

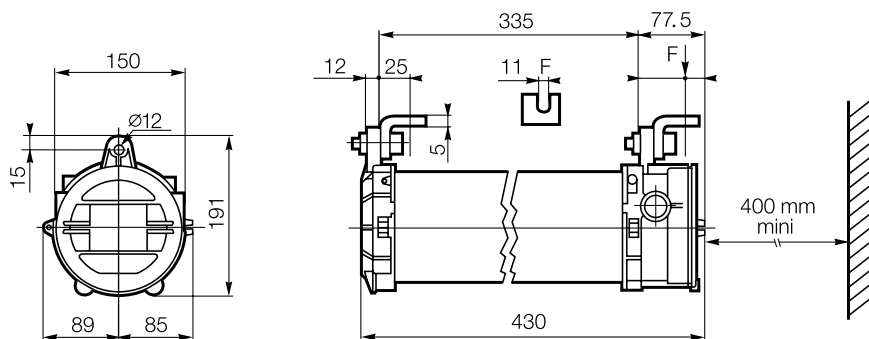
Electrical Wiring Diagram



Emergency Function Diagram:

Mains	1 x 8W Non-Maintained	1 x 8 W Maintained		2 x 8 W Sustained	
		Local Switch OFF or No Link	Local Switch ON or Link Present	Local Switch OFF or No Link	Local Switch ON or Link Present
Switched ON					
Switched OFF					

Dimensions (mm):



Lighting: Emergency Lighting

FNES Series: Self-Contained Emergency Lighting with Self-Test System – Zone 2 - 21 & 22



1 x 8 W Fluorescent Version with Labels

Compliance Data:

ATEX - IEC:



Zone 2 – 21 & 22	II 2 D and II 3 GD	ATEX	IECEX	CE
Ex nR II	T6	Ex tD A21	T75°C	IP66/67 – IK10

Electrical Data:

Power & Lamp Type	Voltage	Frequency	Duration	
1 x 8 W Fluorescent 2 x 3 W Incandescent	230 Vac	50/60 Hz	1 hour	

Operating Temperature:

-40°C to +55°C (Refer to page 113)

Lighting: Emergency Lighting

FNES Series: Self-Contained Emergency Lighting with Self-Test System – Zone 2 - 21 & 22

Zone 2 - 21 & 22

II 2 D and II 3 GD

ATEX / IECEx

IP66/67 - IK10

Applications:

- Provides adequate lighting and/or visual indication of access and exit routes during an evacuation in a hazardous environment.
- Can be installed in hazardous areas designated as Zone 2, 21 and 22.
- Typical applications include oil refineries, petrochemical plants, pulp, paper mills and silos.

Features:

- Power supply 230 Vac 50/60 Hz.
- 1 hour duration.
- Non-maintained.
- Operates in any position.
- 1 x 8 W fluorescent or 2 x 3 W incandescent lamp versions (lamps supplied).
- Open and close using an Allen key (size 10) or a 6 mm flat screwdriver.
- Connection to plug-in terminal block via 2 x 5 x 2.5 mm² terminals.
- Two M20 clearance holes supplied with one cable gland (dia. 6.5 to 14.5 mm), one blanking plug and two locknuts.
- Charge indicator by 4 nos yellow LEDs (lifetime over 10 years).
- Automatic built-in self-test system (SATI) with memorization of tests indicated by LEDs.

- Using a microprocessor and an internal clock, the unit will carry out automatic tests.
- Weekly test: Lamp check duration 6 seconds.
- Quarterly test: Emergency operation and lamp check for 1 hour.
- Can be remotely controlled and checked without switching the mains off with remote control unit from Legrand (Catalog Number 03901) or URA (Catalog Number 095448 and 095450) manufacturers.
- The remote control unit installed in a safe area or inside a flameproof box allows manual ignition of all the units (max. 300 units) for visual inspection of their operation.

Standard Material of Fixtures:

- Fiberglass reinforced polyester body.
- Polycarbonate diffuser hinged to body.
- Elastomer gasket.

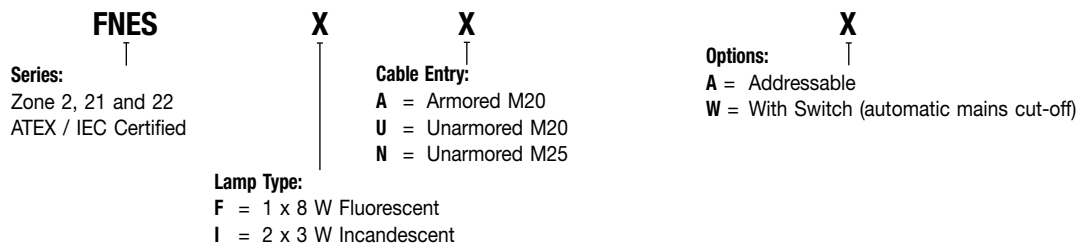
Standard Material of Accessories:

- Zinc plated steel, gray painted aluminum or 316 stainless steel fixing brackets.
- Polyamide cable gland and blanking plug.
- Nickel-plated brass locknut.

Options:

- Addressable versions.

Catalog Number Logic:





Ordering Information:

Unswitched Version – 1 hour duration - Non-maintained - Two M20 clearance entries

Type	Power & Lamp	Lumen Output	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Space Lighting	1 x 8W fluorescent	415 lm	7.2	32.3	FNESFU	096398	1
Escape Route Lighting	2 x 3W incandescent	63 lm	7.2	32.3	FNESIU	096397	1

Accessories:

Description	Catalog Number	Old Catalog Number
 Half Clamps Brackets - Set of Two 1-1/4" (dia. 42 mm) to 1-1/2" (dia. 49 mm) Zinc plated steel 316 stainless steel	FEHC49Z	096593
	FEHC49S	096793
2" (dia. 60 mm) Zinc plated steel 316 stainless steel	FEHC60Z	096593
	FEHC60S	096591
 M8 Ring Bolts - Set of Two Zinc plated steel	FERBM8Z	096594

Lighting: Emergency Lighting

FNES Series: Self-Contained Emergency Lighting with Self-Test System – Zone 2 - 21 & 22

Zone 2 - 21 & 22






⊕ II 2 D and II 3 GD

ATEX / IECEx

IP66/67 - IK10

LIGHTING

Accessories – Continued:

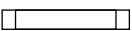
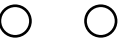
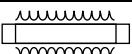
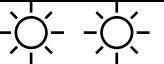
Description	Catalog Number	Old Catalog Number
 Hinged Brackets - Set of two brackets for adjusting luminaire when wall-mounted Aluminum (gray painted) 316 stainless steel	FEHBA	096598
	FEHBS	096574
 Brackets for Surface Mounting - Set of two Aluminum (gray painted) 316 stainless steel	FESBA	096597
	FESBS	096590
 Fixing Brackets - Set of two brackets for ease of surface installation Zinc plated steel 316 stainless steel	FEFBZ	096596
	FEFBS	096589
Spare Lamps  8 W fluorescent lamp G5  3 W incandescent, BA9S 3.6 V – 1 A	LF008G5	094990
	LI003BA9S	094995

Compliances:

Hazardous Area	Gas	Dust
Certification Type	FLn	
Zones	2	21–22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 3 G	CE 0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex nR II	Ex tD A21
Symbol of Protection IEC		
T Rating	T6	–
Surface Temperature	–	T75°C
Ambient Temperature	-40°C to +55°C (1)	
CE Declaration of Conformity	50212 (Zone 2 - 22) 50227 (Zone 21)	
ATEX Certificate	LCIE 03 ATEX 6072 (Zone 2 - 22) LCIE 02 ATEX 6067 (Zone 21)	
IECEx Certificate	IECEx LCI 04.0021 (Zone 2 - 22)	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66/67	
Impact Resistance (shock)	IK10	

(1) Optimum operating temperature for battery is -5°C to +30°C

Emergency Function Diagram:

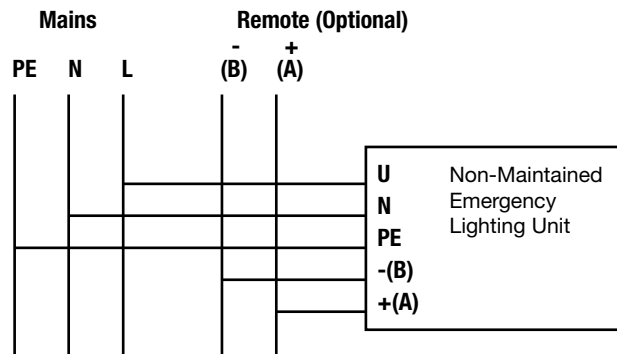
Mains Status	Non-maintained	
	1 x 8 W Fluorescent	2 x 3 W Incandescent
Mains Switched ON		
Mains Switched OFF		

Standards:

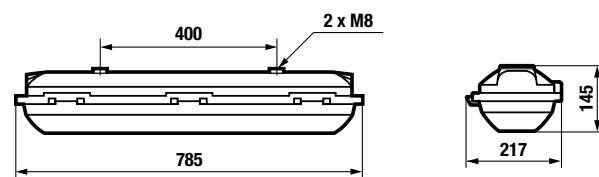
Ex standards	EN / IEC 60079-0; 60079-15; 61241-0; 61241-1
Product standards	EN / IEC 60598-1; 60598-2-22
EMC standards	EN / IEC 55015; 61547
Other standards	EN / IEC 60529 (IP); 62262 (IK)

Technical Data:

Electrical wiring diagram



Dimensions (mm):



Lighting: Emergency Lighting

Signaling Labels: Self-Adhesive Labels for Emergency Lighting Units



0949 05 (on tubular luminaire 0947 16)



0949 04 (on rectangular luminaire 0947 48)








Lighting: Emergency Lighting

Signaling Labels: Self-Adhesive Labels for Emergency Lighting Units

Self-Adhesive Labels for Emergency Lighting Units

- Green background
- Plastic coated

French:

	Length (mm)	Width (mm)	Catalog Number	Pack
	237	53	094904	10
	237	53	094905	10
	237	109	094906	10
	172 + 57	57	094907	10
	237	109	094908	5
	237	109	094909	5
	237	109	094910	5



English:

	Length (mm)	Width (mm)	Catalog Number	Pack
	230	45	094915	5
	230	90	094916	5
	230	45	094917	5



Spanish:

	Length (mm)	Width (mm)	Catalog Number	Pack
	237	109	094919	5
	175 + 57	57	094918	5

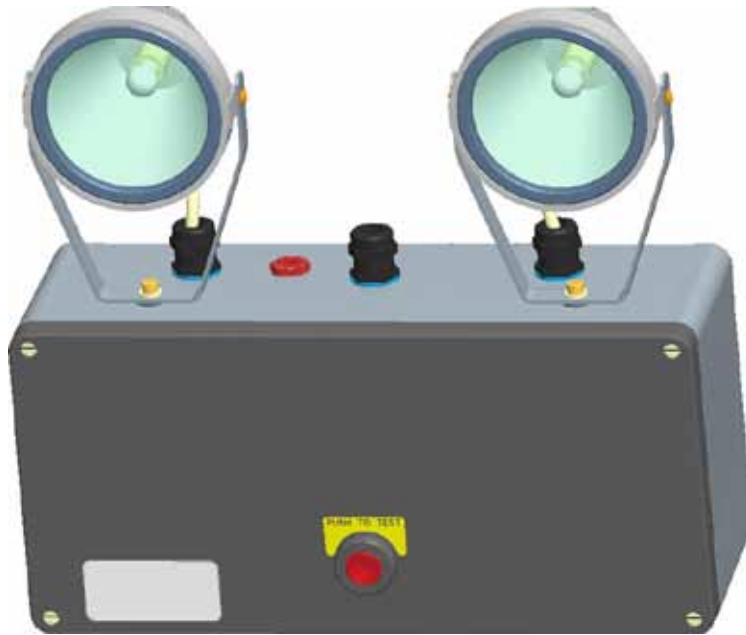
Conforming to Directive CEE 77-576:

	Length (mm)	Width (mm)	Catalog Number	Pack
	237	109	094911	5
	237	109	094912	5

Portuguese:

	Length (mm)	Width (mm)	Catalog Number	Pack
	237	109	094913	5
	175 + 57	57	094914	5

Lighting: Emergency Lighting
ELS Series: Self-Contained Emergency Lighting Unit



2 Lamp Version
ELS 2100712A

Compliance Data:

ATEX - IEC:



Zone 2 & 22	II 3 GD	ATEX		CE
Ex nAR II - Ex tD A22	T2	T121°C	IP66	IK10 (Housing)

Lamp Types & Wattages:

Incandescent				
10 W - 21 W				

Operating Temperature:

-20°C to +55°C

Lighting: Emergency Lighting

ELS Series: Self-Contained Emergency Lighting

Zone 2 & 22

II 3 GD

ATEX

IP66

LIGHTING

Applications:

- Enclosed and gasketed, non-metallic emergency lighting system suitable for use where flammable gases, vapors or dusts may become present due to abnormal conditions defined as Zone 2 and 22.
- Typical applications include manufacturing plants, refineries, petrochemical and chemical plants, waste and sewage treatment facilities, food processing facilities and other industrial manufacturing or process facilities subject to wet or corrosive conditions.

- A LED pilot light indicates the presence of AC line voltage, and a test switch is provided for testing transfer operation.
- Upon restoration of normal power, the charger will begin a recharge cycle. It will bring the battery to full capacity.
- 6 A fuse provided as standard.
- Incandescent 10 W or 21 W lamps – 12 Vdc – Lamp type BA15D.
- Battery capacity 7 A/H.
- Connections on 2.5 mm² terminals.

Features:

- Provides 90 minutes of emergency lighting.
- The electronics consists of a solid state charger, transfer circuit and low voltage disconnect circuit.

Standard Material of Fixtures:

- Fiberglass reinforced polyester housing, carbon loaded for low resistivity.
- Aluminum glass sealed spotlight.

Ordering Information:

2 x M20 entries at the top, supplied with one M20 polyamide cable gland (cable dia. 6.5 to 14.5 mm) and one M20 blanking plug

Number of Lamps	Power	Weight (kg)	Volume (dm ³)	Catalog Number	
				205-254 Vac 50/60 Hz	110 - 120 Vac 50/60 Hz
1	10 W	8.5	4.8	ELS1100712A	ELS1100712B
2	10 W	7.7	4.55	ELS2100712A	ELS2100712B
1	21 W	8.5	4.8	ELS1210712A	ELS1210712B
2	21 W	7.7	4.55	ELS2210712A	ELS2210712B

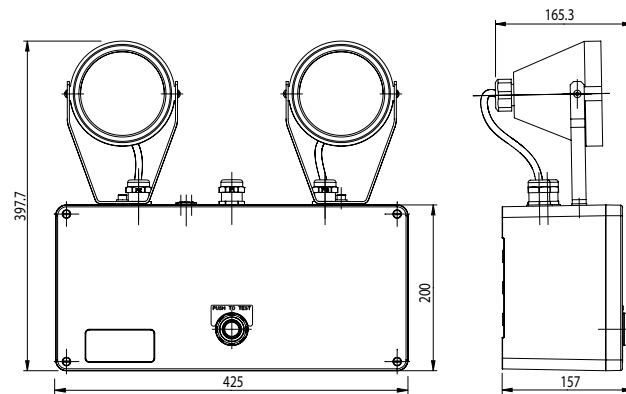
Compliances:

Hazardous Area	Gas	Dust
Certified Type		
Zones	2	22
Conforming to ATEX 94/9/CE	CE 0081 II 3 G	CE 0081 II 3 D
Symbol of protection ATEX	Ex nAR II	Ex tD A22
Symbol of protection IEC		
T Rating	T2	NA
Surface Temperature	NA	121°C
Ambient Temperature	-20°C to +55°C	
ATEX Certificate	LCIE 08 ATEX 6046	
Index of Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10 (housing)	














Standards:

Ex Standards	EN / IEC 60079-0 ; 60079-1 ; 60079-15

Dimensions (mm):



Notes:

Description	Page	
VCB Series Video Camera Housing – Flameproof	120-125	VCB Series    VCB4 DA2W2E102 VCBA
SBDO Series Signaling and Lighting Bulkhead – Flameproof	126-127	SBDO Series   Compact Fluorescent Glass Version Green LED Version
SBDS Series Beacon Lighting Units – Flameproof	128-130	SBDS Series   Static Beacon with Red Globe Rotating Beacon
SBDB Series Beacon and Strobe Lighting Units – Flameproof	131-133	SBDB Series   Strobe Lighting Beacon Lighting
SBDC Series Strobe Lighting and Static Triple Indicator – Flameproof	134-136	SBDC Series   Strobe Lighting Multiple Static Indicator
SI - KL Series Audio Signaling Devices – Flameproof	137-138	SI - KL Series   Siren Horn

Lighting: Signaling Products
VCB Series: Video Camera Housing – Flameproof



VCB4
 (475 mm length version)

Compliance Data:

ATEX - IEC:



Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IEC	CE
Ex d IIC	T6 or T5	Ex tD A21	T100°C	IP66 – IK10

Operating Temperature:

-40°C to +55°C

Lighting: Signaling Products

VCB Series: Video Camera Housing – Flameproof

Zone 1 & 2 - 21 & 22

⊕ II 2 GD

ATEX / IEC

IP66 - IK10

LIGHTING

Applications:

- Flameproof housing to encase video camera used for onshore and offshore site and process supervision.

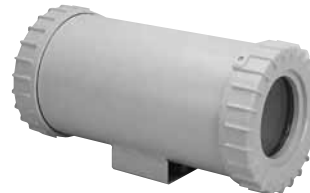
Standard Material of Fixtures:

- Gray painted aluminum body.
- Sealed toughened glass window.

Features:


Compatible with any camera model with the following specifications:

- Length compatible with one of the two sizes (475 or 735 mm).
- Maximum cross section for the camera : < 127 cm².
- Capacitor's residual energy (after opening) : < 20 μJ.
- Maximum dissipated power: 14 W.
- Equipped with back plate.
- Two M20 threaded cable entries.



VCB4
(475 mm length version)

Ordering Information:

	Length (mm)	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
	475	14.2	41	VCB4	095130	1
	735	18.7	61	VCB7	095131	1

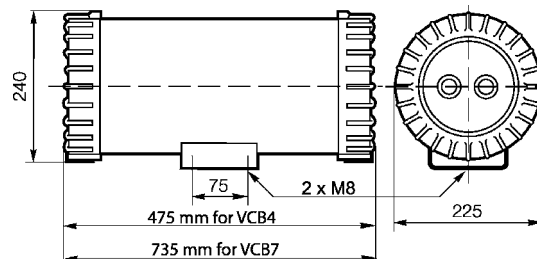
Compliances:

Hazardous Area	Gas	Dust
Certified Type	CAM	
Zones	1 – 2	21 – 22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex d IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	T6 for Ta ≤ 40°C T5 for Ta > 40°C	–
Surface Temperature	–	100°C
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50255	
ATEX Certificate	LCIE 03 ATEX 6080	
IEC Certificate	LCIE Ex 03.014	
Other Certifications	–	
Index of Protection (solid & liquid)	IP66	
Impact Resistance (shock)	IK10	
Internal Volume (dm ³)	> 2 dm ³ (2 liters)	

Standards:

EX Standards	EN / IEC 60079-0; 60079-1; 61241-0; 61241-1
Product Standards	–
EMC Standards	–
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Dimensions (mm):



Lighting: Signaling Products
VCB Series: Video Camera Housing – Flameproof



DA2W2E102

Compliance Data:

ATEX - IEC:



Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IEC	CE
Ex d IIC	T6	Ex tD A21	T80°C	IP66 – IK09

Operating Temperature:

-40°C to +55°C

Lighting: Signaling Products

VCB Series: Video Camera Housing – Flameproof

Zone 1 & 2 - 21 & 22

⊕ II 2 GD

ATEX / IEC

IP66 - IK09

LIGHTING

Applications:

- Flameproof housing to encase video camera used for onshore and offshore site and process supervision.

Features:

- Maximum dissipated power: 10 W
- Equipped with a back plate.
- One open view glass window, usable Ø 84 mm.
- Two internal grounding connection: M4 screw. External grounding: M6 screw.
- Two M20 threaded entries at the bottom.


Standard Material of Fixtures:

- Gray painted aluminum body.
- Sealed toughened glass window.




DA2W2E102

Ordering Information:

	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
	3.5	13	DA2W2E102	093155	1

Accessories:

	Catalog Number	Old Catalog Number	Pack
	VCBHBA	093198	1

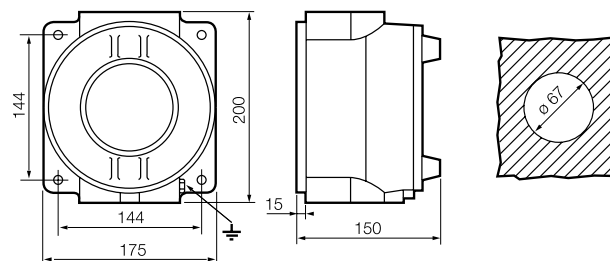
Compliances:

Hazardous Area	Gas	Dust
Certified Type	BR2d	
Zones	1 – 2	21 – 22
Conforming to ATEX 94/9/CE	CE 0081⊕II 2 G	CE 0081⊕II 2 D
Symbol of Protection ATEX	Ex d IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	T6	N.A.
Surface Temperature	N.A.	T80°C
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50256	
ATEX Certificate	LCIE 03 ATEX 6062	
IEC Certificate	LCIE Ex 03.007	
Other Certifications	GOST	
Index of Protection (solid & liquid)	IP66	
Impact Resistance (shock)	IK09	
Internal Volume (dm ³)	< 2 dm ³ (2 liters)	

Standards:

EX Standards	EN / IEC 60079-0; 60079-1; 61241-0; 61241-1
Product Standards	–
EMC Standards	–
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Dimensions (mm):



Lighting: Signaling Products
VCB Series: Video Camera Housing – Flameproof



VCBA

Compliance Data:

ATEX - IEC:



Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IEC	CE
Ex d IIC	T6	Ex tD A21	T80°C	IP66 – IK10

Operating Temperature:

-40°C to +55°C

Lighting: Signaling Products

VCB Series: Video Camera Housing – Flameproof

Zone 1 & 2 - 21 & 22

⊕ II 2 GD

ATEX / IEC

IP66 - IK10

LIGHTING

Applications:

- Flameproof adjustable housing to encase video camera for onshore and offshore site and process supervision.

Standard Material of Fixtures:

- Gray painted aluminum body.
- Sealed toughened glass window.



VCBA

Features:

- Maximum Power: 10 W.
- One open view glass window, usable diameter 155 mm.
- Threaded flameproof joint.
- Two M20 threaded entries with one blanking plug.

Ordering Information:



	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
	8	27	VCBA	095048	1

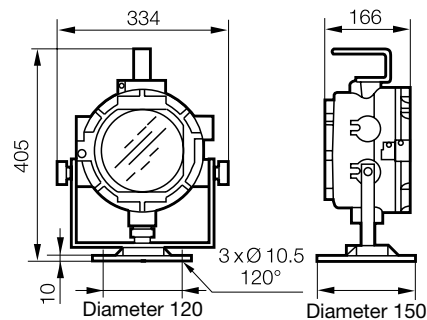
Compliances:

Hazardous Area	Gas	Dust
Certified Type	PJ70	
Zones	1 – 2	21 – 22
Conforming to ATEX 94/9/CE	CE 0081⊕II 2 G	CE 0081⊕II 2 D
Symbol of Protection ATEX	Ex d IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	T6	N.A.
Surface Temperature	N.A.	T80°C
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50239	
ATEX Certificate	LCIE 02 ATEX 6227	
IEC Certificate	LCIE Ex 02.020	
Other Certifications	-	
Index of Protection (solid & liquid)	IP66	
Impact Resistance (shock)	IK10	
Internal Volume (dm ³)	> 2 dm ³ (2 liters)	

Standards:

EX Standards	EN / IEC 60079-0; 60079-1; 61241-0; 61241-1
Product Standards	-
EMC Standards	-
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Dimensions (mm):



Lighting: Signaling Products
SBDO Series: Signaling and Lighting Bulkhead – Flameproof



Compact Fluorescent
Painted Glass Version



Green LED
Version

Compliance Data:

ATEX - IEC:



Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IEC	CE
Ex d IIB	T6 to T4	Ex tD A21	T58°C to T119°C	IP66 – IK08

Lamp Type and Power:

Compact Fluorescent	LED	Incandescent		
7-11-15 W	Green 4 W - Red 3 W	Up to 60 W		

Operating Temperature:

-20°C to +40°C

Lighting: Signaling Products

SBDO Series: Signaling and Lighting Bulkhead – Flameproof

Zone 1 & 2 - 21 & 22

⊕ II 2 GD

ATEX / IEC

IP66 - IK08

LIGHTING

Applications:

- For lighting and signaling.

Features:

- For compact fluorescent 15 W max. or incandescent 60 W max. (lamps not supplied).
- E27 lampholder.
- LED versions: green, red, yellow and blue complete with LED lamps, 3 W and 4 W versions.
- Operating in any position.
- Fixing by 2 integrated brackets.
- Connection to lampholder via two terminals 1 x 2.5 mm².
- LED version: terminal block 4 x 2.5 mm² for looping connection facility.
- Internal earth two terminals 2.5 mm², external earth 1 x 4 mm².
- Two M20 entries through feed.
- Supplied with 1 blanking plug M20.

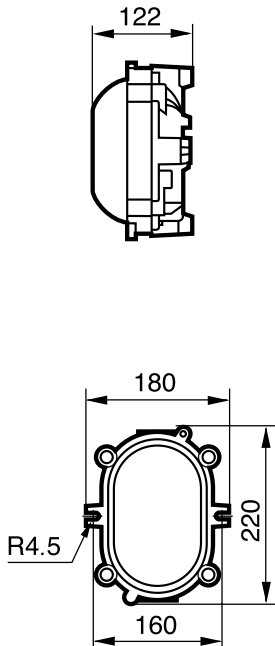
Standard Material of Fixtures:

- Gray painted aluminum body and bezel.
- Sealed toughened lamp glass.

Standard Materials of Accessories:

- Zinc plated steel guard.

Dimensions (mm):



Ordering Information:

Compact Fluorescent (7 W to 15 W) or Incandescent (up to 60 W):

Color (Painted Glass)	Weight (Kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Red	3	9	SBDOSR	094708	1
Green	3	9	SBDOSG	094712	1

LED version 230-240 Vac 50/60 Hz:

Red (1)	3.5	9	SBDOSRLD24A	–	1
Green (1)	3.5	9	SBDOSGLD24A	–	1
Yellow (1)	3.5	9	SBDOSYLD24A	–	1
Blue (1)	3.5	9	SBDOSBLD24A	–	1

(1) with transformer 230-240 V / 24 V

Accessories:

	Catalog Number	Old Catalog Number	Pack
Zinc Plated Steel Protective Guard	HBDOPGZ	094770	1

Terminal block

for through wiring 2 x 2.5 mm ² with high temperature sleeve (no need for LED version)	094784	094784	1
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Compliances:

Hazardous Area	Gas	Dust
Certification Type	HBOd	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex d IIB	Ex tD A21
Symbol of Protection IEC		
T Rating	T4 (Incandescent) T6 (LED & Compact Flu.)	N.A.
Surface Temperature	N.A.	T58°C (LED) T76°C (Compact Flu.) T119°C (Incandescent)
Ambient Temperature	-20°C to +40°C	
CE Declaration of Conformity	50234	
ATEX Certificate	LCIE 02 ATEX 6162	
IEC Certificate	LCIE Ex 02.013	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK08	
Internal Volume	≤2 dm ³ (2 liters)	

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 61241-0; 61241-1
Product Standards	EN / IEC 60598-1
EMC Standards	EN / IEC 55015; 61547
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Lighting: Signaling Products
SBDS Series: Beacon Lighting Units – Flameproof



Static Beacon
with Red Globe



Rotating Beacon

Compliance Data:

ATEX – IEC:



Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	CEI	CE
Ex d IIC	T6 to T3	Ex tD A21	T85°C to T145°C	IP66 – IK08

Lamp Type and Watts:

Static Beacon	Static Beacon	Rotating Beacon		
100 W Incandescent	18 W to 25 W Compact Fluorescent	40 W Incandescent		

Operating Temperature:

-40°C to +50°C (Static Beacon)
-20°C to +50°C (Rotating Beacon)

Lighting: Signaling Products

SBDS Series: Beacon Lighting Units – Flameproof

Zone 1 & 2 - 21 & 22

II 2 GD

ATEX / IEC

IP66 - IK08

LIGHTING

Applications:

- For use in hazardous locations in a wide range of plants.
- In areas where audible signals cannot be heard.

Features:

- Fixtures operate in any position.
- Suspension via integral bolt.
- Threaded flame path.
- Internal earth terminal 2 x 4 mm².
- External earth terminal 1 x 4 mm².
- Two M20 threaded entries with one blanking plug.
- Globe available in four colors: red, amber, green and clear (to be ordered separately).

Static Beacon:

- E27 lamp holder.
- Permissible lamps not supplied:
 - 100 W incandescent max.
 - 18/20/25 W compact fluorescent
- Connection to lamp holder via two terminals
1 x 2.5 mm² or 2 x 4 mm² terminal block supplied.



Static Beacon with Red Globe

Rotating Beacon:

- E14 lamp holder.
- 40 W incandescent lamp supplied.
- Rotating speed: approximately 170 rotations per minute.
- Beaten mirror to reinforce bright effect.
- Connection via two terminals 2 x 4 mm²



Rotating Beacon

Standard Material of Fixtures:



- Gray painted marine aluminum body and bezel.
- Colorless sealed shock resistant glass.
- Internal aluminum reflector for static beacon.

Standard Material of Accessories:




- Colored polymethacrylate globe.
- Zinc plated steel protective guard.
- Zinc plated steel mounting bracket.

Ordering Information:

Lighting Units:

Type	Supply	Rating (Amps)	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack	
 Clear Static Beacon	100 W maximum		7.5	30	SBDSSC	-	1	
 Clear Rotating Beacon	40 W incandescent	48 V ±10% 50/60 Hz	1A	8.5	30	SBDSRC4004A	095126	1
	40 W incandescent	48 Vdc ±10%	1A	8.5	30	SBDSRC4004D	095127	1
	40 W incandescent	110 V ±10% 50/60 Hz	0.5A	8.5	30	SBDSRC4011A	095128	1
	40 W incandescent	230/240 V ±10% 50/60 Hz	0.23A	8.5	30	SBDSRC4024A	095129	1

Accessories:

Type	Catalog Number	Old Catalog Number	Pack
 Polymethacrylate Globe			
Red	SBDGR	095084	1
Green	SBDGG	095085	1
Amber	SBDGA	095089	1
Clear	SBDGC	095090	1
 Zinc Plated Steel Protective Guard			
Not to be used if a colored globe is used.	LDPG1Z	094773	1
 Zinc Plated Steel Hinged Bracket			
For installation on flat surface	LDPHBZ	094776	1

Lighting: Signaling Products

SBDS Series: Beacon Lighting Units – Flameproof

Zone 1 & 2 - 21 & 22

⊕ II 2 GD

ATEX / IEC

IP66 - IK08

Compliances:

Hazardous Area	Gas	Dust
Certified Type	AB14	
Zones	1 – 2	21 – 22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex d IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	See Table 1	NA
Surface Temperature	NA	See Table 2
Ambient Temperature	-40°C to +50°C (Static) -20°C to +50°C (Rotating)	
CE Declaration of Conformity	50231	
ATEX Certificate	LCIE 02 ATEX 6053	
IEC Certificate	LCIE Ex 02.004	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK08	
Internal Volume	> 2 dm ³ (2 liters)	

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 61241-0; 61241-1
Product Standards	EN / IEC 60598-1
EMC Standards	EN / 55015; 61547
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Dimensions (mm):

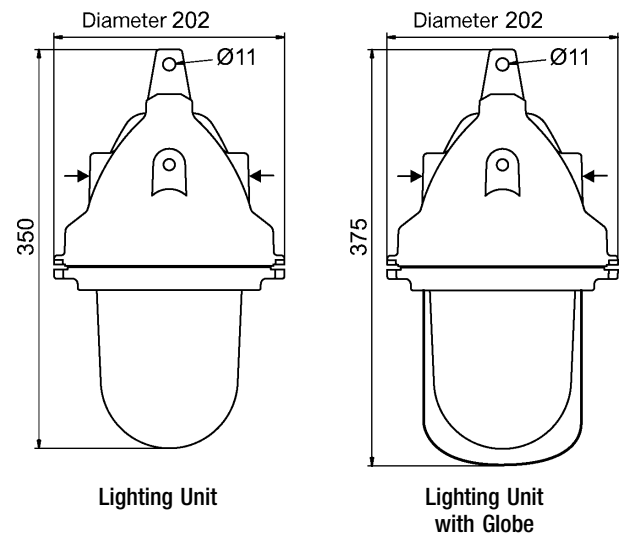
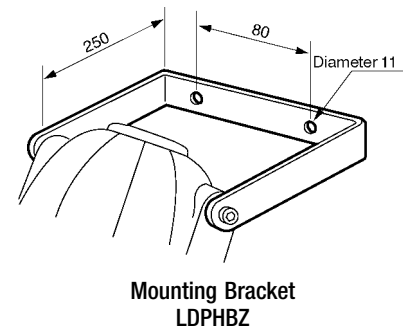


Table 1: T Rating for Gas

Power and Source	Ambient Temperature			
	Ta = +40°C		Ta = +50°C	
	T Rating	Cable Entry Temperature	T Rating	Cable Entry Temperature
18 W Compact Fluor.	T6	–	T5	–
20 W Compact Fluor.	T6	–	T5	–
25 W Compact Fluor.	T6	–	T5	–
100 W Incandescent	T4	115°C	T3	125°C
40 W Rotating	T5	–	T4	–

Table 2: Surface Temperature for Dust

Power and Source	Ambient Temperature	
	Ta = +50°C	
	Surface Temperature	Cable Entry Temperature
18 W Compact Fluorescent	85°C	–
20 W Compact Fluorescent	85°C	–
25 W Compact Fluorescent	85°C	–
40 W Rotating	110°C	–
100 W Incandescent	145°C	125°C



Lighting: Signaling Products

SBDB Series: Beacon and Strobe Lighting Units – Flameproof



Strobe Lighting



Beacon Lighting

Compliance Data:

ATEX - IECEx:



Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IECEx	CE
Ex de IIC	T6 to T3	Ex td A21	T80°C to 195°C	IP66/67 – Ik08

Lamp Type:

Static Beacon	Static Beacon	Rotating Beacon	Strobe Beacon	
100 W Incandescent	18 W Compact Fluorescent	40 W Incandescent	5 Joules	

Operating Temperature:

-40°C to +55°C (Strobe Beacon)
-20°C to +50°C (Rotating Beacon)

Lighting: Signaling Products

SBDB Series: Beacon and Strobe Lighting Units – Flameproof

Zone 1 & 2 - 21 & 22

Ex II 2 GD

ATEX / IEC

IP66/67 - IK08

Applications:

- For use in hazardous locations in a wide range of plants.
- In areas where audible signals cannot be heard.
- To warn of unsafe conditions and other communication needs.

Features:

- Fixtures operate in any position.
- Mounting strap for surface mounting supplied.
- High temperature internal wiring.
- Threaded flame path.
- Stainless steel fastenings.
- Closed by screwing on bezel.
- Connection through an increased safety Exe compartment with terminal block
 - Two 2 x 6 mm² and two earth terminal 1 x 4 mm².
- External earth terminal 1 x 4 mm².
- Two side M20 threaded entries supplied with:
 - 1 x M20 plastic cable-gland for unarmored cable (sealing dia. 6.5 to 14.5 mm).
 - 1 x M20 blanking plug.

Static Beacon:

- E27 lamp holder.
- Permissible lamps not supplied:
 - 100 W incandescent max.
 - 18 W compact fluorescent.
- Globe available in four colors:
 - Red, amber, green and clear (to be ordered separately).

Rotating Beacon:

- E14 lamp holder.
- 40 W incandescent lamp supplied.
- Rotating speed: approximately 170 rotations per minute.
- Beaten mirror to reinforce bright effect.
- Globe available in four colors:
 - Red, amber, green and clear (to be ordered separately).

5 Joules Strobe Beacon:

- Xenon lamp supplied.
- Instantaneous illuminance: 50,000 candles.
- Strobe 60 flashes per minute.
- Operating factor 100%.
- Life duration: 70% efficiency after 8 million flashes.
- Internal red colored lens supplied as standard.
- Other lenses available in five colors:
 - Amber, blue, green, yellow and clear (factory installed).

Standard Material of Fixtures:

- Gray painted marine aluminum body and bezel.
- Colorless sealed shock resistant glass.
- Internal aluminum reflector for static beacon.
- Gray painted aluminum mounting strap.

Standard Material of Accessories:

- Colored Polymethacrylate globe.
- Zinc plated steel protective guard.

Options:

- Other lens colors for strobe beacon.

Catalog Number Logic:

SBDB

Series

X

Type:

- S = Static
- F = Flashing
- R = Rotating

X

Color:

- C = Clear
- R = Red
- A = Amber
- G = Green
- B = Blue
- Y = Yellow

XX

Wattage/Joules:

- 40 = 40 W
- 10 = 100 W
- 05 = 5 Joules

XXX

Voltage:

- 02D = 24 Vdc
- 02A = 24 Vac 50/60 Hz
- 04D = 48 Vdc
- 04A = 48 Vac 50/60 Hz
- 11A = 110 Vac 50/60 Hz
- 11D = 110 Vdc
- 24A = 230/240 Vac 50/60 Hz

Ordering Information:

Lighting Units:

Type	Supply		Rating (amps)	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack	
Clear Static Beacon									
100 W Maximum				7.5	30	SBDBSC	095117	1	
Clear Rotating Beacon									
40 W	48 Vac	+10%	50/60 Hz	1A	8.5	30	SBDBRC4004A	095122	1
40 W	48 Vdc	+10%	-	1A	8.5	30	SBDBRC4004D	095123	1
40 W	110 Vac	+10%	50/60 Hz	0.5A	8.5	30	SBDBRC4011A	095124	1
40 W	230/240 Vac	+10%	50/60 Hz	0.23A	8.5	30	SBDBRC4024A	095125	1

Lighting: Signaling Products

SBDB Series: Beacon and Strobe Lighting Units – Flameproof

Zone 1 & 2 - 21 & 22

II 2 GD

ATEX / IECEx





IP66/67 - IK08

LIGHTING

Ordering Information – Continued:

Type	Supply	Rating (amps)	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack		
Red Strobe Beacon									
5 joules	24 Vac	20-30 V	50/60 Hz	220 mA	8.5	30	SBDBFR0502A	095116	1
5 joules	24 Vdc	18-35 V		230 mA	8.5	30	SBDBFR0502D	095120	1
5 joules	48 Vac	40-54 V	50/60 Hz	180 mA	8.5	30	SBDBFR0504A	095115	1
5 joules	48 Vdc	40-60 V		150 mA	8.5	30	SBDBFR0504D	095119	1
5 joules	110 Vac	90-135 V	50/60 Hz	110 mA	8.5	30	SBDBFR0511A	095114	1
5 joules	110 Vdc	88-132 V		90 mA	8.5	30	SBDBFR0511D	095118	1
5 joules	230/240 Vac	185-255 V	50/60 Hz	55 mA	8.5	30	SBDBFR0523A	095121	1

Accessories:

Type	Catalog Number	Old Catalog Number	Pack
Polymethacrylate Globe			
 Red	SBDGR	095084	1
Green	SBDGG	095085	1
Amber	SBDGA	095089	1
Clear	SBDGC	095090	1
Zinc Plated Steel Protective Guard			
 Using without colored globe	LDPG1Z	094773	1
Zinc Plated Steel Hinged Bracket			
 Bracket for installation on flat surface	LDMHBZ	095079	1
Zinc Plated Steel M10 Eyebolt			
 Eyebolt for suspension	LDRBM10Z	095081	1

Compliances:

Hazardous Area	Gas	Dust
Certified Type	LTd (model LT1d)	
Zones	1 – 2	21 – 22
Conforming to ATEX 94/9/CE	CE 0081 II 2 G	CE 0081 II 2 D
Symbol of Protection ATEX	Ex de IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	See table 1	NA
Surface Temperature	NA	See table 2
Ambient Temperature	-40°C to +55°C (Strobe) -20°C to +50°C (Rotating Beacon)	
CE Declaration of Conformity	50246	
ATEX Certificate	LCIE 02 ATEX 6165	
IECEx Certificate	IECEx LCI Ex 04.0019	
Other Certifications	GOST	
Index of Protection (solid & liquid)	IP 66/67	
Impact Resistance (shock)	IK08	

Table 1: Gas

Power and Source	Ambient Temperature					
	Lighting Downwards			Lighting Upwards		
	Ta = +40°C	Ta = +50°C	Ta = +55°C	Ta = +40°C	Ta = +50°C	Ta = +55°C
18 W Fluo Compact	T6	T6	T6	T6	T5	T5
100 W Incandescent	T4	T3	T3	T3	T3	T3
40 W Rotating	T5	T4	T4	T5	T4	T4
Strobe 5 joules	T6	T6	T6	T6	T6	T6

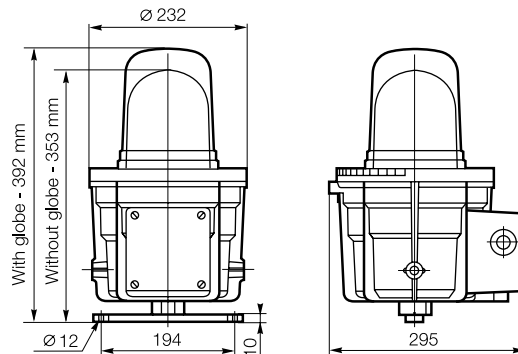
Table 2: Surface Temperature for Dust

Power and Source	POSITIONS	
	Lighting Downwards	Lighting Upwards
	Ta = +55°C	Ta = +55°C
18 W Fluo Compact	T80°C	T95°C
100 W Incandescent	T195°C	T195°C
40 W Rotating	T130°C	T130°C
Strobe 5 joules	T80°C	T80°C

Standards:

Ex standards	EN / IEC 60079-0; 60079-1; 60079-7; 61241-0; 61241-1
Product standards	EN / IEC 60598-1
EMC standards	EN / IEC 55015; 61547
Other standards	EN / IEC 60529 (IP); 62262 (IK)

Dimensions (mm):



Lighting: Signaling Products

SBDC Series: Strobe Lighting and Static Triple Indicator – Flameproof



Strobe Lighting



Multiple Static Indicator

Compliance Data:

ATEX – IECEx:



Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IECEx	CE
Ex d IIC	T5 and T6	Ex tD A21	T80°C and T95°C	IP66/68 (10 m) – IK08

Lamp Type:

Strobe Beacon	Triple Indicator	Triple Indicator	
15 Joules	3 x 7 W Incandescent	3 x Led Lamp	

Operating Temperature:

-40°C to +55°C

Lighting: Signaling Products

SBDC Series: Strobe Lighting and Static Triple Indicator – Flameproof

Zone 1 & 2 - 21 & 22

II 2 GD

ATEX / IECEx

IP66/67 - IK08

LIGHTING

Applications:

- For use in hazardous locations in a wide range of plants.
- In areas where audible signals cannot be heard.
- To warn of unsafe conditions and other communication needs.

Features:

- Threaded access cover with O-ring seal.
- Supplied with two external fixing lugs.
- Fixtures operate in any position.
- External earth terminal 1 x 4 mm².
- Two side M20 threaded entries supplied with 1 x M20 blanking plug.

15 Joules Strobe Beacon:

- Xenon lamp supplied.
- Instantaneous illuminance: 150,000 candelas.
- Strobe 45 flashes per minute.
- Operating factor: 10 min. stop after one hour operation.
- Life duration: 70% efficiency after 8 million flashes.
- Internal red colored lens supplied as standard.
- Other lenses available in five colors:
 - Amber, blue, green, yellow and clear (factory installed).
- Connection to plug-in terminal block via 2 x 3 x 2.5 mm² terminal.

Static Triple Indicator Unit:

- Ba15d lamp holders.
- Permissible lamps not supplied:
 - 7 W incandescent or multi LED lamps.
- Operating factor 100%.
- Supplied with three colored interchangeable modules:
 - Red, yellow and green.
- Each module is controlled separately.
- Possibility of coupling two modules for simultaneous operation.
- Connection to plug-in terminal block via 2 x 5 x 2.5 mm² terminal.

Materials:

- Anti-corrosive gray painted Zamak end caps and cover.
- Nitrile O-ring seal.
- Sealed toughened glass.
- Zinc plated steel fixing lug.

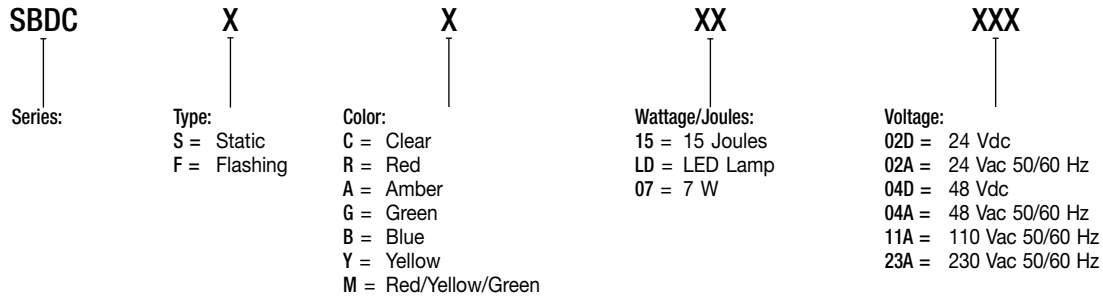
Accessories:

- Zinc plated steel protective guard.

Options:



- Other colored module for static triple indicator unit.
- Other lens colors available for strobe lighting.

Catalog Number Logic:



Ordering Information:

Lighting Units:

Type	Supply	Rating (amps)	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Red Strobe Beacon							
 15 joules	24 Vdc	18-30 V	700 mA	6.8	31	SBDCFR1502D	094971 1
15 joules	48 Vdc	40-60 V	350 mA	6.8	31	SBDCFR1504D	094972 1
15 joules	110 Vac	95-127 V 50/60 Hz	350 mA	6.8	31	SBDCFR1511A	094973 1
15 joules	230 Vac	185-255 V 50/60 Hz	190 mA	6.8	31	SBDCFR1523A	094974 1
Triple Static Indicator							
 Red, yellow and green	Ba15d	07 W	6.8	31	SBDCSM0723A	094989	1
	230 Vac 50/60Hz						

Lighting: Signaling Products

SBDC Series: Strobe Lighting and Static Triple Indicator – Flameproof

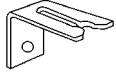
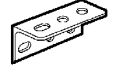
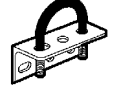

Zone 1 & 2 - 21 & 22

Ⓜ II 2 GD

ATEX / IECEx

IP66/67 - IK08

Accessories:

Type	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
 Mounting Brackets – Quick One Hand Fixings: Set of Two Zinc plated steel Stainless steel	0.40	0.7	FDFBZ	094897	1
			FDFBS	094889	1
 Surface Mounting Brackets: Set of Two Zinc plated steel Stainless steel	0.55	0.5	FDSBZ	094898	1
			FDSBS	094890	1
 Half Clamps – Set of Two – Zinc Plated Steel 42 mm (1.25") to 49 mm (1.5") 60 mm (2")	0.80	0.5	FDHC49Z	094899	1
			FDHC60Z	094891	1
 Protective Guard Zinc plated steel	0.55	8	FDPG1Z	094872	1

Compliance Table:

Hazardous Area	Gas	Dust
Certified Type	FLd	
Zones	1 – 2	21 – 22
Conforming to ATEX 94/9/CE	CE 0081 Ⓜ II 2 G	CE 0081 Ⓜ II 2 D
Symbol of protection ATEX	Ex d IIC	Ex td A21
Symbol of protection IEC		
T Rating	See table	NA
Surface Temperature	NA	See table
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50203	
ATEX Certificate	LCIE 97 ATEX 6012	
IECEx Certificate	IECEx LCI Ex 04.0018	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66/68 (10 meters)	
Impact Resistance (shock)	IK08	
Internal Volume	> 2 dm ³ (2 liters)	

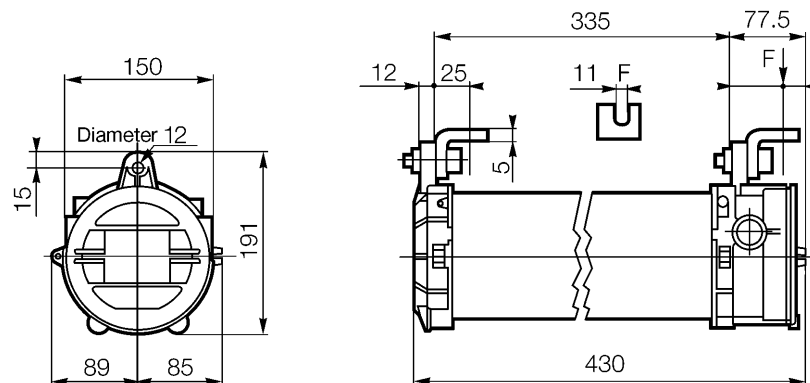
Temperature Rating:

Ambient Temperature	Gas		Dust
	Ta = +40°C	Ta = +55°C	Ta = +55°C
Strobe 15 joules	T6	T5	T95°C
Static Indicator	T6	T6	T80°C

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 61241-0; 61241-1
Product Standards	EN / IEC 60598-1
EMC Standards	EN / IEC 55015; 61547
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Dimensions (mm):



Lighting: Signaling Products

SI - KL Series: Audio Signaling Devices – Flameproof



Siren



Horn

Compliance Data:

ATEX - IEC:



Siren – SI Series:

Zone 1 & 2	ATEX	II 2 G	IEC	CE
Ex d IIC	T6 or T5			IP55 - IK10

Horn – KL Series:

Zone 1 & 2	ATEX	II 2 G	IEC	CE
Ex d IIB	T6			IP55 - IK10

Operating Temperatures:

SI : -40°C to +55°C
KL : -20°C to +40°C

Lighting: Signaling Products

SI - KL Series: Audio Signaling Devices – Flameproof

Zone 1 & 2
 II 2 G
 ATEX / IEC
 IP55 - IK10

Applications:

- Audio alarm to signal an evacuation due to fire, gas or other dangers.

Features:

- Siren Ex d IIC Series SI:
- High performance siren.
 - Flameproof enclosure.
 - Operation:
 - Operating cycle: 5 minute maximum
 - Pause cycle: 15 minute minimum
 - Maximum 5 consecutive cycles
 - Predicts temporary pause cycles
 - One M20 bottom cable entry.

- Interior/exterior ground/earth M4 screw.
- Horn Ex d IIB series KL:
 - Klaxon type warning horn
 - Flameproof enclosure
 - Operation:
 - Operating cycle: 5 minutes maximum
 - Pause cycle: 15 minutes minimum
 - Maximum 5 consecutive cycles
 - Predicts temporary pause cycles
 - One M20 bottom cable entry.
 - M6 earth stud.

Standard Material of Fixtures:

- SI and KL Series:
- Marine grade aluminum enclosure painted gray.

Catalog Number Logic:

SI/KL	XXX	X
Series: SI = Siren KL = Horn	Voltage: 02D = 24 Vdc 02A = 24 Vac 04D = 48 Vdc 04A = 48 Vac 11A = 110 Vac 23A = 220-230 Vac	Option: E = Electronic

Ordering Information:

Series	Voltage	Frequency	Sound Volume at 2m	Sound Frequency (Hz)	Rating (A)	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
SI	24 Vdc	0 Hz	104 dB mini	1500	2.6	5.2	13	SI02D	095110	1
SI	220 / 230 Vac	50 Hz	116 dB mini	1500	0.8	5.2	13	SI23A	095111	1
KL	24 Vdc	0 Hz	80 dB mini	420	0.75	5.2	13	KL02D	095108	1
KL	24 Vac	50/60 Hz	80 dB mini	420	0.75	5.2	13	KL02A	095109	1
KL	48 Vdc	0 Hz	80 dB mini	420	0.75	5.2	13	KL04D	-	1
KL	48 Vac	50 Hz	80 dB mini	420	0.75	5.2	13	KL04A	-	1
KL	110 Vac	50/60 Hz	80 dB mini	420	0.13	5.2	13	KL11A	-	1
KL	220 / 230 Vac	50/60 Hz	80 dB mini	420	0.13	5.2	13	KL23A	095113	1

Compliances:

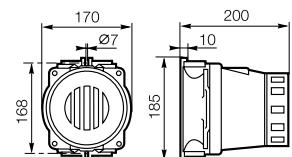
Hazardous Areas	Gas	
	Certified Type	SIR1
Zones	1 – 2	1 – 2
Conforming to ATEX 94/9/CE	CE 0081 II 2 G	CE 0081 II 2 G
Symbol of Protection ATEX	Ex d IIC	Ex d IIB
Symbol of Protection IEC		
T Rating	T6 for Ta ≤ 40°C T5 for Ta > 40°C	T6
Surface Temperature	N.A.	NA
Ambient Temperature	-40°C to +55°C	-20°C to +40°C
CE Declaration of Conformity	50253	50216
ATEX Certificate	LCIE 03 ATEX 6081	LCIE 00 ATEX 6018
IEC Certificate	LCIE Ex 03.015	LCIE Ex 00.013
Other Certifications	-	-
Index of Protection (solid & liquid)	IP55	IP55
Impact Resistance (shock)	IK10	IK10
Internal Volume	≤ 2 dm ³ (2 liters)	> 2 dm ³ (2 liters)

Standards:

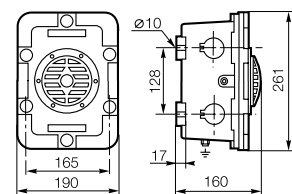
Ex Standards	EN / IEC 60079-0; 60079-1
Product Standards	-
EMC Standards	EN / IEC 55015; 61547
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Dimensions (mm):

Siren SI



Horn KL



PLUGS & SOCKETS











With a broad range of power capacities and pin configurations, Appleton's ATX plugs and sockets are standard equipment in hazardous locations where safety is a top priority. They're designed to allow you to connect to the power you need without danger, wherever and whenever you need it. Appleton's ATX plugs and sockets are available in two methods of protection: Increased Safety and Flameproof. All plugs can be used with EN/IEC 60309-2 industrial pin sockets outside hazardous environments.

The PRE Series, with 16, 32, 63 and 125 A plugs and sockets, is rated as Increased Safety. All sockets incorporate switching technology that prevents removal of the plug under electrical load and does not disturb the potentially explosive atmospheres of Zone 1 and 2 locations. Plugs lock when the power is on. The socket can be padlocked in the "Off" position when the plug is not inserted.

The PRD Series is Appleton's ATX flameproof line of plugs and sockets. Available in multiple pin configurations, 16 and 32 A models are available in aluminum with a load-break disconnect switch. 80 A and 125 A models offer a cast iron wall-mounted socket that is fitted with a load-break isolating switch. Plugs cannot be removed with the power on. Disconnections are completed within single or dual flameproof chambers before the plug is removed from the socket.



Plugs & Sockets

Description	Page	
PRE Series	141-159	PRE Series
16 A Plugs and Sockets – Increased Safety	141-146	
32 A Plugs and Sockets – Increased Safety	147-151	
63 A Plugs and Sockets – Increased Safety	152-155	
125 A Plugs and Sockets – Increased Safety	156-159	
		Plug
		Wall Mounting Sockets
		Mobile Sockets
		Flush Socket
MRE Series	160 -167	MRE Series
16 and 32 A Multiple Socket Outlets – Stationary and Portable – Increased Safety		
		
		
		
		Customized Version
		Two Socket Outlet Version
		Four Socket Outlet Version
		Cable Reel
PRD Series	168-174	PRD Series
16, 32, 80 and 125 A Plugs and Sockets – Flameproof		
		
		Plug
		Sockets

Plugs & Sockets

PRE Series: 16 A Plugs and Sockets – Increased Safety

ELV: Extra Low Voltage



Plug



Wall Mounting Socket



Mobile Socket



Flush Socket

20/25 Vac
 20/50 Vdc
 40/50 Vac

LV: Low Voltage



Plug



Wall Mounting Sockets



Mobile Socket



Flush Socket

100/130 Vac
 200/250 Vac
 380/415 Vac
 480/500 Vac
 50/500 Vac (300 to 500 Hz)

Compliance Data:

ATEX - IECEx:



Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IECEx	CE
Ex de IIC	T6 or T5	Ex tD A21	T68°C	IP66 – IK09/10

Amperage:

16 A				
------	--	--	--	--

Operating Temperature:

-40°C to +55°C				
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Plugs & Sockets

PRE Series: 16 A Plugs and Sockets – Increased Safety

Zone 1 & 2 - 21 & 22

II 2 GD

ATEX / IECEx

IP66 - IK09/10

Applications:

- Plugs and sockets are used with portable or stationery electrical equipment such as lighting systems, conveyors, heaters, motor generators, air conditioning equipment, compressors and pumps.
- For use in corrosive atmospheres and installations in Zone 1 and 2 and 21 and 22 of the oil and gas industry; such as refineries, chemical and petrochemical plants, pipelines, loading docks and onshore and offshore drilling platforms.

Features:

- Plug and socket assembly is equipped with a patented silver-plated linear switch which allows a total disconnection of power when plug is removed:
 - The high voltage contact separation is in a flameproof chamber.
 - The automatic electrical disconnection of each phase is contained in a second flameproof chamber.
- Short circuit protection is 20 kA, while normal reference is 10 kA.
- Different voltages are color coded for easy identification.
- The sockets are keyed to accept only ATX plugs (other plugs can not be inserted).
- ATX plugs can be used in non-hazardous sockets.

Wall Mounting Sockets:

- Three M20 threaded entries (one on the top and two on the bottom).
- Supplied with one M20 cable gland (Ø 6.5 to Ø 14.5 mm) and two M20 blanking plugs.
- Terminal capacity 2 x 4 mm². Can be through-wired.
- Fitted with three linked earth terminals.

Plugs:

- One PG16 integrated cable gland (Ø 6.5 to Ø 14.5 mm).
- Terminal capacity 2.5 mm².

Mobile Sockets:

- One PG16 integrated cable gland (Ø 6.5 to Ø 14.5 mm).
- Terminal capacity 2 x 4 mm².

Flush Sockets:

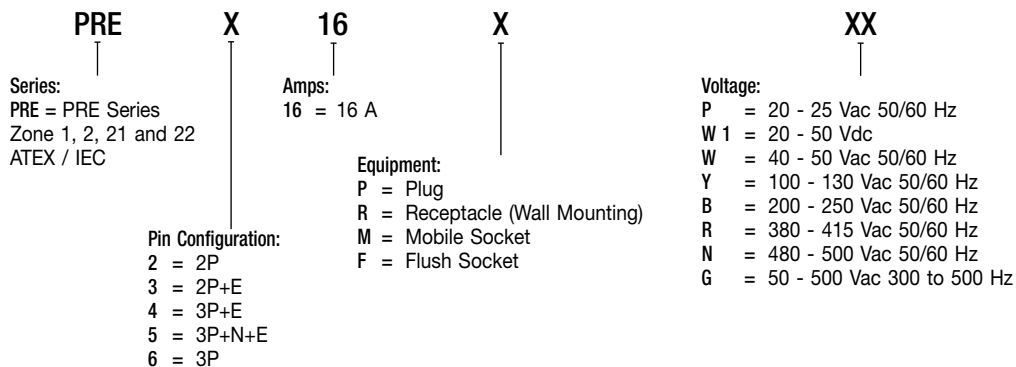
- Terminal capacity 2 x 4 mm².

Standard Material of Fixtures:

- High impact resistance polycarbonate.
- High impact resistance fiberglass reinforced polyester.
- Polyamide.

2P - 2P+E - 3P	
Wall Socket	Polycarbonate
Plug	Polyamide
Mobile Socket	Polyamide
Flush Socket	Polyamide
3P+E - 3P+N+E	
Wall Socket	Polyester
Plug	Polyamide
Mobile Socket	Polyamide
Flush Socket	Polyamide

Catalog Number Logic:



Plugs & Sockets

PRE Series: 16 A Plugs and Sockets – Increased Safety

Zone 1 & 2 - 21 & 22




II 2 GD

ATEX / IECEx

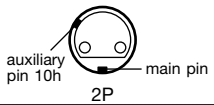
IP66 - IK09/10

Ordering Information:


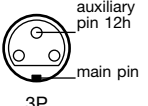
Extra Low Voltage: ELV
16 A – 20/25 Vac 50/60 Hz

Equipment	Pin Configuration	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Wall Socket		0.6	3.8	PRE216RP	097379	1
Plug		0.2	0.6	PRE216PP	097360	1
Mobile Socket		0.4	1.3	PRE216MP	097365	1
Flush Socket		2P	0.2	1.3	PRE216FP	097355
Wall Socket		0.6	3.8	PRE316RP	097368	1
Plug		0.2	0.6	PRE316PP	097388	1
Mobile Socket		0.4	1.3	PRE316MP	097389	1
Flush Socket		2P+E	0.2	1.3	PRE316FP	097387
Wall Socket		0.6	3.8	PRE616RP	097366	1
Plug		0.2	0.6	PRE616PP	097361	1
Mobile Socket		0.4	1.3	PRE616MP	097382	1
Flush Socket		3P	0.2	1.3	PRE616FP	097385

16 A – 20/50 Vdc

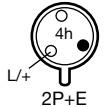
Equipment	Pin Configuration	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Wall Socket		0.6	3.8	PRE216RW1	097354	1
Plug		0.2	0.6	PRE216PW1	097364	1
Mobile Socket		0.4	1.3	PRE216MW1	097369	1
Flush Socket		2P	0.2	1.3	PRE216FW1	097386

16 A – 40/50 Vac 50/60 Hz

Equipment	Pin Configuration	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Wall Socket		0.6	3.8	PRE216RW	097352	1
Plug		0.2	0.6	PRE216PW	097362	1
Mobile Socket		0.4	1.3	PRE216MW	097367	1
Flush Socket		2P	0.2	1.3	PRE216FW	097383
Wall Socket		0.6	3.8	PRE616RW	097353	1
Plug		0.2	0.6	PRE616PW	097363	1
Mobile Socket		0.4	1.3	PRE616MW	097370	1
Flush Socket		3P	0.2	1.3	PRE616FW	097384

Low Voltage: LV

16 A – 100/130 Vac 50/60 Hz

Equipment	Pin Configuration	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Wall Socket		0.6	3.8	PRE316RY	097419	1
Plug		0.2	0.6	PRE316PY	097430	1
Mobile Socket		0.4	1.3	PRE316MY	097400	1
Flush Socket		2P+E	0.2	1.3	PRE316FY	097410

Plugs & Sockets

PRE Series: 16 A Plugs and Sockets – Increased Safety

Zone 1 & 2 - 21 & 22


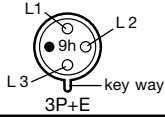
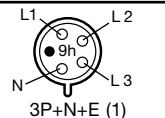
II 2 GD

ATEX / IECEx

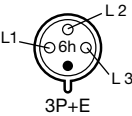
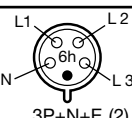
IP66 - IK09/10

Ordering Information – Continued:


Low Voltage: LV
16 A – 200/250 Vac 50/60 Hz

Equipment	Pin Configuration	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Wall Socket		0.6	3.8	PRE316RB	097426	1
Plug		0.2	0.6	PRE316PB	097433	1
Mobile Socket		0.4	1.3	PRE316MB	097401	1
Flush Socket		0.2	1.3	PRE316FB	097413	1
Wall Socket		1.5	4.7	PRE416RB	097424	1
Plug		0.2	0.6	PRE416PB	097434	1
Mobile Socket		0.6	4.0	PRE416MB	097403	1
Flush Socket		0.2	1.3	PRE416FB	097414	1
Wall Socket		1.6	4.7	PRE516RB	097425	1
Plug		0.3	1.3	PRE516PB	097435	1
Mobile Socket		0.6	4.0	PRE516MB	097407	1
Flush Socket		0.2	1.3	PRE516FB	097415	1

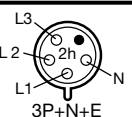
16 A – 380/415 Vac 50/60 Hz

Equipment	Pin Configuration	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Wall Socket		1.5	4.7	PRE416RR	097427	1
Plug		0.2	0.6	PRE416PR	097437	1
Mobile Socket		0.6	4.0	PRE416MR	097404	1
Flush Socket		0.3	1.3	PRE416FR	097417	1
Wall Socket		1.6	4.7	PRE516RR	097428	1
Plug		0.3	1.3	PRE516PR	097438	1
Mobile Socket		0.6	4.0	PRE516MR	097408	1
Flush Socket		0.3	1.3	PRE516FR	097418	1

16 A – 480/500 Vac 50/60 Hz

Equipment	Pin Configuration	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Wall Socket		1.5	4.7	PRE416RN	097441	1
Plug		0.2	0.6	PRE416PN	097451	1
Mobile Socket		0.6	4.0	PRE416MN	097409	1
Flush Socket		0.3	1.3	PRE416FN	097421	1

16 A – 50/500 Vac 300/500 Hz

Equipment	Pin Configuration	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Wall Socket		1.6	4.7	PRE516RG	097429	1
Plug		0.2	0.6	PRE516PG	097439	1
Mobile Socket		0.6	4.0	PRE516MG	097411	1
Flush Socket		0.3	1.3	PRE516FG	097423	1

(1) 120/208 V - 144/250 Vac 50/60 Hz

(2) 200/346 V - 240/415 Vac 50/60 Hz

Plugs & Sockets

PRE Series: 16 A Plugs and Sockets – Increased Safety



Zone 1 & 2 - 21 & 22

⊕ II 2 GD

ATEX / IECEx

IP66 - IK09/10

Accessories:

	Catalog Number	Old Catalog Number	Pack
 <p>M5 earth stud via M20 blanking plug</p>	PREESTM20	095748	1
 <p>Earth continuity adaptor via M20 blanking plug</p>	PREECAM20	095743	1

Technical Data:

Breaking Capacity		Wall Sockets	Plugs	Mobile Sockets	Flush Sockets
AC 3	4 kW – 220 V 4.3 kW – 240 V 7.5 kW – 380 V 8.2 kW – 415 V	Termination 2 x 4 mm ²	2.5 mm ²	2 x 4 mm ²	2 x 4 mm ²
ICC	20 kA	Cable Entries 3 x M20 with 1 x cable gland (dia. 6.5 to 14.5 mm) and 2 blanking plugs	1 x PG16 integrated cable gland (dia. 6.5 to 14.5 mm)	1 x PG16 integrated cable gland (dia. 6.5 to 14.5 mm)	N.A.

Compliances:

Hazardous Area	Gas		Dust	
	PCX	PCX/EN	PCX	PCX/EN
Equipment	Wall and Mobile Sockets and Plug	Flush Socket	Wall and Mobile Sockets and Plug	Flush Socket
Zones	1 – 2		21 – 22	
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G		CE 0081 ⊕ II 2 D	
Symbol of Protection ATEX	Ex de IIC		Ex tD A21	
Symbol of Protection IEC				
T Rating	T6 for Ta ≤ +40°C T5 for Ta ≤ +55°C		N.A.	
Surface Temperature	N.A.		T68°C	
Ambient Temperature	-40°C ≤ Ta ≤ +55°C			
CE Declaration of Conformity	50228	5C214	50228	5C214
ATEX Certificate	LCIE 02 ATEX 6068	LCIE 02 ATEX 0001U	LCIE 02 ATEX 6068	LCIE 02 ATEX 0001U
IECEx Certificate	IECEx LCI 04.0014	IECEx LCI 04.0012	IECEx LCI 04.0014	IECEx LCI 04.0012
Other Certifications	GOST	GOST	GOST	GOST
Ingress Protection (solid and liquid)	IP66			
Impact Resistance (shock)	IK10 (Polyester) and IK09 (Polyamide)			

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 60079-7; 61241-0; 61241-1
Product Standards	EN / IEC 60309-1; 60309-2
EMC Standards	–
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Plugs & Sockets

PRE Series: 16 A Plugs and Sockets – Increased Safety

Zone 1 & 2 - 21 & 22

Ex II 2 GD

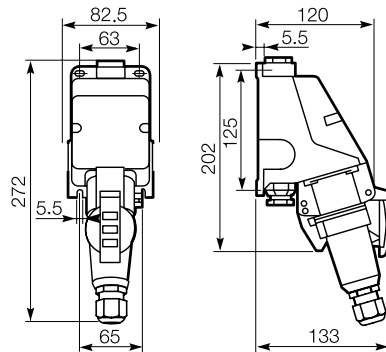
ATEX / IECEx

IP66 - IK09/10

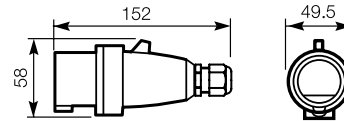
Dimensions (mm):

16A – 2P – 2P+E – 3P Versions

Wall Mounting Sockets

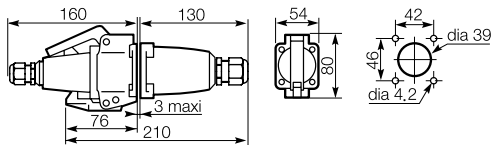


Plugs

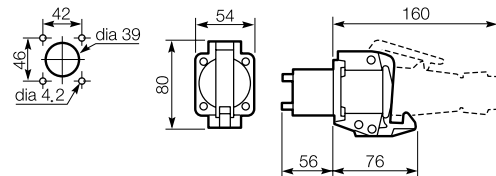


Mobile Sockets

Can be mounted on panel - 3 mm thickness maximum

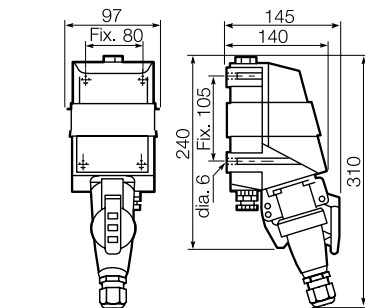


Flush Sockets

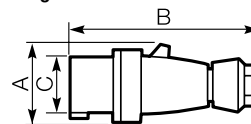


16A – 3P+E – 3P+N+E Versions

Wall Mounting Sockets



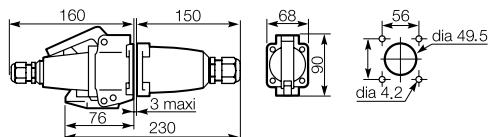
Plugs



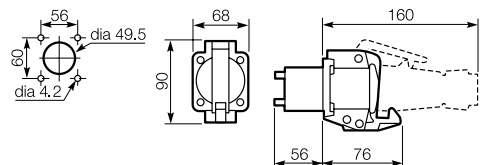
	A	B	C
3 P + E	66	154	55.5
3 P + N + E	73	166	62

Mobile Sockets

Can be mounted on panel - 3 mm thickness maximum



Flush Sockets



Plugs & Sockets

PRE Series: 32 A Plugs and Sockets – Increased Safety

LV: Low Voltage



Plug



Wall Mounting Socket



Mobile Socket



Flush Socket

100/130 Vac
 200/250 Vac
 380/415 Vac

 480/500 Vac

Compliance Data:

ATEX - IECEx



Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IECEx	CE
Ex de IIC	T6 or T5	Ex tD A21	T68°C	IP66 – IK10

Amperage:

32 A				
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Operating Temperature:

-40°C to +55°C				
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Plugs & Sockets

PRE Series: 32 A Plugs and Sockets – Increased Safety

Zone 1 & 2 - 21 & 22

II 2 GD

ATEX / IECEx

IP66 - IK10

Applications:

- Plugs and sockets are used with portable or stationery electrical equipment such as lighting systems, conveyors, heaters, motor generators, air conditioning equipment, compressors and pumps.
- For use in corrosive atmospheres and installations in Zone 1 and 2 and 21 and 22 of the oil and gas industry, such as refineries, chemical and petrochemical plants, pipelines, loading docks, and onshore and offshore drilling platforms.

Features:

- Plug and socket assembly is equipped with a patented silver-plated linear switch which allows a total disconnection of power when plug is removed:
 - The high voltage contact separation is in a flameproof chamber.
 - The automatic electrical disconnection of each phase is contained in a second flameproof chamber.
- Short circuit protection is 20 kA, while normal reference is 10 kA.
- Different voltages are color coded for easy identification.
- The sockets are keyed to accept only ATX plugs (other plugs can not be inserted).
- ATX plugs can be used in non-hazardous sockets.

Wall Mounting Sockets:

- Three M25 threaded entries (one on the top and two on the bottom).
- Supplied with one M25 cable gland (Ø 8 to Ø 18.5 mm) and two M25 blanking plugs.
- Terminal capacity 2 x 6 mm².
- Fitted with three linked earth terminals.

Plugs:

- One PG21 integrated cable gland (Ø 8 to Ø 18.5 mm) for 3P+N+E versions.
- Terminal capacity 6 mm².

Mobile Sockets:

- One PG21 integrated cable gland (Ø 8 to Ø 18.5 mm) for 2P+E and 3P+E versions.
- One PG29 integrated cable gland (Ø 18 to Ø 25 mm) for 3P+N+E versions.
- Terminal capacity 2 x 6 mm².

Flush Sockets:

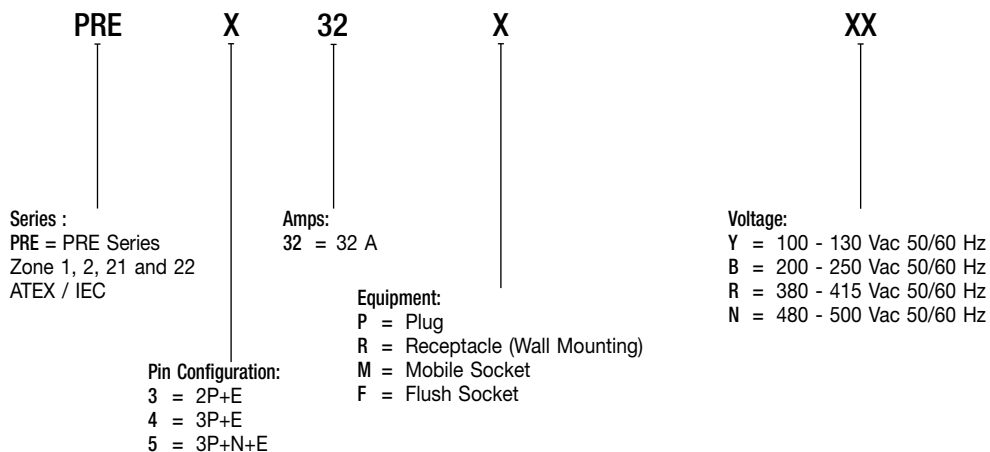
- Terminal capacity 2 x 6 mm².

Standard Material of Fixtures:

- High impact resistance fiberglass reinforced polyester.
- Polyamide.

Wall Socket	Polyester
Plug	Polyamide
Mobile Socket	Polyamide
Flush Socket	Polyamide

Catalog Number Logic:



Plugs & Sockets

PRE Series: 32 A Plugs and Sockets – Increased Safety

Zone 1 & 2 - 21 & 22

II 2 GD

ATEX / IECEx

IP66 - IK10

Ordering Information:

Low Voltage: LV

32 A – 100/130 Vac 50/60 Hz



Equipment	Pin Configuration	Weight (kg)	Volume (dm ³)	Catalog Number	Pack
Wall Socket		1.9	7	PRE332RY	1
Plug		0.5	4	PRE332PY	1
Mobile Socket		0.8	3.2	PRE332MY	1
Flush Socket		0.6	2.7	PRE332FY	1

32 A – 200/250 Vac 50/60 Hz



Equipment	Pin Configuration	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Wall Socket		1.9	7	PRE332RB	097723	1
Plug		0.5	4	PRE332PB	097733	1
Mobile Socket		0.8	3.2	PRE332MB	097743	1
Flush Socket		0.6	2.7	PRE332FB	097713	1

Wall Socket		1.9	7	PRE432RB	097724	1
Plug		0.5	4	PRE432PB	097734	1
Mobile Socket		0.8	3.2	PRE432MB	097744	1
Flush Socket		0.6	2.7	PRE432FB	097714	1

Wall Socket		1.9	7	PRE532RB	097725	1
Plug		0.5	4	PRE532PB	097735	1
Mobile Socket		1	4	PRE532MB	097745	1
Flush Socket		0.6	2.7	PRE532FB	097715	1

32 A – 380/415 Vac 50/60 Hz



Equipment	Pin Configuration	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Wall Socket		2	7	PRE432RR	097727	1
Plug		0.4	4	PRE432PR	097737	1
Mobile Socket		0.8	3.2	PRE432MR	097747	1
Flush Socket		0.6	2.7	PRE432FR	097777	1

Wall Socket		2	7	PRE532RR	097728	1
Plug		0.5	4	PRE532PR	097738	1
Mobile Socket		1	4	PRE532MR	097749	1
Flush Socket		0.6	2.7	PRE532FR	097778	1

32 A – 480/500 Vac 50/60 Hz



Equipment	Pin Configuration	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Wall Socket		2	7	PRE432RN	097757	1
Plug		0.4	4	PRE432PN	097751	1
Mobile Socket		1	4	PRE432MN	097761	1
Flush Socket		0.6	2.7	PRE432FN	097754	1

(1) 120/208 V - 144/250 Vac 50/60 Hz

(2) 200/346 V - 240/415 Vac 50/60 Hz

Plugs & Sockets

PRE Series: 32 A Plugs and Sockets – Increased Safety



Zone 1 & 2 - 21 & 22

⊕ II 2 GD

ATEX / IECEx

IP66 - IK10

Accessories:

	Catalog Number	Old Catalog Number	Pack
 M6 earth stud via M25 blanking plug	PREESTM25	095749	1
 Earth continuity adaptor via M25 blanking plug	PREECAM25	095744	1

Technical Data:

		Wall Sockets	Plugs	Mobile Sockets	Flush Sockets	
Breaking Capacity		Termination	6 mm ²	2 x 6 mm ²	2 x 6 mm ²	
AC 1	32 A – 500 V	Cable Entries	2P+E and 3P+E 1 x PG21 integrated cable gland (dia. 8 to 18.5 mm)	2P+E and 3P+E 1 x PG21 integrated cable gland (dia. 8 to 18.5 mm)	N.A.	
AC 22	11 kW – 220 V 12 kW – 240 V 19 kW – 380 V 20.7 kW – 415 V		3 x M25 with 1 x cable gland (dia. 8 to 18.5 mm) and 2 blanking plugs	3P+N+E 1 x PG29 integrated cable gland (dia. 18 to 25 mm)		3P+N+E 1 x PG29 integrated cable gland (dia. 18 to 25 mm)
ICC	20 kA					

Compliances:

Hazardous Area	Gas		Dust	
	PCX	PCX/EN	PCX	PCX/EN
Certification Type	Wall and Mobile Sockets and Plug	Flush Socket	Wall and Mobile Sockets and Plug	Flush Socket
Equipment				
Zones	1 – 2		21 – 22	
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G		CE 0081 ⊕ II 2 D	
Symbol of Protection ATEX	Ex de IIC		Ex tD A21	
Symbol of Protection IEC				
T Rating	T6 for Ta ≤ +40°C T5 for Ta ≤ +55°C		N.A.	
Surface Temperature	N.A.		T68°C	
Ambient Temperature	-40°C ≤ Ta ≤ +55°C			
CE Declaration of Conformity	50228	5C214	50228	5C214
ATEX Certificate	LCIE 02 ATEX 6068	LCIE 02 ATEX 0001U	LCIE 02 ATEX 6068	LCIE 02 ATEX 0001U
IECEx Certificate	IECEx LCI 04.0014	IECEx LCI 04.0012	IECEx LCI 04.0014	IECEx LCI 04.0012
Other Certifications	GOST	GOST	GOST	GOST
Ingress Protection (solid and liquid)	IP66			
Impact Resistance (shock)	IK10			

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 60079-7; 61241-0; 61241-1
Product Standards	EN / IEC 60309-1; 60309-2
EMC Standards	–
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Plugs & Sockets

PRE Series: 32 A Plugs and Sockets – Increased Safety

Zone 1 & 2 - 21 & 22

II 2 GD

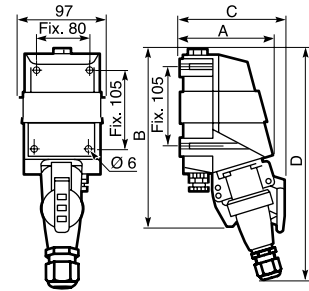
ATEX / IECEx

IP66 – IK10

Dimensions (mm):

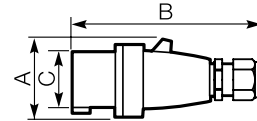
32A – 2P+E – 3P+E – 3P+N+E Versions

Wall Mounting Sockets



	A	B	C	D
2 P + E	140	275	155	370
3 P + E	140	275	155	370
3 P + N + E	140	275	165	375

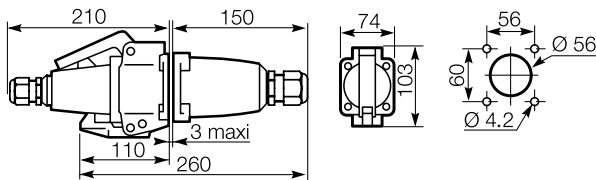
Plugs



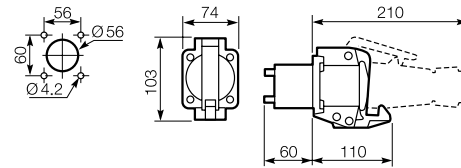
	A	B	C
2 P + T	80	170	67
3 P + T	80	170	67
3 P + N + T	80	195	74

Mobile Sockets

Can be mounted on panel - 3 mm thickness maximum



Flush Sockets



Plugs & Sockets

PRE Series: 63 A Plugs and Sockets – Increased Safety



63 A Wall Mounting Socket



63A Wall Mounting Socket Through-Wired



63A Plug

Compliances:

ATEX - IEC:



Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IEC	CE
Ex de IIC	T6 or T5	Ex tD A21	T90°C	IP66 – IK10

Electrical Data:

Voltage	Amperage			
Up to 690 V	63 A			

Operating Temperature:

-30°C to +55°C		
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Plugs & Sockets

PRE Series: 63 A Plugs and Sockets – Increased Safety

Zone 1 & 2 - 21 & 22

II 2 GD

ATEX / IEC

IP66 – IK10

Applications:

- Plugs and sockets are used with stationary or portable electrically operated devices such as welding devices, lighting systems, conveyers, heaters, motor generator sets, air conditioners, compressors and pumps.
- For use in corrosive atmospheres and installations in Zones 1, and 2 and 21 and 22 of oil and gas industry; such as refineries, chemical, petrochemical plants, pipelines, offshore and onshore drilling platforms.

Features:

- Positive polarization: only ATX plugs of same style, number of poles and ampere rating may be used with these sockets.
- Interlocked 3-pole or 4-pole Ex de disconnecting on-load switch, with auxiliary early break contact (capacity 2.5 mm² max).
- Plug is mechanically locked in socket when switch is ON.
- Switch operating handle can be padlocked in OFF position (max 4 padlocks).
- Plug cannot be inserted or removed unless switch is in OFF position.

Socket Outlet:

Standard versions:

- Supplied with one M50 cable gland for unarmored cable Ø 28 to Ø 42 mm, and one M25 blanking plug.
- Terminal capacity 1 x 35 mm².

Through-wired versions:

- Supplied with two M50 cable glands for unarmored cable Ø 28 to Ø 42 mm, and one M25 blanking plug.
- Terminal capacity 2 x 35 mm².

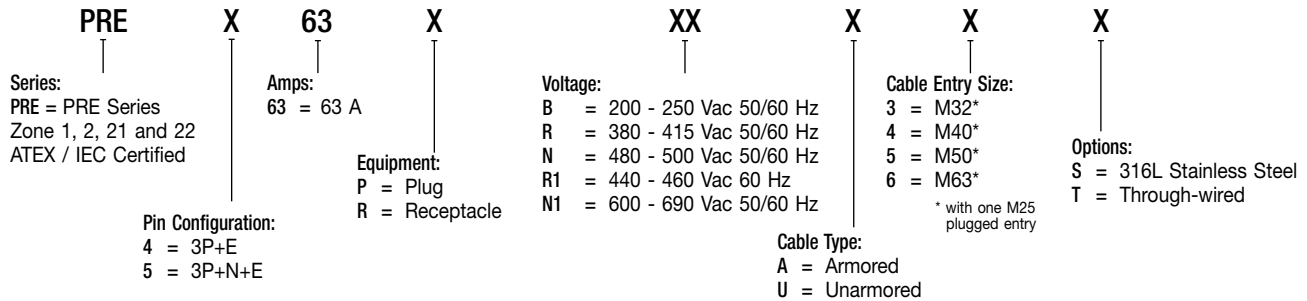
Plug:

- One integrated cable entry for unarmored flexible cable Ø 17.5 to 29 mm for 3P + E versions. Ø 17.5 to 32 mm for 3P + N + E versions.
- Terminals capacity 16 mm².

Standard Material of Fixtures:

- High impact resistance fiberglass reinforced polyester socket.
- Polyamide flap cover and plug.

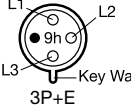
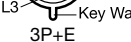
Catalog Number Logic:



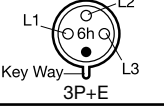
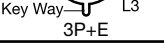


Ordering Information:

Standard Versions:

63 A – 200/250 Vac 50/60 Hz

Equipment	Pin Configuration	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Wall Socket		8	26	PRE463RBU5	096842	1
Plug		1	7	PRE463PB	096882	1

63 A – 380/415 Vac 50/60 Hz

Equipment	Pin Configuration	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Wall Socket		8	26	PRE463RRU5	096844	1
Plug		1	7	PRE463PR	096884	1
Wall Socket		8	26	PRE563RRU5	096845	1
Plug		1	7	PRE563PR	096885	1

(1) 200/346 V – 240/415 Vac 50/60 Hz

Plugs & Sockets

PRE Series: 63 A Plugs and Sockets – Increased Safety

Zone 1 & 2 - 21 & 22

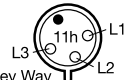
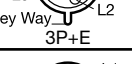
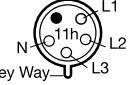
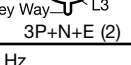
II 2 GD

ATEX / IEC

IP66 – IK10

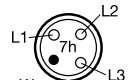
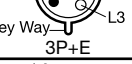
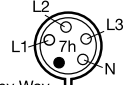
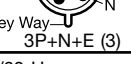
Ordering Information – Continued:

63 A – 440/460 Vac 60 Hz

Equipment	Pin Configuration	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Wall Socket		8	26	PRE463RR1U5	096848	1
Plug		1	7	PRE463PR1	096888	1
Wall Socket		8	26	PRE563RR1U5	096849	1
Plug		1	7	PRE563PR1	096889	1

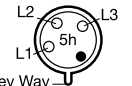
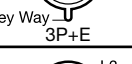

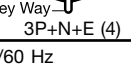
(2) 250/440 V – 265/460 Vac 60 Hz

63 A – 480/500 Vac 50/60 Hz

Equipment	Pin Configuration	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Wall Socket		8	26	PRE463RNU5	096846	1
Plug		1	7	PRE463PN	096886	1
Wall Socket		8	26	PRE563RNU5	096847	1
Plug		1	7	PRE563PN	096887	1

(3) 277/480 V – 288/500 Vac 50/60 Hz

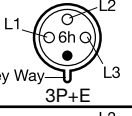
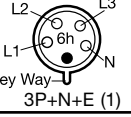
63 A – 600/690 Vac 50/60 Hz

Equipment	Pin Configuration	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Wall Socket		8	26	PRE463RN1U5	096851	1
Plug		1	7	PRE463PN1	096891	1
Wall Socket		8	26	PRE563RN1U5	096852	1
Plug		1	7	PRE563PN1	096892	1

(4) 347/600 V – 400/690 Vac 50/60 Hz

Through-wired Versions:

63 A – 380/415 Vac 50/60 Hz

Equipment	Pin Configuration	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Wall Socket		16	110	PRE463RRU5T	—	1
Wall Socket		16	110	PRE563RRU5T	—	1

(1) 200/346 V – 240/415 Vac 50/60 Hz

Plugs & Sockets

PRE Series: 63 A Plugs and Sockets – Increased Safety

Zone 1 & 2 – 21 & 22

⊕ II 2 GD

ATEX / IEC IP66 – IK10

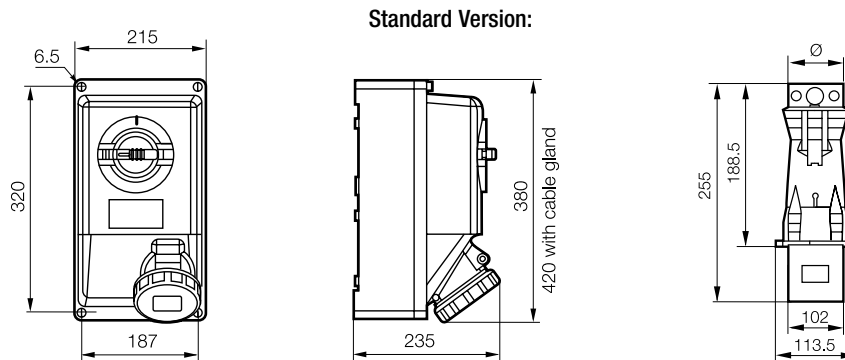
Compliances:

Hazardous Area	Gas	Dust
Certification Type	PC63X	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex de IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	T6 for $T_a \leq +40^\circ\text{C}$ T5 for $+40^\circ\text{C} < T_a \leq +55^\circ\text{C}$	–
Surface Temperature	–	T90°C
Service Temperature	-30°C to +55°C	
CE Declaration of Conformity	50208	
ATEX Certificate	LCIE 99 ATEX 6004	
IEC Certificate	LCIE Ex 99.004	
Other Certifications	GOST	
Ingress Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	

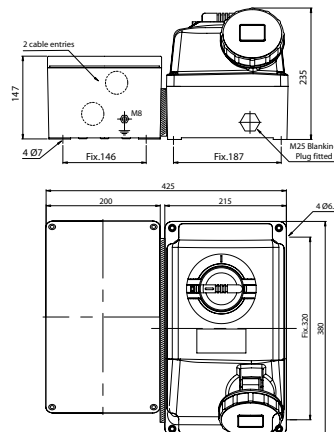
Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 60079-7; 61241-0; 61241-1
Product Standards	EN / IEC 60309-1; 60309-2
EMC Standards	–
Other Standards	EN / IEC 60529 (IP); EN 62262 (IK)

Dimensions (mm):



Through-Wired Version:



Plugs & Sockets

PRE Series: 125 A Plugs and Sockets – Increased Safety



125 A Plug



125 A Wall Mounting Socket

Compliances:

ATEX - IEC:



Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IEC	CE
Ex de IIC	T6 or T5	Ex tD A21	T90°C	IP66 – IK10

Electrical Data:

Voltage	Amperage			
Up to 690 V	125 A			

Operating Temperature:

-30°C to +55°C		
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Plugs & Sockets

PRE Series: 125 A Plugs and Sockets – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IEC

IP66 – IK10

Applications:

- Plugs and sockets are used with stationary or portable electrically operated devices such as welding devices, lighting systems, conveyers, heaters, motor generator sets, air conditioners, compressors and pumps.
- For use in corrosive atmospheres and installations in Zones 1 and 2 and 21 and 22 of the oil and gas industry; such as refineries, chemical, petrochemical plants, pipelines, offshore and onshore drilling platforms.

Features:

- Positive polarization: only ATX plugs of same style, number of poles and ampere rating may be used with these sockets.
- Interlocked 3-pole or 4-pole Ex de disconnecting on-load switch, with auxiliary early break contact (capacity 2.5 mm² max).
- Plug is mechanically locked in socket when switch is ON.
- Switch operating handle can be padlocked in OFF position (max 4 padlocks).
- Plug cannot be inserted or removed unless switch is in OFF position.

Socket Outlet:

- One M63 cable gland for unarmored cable Ø 36 to Ø 44 mm, and one M25 blanking plug.
- Terminal capacity 120 mm².

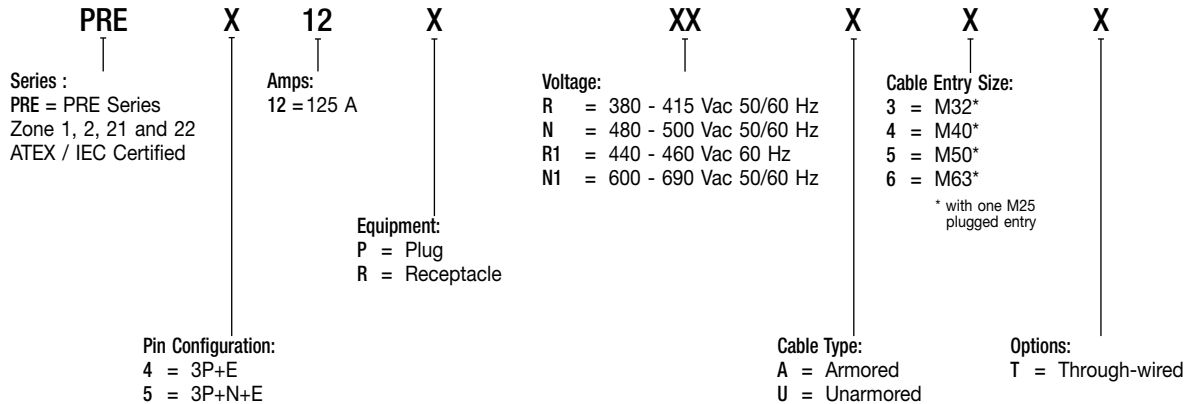
Plug:

- One integrated cable entry for unarmored flexible cable Ø 30 to Ø 48 mm.
- Terminals capacity 50 mm².

Standard Material of Fixtures:

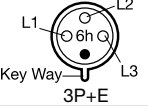

- 316L stainless steel socket.
- Polyamide flap cover and plug.

Catalog Number Logic:



Ordering Information:

125 A – 380/415 Vac 50/60Hz

Equipment	Pin Configuration	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Wall Socket		16	70	PRE412RRU6	096866	1
Plug	Key Way—J 3P+E	1.1	13	PRE412PR	096876	1
Wall Socket		16	70	PRE512RRU6	096867	1
Plug	Key Way—J 3P+N+E (1)	1.1	13	PRE512PR	096877	1

(1) 200/346 V – 240/415 Vac 50/60 Hz

Plugs & Sockets

PRE Series: 125 A Plugs and Sockets – Increased Safety

Zone 1 & 2 – 21 & 22

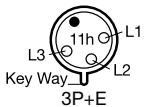
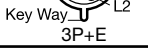
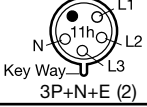
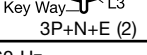
II 2 GD

ATEX / IEC

IP66 – IK10

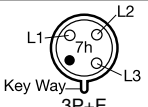
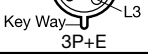

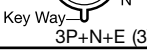
Ordering Information – Continued:

125 A – 440/460 Vac 60 Hz

Equipment	Pin Configuration	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Wall Socket		16	70	PRE412RR1U6	096858	1
Plug		1.1	13	PRE412PR1	096868	1
Wall Socket		16	70	PRE512RR1U6	096859	1
Plug		1.1	13	PRE512PR1	096869	1


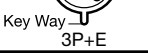

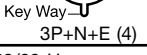
(2) 250/440 V – 265/460 Vac 60 Hz

125 A – 480/500 Vac 50/60 Hz

Equipment	Pin Configuration	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Wall Socket		16	70	PRE412RNU6	096860	1
Plug		1.1	13	PRE412PN	096870	1
Wall Socket		16	70	PRE512RNU6	096861	1
Plug		1.1	13	PRE512PN	096871	1

(3) 277/480 V – 288/500 Vac 50/60 Hz

125 A – 600/690 Vac 50/60 Hz

Equipment	Pin Configuration	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Wall Socket		16	70	PRE412RN1U6	096862	1
Plug		1.1	13	PRE412PN1	096872	1
Wall Socket		16	70	PRE512RN1U6	096863	1
Plug		1.1	13	PRE512PN1	096873	1

(4) 347/600 V – 400/690 Vac 50/60 Hz

Plugs & Sockets

PRE Series: 125 A Plugs and Sockets – Increased Safety

Zone 1 & 2 – 21 & 22

⊕ II 2 GD

ATEX / IEC

IP66 – IK10

Compliances:

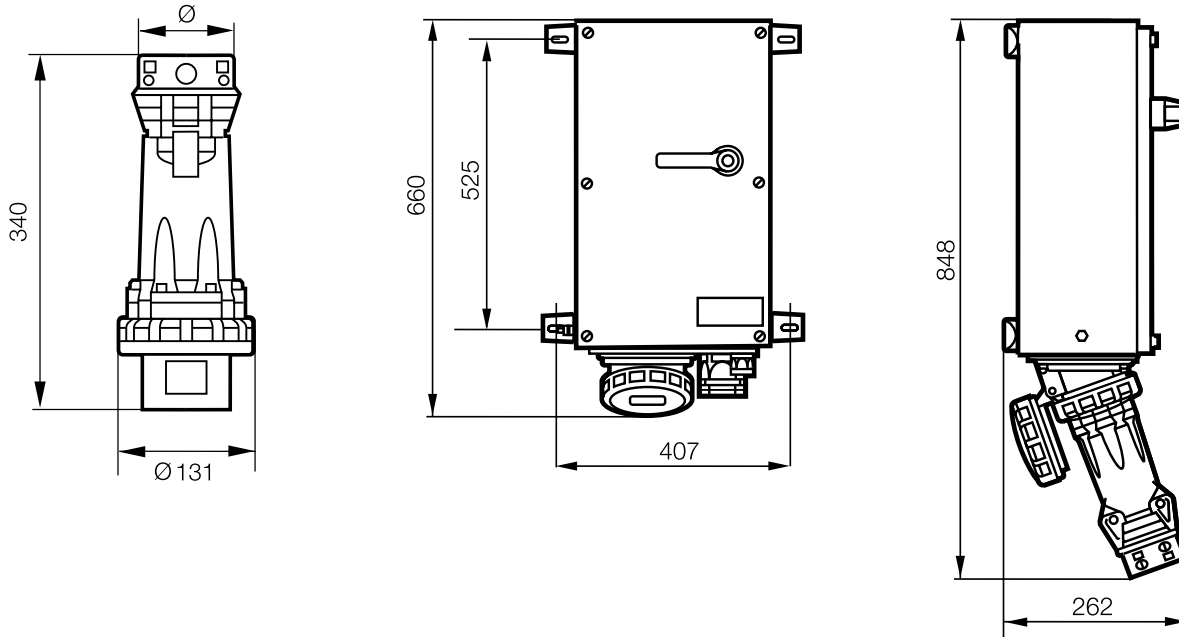
Hazardous Area	Gas	Dust
Certification Type	PC125X	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex de IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	T6 for $T_a \leq +40^\circ\text{C}$ T5 for $T_a \leq +55^\circ\text{C}$	–
Surface Temperature	–	T90°C
Service Temperature	-30°C to +55°C	
CE Declaration of Conformity	50218	
ATEX Certificate	LCIE 99 ATEX 6031	
IEC Certificate	LCIE Ex 99.017	
Other Certifications	GOST	
Ingress Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 60079-7; 61241-0; 61241-1
Product Standards	EN / IEC 60309-1; 60309-2
EMC Standards	–
Other Standards	EN / IEC 60529 (IP); EN 62262 (IK)

Dimensions (mm):

Standard Version:



Plugs & Sockets

MRE Series: 16 and 32 A Multiple Socket Outlets – Stationary and Portable – Increased Safety



Customized Version



Two Socket Outlet Version



Four Socket Outlet Version



Cable Reel

Compliance Data:

ATEX – IECEx (CSPe and CAe Type) – IEC (JBE Type):



Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IECEx / IEC	CE
Ex de IIC	T6 to T2	Ex tD A21	T68°C to T290°C	IP66 – IK09

Operating Temperature:

-40°C to +55°C

Plugs & Sockets

MRE Series: 16 and 32 A Multiple Socket Outlets – Stationary and Portable – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IEC

IP66 – IK09

Applications:

- Plugs and sockets are used with portable or stationary electrical equipment such as lighting systems, conveyors, heaters, motor generators, air conditioning equipment, compressors and pumps.
- For use in corrosive atmospheres and installations in Zone 1 and 2 and 21 and 22 of the oil and gas industry; such as refineries, chemical, petrochemical plants, pipelines, loading docks, onshore and offshore drilling platforms.

Features:

- Plug and socket assembly is equipped with a patented silver plated linear switch which allows a total disconnection of power when plug is removed.
- The high voltage contact separation is in a flameproof chamber.
- The automatic electrical disconnection of each phase is contained in a second flameproof chamber.
- Short circuit protection is 20 kA, while normal reference is 10 kA.
- Different voltages are color coded for easy identification.

- The sockets are keyed to accept only ATX plugs (other plugs can not be inserted).
- ATX plugs can be used in non-hazardous sockets.

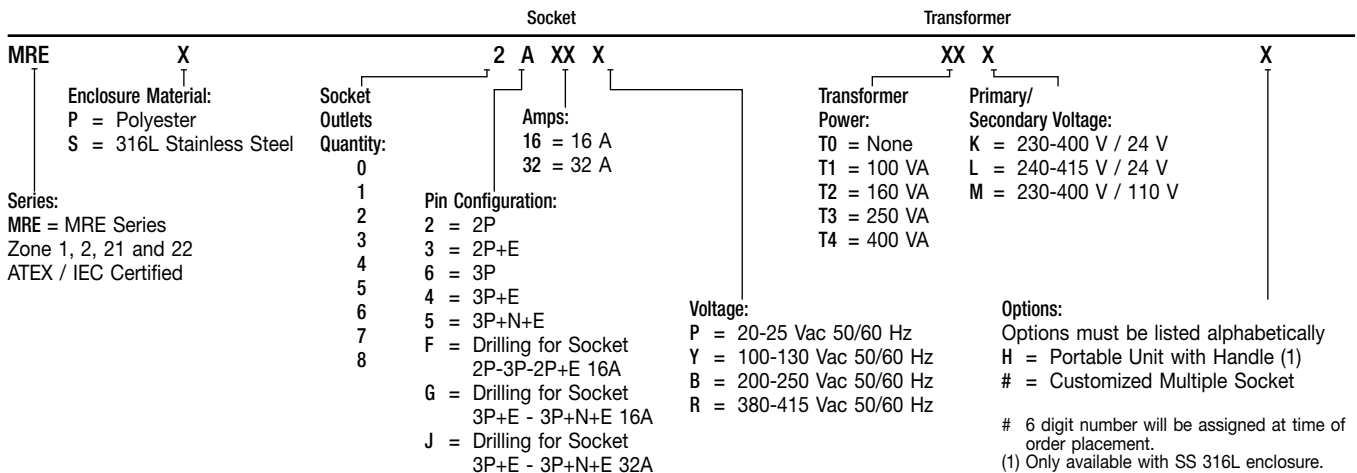
Standard Material of Fixtures:

- High impact resistance fiberglass reinforced polyester or 316L stainless steel housing.
- Polyamide flush sockets.

Options:

- Customized multiple socket outlets.

Catalog Number Logic:



Ordering Information:

Pre-drilled Multiple Sockets in Polyester for 2 Flush Sockets 16 A

Ex de IIC T5 -40°C to + 60°C

Supplied with:

1 x Terminal block 2P+E 6 mm²

1 x M20 plastic cable gland for unarmored cable (sealing diameter 6.5 to 14.5 mm)

Layout 1	Description	Type	Weight (kg)	Volume (dm ³)	Catalog Number	Pack
	Pre-drilled enclosure for 2 flush sockets (not supplied) PRE Series 2P or 2P+E – 16A	CSPe3 PCX/EN	1.3	7	MREP2F	1

Plugs & Sockets

MRE Series: 16 and 32 A Multiple Socket Outlets – Stationary and Portable – Increased Safety

Zone 1 & 2 – 21 & 22

Ex II 2 GD

ATEX / IEC

IP66 – IK09

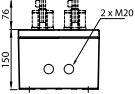
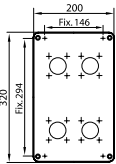



Ordering Information – Continued:

Pre-drilled Multiple Sockets in Polyester for 4 Flush Sockets 16A

Ex de IIC T5 -40°C to + 55°C

Supplied with:

- 1 x Distribution block 4 poles 12 x 4 mm with cable clamps 2 x 10 mm² max.
- 1 x M20 plastic cable gland for unarmored cable (sealing diameter 6.5 to 14.5 mm).
- 1 x M20 plastic blanking plug.

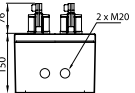
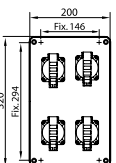
Layout 2	Description	Type	Weight (kg)	Volume (dm ³)	Catalog Number	Pack
	Pre-drilled enclosure for 4 flush sockets (not supplied) PRE Series 2P or 2P+E – 16A	CAe2 PCX/EN	4	15	MREP4F	1
	Pre-drilled enclosure for 4 flush sockets (not supplied) PRE Series 3P+E or 3P+N+E – 16A	CAe2 PCX/EN	4	15	MREP4G	1
	Mounting adaptor to install 2P or 2P+E – 16A flush sockets with pre-drilled enclosure MREP4G	–	0.1	0.7	096496	1
	Blanking plate to install Unicode2 Series component diameter 30 mm (Push button, Pilot light or blanking plug) on 096496	–	0.1	0.7	097494	1
	Blanking plug diameter 30 mm	–	0.1	0.18	UBP	1

Combined Units in Polyester with 4 Flush Sockets 16A

Ex de IIC T5 -40°C to + 55°C

Supplied with:

- 1 x Distribution block 4 poles 12 x 4 mm with cable clamps 2 x 10 mm² max.
- 1 x M20 plastic cable gland for unarmored cable (sealing diameter 6.5 to 14.5 mm).
- 1 x M20 plastic blanking plug.

Layout 3	Description	Type	Weight (kg)	Volume (dm ³)	Catalog Number	Pack
	4 flush sockets 2P+E 16 A 20/25 Vac	CAe2 PCX/EN	5	25	MREP4316P	1
	4 flush sockets 2P+E 16 A 200/250 Vac	CAe2 PCX/EN	5	25	MREP4316B	1

Plugs & Sockets

MRE Series: 16 and 32 A Multiple Socket Outlets – Stationary and Portable – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IEC

IP66 – IK09

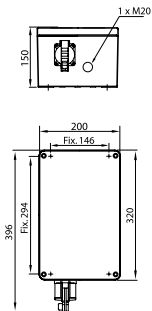
Ordering Information – Continued:

Combined Units in Polyester with 1 Flush Socket 16 A

Ex de IIC T3 -40°C to + 55°C

Supplied with:

- 1 x Transformer 230-400 V / 24 V 250 VA.
- 2 x Fuse carriers 14 x 51 for primary protection.
- 2 x Fuse carriers 14 x 51 for secondary protection.
- 1 x Flush socket 2P+E 16 A 24 Vac (PRE316FP).
- 1 x M20 plastic cable gland for unarmored cable (sealing diameter 6.5 to 14.5 mm).

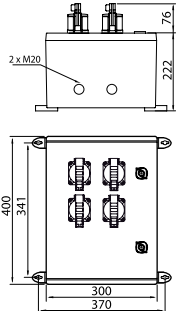
Layout 4	Description	Type	Weight (kg)	Volume (dm ³)	Catalog Number	Pack
	1 flush socket 2P+E 16 A 20/25 Vac and transformer 230-400 V/24 V 250 VA	CAe2 PCX/EN	12	25	MREP1316PT3K	1

Combined Units in Polyester with 4 Flush Sockets 16 A

Ex de IIC T3 -40°C to + 55°C

Supplied with:

- 1 x Transformer 230-400 V / 24 V 400 VA.
- 2 x Fuse carriers 14 x 51 for primary protection.
- 2 x Fuse carriers 14 x 51 for secondary protection.
- 4 x Flush sockets 2P+E 16 A 24 Vac (PRE316FP).
- 1 x M20 plastic cable gland for unarmored cable (sealing diameter 6.5 to 14.5 mm).
- 1 x M20 plastic blanking plug.

Layout 5	Description	Type	Weight (kg)	Volume (dm ³)	Catalog Number	Pack
	4 flush sockets 2P+E 16 A 20/25 Vac and transformer 230-400 V/24 V 400 VA	CAe6 PCX/EN	15	36	MREP4316PT4K	1

Plugs & Sockets

MRE Series: 16 and 32 A Multiple Socket Outlets – Stationary and Portable – Increased Safety

Zone 1 & 2 – 21 & 22

Ex II 2 GD

ATEX / IEC

IP66 – IK09

Ordering Information – Continued:

Portable Combined Units in 316L Stainless Steel with 4 Flush Sockets 16 A

Ex de IIC T3 -40°C to +55°C

Supplied with:

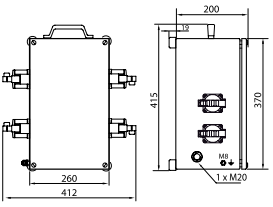
1 x Transformer.

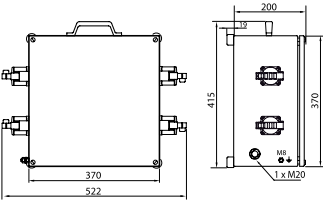
2 x Fuse carriers 14 x 51 for primary protection.

2 x Fuse carriers 14 x 51 for secondary protection.

4 x Flush sockets 2P+E 16 A 24 V (PRE316FP).

1 x M20 cable gland for unarmored cable (sealing diameter 6.5 to 14.5 mm).

Layout 6	Description	Type	Weight (kg)	Volume (dm ³)	Catalog Number	Pack
	250 VA Portable Unit: Ex de IIC T3 -40°C to +55°C 4 flush sockets 2P+E 16A 20/25 Vac and transformer 230-400 V / 24 V 250 VA	JBe47 PCX/EN	19	30	MRES4316PT3KH	1

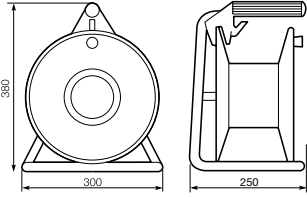
Layout 7	Description	Type	Weight (kg)	Volume (dm ³)	Catalog Number	Pack
	400 VA Portable Unit: Ex de IIC T2 -40°C to +55°C or Ex de IIC T3 -40°C to +40°C 4 flush sockets 2P+E 16 A 20/25 Vac and transformer 230-400 V/24 V 400 VA	JBe55 PCX/EN	23	42	MRES4316PT4KH	1

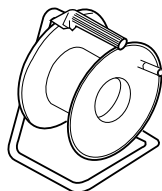
Cable Reel

Polyamide reel

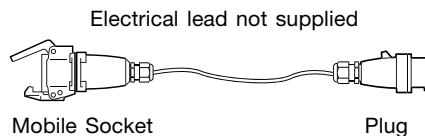
Reel capacity: 40 meters of 3 x 2.5 mm² flexible cable

Handle with drum brake

Layout 8	Description	Weight (kg)	Volume (dm ³)	Catalog Number	Pack
	Cable reel	2.5	32	097499	1



Cable Reel



Mobile Socket

Plug

Cable reel is used for carrying and storing of the electrical lead.
The electrical lead must be completely removed from the cable reel before use.

Plugs & Sockets

MRE Series: 16 and 32 A Multiple Socket Outlets – Stationary and Portable – Increased Safety

Zone 1 & 2 – 21 & 22

⊕ II 2 GD

ATEX / IEC

IP66 – IK09

Compliances:

Flush Socket:

Hazardous Area	Gas	Dust
Certification Type	PCX/EN	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	0081 ⊕ II 2 G	0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex de IIC	Ex td A21
Symbol of Protection IEC		
T Rating	T6 for Ta ≤ +40°C T5 for Ta ≤ +55°C	N.A.
Surface Temperature	N.A.	T68°C
Service Temperature	-40°C to +55°C	
CE Declaration of Conformity	5C214	
ATEX Certificate	LCIE 02 ATEX 0001U	
IECEX Certificate	IECEX LCI 07.0012U	
Other Certifications	GOST	
Ingress Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK09 (Polyamide)	

Housing:

Hazardous Area	Gas	Dust
Certification Type	CSPe	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex e II	Ex td A21
Symbol of Protection IEC		
T Rating	T6	N.A.
Surface Temperature	N.A.	T75°C
Ambient Temperature	-55°C to +60°C	
CE Declaration of Conformity	50284	
ATEX Certificate	LCIE 09 ATEX 3032X	
IECEX Certificate	IECEX LCI 09.0016X	
Other Certifications	GOST	
Ingress Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	

Housing:

Hazardous Area	Gas	Dust
Certification Type	CAe	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex e II	Ex td A21
Symbol of Protection IEC		
T Rating	T6 to T3	N.A.
Surface Temperature	N.A.	T80°C to T195°C
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50235	
ATEX Certificate	LCIE 02 ATEX 6248X	
IECEX Certificate	IECEX LCI 04.0016X	
Other Certifications	GOST	
Ingress Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	

Housing:

Hazardous Area	Gas	Dust
Certification Type	JBe	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex e II	Ex td A21
Symbol of Protection IEC		
T Rating	T6 to T2	N.A.
Surface Temperature	N.A.	T80°C to T290°C
Ambient Temperature	-50°C to +70°C	
CE Declaration of Conformity	50232	
ATEX Certificate	LCIE 02 ATEX 6118X	
IEC Certificate	LCIE Ex 02.010X	
Other Certifications	GOST	
Ingress Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 60079-7; 61241-0; 61241-1
Product Standards	EN / IEC 60309-1; 60309-2
EMC Standards	–
Other Standards	EN / IEC 60529 (IP); EN 62262 (IK)

Plugs & Sockets

MRE Series: 16 and 32 A Multiple Socket Outlets – Stationary and Portable – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

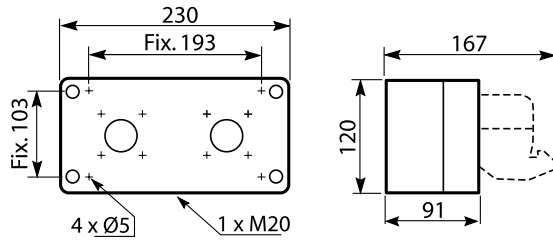
ATEX / IEC

IP66 – IK09

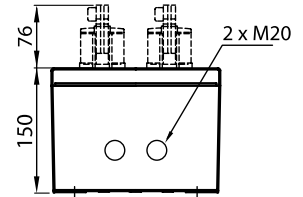
Dimensions (mm):

Polyester Enclosures:

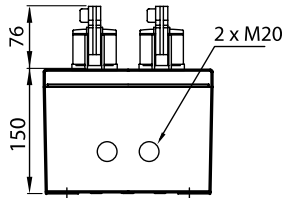
Layout 1:



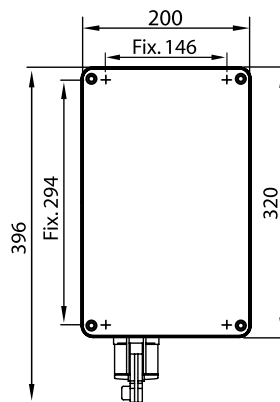
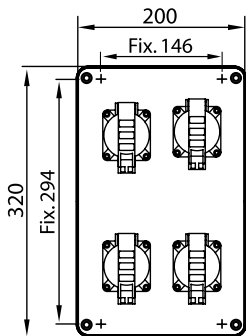
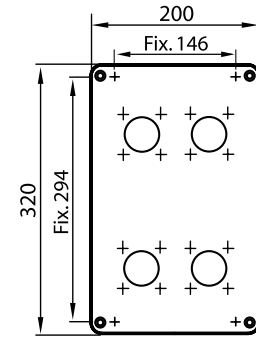
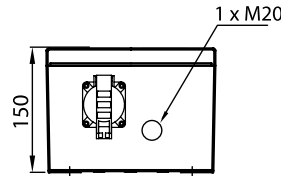
Layout 2:
(Flush Sockets Not Supplied)



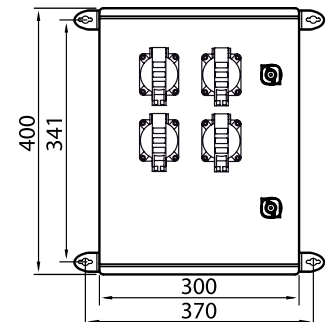
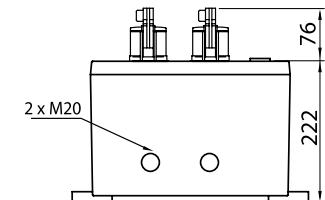
Layout 3:



Layout 4:



Layout 5:



Plugs & Sockets

MRE Series: 16 and 32 A Multiple Socket Outlets – Stationary and Portable – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IEC

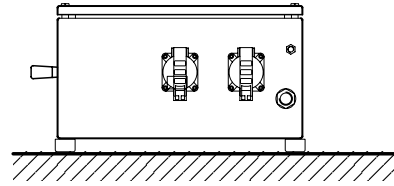
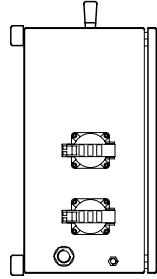
IP66 – IK09

Dimensions (mm) – Continued:

316L Stainless Steel Enclosures:

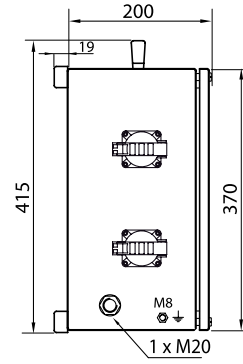
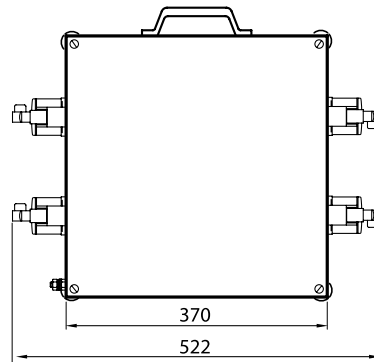
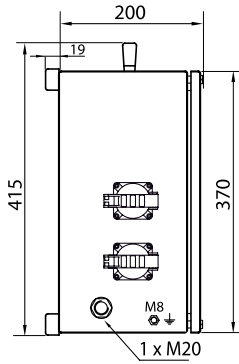
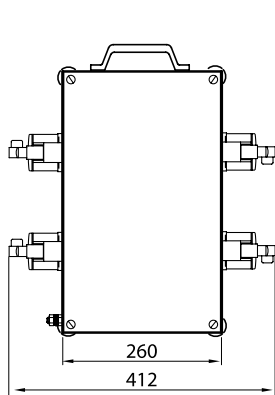
Position for Transportation:

Position for Use:



Layout 6:

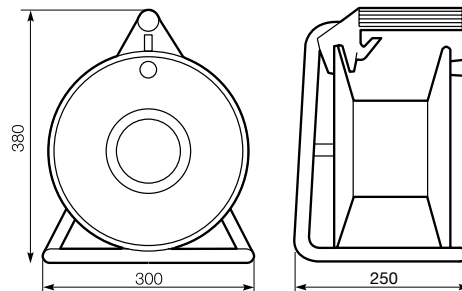
Layout 7:



Dimensions (mm):

Cable Reel:

Layout 8:



Plugs & Sockets

PRD Series: 16, 32, 80 and 125 A Plugs and Sockets – Flameproof



16 Amp
Plug & Socket



32 Amp
Plug & Socket



80 Amp & 125 Amp
Plug & Socket



Compliances:

ATEX - IEC:



16 A & 32 A				
Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IEC	CE
Ex d IIC	T6 or T5	Ex tD A21	T95°C	IP66 – IK10

ATEX - IEC:

80 A & 125 A				
Zone 1 & 2	ATEX	II 2 G	IEC	CE
Ex d IIB	T6 or T5	IP55 – IK10		

Amperage and Voltage:

16 A	32 A	80 A	125 A	
20 V to 415 Vac	380/415 Vac	380/415 Vac	380/415 Vac	

Operating Temperature:

-40°C to +55°C				
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Plugs & Sockets

PRD Series: 16, 32, 80 and 125 A Plugs and Sockets – Flameproof

Zone 1 & 2 – 21 & 22

II 2 GD or II 2 G

ATEX / IEC

IP66 or IP55 – IK10

Applications:

- Hazardous areas where plugs and sockets are used with portable or stationary electrical equipment such as lighting and heating systems, conveyors, motor starters, air-conditioning appliances, compressors and pumps.
- Ideal for hazardous areas where weatherproof and robust equipment is required.
- Ideal for hazardous areas Zones 1, 2, 21 and 22 in the oil and gas industry; such as refineries, pipelines and offshore sea-rigs.

Features:

General:

16 A:

- Flameproof seal with cylindrical spigot joint.
- Automatic disconnection of the poles by patented dual-safety device, which ensures the following once the plug is removed from the socket outlet:
 - Automatic and simultaneous disconnection of each phase in a flameproof chamber
 - Disconnection, once power is off, of the pins in the second flameproof chamber
- Cover can be padlocked (1 padlock diameter 5 mm, length 45 mm).
- Wall sockets and flush sockets incorporate a safety device that only accepts plugging of ATX plugs which are certified for use in hazardous areas.
- Plugs can be used with IEC 60309-2 compliant industrial pin socket outlets in non-hazardous areas.

32 A:

- Flameproof seal with cylindrical spigot joint.
- Mechanical interlocking device ensures:
 - Disconnection takes place within the flameproof chamber before the plug is removed from the socket outlet
 - The plug cannot be removed when energized
- Straight handle placed on the plug for use with IEC 60309-2 compliant industrial pin socket outlets in non-hazardous areas.

80 A and 125 A:

- Interlocking mechanical device which prevents:
 - The switch from closing until the plug is fully inserted into the wall socket
 - The plug from being removed until the switch is off
- Socket outlet supplied with a load break isolating switch ensuring disconnection with power on.
- Switch handle can be padlocked in the “off” position (3 padlocks).

Wall Sockets:

16 A:

- 2 x M20 threaded cable entries (1 at the top, 1 at bottom).
- Supplied with one M20 plug.
- Connection on 2 x 4 mm² terminals.
- Earth terminals: internal and external, with 4 mm diameter screws.

32 A:

- 2 x M25 threaded cable entries (1 at the top, 1 at bottom).
- Supplied with one M25 plug.
- Connection on 10 mm² terminals.
- Earth terminals: internal and external with 6 mm diameter screws.

80 A:

- 1 x M32 threaded cable entry (on the top side).
- Connection via 8 mm diameter lug terminals (not supplied).
- Internal earth through 35 mm² connection and external earth through 6 mm diameter screws.

125 A:

- 1 x M50 threaded entry (on the top side).
- Connection via 8 mm diameter lug terminals (not supplied).
- Internal earth through 35 mm² connection and external earth through 6 mm diameter screws.

Plugs:

16 A:

- 1 cable entry through integrated M25 cable gland 9 to 12 mm diameter for the 2P+E plug 12 to 15 mm diameter for the 3P+E plug 15 to 17 mm diameter for the 3P+N+E plug
- Connection on 2.5 mm² maximum terminals.

32 A:

- 1 cable entry via integrated cable gland diameter 17 to 22 mm.
- Connection on 6 mm² maximum terminals.

80 A:

- 1 cable entry via supplied cable gland diameter 18 to 28 mm.
- Connection on 16 mm² maximum terminals.

125 A:

- 1 cable entry via supplied cable gland diameter 30 to 36 mm.
- Connection on 35 mm² maximum terminals.

Standard Material of Fixtures:

Socket Outlets:

16 A:

- Gray painted marine grade aluminum alloy.

32 A:

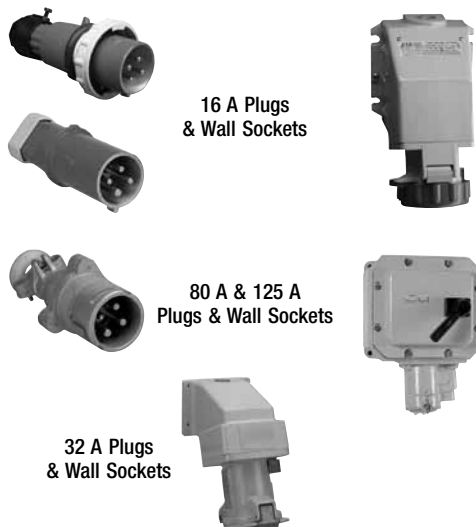
- Gray painted marine grade aluminum alloy body and cast iron flush socket.

80 A and 125 A:

- Gray painted cast iron with marine anti-corrosion treatment.

Plugs:

- Gray painted marine grade aluminum alloy.



Plugs & Sockets

PRD Series: 16, 32, 80 and 125 A Plugs and Sockets – Flameproof

Zone 1 & 2 – 21 & 22

II 2 GD or II 2 G

ATEX / IEC

IP66 or IP55 – IK10

Ordering Information:

Extra Low Voltage:

16 A – 20/25 Vac 50/60 Hz

Equipment	Pin Configuration	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Wall Socket		1.7	5	PRD316RP	094403	1
Plug		0.5	4	PRD316PP	094458	1

Low Voltage:

16 A – 100/130 Vac 50/60 Hz

Equipment	Pin Configuration	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Wall Socket		1.7	5	PRD316RY	094404	1
Plug		0.5	4	PRD316PY	094460	1

16 A – 200/250 Vac 50/60 Hz

Equipment	Pin Configuration	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Wall Socket		1.7	5	PRD316RB	094406	1
Plug		0.5	4	PRD316PB	094463	1

16 A – 380/415 Vac 50/60 Hz

Wall Socket		1.8	5	PRD416RR	094415	1
Plug		0.5	4	PRD416PR	094467	1
Wall Socket		1.9	5	PRD516RR	094416	1
Plug		0.5	4	PRD516PR	094468	1

(1) 200/346 V – 240/415 Vac 50/60 Hz

32 A – 380/415 Vac 50/60 Hz

Wall Socket		10.4	17	PRD432RR	094420	1
Plug		1.5	4	PRD432PR	094480	1

80 A – 380/415 Vac 50/60 Hz

Wall Socket		44.6	69	PRD480RR	094422	1
Plug		3.4	6	PRD480PR	094667	1

Plugs & Sockets

PRD Series: 16, 32, 80 and 125 A Plugs and Sockets – Flameproof

Zone 1 & 2 – 21 & 22


Ex II 2 GD or II 2 G

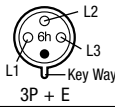
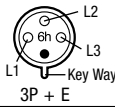
ATEX / IEC

IP66 or IP55 – IK10


Ordering Information – Continued:

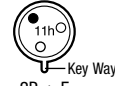
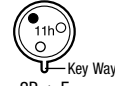
Low Voltage:


125 A – 380/415 Vac 50/60 Hz 



Equipment	Pin Configuration	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Wall Socket		47	69	PRD412RR	094424	1
Plug		5.9	7	PRD412PR	094693	1


Flush Sockets for Mounting on Ex d IIB or Ex d IIC Enclosures:



16 A – 20/25 Vac 50/60 Hz 


Gas Group	Pin Configuration	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Ex d IIC		1.7	5	PRD316FPC	094425	1
Ex d IIB		1.5	5	PRD316FPB	–	1

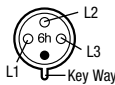
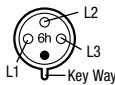
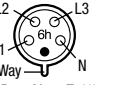
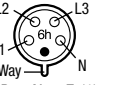
16 A – 100/130 Vac 50/60 Hz 

Gas Group	Pin Configuration	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Ex d IIC		1.7	5	PRD316FYC	094426	1
Ex d IIB		1.5	5	PRD316FYB	–	1


16 A – 200/250 Vac 50/60 Hz 



Gas Group	Pin Configuration	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Ex d IIC		1.7	5	PRD316FBC	094427	1
Ex d IIB		1.7	5	PRD316FBB	–	1

16 A – 380/415 Vac 50/60 Hz 

Gas Group	Pin Configuration	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Ex d IIC		1.8	5	PRD416FRC	094428	1
Ex d IIB		1.6	5	PRD416FRB	–	1
Ex d IIC		1.9	5	PRD516FRC	094429	1
Ex d IIB		1.7	5	PRD516FRB	–	1

(1) 200/346 V – 240/415 Vac 50/60 Hz

32 A – 380/415 Vac 50/60 Hz 

Gas Group	Pin Configuration	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Ex d IIC		9.5	17	PRD432FRC	094430	1
Ex d IIB		9.2	17	PRD432FRB	–	1

Plugs & Sockets

PRD Series: 16, 32, 80 and 125 A Plugs and Sockets – Flameproof

Zone 1 & 2 – 21 & 22

⊕ II 2 GD or II 2 G

ATEX / IEC

IP66 or IP55 – IK10

Compliances:

16 A Plugs and Wall Sockets:

Hazardous Area	Gas	Dust
Certification Type	PCX 16d	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex d IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	T6 for $T_a \leq +40^\circ\text{C}$ T5 for $+40^\circ\text{C} < T_a \leq +55^\circ\text{C}$	–
Surface Temperature	–	T95°C
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50243	
ATEX Certificate	LCIE 02 ATEX 6234	
IEC Certificate	LCIE Ex 02.030	
Other Certifications	GOST	
Ingress Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	

32 A Plugs and Wall Sockets:

Hazardous Area	Gas	Dust
Certification Type	PCX 32d	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex d IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	T6 for $T_a \leq +40^\circ\text{C}$ T5 for $+40^\circ\text{C} < T_a \leq +55^\circ\text{C}$	–
Surface Temperature	–	T95°C
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50258	
ATEX Certificate	LCIE 03 ATEX 6134X	
IEC Certificate	LCIE Ex 03.021X	
Other Certifications	GOST	
Ingress Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	

Standards: 16 A and 32 A

Ex Standards	EN / IEC 60079-0; 60079-1; 61241-0; 61241-1
Product Standards	EN / IEC 60309-1; 60309-2
EMC Standards	–
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

16 A and 32 A Flush Sockets:

Hazardous Area	Gas	Dust
Certification Type	PCXd/EN	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	0081 ⊕ II 2 G	0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex d IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	–	–
Surface Temperature	–	–
Service Temperature	-40°C to +55°C	
CE Declaration of Conformity	5C227	
ATEX Certificate	LCIE 03 ATEX 0022U	
IEC Certificate	LCIE Ex 03.029U	
Other Certifications	GOST	
Ingress Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	

80 A and 125 A Plugs and Wall Sockets:

Hazardous Area	Gas	
Certification Type	PCX 80d (80A)	PCX 125d (125A)
Zones	1–2	
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	
Symbol of Protection ATEX	Ex d IIB	
Symbol of Protection IEC		
T Rating	T6 for $T_a \leq +40^\circ\text{C}$ T5 for $+40^\circ\text{C} < T_a \leq +55^\circ\text{C}$	T5
Surface Temperature	–	
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50262	50263
ATEX Certificate	LCIE 03 ATEX 6149X	LCIE 03 ATEX 6148X
IEC Certificate	LCIE Ex 03.024X	LCIE Ex 03.023X
Other Certifications	GOST	
Ingress Protection (solid and liquid)	IP55	
Impact Resistance (shock)	IK10	
Internal Volume	> 2 dm ³ (2 liters)	

Standards: 80 A and 125 A

Ex Standards	EN / IEC 60079-0; 60079-1
Product Standards	EN / IEC 60309-1; 60309-2
EMC Standards	–
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Plugs & Sockets

PRD Series: 16, 32, 80 and 125 A Plugs and Sockets – Flameproof

Zone 1 & 2 – 21 & 22

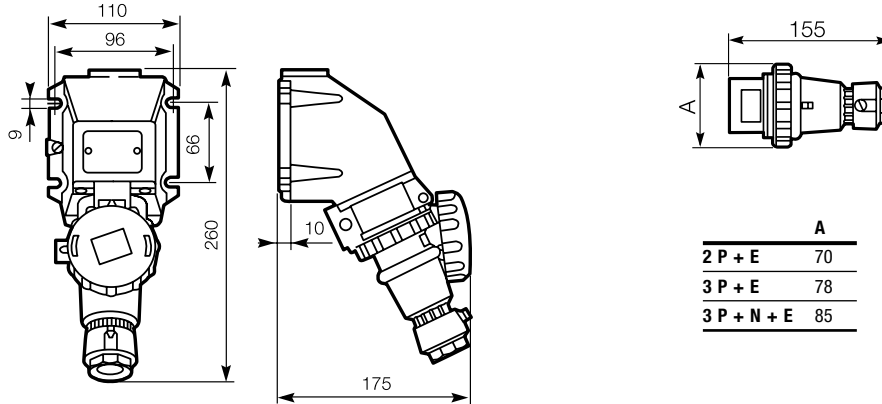
II 2 GD or II 2 G

ATEX / IEC

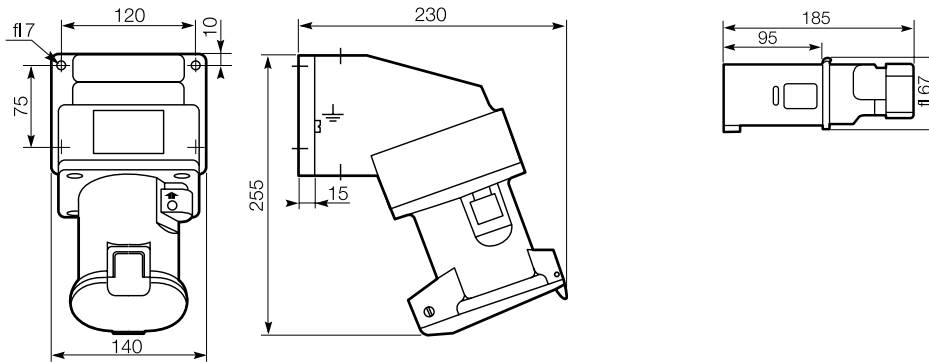
IP66 or IP55 – IK10

Dimensions (mm):

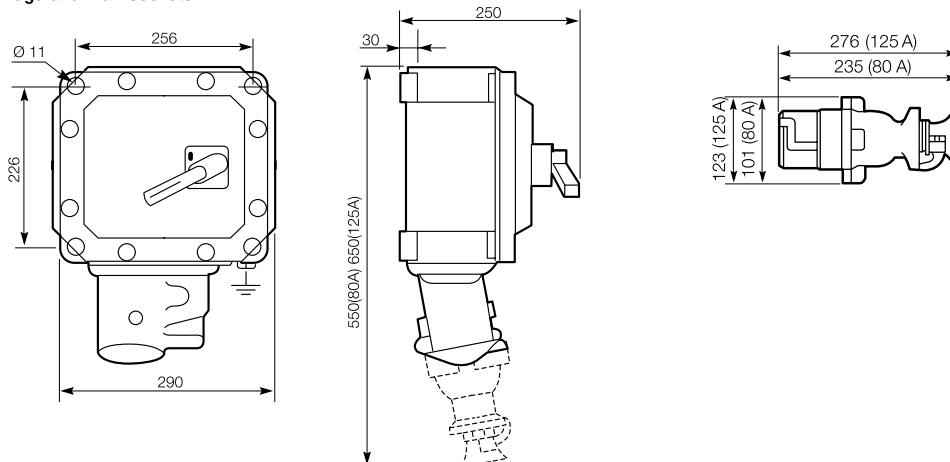
16 A Plugs and Wall Sockets:



32 A Plugs and Wall Sockets:



80 A and 125 A Plugs and Wall Sockets:



Plugs & Sockets

PRD Series: 16, 32, 80 and 125 A Plugs and Sockets – Flameproof

Zone 1 & 2 – 21 & 22

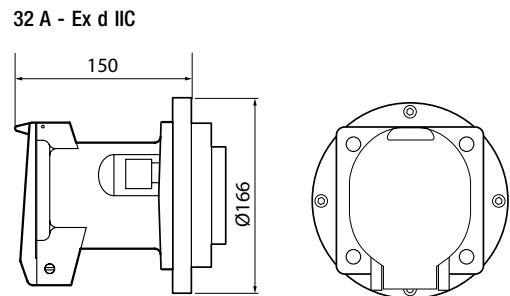
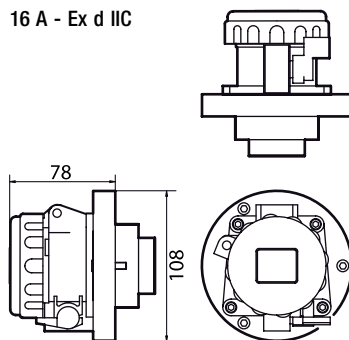
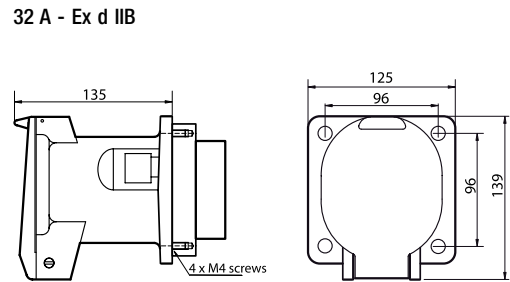
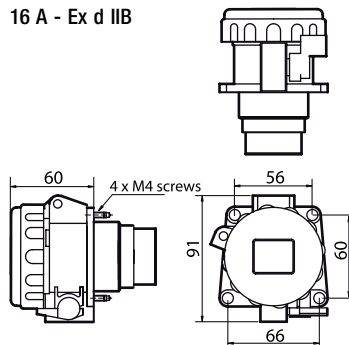
Ex II 2 GD or II 2 G

ATEX / IEC

IP66 or IP55 – IK10

Dimensions (mm) – Continued:

16 A and 32 A Flush Sockets:

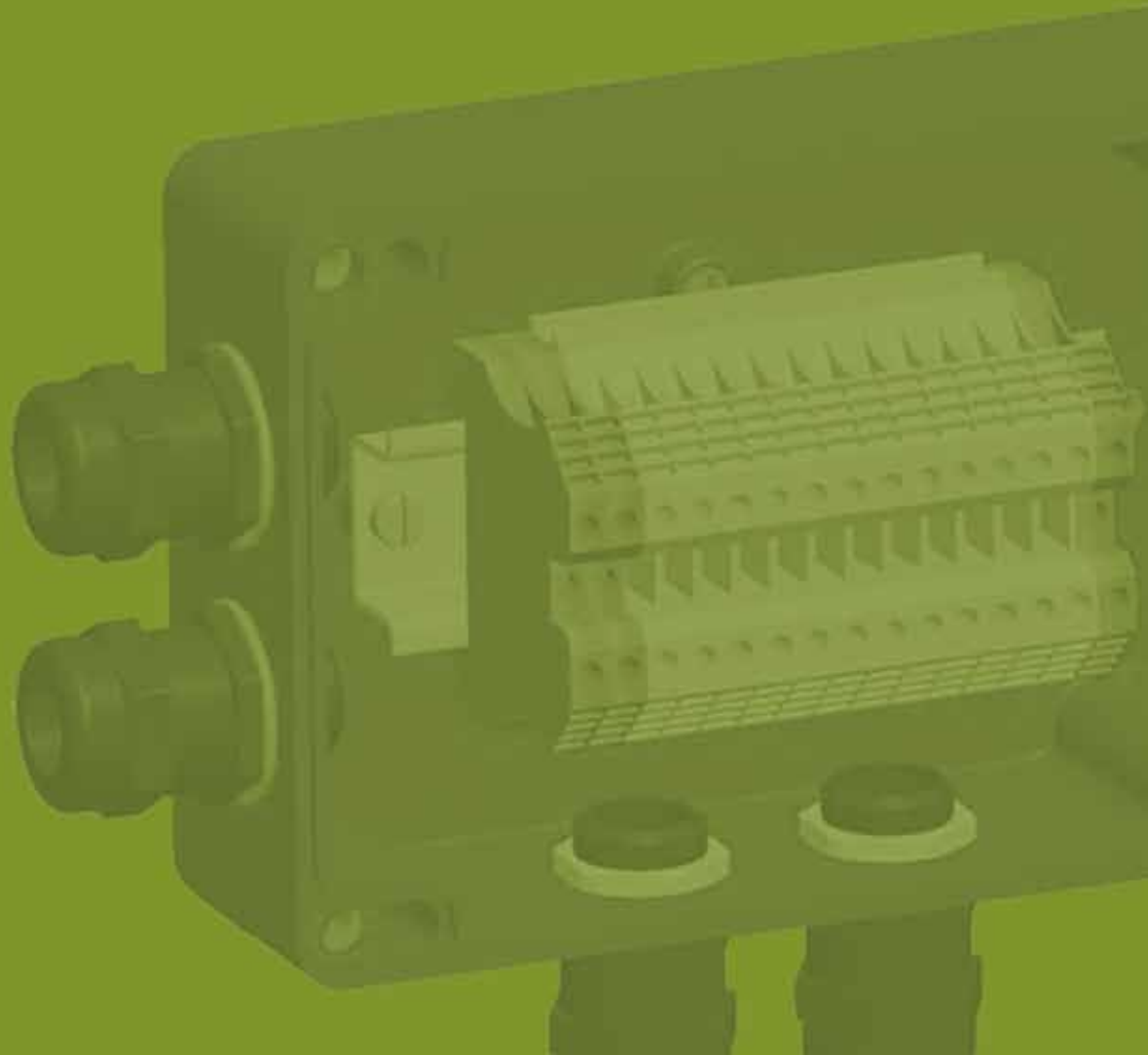


JUNCTION BOXES & ENCLOSURES

Appleton's ATX line of junction boxes and enclosures is available in a wide range of sizes and materials. They are high-impact and low temperature-resistant for use anywhere in the world for virtually any application.

Our junction boxes are available in a wide variety of sizes and materials for multiple applications: lighting, power, instrumentation and more. For even more flexibility, ATX junction boxes can come complete with terminals, can be pre-drilled, or drilled and fitted with terminals on site. For more information about drilling or terminal equipment, please visit our website.

Increased Safety and Flameproof enclosures are available in a range of materials: fiberglass reinforced polyester (FRP), aluminum, cast iron, welded steel and stainless steel. Enclosures are available for a variety of applications and can accommodate breakers, meters, relays, variable speed drives and more.



Junction Boxes & Enclosures

Description	Page	
JBEL and JBEP Series Polycarbonate and Polyester Junction Boxes Complete with Terminals – Increased Safety	177-181	JBEL and JBEP Series 
JBEP Series Pre-drilled Fiberglass Reinforced Polyester Junction Boxes – Increased Safety	182-189	JBEP Series 
JBEP and ECEP Series Undrilled Fiberglass Reinforced Polyester Enclosures – Increased Safety	190-198	JBEP & ECEP Series 
JBES Series Pre-drilled 316L Fiberglass Stainless Steel Junction Boxes – Increased Safety	199-203	JBES Series 
JBES and ECES Series 316L Stainless Steel Enclosures – Increased Safety	204-214	JBEP & ECEP Series 
JBEA Series Pre-drilled Aluminum Junction Boxes – Increased Safety	215-222	JBEA Series 
JBEA and ECEA Series Aluminum Enclosures – Increased Safety	223-228	JBEA & ECEA Series 
JBDR Series Pre-drilled Round Junction Boxes	229-231	JBDR Series 
JBD Series Pre-drilled Terminal Junction Boxes – Flameproof	232-235	JBD Series 
JBDA and JBDF - ECDA, ECDF and ACSEW Series Customized Enclosures – Flameproof	236-244	JBDA & JBDF - ECDA & ECDF Series 
ECDX Series Customized Welded Steel Enclosures – Flameproof	245-248	ECDX Series 

Junction Boxes & Enclosures

JBEL and JBEP Series: Polycarbonate and Polyester Junction Boxes Complete with Terminals – Increased Safety



Type BJe1



Type BJe2



Type CSPe1 with Screw Terminals



Type CSPe1 with Pillar Terminals

JUNCTION BOXES & ENCLOSURES

Compliance Data:

ATEX - IEC:



Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IEC	CE
Ex e II	T6	Ex tD A21	T75°C or T80°C	IP66 – IK10

Operating Temperature:

-40°C to +55°C (JBEL Series)	-55°C to +60°C (JBEP Series)
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Junction Boxes & Enclosures

JBEL and JBEP Series: Polycarbonate and Polyester Junction Boxes Complete with Terminals – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IEC

IP66 – IK10

Applications:

- Small terminal junction boxes designed to facilitate electrical connections in hazardous areas.
- Designed for use in Zone 1 or 2 areas, where flammable gases or vapors are present either continuously or intermittently.
- Ideal for wet or corrosive atmospheres.
- Petroleum, chemical, refineries and other industrial process facilities.
- Designed for use in Zone 21 or 22 areas where flammable dusts are present either continuously or intermittently.
- Food processing, dairy, brewing and other commercial facilities.

Features:

- High impact resistant black polycarbonate and polyester enclosures.
- Pillar type terminal block for easy connection.

- Available in two sizes: 4 mm² or 10 mm² for polycarbonate version and up to 6 mm² for polyester version.
- Unarmored or armored versions with earth continuity brass device.
- Operating temperature -40°C to +55°C for polycarbonate version and -55°C to +60°C for polyester version.

Standard Materials:

JBEL Series:

- Static and impact resistant polycarbonate.
- Polyurethane cover gasket.
- Stainless steel hardware.

JBEP Series:

- Static resistant carbon filled fiberglass reinforced polyester (FRP) enclosures.
- Stainless steel hardware.

Ordering Information – JBEL Series:

For Unarmored Cables 2.5/4 mm² 660 V

Supplied with 4 connection terminals. Maximum capacity per terminal:
4 x 2.5 mm² or 2 x 4 mm² + 2 x 2.5 mm² and 4 interconnected earth terminals.
Maximum capacity per earth terminal: 1 x 4 mm²



Type	Equipment	Rating (Amps)	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
BJe1	4 x PG16 entries with knock-out caps (*) 4 x Integrated cable glands for unarmored cable diameter 8 to 16 mm (*) Knock-out caps can be used as plugs Important: Cables must be clamped close to the box	28 A/2.5 mm ² 38 A/4 mm ²	0.35	1.7	JBEL1N4P16G	096105	1

For Armored Cables 2.5/4 mm² 660 V

Supplied with 4 connection terminals. Maximum capacity per terminal:
4 x 2.5 mm² or 2 x 4 mm² + 2 x 2.5 mm² and 4 interconnected earth terminals.
Maximum capacity per earth terminal: 1 x 4 mm²



Type	Equipment	Rating (Amps)	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
BJe1	4 x M20 entries with earth brass continuity device 2 x blanking plugs	28 A/2.5 mm ² 38 A/4 mm ²	0.4	1.7	JBEL1A4M20	096104	1

For Unarmored Cables 6/10 mm² 690 V

Supplied with 4 connection terminals. Maximum capacity per terminal:
4 x 6 mm² or 3 x 10 mm² + 4 mm² and 4 interconnected earth terminals.
Maximum capacity per earth terminal: 1 x 10 mm²



Type	Equipment	Rating (Amps)	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
BJe2	3 x M20 entries 3 x cable glands for unarmored cable (diameter 6.5 to 14.5 mm)	42A/10 mm ² 30A/6 mm ² 18A/4 mm ²	0.7	4.5	JBEL2N3M20G	096112	1
BJe2	4 x M20 entries 4 x cable glands for unarmored cable (diameter 6.5 to 14.5 mm)		0.7	4.5	JBEL2N4M20G	096113	1
BJe2	3 x M25 entries 3 x cable glands for unarmored cable (diameter 8 to 18.5 mm)		0.7	4.5	JBEL2N3M25G	096118	1
BJe2	4 x M25 entries 4 x cable glands for unarmored cable (diameter 8 to 18.5 mm)		0.7	4.5	JBEL2N4M25G	096119	1

Junction Boxes & Enclosures

JBEL and JBEP Series: Polycarbonate and Polyester Junction Boxes Complete with Terminals – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IEC

IP66 – IK10

Ordering Information – JBEL Series Continued:

For Armored Cables 6/10 mm² 690 V

Supplied with 4 connection terminals. Maximum capacity per terminal:
4 x 6 mm² or 3 x 10 mm² + 4 mm² and 4 interconnected earth terminals.
Maximum capacity per earth terminal: 1 x 10 mm²



Type	Equipment	Rating (Amps)	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
BJe2	4 x M20 entries with earth brass continuity device. 2 x M20 blanking plugs	42A/10 mm ² 30A/6 mm ² 18A/4 mm ²	0.7	4.5	JBEL2A4M20	096114	1
BJe2	4 x M25 entries with earth brass continuity device. 2 x M25 blanking plugs		0.7	4.5	JBEL2A4M25	096117	1
BJe2	2 x M25 + 2 x M20 entries with earth brass continuity device. 1 x M25 + 1 x M20 blanking plugs		0.7	4.5	JBEL2A4M05	–	1
BJe2	3 x M25 + 1 x M20 entries with earth brass continuity device. 1 x M25 + 1 x M20 blanking plugs		0.7	4.5	JBEL2A4M06	–	1

Ordering Information – JBEP Series with Pillar Terminals:

Supplied with 4 connection terminals. Maximum capacity per terminal: 4 x 6 mm² – Rating 30 Amps



Type	Equipment	Entry Layout	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
CSPe1	2 x M20 at bottom with earth continuity device		1	4	JBEP3A2M20	–	1
CSPe1	2 x M20 at bottom with two cable glands for unarmored cable (diameter 6.5 to 14.5 mm)		1.2	4	JBEP3N2M20G	–	1
CSPe1	4 x M20 with earth continuity device and two blanking plugs		1.2	4	JBEP3A4M20	–	1
CSPe1	4 x M20 with four cable glands for unarmoured cable (diameter 6.5 to 14.5 mm)		1.2	4	JBEP3N4M20G	–	1

Supplied with 8 connection terminals. Maximum capacity per terminal: 4 x 6 mm² – Rating 30 Amps

Type	Equipment	Entry Layout	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
CSPe2	4 x M20 with earth continuity device and two blanking plugs		1.4	4	JBEP4A4M20	–	1
CSPe2	4 x M20 with four cable glands for unarmoured cable (diameter 6.5 to 14.5 mm)		1.4	4	JBEP4N4M20G	–	1
CSPe2	6 x M20 with earth continuity device and two blanking plugs		1.4	4	JBEP4A6M20	–	1
CSPe2	6 x M20 with six cable glands for unarmoured cable (diameter 6.5 to 14.5 mm)		1.4	4	JBEP4N6M20G	–	1

Junction Boxes & Enclosures

JBEL and JBEP Series: Polycarbonate and Polyester Junction Boxes Complete with Terminals – Increased Safety

Zone 1 & 2 – 21 & 22

⊕ II 2 GD

ATEX / IEC

IP66 – IK10

Ordering Information – JBEP Series with Screw Terminals:



Supplied with 4 terminals and 2 earth terminals.

Type	Equipment	Entry Layout	Weight (kg)	Volume (dm3)	Catalog Number		Pack
					Standard Terminal	Terminals Jumped 2 by 2	
CSPe1	4 x M20 with earth continuity device and two blanking plugs		1	–	JBEP3A4M206	JBEP3A4M206J	1
CSPe1	4 x M20 with 4 cable glands for unarmored cable (diameter 6.5 to 14.5 mm)		1.2	–	JBEP3N4M206G	JBEP3N4M206JG	1
CSPe1	4 x M20 with earth continuity device and two blanking plugs		1	–	JBEP3A4M2011	JBEP3A4M2011J	1
CSPe1	4 x M20 with 4 cable glands for unarmored cable (diameter 6.5 to 14.5 mm)		1.2	–	JBEP3N4M2011G	JBEP3N4M2011JG	1

Supplied with 6 terminals and 2 earth terminals.

Type	Equipment	Entry Layout	Weight (kg)	Volume (dm3)	Catalog Number		Pack
					Standard Terminal	Terminals Jumped 2 by 2	
CSPe2	6 x M20 with earth continuity device and two blanking plugs		1.4	–	JBEP4A6M208	JBEP4A6M208J	1
CSPe2	6 x M20 with 4 cable glands for unarmored cable (diameter 6.5 to 14.5 mm)		1.4	–	JBEP4N6M208G	JBEP4N6M208JG	1

Supplied with 12 terminals and 3 earth terminals.

Type	Equipment	Entry Layout	Weight (kg)	Volume (dm3)	Catalog Number		Pack
					Standard Terminal	Terminals Jumped 2 by 2	
CSPe2	6 x M20 with earth continuity device and two blanking plugs		1.4	–	JBEP4A6M2015	JBEP4A6M2015J	1
CSPe2	6 x M20 with 4 cable glands for unarmored cable (diameter 6.5 to 14.5 mm)		1.4	–	JBEP4N6M2015G	JBEP4N6M2015JG	1

Compliances:

Hazardous Area	Gas	Dust	Gas	Dust	Gas	Dust
Certification Type	BJe1		BJe2		CSPe	
Zones	1–2	21–22	1–2	21–22	1–2	21–22
Conforming to ATEX 94/9/C	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex e II	Ex tD A21	Ex e II	Ex tD A21	Ex e II Ex ia IIC Ex ib IIC EX de IIC Ex demb IIC	Ex tD A21
Symbol of Protection IEC						
T Rating	T6	NA	T6	NA	T6	NA
Surface Temperature	NA	T75°C	NA	T80°C	NA	T75°C
Ambient Temperature	-40°C to +55°C		-40°C to +55°C		-55°C to +60°C	
CE Declaration of Conformity	50226		50209		50284	
ATEX Certificate	LCIE 02 ATEX 6069		LCIE 99 ATEX 6003		LCIE 09 ATEX 3032X	
IEC Certificate	LCIE Ex 02.008		LCIE Ex 99.005		IECx LCI 09.0016X	
Other Certifications	GOST		GOST		GOST	
Index of Protection (solid and liquid)	IP66		IP66		IP66	
Impact resistance (shock)	IK10		IK10		IK10	

Junction Boxes & Enclosures

JBEL and JBEP Series: Polycarbonate and Polyester Junction Boxes Complete with Terminals – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

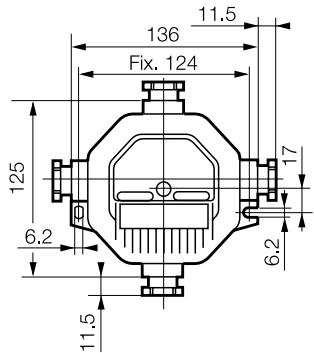
ATEX / IEC

IP66 – IK10

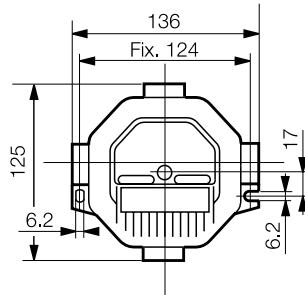
Standards:

Ex Standards	EN / IEC 60079-0; 60079-7; 61241-0; 61241-1
Product Standards	–
EMC Standards	–
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

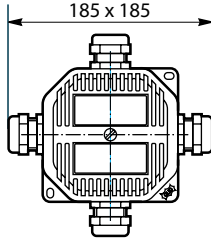
Dimensions (mm) JBEL Series:



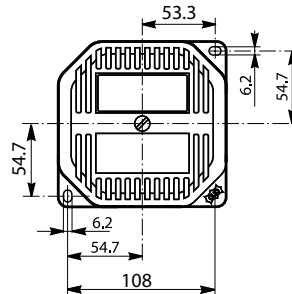
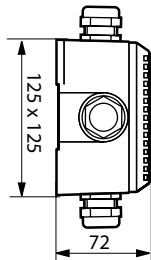
BJe1 with Cable Glands for Unarmored Cables



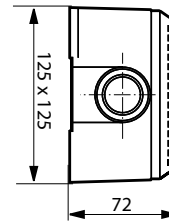
BJe1 without Cable Glands for Armored Cables



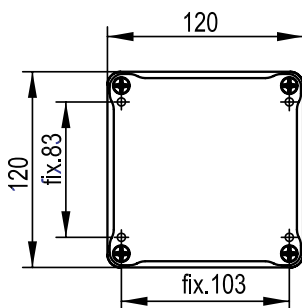
BJe2 with Cable Glands for Unarmored Cables



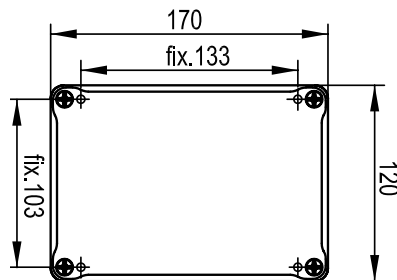
BJe2 without Cable Glands for Armored Cables



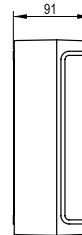
Dimensions (mm) JBEP Series:



CSPe1



CSPe2



Junction Boxes & Enclosures

JBEP Series: Pre-drilled Fiberglass Reinforced Polyester Junction Boxes – Increased Safety



Pre-drilled Junction Box without Terminals



Pre-drilled Junction Box Equipped with Terminals

Compliance Data:

ATEX - IECEx:



Zone 1 & 2, 21 & 22	ATEX	II 2 GD	IECEx	CE
Ex e II; Ex eia IIC; Ex eib IIC	T6 to T5	Ex tD A21	T75°C to T95°C	IP66 – IK10

Operating Temperatures:

-55°C to 60°C (CSPe Type)
-40°C to 55°C (CAe Type)

Junction Boxes & Enclosures

JBEP Series: Pre-drilled Fiberglass Reinforced Polyester Junction Boxes – Increased Safety

Zone 1 & 2 – 21 & 22

⊕ II 2 GD

ATEX / IECEx

IP66 – IK10

Applications:

- Terminal junction boxes designed to facilitate electrical connections in hazardous areas.
- Designed for use in Zone 1 or 2 areas, where flammable gases or vapors are present either continuously or intermittently.
- Ideal for wet or corrosive atmospheres.
- Petroleum, chemical, refineries and other industrial process facilities.
- Designed for use in Zone 21 or 22 areas, where flammable dusts are present either continuously or intermittently.
- Food processing, dairy, brewing, silos and other facilities.

Features:

- Static resistant black fiberglass reinforced polyester enclosure.
- Operating temperature -55°C to +60°C (CSPe type) and -40°C to +55°C (CAe type).
- For use only with Ex certified terminal blocks.
- Stainless steel hardware.
- Yellow laminated plastic label with black lettering.
- Factory drilled and equipped.

Standard Materials:

- Enclosure is static resistant carbon filled fiberglass reinforced polyester (FRP).
- Stainless steel hardware.

Options:

- For use with other equipment than Ex terminal blocks, see section ECEP series enclosures and controls.

Catalog Number Logic:

<p>JBEP</p> <p>↑</p> <p>Series ATEX / IEC Certified: JB = Junction Box E = Increased Safety I = Intrinsic Safety P = Polyester</p>	<p>XX</p> <p>↑</p> <p>Dimensions Length (mm): 12 = 120 17 = 170 21 = 210 23 = 230 32 = 320 42 = 425 57 = 575</p>	<p>XX</p> <p>↑</p> <p>Dimensions Width (mm): 12 = 120 20 = 200</p>	<p>XX</p> <p>↑</p> <p>Dimensions Depth (mm): 09 = 91 15 = 150</p>	<p>XX</p> <p>↑</p> <p>Options: D1 = 5 x M20 D2 = 4 x M20 + 1 x M25 D3 = 7 x M20 + 1 x M25 D5 = 7 x M20 + 1 x M25 D6 = 12 x M20 + 1 x M32 D7 = 19 x M20 + 1 x M32 D8 = 27 x M20 + 1 x M40 P-- = Unarmored Cable A-- = Armored Cable L-- = Lead Sheath Armored Cable E = Earth Continuity Brass Plate # = Customized Enclosure</p>
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#: 6 Digit number will be assigned at time of order placement.

Junction Boxes & Enclosures

JBEP Series: Pre-drilled Fiberglass Reinforced Polyester Junction Boxes – Increased Safety

Zone 1 & 2 – 21 & 22

Ex II 2 GD

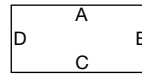
ATEX / IECEx

IP66 – IK10

Ordering Information:

Factory Drilled Ex e II Polyester Junction Boxes Fitted with:

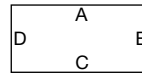
One horizontal symmetrical zinc plated rail.
For use with EX terminals only (not supplied).
Yellow laminated plastic label with black lettering.
Internal earth terminal.
Cable glands and plugs ordered separately.



Type	Dimension L x W x D (mm)	Rail Length Capacity (mm)	A	Clearance Holes B	Per Side C	D	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
CSPe1	120 x 120 x 91	62	1 x M20	1 x M20	2 x M20	1 x M20	0.8	4	JBEP 121209 D1	–
CSPe2	170 x 120 x 91	112	–	1 x M20	2 x M20 1 x M25	1 x M20	1	4	JBEP 171209 D2	–
CSPe3	230 x 120 x 91	172	–	2 x M20	3 x M20 1 x M25	2 x M20	1.2	4	JBEP 231209 D3	–

Factory Drilled Exe II Instrumentation Polyester Junction Boxes Fitted with:

Yellow laminated plastic label with black lettering.
Set of two insulated side supports (096115).
One horizontal symmetrical zinc plated rail.
For use with Ex terminals only (not supplied).
Also available for use with copper bar 12 x 2 mm or 12 x 4 mm.
2 x 10 mm² internal earth terminals.
Cable glands and plugs ordered separately.



Type	Dimension L x W x D (mm)	Cable	Rail Length Capacity (mm)	Threaded Holes Side C	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
CAe1	215 x 200 x 150	7 Pairs	105	1 x M25 7 x M20	3.4	16	JBEP 212015 D5	096005
CAe2	320 x 200 x 150	12 Pairs	206	1 x M32 12 x M20	4.2	23	JBEP 322015 D6	096006
CAe3	425 x 200 x 150	19 Pairs	310	1 x M32 19 x M20	5.2	26	JBEP 422015 D7	096007
CAe4	575 x 200 x 150	27 Pairs	315	1 x M40(1) 27 x M20	6.8	33	JBEP 572015 D8	096008

(1) – clearance hole

Factory Assembled Ex Terminal Block for Junction Boxes Shown Above:

Screwed/screwed terminal block fitted with continuity shield.



For Junction Boxes	Cable	Terminals 0.5/2.5 mm ² Qty.	Continuity Shield Qty.	Weight (kg)	Volume (dm ³)	Catalog Number
215 x 200 x 150	7 Pairs	14	7	0.3	0.5	096039
320 x 200 x 150	12 Pairs	24	12	0.4	1.1	096041
425 x 200 x 150	19 Pairs	38	19	0.5	1.3	096043
575 x 200 x 150	27 Pairs	54	27	0.6	1.7	096044

Junction Boxes & Enclosures

JBEP Series: Pre-drilled Fiberglass Reinforced Polyester Junction Boxes – Increased Safety

Zone 1 & 2 – 21 & 22

Ex II 2 GD

ATEX / IECEx

IP66 – IK10

Ordering Information – Continued:

Factory Drilled and Equipped with Terminals Ex e II Polyester Junction Boxes for Instrumentation Applications with Unarmored Cables Fitted with:

- Horizontal beige terminal block.
- Copper bar with cable clamps or continuity shields.
- Yellow laminated plastic label with black lettering.
- M16 to M32 threaded entries.
- M40 to M50 clearance holes.
- Cable glands and plugs ordered separately.

Unarmored cables



Type	For Cable U1000 R02V	Terminal Block 0.5/2.5 mm ² Qty.	Earth Terminal 0.5/2.5 mm ² Qty.	Copper Bar 10 x 3 mm Qty.	Cable Clamp 0.5/2.5 mm ² Qty.	Multi-cable Cable Entry Qty. 1	Single Cable Entries M20 Qty.	Catalog Number
CAe1	07G1.5	7	1	1	5	M20	3	JBEP 212015 P01
CAe1	12G1.5	12	1	1	8	M25	6	JBEP 212015 P02
CAe2	19G1.5	19	1	1	11	M25	9	JBEP 322015 P03
CAe2	24G1.5	24	1	1	14	M32	12	JBEP 322015 P04
CAe2	27G1.5	27	1	1	15	M32	13	JBEP 322015 P05
CAe3	37G1.5	37	1	1	20	M32	18	JBEP 422015 P06
CAe1	07G2.5	7	1	1	5	M20	3	JBEP 212015 P07
CAe1	12G2.5	12	1	1	8	M25	6	JBEP 212015 P08
CAe2	19G2.5	19	1	1	11	M32	9	JBEP 322015 P09
CAe2	24G2.5	24	1	1	14	M32	12	JBEP 322015 P10
CAe2	27G2.5	27	1	1	15	M32	13	JBEP 322015 P11
CAe3	37G2.5	37	1	1	20	M40	18	JBEP 422015 P12

Type	For Cable EGSF	Terminal Block 0.5/2.5 mm ² Qty.	Continuity Shield Qty.	Multi-cable Cable Entry Qty. 1	Single Cable Entries M16 Qty.	Catalog Number
CAe1	07IP05	14	7	M20	7	JBEP 212015 P21
CAe1	07IT05	21	7	M20	7	JBEP 212015 P22
CAe2	12IP05	24	12	M25	12	JBEP 322015 P23
CAe2	12IT05	36	12	M25	12	JBEP 322015 P24
CAe3	19IP05	38	19	M32	19	JBEP 422015 P25
CAe4	27IP05	54	27	M32	27	JBEP 572015 P26
CAe1	07IP09	14	7	M25	7	JBEP 212015 P27
CAe1	07IT09	21	7	M25	7	JBEP 212015 P28
CAe2	12IP09	24	12	M32	12	JBEP 322015 P29
CAe2	12IT09	36	12	M32	12	JBEP 322015 P30
CAe3	19IP09	38	19	M32	19	JBEP 422015 P31
CAe4	27IP09	54	27	M40	27	JBEP 572015 P32

Type	For Cable EISF	Terminal Block 0.5/2.5 mm ² Qty.	Continuity Shield Qty.	Multi-cable Cable Entry Qty. 1	Single Cable Entries M16 Qty.	Catalog Number
CAe1	07IP05	15	8	M25	7	JBEP 212015 P41
CAe1	07IT05	22	8	M32	7	JBEP 212015 P42
CAe2	12IP05	25	13	M32	12	JBEP 322015 P43
CAe2	12IT05	37	13	M32	12	JBEP 322015 P44
CAe3	19IP05	39	20	M40	19	JBEP 422015 P45
CAe4	27IP05	55	28	M40	27	JBEP 572015 P46
CAe1	07IP09	15	8	M32	7	JBEP 212015 P47
CAe1	07IT09	22	8	M32	7	JBEP 212015 P48
CAe2	12IP09	25	13	M40	12	JBEP 322015 P49
CAe2	12IT09	37	13	M40	12	JBEP 322015 P50
CAe3	19IP09	29	20	M50	19	JBEP 422015 P51
CAe4	27IP09	55	28	M50	27	JBEP 572015 P52

Junction Boxes & Enclosures

JBEP Series: Pre-drilled Fiberglass Reinforced Polyester Junction Boxes – Increased Safety

Zone 1 & 2 – 21 & 22

Ex II 2 GD

ATEX / IECEx

IP66 – IK10

Ordering Information – Continued:

Factory Drilled and Equipped with Terminals Ex e II Polyester Junction Boxes for Instrumentation Applications with Armored Cables Fitted with:

- Horizontal beige terminal block.
- Copper bar with cable clamps or continuity shields.
- Yellow laminated plastic label with black lettering.
- Earth continuity brass plate.
- M8 external earth crossing terminal.
- M20 to M32 threaded entries. M40 to M50 clearance holes.
- Cable glands and plugs ordered separately.

Armored cables



Type	For Cable U1000 RVFV	Terminal Block 0.5/2.5 mm ² Qty.	Earth Terminal 0.5/2.5 mm ² Qty.	Copper Bar 10 x 3 mm Qty.	Cable Clamp 0.5/2.5 mm ² Qty.	Multi-cable Cable Entry Qty. 1	Single Cable Entries M20 Qty.	Catalog Number
CAe1	07G1.5	7	1	1	5	M20	3	JBEP 212015 A01E
CAe1	12G1.5	12	1	1	8	M20	6	JBEP 212015 A02E
CAe2	19G1.5	19	1	1	11	M25	9	JBEP 322015 A03E
CAe2	24G1.5	24	1	1	14	M25	12	JBEP 322015 A04E
CAe2	27G1.5	27	1	1	15	M25	13	JBEP 322015 A05E
CAe3	37G1.5	37	1	1	20	M32	18	JBEP 422015 A06E
CAe1	07G2.5	7	1	1	5	M20	3	JBEP 212015 A07E
CAe1	12G2.5	12	1	1	8	M25	6	JBEP 212015 A08E
CAe2	19G2.5	19	1	1	11	M25	9	JBEP 322015 A09E
CAe2	24G2.5	24	1	1	14	M32	12	JBEP 322015 A10E
CAe2	27G2.5	27	1	1	15	M32	13	JBEP 322015 A11E
CAe3	37G2.5	37	1	1	20	M32	18	JBEP 422015 A12E

Type	For Cable EGFA	Terminal Block 0.5/2.5 mm ² Qty.	Continuity Shield Qty.	Multi-cable Cable Entry Qty. 1	Single Cable Entries M16 Qty.	Catalog Number
CAe1	07IP05	14	7	M20	7	JBEP 212015 A21E
CAe1	07IT05	21	7	M20	7	JBEP 212015 A22E
CAe2	12IP05	24	12	M25	12	JBEP 322015 A23E
CAe2	12IT05	36	12	M25	12	JBEP 322015 A24E
CAe3	19IP05	38	19	M25	19	JBEP 422015 A25E
CAe4	27IP05	54	27	M32	27	JBEP 572015 A26E
CAe1	07IP09	14	7	M25	7	JBEP 212015 A27E
CAe1	07IT09	21	7	M25	7	JBEP 212015 A28E
CAe2	12IP09	24	12	M25	12	JBEP 322015 A29E
CAe2	12IT09	36	12	M32	12	JBEP 322015 A30E
CAe3	19IP09	38	19	M32	19	JBEP 422015 A31E
CAe4	27IP09	54	27	M40	27	JBEP 572015 A32E

Type	For Cable EIFA	Terminal Block 0.5/2.5 mm ² Qty.	Continuity Shield Qty.	Multi-cable Cable Entry Qty. 1	Single Cable Entries M16 Qty.	Catalog Number
CAe1	07IP05	15	8	M25	7	JBEP 212015 A41E
CAe1	07IT05	22	8	M25	7	JBEP 212015 A42E
CAe2	12IP05	25	13	M32	12	JBEP 322015 A43E
CAe2	12IT05	37	13	M32	12	JBEP 322015 A44E
CAe3	19IP05	39	20	M32	19	JBEP 422015 A45E
CAe4	27IP05	55	28	M40	27	JBEP 572015 A46E
CAe1	07IP09	15	8	M32	7	JBEP 212015 A47E
CAe1	07IT09	22	8	M32	7	JBEP 212015 A48E
CAe2	12IP09	25	13	M40	12	JBEP 322015 A49E
CAe2	12IT09	37	13	M40	12	JBEP 322015 A50E
CAe3	19IP09	39	20	M40	19	JBEP 422015 A51E
CAe4	27IP09	55	28	M50	27	JBEP 572015 A52E

Junction Boxes & Enclosures

JBEP Series: Pre-drilled Fiberglass Reinforced Polyester Junction Boxes – Increased Safety

Zone 1 & 2 – 21 & 22

Ⓜ II 2 GD

ATEX / IECEx

IP66 – IK10

Ordering Information – Continued:

Factory Drilled and Equipped with Terminals Ex e II Polyester Junction Boxes for Instrumentation Applications with Lead Sheath Armored Cables Fitted with:

- Horizontal beige terminal block.
- Copper bar with cable clamps or continuity shields.
- Yellow laminated plastic label with black lettering.
- Earth continuity brass plate.
- M8 external earth crossing terminal.
- M20 to M32 threaded entries.
- M40 to M50 clearance holes.
- Cable glands and plugs ordered separately.

Armored Cables

 With lead sheath



Type	For Cable U1000 RGPFV	Terminal Block 0.5/2.5 mm ² Qty.	Earth Terminal 0.5/2.5 mm ² Qty.	Copper Bar 10 x 3 mm Qty.	Cable Clamp 0.5/2.5 mm ² Qty.	Multi-cable Cable Entry Qty. 1	Single Cable Entries M20 Qty.	Catalog Number
CAe1	07 x 1.5	7	1	1	5	M20	3	JBEP 212015 L01E
CAe1	12 x 1.5	12	1	1	8	M25	6	JBEP 212015 L02E
CAe2	19 x 1.5	19	1	1	11	M25	9	JBEP 322015 L03E
CAe2	24 x 1.5	24	1	1	14	M32	12	JBEP 322015 L04E
CAe2	27 x 1.5	27	1	1	15	M32	13	JBEP 322015 L05E
CAe3	37 x 1.5	37	1	1	20	M32	18	JBEP 422015 L06E
CAe1	07 x 2.5	7	1	1	5	M20	3	JBEP 212015 L07E
CAe1	12 x 2.5	12	1	1	8	M25	6	JBEP 212015 L08E
CAe2	19 x 2.5	19	1	1	11	M32	9	JBEP 322015 L09E
CAe2	24 x 2.5	24	1	1	14	M32	12	JBEP 322015 L10E
CAe2	27 x 2.5	27	1	1	15	M32	13	JBEP 322015 L11E
CAe3	37 x 2.5	37	1	1	20	M40	18	JBEP 422015 L12E

Type	For Cable EGPF	Terminal Block 0.5/2.5 mm ² Qty.	Continuity Shield Qty.	Multi-cable Cable Entry Qty. 1	Single Cable Entries M20 Qty.	Catalog Number
CAe1	07IP05	14	7	M20	7	JBEP 212015 L21E
CAe1	07IT05	21	7	M20	7	JBEP 212015 L22E
CAe2	12IP05	24	12	M25	12	JBEP 322015 L23E
CAe2	12IT05	36	12	M25	12	JBEP 322015 L24E
CAe3	19IP05	38	19	M25	19	JBEP 422015 L25E
CAe4	27IP05	54	27	M32	27	JBEP 572015 L26E
CAe1	07IP09	14	7	M25	7	JBEP 212015 L27E
CAe1	07IT09	21	7	M25	7	JBEP 212015 L28E
CAe2	12IP09	24	12	M32	12	JBEP 322015 L29E
CAe2	12IT09	36	12	M32	12	JBEP 322015 L30E
CAe3	19IP09	38	19	M40	19	JBEP 422015 L31E
CAe4	27IP09	54	27	M40	27	JBEP 572015 L32E

Type	For Cable EIPF	Terminal Block 0.5/2.5 mm ² Qty.	Continuity Shield Qty.	Multi-cable Cable Entry Qty. 1	Single Cable Entries M20 Qty.	Catalog Number
CAe1	07IP05	15	8	M25	7	JBEP 212015 L41E
CAe1	07IT05	22	8	M32	7	JBEP 212015 L42E
CAe2	12IP05	25	13	M32	12	JBEP 322015 L43E
CAe2	12IT05	37	13	M32	12	JBEP 322015 L44E
CAe3	19IP05	39	20	M40	19	JBEP 422015 L45E
CAe4	27IP05	55	28	M50	27	JBEP 572015 L46E
CAe1	07IP09	15	8	M32	7	JBEP 212015 L47E
CAe1	07IT09	22	8	M32	7	JBEP 212015 L48E
CAe2	12IP09	25	13	M40	12	JBEP 322015 L49E
CAe2	12IT09	37	13	M40	12	JBEP 322015 L50E
CAe3	19IP09	39	20	M50	19	JBEP 422015 L51E
CAe4	27IP09	55	28	M50	27	JBEP 572015 L52E

Junction Boxes & Enclosures

JBEP Series: Pre-drilled Fiberglass Reinforced Polyester Junction Boxes – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

IP66 – IK10

Technical Data:

Defining maximum terminal block quantity according to power dissipation:

Junction boxes used for instrumentation applications carry very low current levels. Therefore there is no risk of overheating whatever the number of terminals inside the box.

For applications other than instrumentation, the following tables allow you to define your junction box depending on the number of terminals and the maximum authorized current being carried.

T Rating: T6		Type		
		CSPe1	CSPe2	CSPe3
		120 x 120 x 91 mm	120 x 170 x 91 mm	120 x 230 x 91 mm
2.5 mm ²	Qty. I max.	12 15 A	22 13 A	33 12 A
4 mm ²	Qty. I max.	10 20 A	18 19 A	28 16 A
6 mm ²	Qty. I max.	7 32 A	14 27 A	21 24 A
10 mm ²	Qty. I max.	4 50 A	6 50 A	8 50 A

T Rating: T6 @ Ta +40°C T5 @ Ta +55°C		Type			
		CAe1	CAe2	CAe3	CAe4
		200 x 215 x 150 mm	200 x 320 x 150 mm	200 x 425 x 150 mm	200 x 575 x 150 mm
2.5 mm ²	Qty. I max.	20 16 A	21 16 A	23 16 A	29 14 A
4 mm ²	Qty. I max.	19 20 A	20 20 A	23 20 A	33 16 A
6 mm ²	Qty. I max.	12 32 A	13 32 A	14 32 A	18 28 A
10 mm ²	Qty. I max.	10 40 A	11 40 A	18 32 A	22 28 A
16 mm ²	Qty. I max.	8 28 A	10 27 A	13 25 A	15 26 A
25 mm ²	Qty. I max.	8 67 A	8 73 A	10 69 A	10 70 A
35 mm ²	Qty. I max.	8 79 A	8 86 A	10 80 A	10 80 A

For other terminal block configurations, please consult our guide G0002 available online at: www.egsatx.com

Compliances:

Hazardous Area	Gas	Dust
Certification Type	CSPe	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081ⓂII 2 G	CE 0081ⓂII 2 D
Symbol of Protection ATEX	Ex e II Ex eia IIC Ex eib IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	T6	NA
Surface Temperature	NA	T75°C
Ambient Temperature	-55°C to +60°C	
CE Declaration of Conformity	50284	
ATEX Certificate	LCIE 09 ATEX 3032X	
IECEx Certificate	IECEx LCI 09.0016X	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact resistance (shock)	IK10	

Hazardous Area	Gas	Dust
Certification Type	CAe	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081ⓂII 2 G	CE 0081ⓂII 2 D
Symbol of Protection ATEX	Ex e II Ex eia IIC Ex eib IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	T6 for Ta ≤ +40°C T5 for +40°C < Ta ≤ +55°C	NA
Surface Temperature	NA	T80°C to T95°C
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50235	
ATEX Certificate	LCIE 02 ATEX 6248X	
IECEx Certificate	IECEx LCI 04.0016	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact resistance (shock)	IK10	

Standards:

Ex Standards	EN / IEC 60079-0; 60079-7; 60079-11; 61241-0; 61241-1; 61241-11
Product Standards	–
EMC Standards	–
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Junction Boxes & Enclosures

JBEP Series: Pre-drilled Fiberglass Reinforced Polyester Junction Boxes – Increased Safety

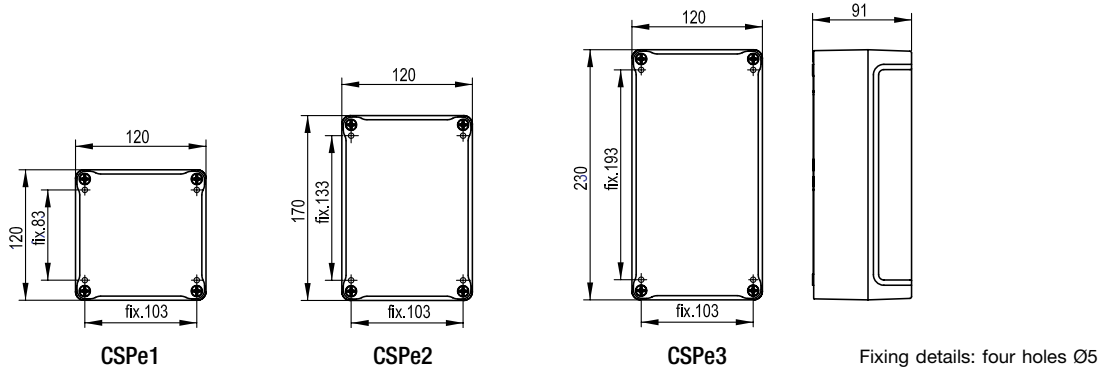
Zone 1 & 2 – 21 & 22

II 2 GD

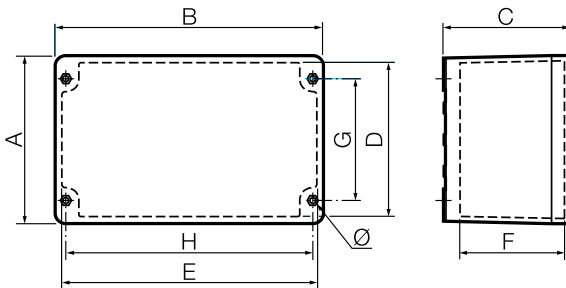
ATEX / IECEx

IP66 – IK10

Dimensions (mm):



CAe1 to CAe4



Type	External Dimensions			Internal Dimensions			Fixings			Ø
	A	B	C	D	E	F	G	H	Thick	
CAe1	200	215	150	185	200	125	146	189	6	7
CAe2	200	320	150	185	305	125	146	294	6	7
CAe3	200	425	150	185	410	125	146	399	6	7
CAe4	200	575	150	185	560	125	146	548	6	7

Junction Boxes & Enclosures

JBEP and ECEP Series: Undrilled Fiberglass Reinforced Polyester Enclosures – Increased Safety



CSPe Type – Small Version



CAe Type – Non-Hinged Version



CAe Type – Hinged Versions

Compliance Data:

ATEX - IECEx:



Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IECEx	CE
Ex e II Ex ia IIC; Ex ib IIC Ex de IIC; Ex demb IIC	T6 to T2	Ex tD A21	T75°C to T295°C	IP66 – IK10

Operating Temperatures:

-55°C to +60°C (CSPe Type)
-40°C to +55°C (CAe Type)

Junction Boxes & Enclosures

JBEP and ECEP Series: Undrilled Fiberglass Reinforced Polyester Enclosures – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

IP66 – IK10

Applications:

- Designed for use in Zone 1 or 2 areas, where flammable gases or vapors are present either continuously or intermittently.
- Ideal for wet or corrosive atmospheres.
- Petroleum, chemical, refineries and other industrial process facilities.
- Designed for use in Zone 21 or 22 areas, where flammable dusts are present either continuously or intermittently. Food processing, dairy, brewing and other commercial facilities.

JBEP Series:

- Terminal junction boxes for electrical low voltage and instrumentation connections in hazardous areas.
- Refer to technical data to define permitted number of terminal blocks and cable entries on selected junction boxes.

ECEP Series:

- Enclosure for distribution and control applications. Can be modified at our manufacturing facility to house a large range of components; i.e. control units, switches, breakers, transformers, meters, etc.

Features:

- Static resistant black fiberglass reinforced polyester enclosure.
 - Available in a wide range of sizes.
 - Operating temperature -55°C to +60°C (CSPe) and -40°C to +55°C (CAe).
 - Stainless steel hardware.
 - Hinges standard on all sizes above 400 x 300 mm.
- Hinged enclosures:
- Reversible door opening 180°.
 - Door with double bar lock.
 - Key locking facility.
 - Protective flange at top and bottom.

Standard Materials of Fixtures:

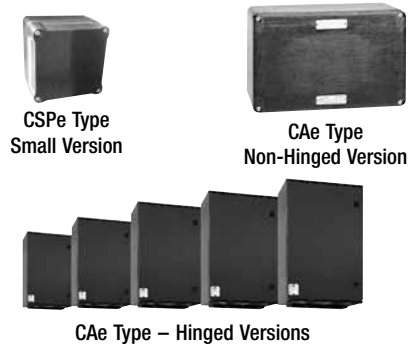
- Static resistant carbon filled fiberglass reinforced polyester (FRP) enclosures.
- Stainless steel hardware.

Accessories:

- Mounting pan.
- Rail mounting.
- Padlocking device.
- Inside pocket for documents.
- Refer to technical data to define permitted number and size of terminals and cable entries.

Options:

- Removable gland plates.
- Nameplates.
- Consult factory for custom drilling and assembly requirements.
- Empty enclosure with Ex “U” component marking for re-certification by notified body for CAe type.



JUNCTION BOXES & ENCLOSURES

Catalog Number Logic:

<p>JBEP</p> <p>Series</p> <p>ATEX / IEC Certified:</p> <p>EC = Enclosure & Controls</p> <p>JB = Junction Box</p> <p>E = Increased Safety</p> <p>I = Intrinsic Safety</p> <p>P = Polyester</p>	<p>XX</p> <p>Dimensions</p> <p>Length (mm):</p> <p>12 = 120</p> <p>17 = 170</p> <p>21 = 215</p> <p>23 = 230</p> <p>32 = 320</p> <p>40 = 400</p> <p>42 = 425</p> <p>50 = 500</p> <p>57 = 575</p> <p>60 = 600</p> <p>80 = 800</p> <p>10 = 1000</p>	<p>XX</p> <p>Dimensions</p> <p>Width (mm):</p> <p>12 = 120</p> <p>20 = 200</p> <p>30 = 300</p> <p>40 = 400</p> <p>60 = 600</p> <p>80 = 800</p>	<p>XX</p> <p>Dimensions</p> <p>Depth (mm):</p> <p>09 = 91</p> <p>15 = 150</p> <p>20 = 200</p> <p>25 = 200</p> <p>30 = 300</p>	<p>X</p> <p>Gland Plates (1):</p> <p>0 = None</p> <p>1 = One Bottom</p> <p>2 = One Top and Bottom</p> <p>3 = Two Sides and Bottom</p> <p>4 = All Sides</p>	<p>X</p> <p>Options:</p> <p>(options must be listed alphabetically)</p> <p>E = Earth Continuity Brass Plate</p> <p>M = Mounting Pan</p> <p>U = Component Certification “U”</p> <p># = Customized at Factory</p>
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(1) Gland plate for hinged enclosures only.

#: 6 Digit number will be assigned at time of order placement.

Junction Boxes & Enclosures

JBEP and ECEP Series: Undrilled Fiberglass Reinforced Polyester Enclosures – Increased Safety

Zone 1 & 2 – 21 & 22

Ex II 2 GD

ATEX / IECEx

IP66 – IK10

Ordering Information:

JBEP Series Exe II Small Polyester Junction Boxes

For use with Ex certified terminals only (not supplied).

Mounting rails supplied.

Yellow laminated plastic label with black lettering.



Type	Dimensions L x W x D (mm)	Rail Length (mm)	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
CSPe1	120 x 120 x 91	62	0.8	4	JBEP 121209 0	–
CSPe2	170 x 120 x 91	112	1	4	JBEP 171209 0	–
CSPe3	230 x 120 x 91	172	1.2	4	JBEP 231209 0	–

Exe II Non-Hinged Junction Boxes

For use with Ex terminals only (not supplied).

Mounting rails to be ordered separately.

Yellow laminated plastic label with black lettering.



Type	Dimensions L x W x D (mm)	Rail Length (mm)	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
CAe1	215 x 200 x 150	191	3	13	JBEP 212015 0	095953
CAe2	320 x 200 x 150	293	3.8	23	JBEP 322015 0	095954
CAe3	425 x 200 x 150	400	4.9	26	JBEP 422015 0	095955
CAe4	575 x 200 x 150	554	6.2	33	JBEP 572015 0	095956

Exe II Hinged Junction Boxes without Gland Plate

For use with Ex terminals only (not supplied).

Mounting pan and rails to be ordered separately.



Type	Dimensions L x W x D (mm)	Rail Length (mm)	Weight (dm ³)	Volume Number	Catalog Number	Old Catalog Number
CAe6	400 x 300 x 206	243	4.4	33	JBEP 403020 0	095957
CAe7	500 x 400 x 206	343	5.3	47	JBEP 504020 0	–
CAe8	610 x 400 x 257	343	7.7	84	JBEP 604025 0	–
CAe10	820 x 610 x 300	543	18.3	190	JBEP 806030 0	096473
CAe11	1020 x 810 x 300	743	23.6	313	JBEP 108030 0	096474

Exe II Hinged Junction Boxes with Bottom Opening for Gland Plate

For use with Ex terminals only (not supplied).

Opening at bottom 114 x 322 mm.

Mounting pan, rails and gland plate to be ordered separately.



Type	Dimensions L x W x D (mm)	Rail Length (mm)	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
CAe7	500 x 400 x 206	343	5.3	47	JBEP 504020 1	096465
CAe8	610 x 400 x 257	343	7.7	84	JBEP 604025 1	096471

Removable Gland Plate



Description	Size (mm)	Drilling	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
Gland Plate	114 x 322	Blank	1.4	0.4	JBEPGP400	096485
Gland Plate	114 x 322	Clearance holes for 17 x M20 + 3 x M25	1.4	0.4	JBEPGP400 D12	096486
Gland Plate	130 x 264 (1)	Blank	1.3	0.3	JBEPGP300	096490

(1) To be used with customized enclosure CAe6.

Junction Boxes & Enclosures

JBEP and ECEP Series: Undrilled Fiberglass Reinforced Polyester Enclosures – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

IP66 – IK10

Ordering Information – Continued:

Coupling Flange

Description	Size (mm)	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
Coupling Flange	114 x 322	1.3	0.2	JBEP CF1	–

ECEP Series:

Polyester Enclosure for Distribution and Control Applications


Designed to house a large range of components; i.e. control units, switches, breakers, transformers, meters, etc.

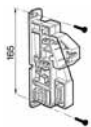
Must be customized at our workshop. Order using the following catalog number:

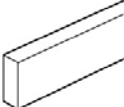
Replace “JB” with “EC” and add # as last digit for customized enclosure.


Example: JBEP 403020 0 becomes ECEP 403020 0 #. At time of order, # will be replaced by a 6 digit number.

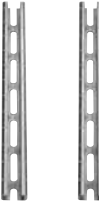
Mounting Accessories:

Enclosure Type	Rail Length (mm)	Catalog Number	Old Catalog Number	Pack
 Zinc Plated Symmetrical Steel Rail For direct fixing. Set of two 60 mm height spacers supplied.				
CAe1	191	JBEP DR215	–	1
CAe2	293	JBEP DR320	–	1
CAe3	400	JBEP DR425	–	1
CAe4	554	JBEP DR575	–	1

Description	Catalog Number	Old Catalog Number	Pack
 Insulated Side Support – Set of Two For mounting symmetrical, asymmetrical rails and copper bar 12 x 2 mm or 12 x 4 mm. See dimensional data page for more details.	096115	–	1

Description	Bar Length (mm)	Catalog Number	Pack
 Copper Bar (12 x 4 mm) Copper bar not perforated for cable clamps.			
	160	097270	1
	200	097271	1
	310	097272	1
	500	097273	1
	690	097274	1
	1070	097275	1

Description	Catalog Number	Pack
 Cable Clamp for Copper Bar (12 x 4 mm) 1.5 mm ² to 4 mm ² capacity. 6 mm ² to 16 mm ² capacity.	097203 097204	1 1

Enclosure Type	Rail Length (mm)	Catalog Number	Old Catalog Number	Pack
 Zinc Plated Steel Uprights – Set of Two “C” profile supplied with hardware.				
CAe6	337	JBEP SR400	096475	1
CAe7	437	JBEP SR500	096476	1
CAe8	537	JBEP SR600	096477	1
CAe10	737	JBEP SR800	096478	1
CAe11	937	JBEP SR100	096479	1

Junction Boxes & Enclosures

JBEP and ECEP Series: Undrilled Fiberglass Reinforced Polyester Enclosures – Increased Safety


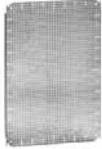


Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

IP66 – IK10

Mounting Accessories – Continued:

Enclosure Type	Rail Length (mm)	Catalog Number	Old Catalog Number	Pack	
Zinc Plated Symetrical Steel Rail For fixing onto uprights with clip nut supplied.					
	CAe6	243	JBEP DR300	096481	1
	CAe7 / CAe8	343	JBEP DR400	096482	1
	CAe10	543	JBEP DR600	096483	1
	CAe11	743	JBEP DR800	096484	1
Enclosure Type	Dimensions (mm)	Catalog Number	Pack		
Mounting Pan Perforated mounting pan "Telequick".					
	CAe6	350 x 250	JBEPMP400	096452	1
	CAe7	450 x 350	JBEPMP500	096453	1
	CAe8	550 x 350	JBEPMP600	096454	1
	CAe10	750 x 550	JBEPMP800	096455	1
	CAe11	950 x 750	JBEPMP100	096456	1
Description	Catalog Number	Pack			
Self Adhesive Pocket for Drawings					
	External dimensions: 260 x 165 mm. Internal dimensions: 230 x 130 x 18 mm.	097263	1		
	External dimensions: 340 x 235 mm. Internal dimensions: 310 x 200 x 18 mm.	097264	1		
	Padlocking Device Takes 3 safety padlocks shackle dia. 6 mm maximum.	JBEPPL	1		

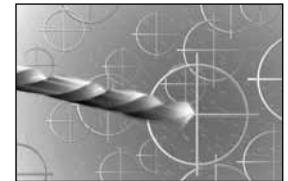
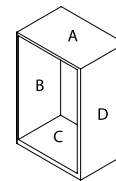
Technical Data:

JBEP Series for Terminal Junction Box Application Only.

The size of junction box needed to meet your requirements can be selected based upon the table show below. We also offer you the possibility to drill and equip using guides G0002 & G0003 available online at www.egsatx.com

- 1) Define maximum cable entries according to number of modules available per side.

Cable Entry Metric Thread	Number of Modules
M20	1
M25	1
M32	1
M40	2
M50	3



Type	Dimensions (mm)			Number of Modules			Allowable Max.
	Length	Width	Depth	B/D	A/C	A/C' (1)	Size
CSPe1	120	120	91	2	2	–	M25
CSPe2	170	120	91	3	2	–	M32
CSPe3	230	120	91	4	2	–	M32
CAe1	215	200	150	11	8	–	M50
CAe2	320	200	150	18	8	–	M50
CAe3	425	200	150	26	8	–	M50
CAe4	575	200	150	38	8	–	M50
CAe6	400	300	206	18	18	–	M50
CAe7	500	400	206	24	10	10	M50
CAe8	610	400	257	48	10	10	M75
CAe10	820	610	300	72	54	–	M100
CAe11	1020	810	300	96	78	–	M100

(1) Enclosure with removable gland plate

Junction Boxes & Enclosures

JBEP and ECEP Series: Undrilled Fiberglass Reinforced Polyester Enclosures – Increased Safety

Zone 1 & 2 – 21 & 22

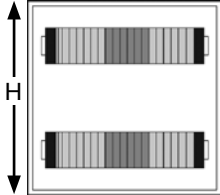
II 2 GD

ATEX / IECEx

IP66 – IK10

Technical Data – Continued:

2) Maximum rail arrangement according to physical dimensions.



	H (mm)	Maximum Quantity of Horizontal Rails Per Quantity						
		Terminal Capacity (mm ²)						
		2.5	4	6	10	16	35	50
CSPe1/2/3	120	1	1	1	1	0	0	0
CAe1/2/3/4	200	1	1	1	1	1	1	0
CAe6	400	3	3	3	2	2	2	1
CAe7	500	4	4	3	3	3	2	1
CAe8	610	4	4	4	4	3	3	2
CAe10	820	6	6	5	5	5	4	3
CAe11	1020	8	8	7	7	6	5	3

3) Define maximum terminal block quantity according to power dissipation:

Junction boxes used for instrumentation applications have very low current levels, therefore there is no risk of overheating whatever the number of terminals inside the box.

For applications other than instrumentation, the following tables allow you to define your junction box depending on the number of terminals and the maximum authorized current being carried with feed-through terminals.

For single feed terminals using cross connection, please consult factory for calculation.

Small Junction Boxes

T rating: T6		Type		
		CSPe1 120 x 120 x 91 mm	CSPe2 170 x 120 x 91 mm	CSPe3 230 x 120 x 91 mm
2.5 mm ²	Qty. I Max.	12 15 A	22 13 A	33 12 A
4 mm ²	Qty. I Max.	10 20 A	18 19 A	28 16 A
6 mm ²	Qty. I Max.	7 32 A	14 27 A	21 24 A
10 mm ²	Qty. I Max.	4 50 A	6 50 A	8 50 A

Non-Hinged Junction Boxes

T Rating: T6 @ Ta +40°C T5 @ Ta +55°C		Type			
		CAe1 215 x 200 x 150 mm	CAe2 320 x 200 x 150 mm	CAe3 425 x 200 x 150 mm	CAe4 575 x 200 x 150 mm
2.5 mm ²	Qty. I Max.	20 16 A	21 16 A	23 16 A	29 14 A
4 mm ²	Qty. I Max.	19 20 A	20 20 A	23 20 A	33 16 A
6 mm ²	Qty. I Max.	12 32 A	13 32 A	14 32 A	18 28 A
10 mm ²	Qty. I Max.	10 40 A	11 40 A	18 32 A	22 28 A
16 mm ²	Qty. I Max.	8 28 A	10 27 A	13 25 A	15 26 A
25 mm ²	Qty. I Max.	8 67 A	8 73 A	10 69 A	10 70 A
35 mm ²	Qty. I Max.	8 79 A	8 86 A	10 80 A	10 80 A

For other terminal block configurations please consult our guide G0002 available online at www.egsatx.com

Junction Boxes & Enclosures

JBEP and ECEP Series: Undrilled Fiberglass Reinforced Polyester Enclosures – Increased Safety

Zone 1 & 2 – 21 & 22

⊕ II 2 GD

ATEX / IECEx

IP66 – IK10

Technical Data – Continued:

Hinged Junction Boxes

T Rating: T6 @ Ta +40°C T5 @ Ta +55°C		Type				
		CAe6	CAe7	CAe8	CAe10	CAe11
		400 x 300 x 206 mm	500 x 400 x 206 mm	610 x 400 x 257 mm	820 x 610 x 300 mm	1020 x 810 x 300 mm
35 mm ²	Qty. I Max.	12 100 A	16 100 A	16 100 A		
50 mm ²	Qty. I Max.	8 125 A	12 125 A	16 125 A		
70 mm ²	Qty. I Max.	8 160 A	10 160 A	12 160 A		
95 mm ²	Qty. I Max.	8 200 A	10 200 A	12 200 A		
120 mm ²	Qty. I Max.		8 250 A	8 250 A	12 200 A	16 150 A
150 mm ²	Qty. I Max.			6 250 A	9 250 A	12 190 A
185 mm ²	Qty. I Max.				8 300 A	10 240 A

For other terminal block configurations please consult our guide G0003 available online at www.egsatx.com

JUNCTION BOXES & ENCLOSURES

Compliances:

Hazardous Area	Gas	Dust
Certification Type	CSPe	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081⊕ II 2 G	CE 0081⊕ II 2 D
Symbol of Protection ATEX	Ex e II Ex ia IIC Ex ib IIC	Ex tD A21
Symbol of Protection IEC	Ex de IIC Ex demb IIC	
T Rating	T6	NA
Surface Temperature	NA	T75°C
Ambient Temperature	-55°C to +60°C	
CE Declaration of Conformity	50284	
ATEX Certificate	LCIE 09 ATEX 3032X	
IECEx Certificate	IECEx LCI 09.0016X	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact resistance (shock)	IK10	

Hazardous Area	Gas	Dust
Certification Type	CAe	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081⊕ II 2 G	CE 0081⊕ II 2 D
Symbol of Protection ATEX	Ex e II Ex ia IIC Ex ib IIC	Ex tD A21
Symbol of Protection IEC	Ex de IIC Ex demb IIC	
T Rating	T6 to T2	NA
Surface Temperature	NA	T80°C to T295°C
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50235	
ATEX Certificate	LCIE 02 ATEX 6248X	
IECEx Certificate	IECEx LCI 04.0016X	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact resistance (shock)	IK10	

Junction Boxes & Enclosures

JBEP and ECEP Series: Undrilled Fiberglass Reinforced Polyester Enclosures – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

IP66 – IK10

Compliances – Continued:

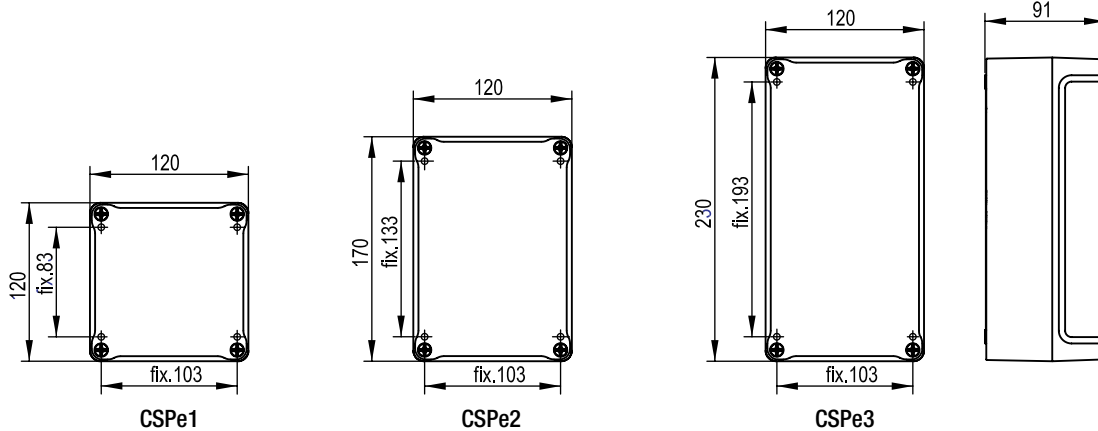
Hazardous Area	Gas	Dust
Certification Type	CAe U	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	0081ⓈII 2 G	0081ⓈII2 D
Symbol of Protection ATEX	Ex e II	Ex tD A21
Symbol of Protection IEC		
T Rating	NA	NA
Surface Temperature	NA	NA
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	5C241	
ATEX Certificate	LCIE 09 ATEX 3036 U	
IEC Certificate	LCIE Ex 09.002 U	
Other Certifications	–	
Index of Protection (solid and liquid)	IP66	
Impact resistance (shock)	IK10	

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 60079-7; 60079-11; 61241-0; 61241-1; 61241-11
Product Standards	–
EMC Standards	–
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

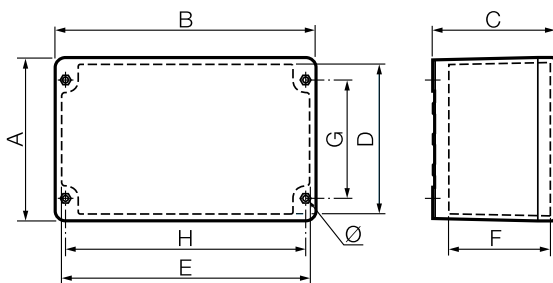
Dimensions (mm):

CSPe1 to CSPe3



Fixing details for above boxes: four holes Ø 5

CAe1 to CAe4



Type	External			Internal			Fixings			
	A	B	C	D	E	F	G	H	Thick	Ø
CAe1	200	215	150	185	200	125	146	189	6	6.5
CAe2	200	320	150	185	305	125	146	294	6	6.5
CAe3	200	425	150	185	410	125	146	399	6	6.5
CAe4	200	575	150	185	560	125	146	548	6	6.5

Junction Boxes & Enclosures

JBEP and ECEP Series: Undrilled Fiberglass Reinforced Polyester Enclosures – Increased Safety

Zone 1 & 2 – 21 & 22

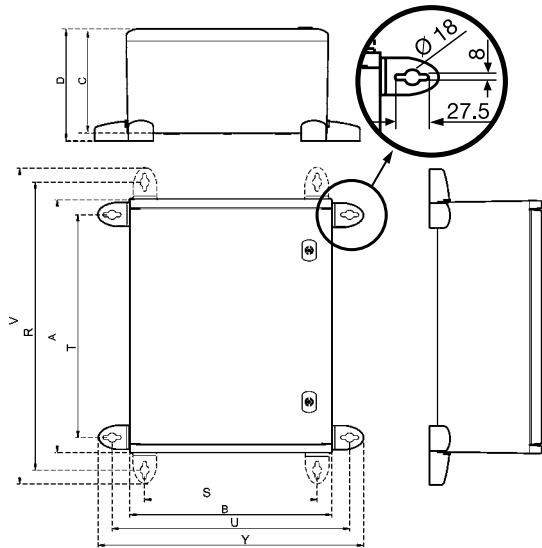
II 2 GD

ATEX / IECEx

IP66 – IK10

Dimensions (mm) – Continued:

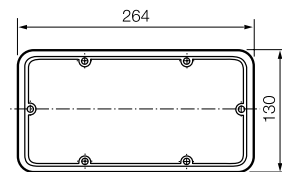
CAe6 to CAe11



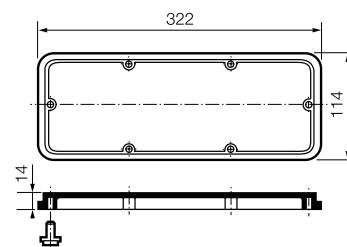
Type	External dimensions (mm)				Fixing (mm)						
	A	B	C	D	with horizontal lug			with vertical lug			
					T	U	Y	R	S	V	
CAe6	400	300	206	222	341	370	425	470	241	525	
CAe7	500	400	206	222	441	470	525	570	341	625	
CAe8	610	400	257	273	551	470	525	680	341	735	
CAe10	820	610	300	316	758	677	732	887	548	942	
CAe11	1020	810	300	316	958	877	932	1087	748	1142	

Gland Plates:

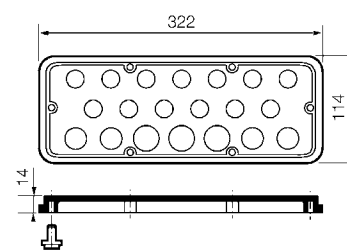
JBEPGP300



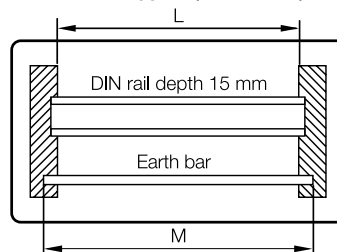
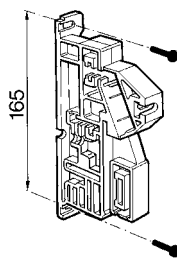
JBEPGP400



JBEPGP400D12

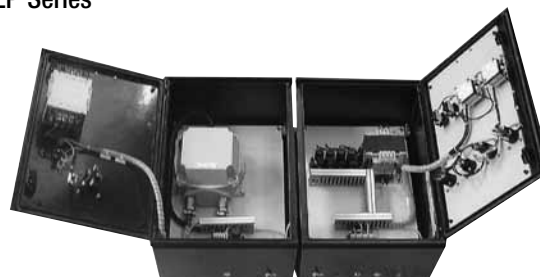


Insulated Side Support (Rail Holder) 096115



Type	Equipment Capacity	
	L (mm)	M (mm)
CAe1	105	129
CAe2	206	234
CAe3	310	339
CAe4	315	345

Example of Customized Enclosure ECEP Series



Junction Boxes & Enclosures

JBES Series: Pre-drilled 316L Stainless Steel Junction Boxes – Increased Safety



JBe10
Without Terminals



JBe46
Equipped with Terminals



JBe46
Equipped with Terminals



JBe46
Equipped with Terminals

JUNCTION BOXES & ENCLOSURES

Compliance Data:

ATEX - IEC:

Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IEC	CE
Ex e II; Ex ia IIC; Ex ib IIC	T6 to T5	Ex tD A21	T80°C to T95°C	IP66 – IK10

Operating Temperatures:

-50°C to +70°C



Junction Boxes & Enclosures

JBES Series: Pre-drilled 316L Stainless Steel Junction Boxes – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IEC

IP66 – IK10

Applications:

- Terminal junction boxes designed to facilitate electrical connections in hazardous areas.
- Designed for use in Zone 1 or 2 areas, where flammable gases or vapors are present either continuously or intermittently.
- Ideal for use in wet or corrosive atmospheres.
- Petroleum, chemical, refineries and other industrial process facilities.
- Designed for use in Zone 21 or 22 areas, where flammable dusts are present either continuously or intermittently
- Food processing, dairy, brewing, pharmaceutical industry, silos and other facilities.
- Smooth, continuously welded seams.
- 316L stainless steel captive screws.
- Hinges supplied on all boxes from 370 mm x 260 mm sizes.
- Poured-in-place polyurethane door gasket.
- Earth crossing terminal.
- Factory drilled and equipped.

Features:

- Austenitic stainless steel contains at least 10.5% Chrome (Cr). Chrome is a protective layer that shields the material from humidity.
- 316L stainless steel contains molybdenum (Mo), which provides excellent corrosion resistance especially against chlorides.

Standard Material:

- 316L chrome plated molybdenum stainless steel enclosure with natural burnished finish.
- 316L stainless steel hardware.

Options:

- For use with other equipment than Ex terminal blocks, see section ECES series enclosures and controls.

Catalog Number Logic:

JBES	XX	XX	XX	XX	X
Series	Dimensions	Dimensions	Dimensions		Options:
ATEX / IEC Certified:	Length (mm):	Width (mm):	Depth (mm):		Options have to be listed alphabetically
E = Increased Safety	12 = 120	12 = 120	09 = 95		D1 = 5 x M20
I = Intrinsic Safety	18 = 180	18 = 180	15 = 150		D2 = 4 x M20 + 1 x M25
	22 = 220	22 = 220	20 = 200		D3 = 7 x M20 + 1 x M25
	26 = 260	26 = 260			F1 = Fitted with 12 x 2.5 mm ² Terminals and Drilled
	37 = 370	37 = 370			F2 = Fitted with 20 x 2.5 mm ² Terminals and Drilled
					F3 = Fitted with 40 x 2.5 mm ² Terminals and Drilled
					F4 = Fitted with 60 x 2.5 mm ² Terminals and Drilled
					F5 = Fitted with 14 x 2.5 mm ² Terminals and Drilled
					F6 = Fitted with 24 x 2.5 mm ² Terminals and Drilled
					F7 = Fitted with 38 x 2.5 mm ² Terminals and Drilled
					F8 = Fitted with 54 x 2.5 mm ² Terminals and Drilled
					# = Customized Enclosure
				Gland Plates:	
				0 = None	
				1 = One Bottom	
				2 = One Top and Bottom	
				3 = Two Sides and Bottom	
				4 = All Sides	

#: 6 Digit number will be assigned at time of order placement.

Ordering Information:

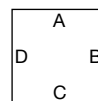
Factory Drilled Ex e II 316L Stainless Steel Junction Boxes Fitted with:

One horizontal symmetrical zinc plated rail.

For use only with Ex terminals (not supplied).

M6 external earth crossing terminal.

Cable glands and plugs to be ordered separately.



Type	Dimensions L x W x D (mm)	Rail Length Capacity (mm)	A	Clearance Holes per side			Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
				B	C	D				
JBBe10	120 x 120 x 95	100	1 x M20	1 x M20	2 x M20	1 x M20	1	1.4	JBES 121209 0 D1	–
JBBe20	120 x 180 x 95	160	–	1 x M20	2 x M20 1 x M25	1 x M20	1.5	2	JBES 121809 0 D2	–
JBBe20	120 x 180 x 95	160	–	2 x M20	3 x M20 1 x M25	2 x M20	1.5	2	JBES 121809 0 D3	–

Junction Boxes & Enclosures

JBES Series: Pre-drilled 316L Stainless Steel Junction Boxes – Increased Safety

Zone 1 & 2 – 21 & 22

Ex II 2 GD

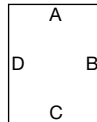
ATEX / IEC

IP66 – IK10

Ordering Information Continued:

Factory Drilled and Equipped with Terminals Ex e II 316L
Stainless Steel Instrumentation Junction Boxes Fitted with:

Vertical beige Exe terminal block.
Insulated copper bar with connectors.
White laminated plastic tag with black lettering.
M8 external earth crossing terminal.
Cable glands and plugs to be ordered separately.



Type	Dimensions L x W x D (mm)	Rail Length Capacity (mm)	Insulated Connectors	Clearance Holes per Side			Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
				B	C	D				
JBES20	180 x 120 x 95	12 (6 Pairs)	8	3 x M20	1 x M25 1 x M20	3 x M20	2.5	2	JBES 1812090 F1	097160
JBES36	260 x 220 x 150	20 (10 Pairs)	12	5 x M20	1 x M32 1 x M20	5 x M20	4	8.6	JBES 2622150 F2	097161
JBES46	370 x 220 x 200	40 (20 Pairs)	22	10 x M20	1 x M40 1 x M20	10 x M20	9	16.3	JBES 372220 F3	097162
JBES47	370 x 260 x 200	60 (30 pairs)	32	15 x M20	1 x M50 1 x M20	15 x M20	11	19.3	JBES 3726200 F4	097163

Ex ia IIC Version: Replace Third Digit “E” with “I”
(Example: JBES1812090F1 becomes JBIS1812090F1)

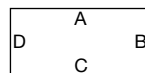
Fitted with:

Vertical blue terminal block.
Insulated copper bar with connectors.
Blue laminated plastic tag with white lettering.
M8 external earth crossing terminal.
Cable glands and plugs to be ordered separately.



Factory Drilled and Equipped with Terminals Ex e II 316L
Stainless Steel Instrumentation Junction Boxes Fitted with:

Horizontal beige Exe terminal block.
Continuity shield.
White laminated plastic tag with black lettering.
M8 External earth crossing terminal.
Cable glands and plugs to be ordered separately.



Type	Dimensions L x W x D (mm)	Terminals 2.5mm ²	Continuity Shield	Clearance Holes Side C		Weight (Kkg)	Volume (dm ³)	Catalog Number	Old Catalog Number
JBES36	220 x 260 x 150	14 (7 Pairs)	7	1 x M25	7 x M20	4	8.6	JBES 2226150 F5	097140
JBES36	220 x 260 x 150	24 (12 pairs)	12	1 x M32	12 x M20	4	8.6	JBES 2226150 F6	097141
JBES46	220 x 370 x 200	38 (19 pairs)	19	1 x M32	19 x M20	9	16.3	JBES 2237200 F7	097142
JBES46	220 x 370 x 200	54 (27 pairs)	27	1 x M40	27 x M20	9	16.3	JBES 2237200 F8	097143

Ex ia IIC Version: Replace Third Digit “E” with “I” Fitted with:

(Example: JBES2226150F5 becomes JBIS2226150F5)
Horizontal blue terminal block.
Continuity shield.
Blue laminated plastic tag with white lettering.
M8 external earth crossing terminal.
Cable glands and plugs to be ordered separately.



Junction Boxes & Enclosures

JBES Series: Pre-drilled 316L Stainless Steel Junction Boxes – Increased Safety

Zone 1 & 2 – 21 & 22

⊕ II 2 GD

ATEX / IEC

IP66 – IK10

Technical Data:

Maximum rail arrangement according to physical dimensions.

Type	Protection	Terminal Size	Quantity	Max. Amps
JBe10	T6 @ Ta = +55°C	2.5 mm ²	10	16A
		4 mm ²	8	25A
		6 mm ²	6	32A
JBe20	T6 @ Ta = +55°C	2.5 mm ²	21	16A
		4 mm ²	18	25A
		6 mm ²	13	32A

For other terminal block configurations, consult our guide G0002 available online at our website: www.egsatx.com

Compliances:

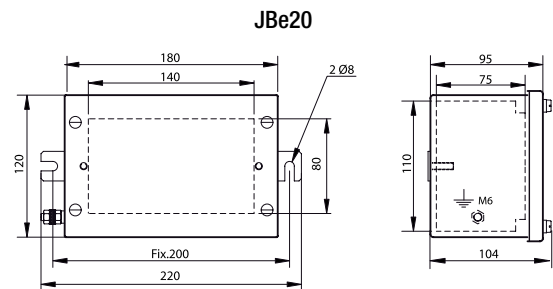
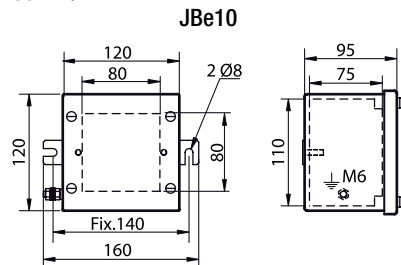
Hazardous Area	Gas	Dust
Certification Type	JBe	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex e II Ex ia IIC Ex ib IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	T6 to T5	NA
Surface Temperature	NA	T80°C to T95°C
Ambient Temperature	-50°C to +70°C	
CE Declaration of Conformity	50232	
ATEX Certificate	LCIE 02 ATEX 6118X	
IEC Certificate	LCIE Ex 02.010X	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact resistance (shock)	IK10	

Standards:

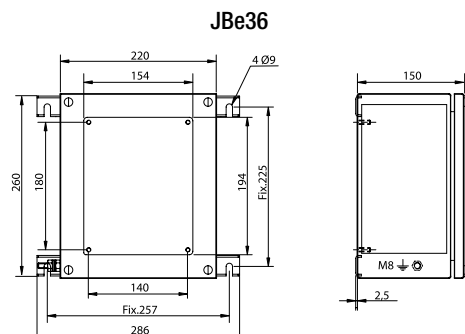
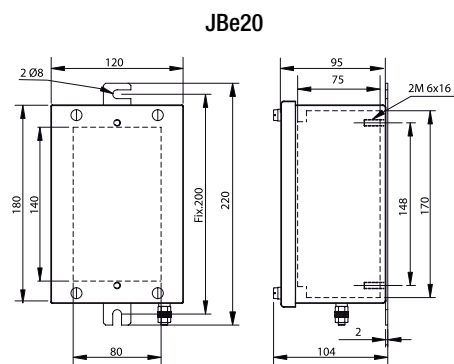
Ex Standards	EN / IEC 60079-0; 60079-7; 60079-11; 61241-0; 61241-1; 61241-11
Product Standards	–
EMC Standards	–
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Dimensions (mm):

Factory Drilled without Terminal Block (DIN rail supplied)



Factory Drilled and Equipped with Vertical Terminal Block



Junction Boxes & Enclosures

JBES Series: Pre-drilled 316L Stainless Steel Junction Boxes – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

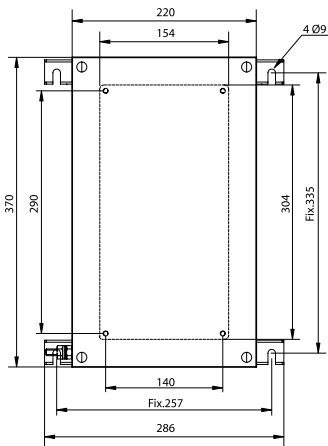
ATEX / IEC

IP66 – IK10

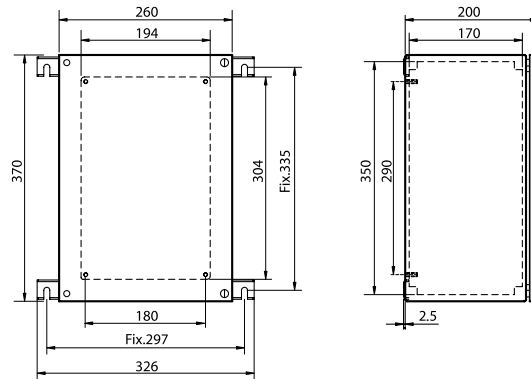
Dimensions (mm) – Continued:

Factory Drilled and Equipped with
Vertical Terminal Block

JBe46

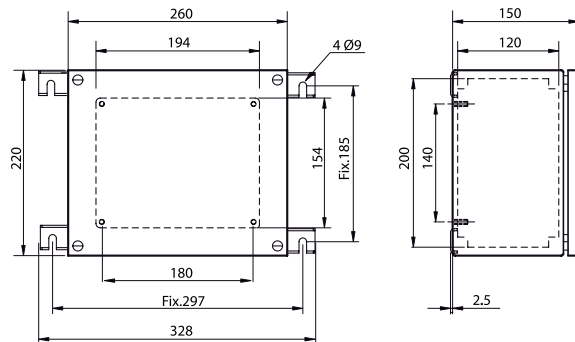


JBe47

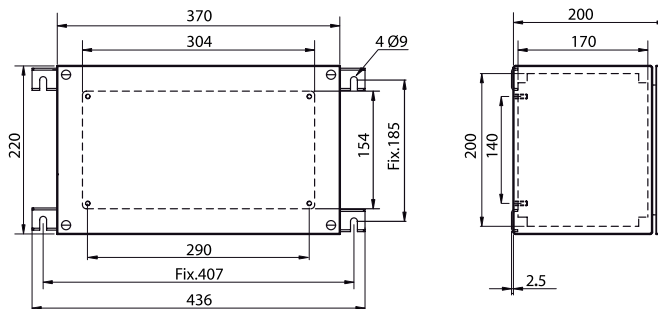


Factory Drilled and Equipped with
Horizontal Terminal Block

JBe36



JBe46



Junction Boxes & Enclosures

JBES and ECES Series: 316L Stainless Steel Enclosures – Increased Safety



JBES Series

Medium Voltage 11 kV



ECES Series

JUNCTION BOXES & ENCLOSURES

Compliance Data:

ATEX - IEC:



Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IEC	CE
Ex e II Ex ia IIC; Ex ib IIC Ex de IIC; Ex demb IIC	T6 to T4	Ex tD A21	T80°C to T130°C	IP66 – IK10

Operating Temperatures:

-50°C to +70°C (JBES series)

-50°C to +55°C (ECES series)

Junction Boxes & Enclosures

JBES and ECES Series: 316L Stainless Steel Enclosures – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IEC

IP66 – IK10

Applications:

- Designed for use in Zone 1 or 2 areas where flammable gases or vapors are present either continuously or intermittently.
- Ideal for use in wet or corrosive atmospheres.
- Petroleum, chemical, refineries and other industrial process facilities.
- Designed for use in Zone 21 or 22 areas where flammable dusts are present either continuously or intermittently.
- Food processing, dairy, brewing, pharmaceutical industry and other commercial facilities.
- Poured-in-place polyurethane door gasket.
- Feedthrough earth grounding stud.
- Patented reversible door, opens 210 degrees, from any location top; bottom, left or right, by means of removable hinges that can be installed in any position.
- Patented reversible antivibration mounting brackets can be mounted on the top, bottom or side positions.
- Optional patented removable padlocking device.
- Numerous optional accessories.

JBES Series:

- Terminal junction box for electrical low voltage and instrumentation connections for use in hazardous areas.
- Refer to technical data to define permitted number of terminal blocks and cable entries on selected junction boxes.

ECES Series:

- Enclosure for distribution and control applications must be customized at our workshop to house a large range of components such as control units, switches, breakers, transformers, meters, etc.

Features:

- Austenitic stainless steel contains at least 10.5% chrome (Cr). Chrome is a protective layer that shields the material from humidity in the air.
- 316L stainless steel contains molybdenum (Mo), which provides excellent corrosion resistance especially against chlorides.
- Smooth, continuously welded seams.
- Many different sizes and depths to choose from.
- Available in three depths, 95 mm, 200 mm and 300 mm.
- Operating temperature -50°C to +70°C (JBES series) and -50°C to +55°C (ECES series).
- Can be supplied with 1, 2, 3 or even 4 neoprene sealed gland plates for ease of cable installation.
- 316L stainless steel captive screws.
- Hinges standard on all sizes above 370 mm x 260 mm.

Standard Materials:

- Enclosure is 316L chrome plated molybdenum stainless steel.
- Natural brushed finish.
- 316L stainless steel hardware.

Accessories:

- Mounting pan.
- Rail mounting.
- Padlocking device.
- Door locking bracket for easy access.
- Inside pocket.
- Refer to technical data to define permitted number of terminals and cable entries acceptance.

Options:

- Removable gland plates.
- Nameplate.
- Please consult us for:
 - Factory drilled and assembled
 - Medium voltage application (11 KV max.)
- Intrinsic safety version (JBIS) available with the use of intrinsic terminals.
- CSA and CUL certified terminal junction box.

Illustrated Features:



Optional patented removable locking device.
Part Number 097209



Patented reversible antivibration mounting brackets, can be mounted in top, side or bottom positions.



M8 feedthrough earth/ground terminal.



Polyurethane poured in place door gasket and stainless steel captive screws.



Patented reversible door. Opens to 210°, top, bottom, left or right, by moving the location of the hinges



Optional removable gland plate.

Junction Boxes & Enclosures

JBES and ECES Series: 316L Stainless Steel Enclosures – Increased Safety

Zone 1 & 2 – 21 & 22

Ex II 2 GD

ATEX / IEC

IP66 – IK10

Catalog Number Logic:

<p>JBES</p> <p>Series</p> <p>ATEX / IEC Certified:</p> <p>EC = Enclosure & Controls, Control stations</p> <p>JB = Junction Box</p> <p>E = Increased Safety</p> <p>I = Intrinsic Safety</p> <p>S = Stainless Steel</p>	<p>XX</p> <p>Dimensions</p> <p>Length (mm):</p> <p>12 = 120</p> <p>18 = 180</p> <p>22 = 220</p> <p>26 = 260</p> <p>37 = 370</p> <p>56 = 560</p> <p>75 = 750</p> <p>11 = 1130</p>	<p>XX</p> <p>Dimensions</p> <p>Width (mm):</p> <p>12 = 120</p> <p>18 = 180</p> <p>22 = 220</p> <p>26 = 260</p> <p>37 = 370</p> <p>56 = 560</p> <p>75 = 750</p>	<p>XX</p> <p>Dimensions</p> <p>Depth (mm):</p> <p>09 = 95</p> <p>15 = 150</p> <p>20 = 200</p> <p>30 = 300</p>	<p>X</p> <p>Gland Plates:</p> <p>0 = None</p> <p>1 = One Bottom</p> <p>2 = One Top and Bottom</p> <p>3 = Two Sides and Bottom</p> <p>4 = All Sides</p>	<p>X</p> <p>Options:</p> <p>M = Mounting Pan</p> <p>U = Component Certification "U"</p> <p># = Customized Enclosure</p>
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#: 6 Digit number will be assigned at time of order placement.

Ordering Information:

JBES Series:

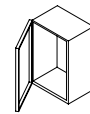
Ex e II 316L Stainless Steel Junction Boxes without Gland Plate

For use only with Ex terminals (not supplied).

External earth crossing terminal.

(M6 for JBe10/20/30 and M8 for other boxes).

Mounting pan and rails to be ordered separately.



Type	Dimensions L x W x D (mm)	Hinged Door	Vertical Orientation Rail Length (mm)	Horizontal Orientation Rail Length (mm)	Weight (Kg.)	Volume (dm ³)	Catalog Number	Old Catalog Number
JBe10	120 x 120 x 95	N	–	100	1	1.4	JBES 121209 0_	097000
JBe20	120 x 180 x 95	N	–	160	1.5	2	JBES 121809 0_	097001
JBe30	180 x 180 x 95	N	–	160	1.8	3	JBES 181809 0_	097002
JBe36	220 x 260 x 150	R	170	210	5	8.6	JBES 222615 0_	097003
JBe36	260 x 220 x 150	R	210	170	5	8.6	JBES 262215 0_	–
JBe46	220 x 370 x 200(*)	R	170	320	8.5	16.3	JBES 223720 0_	097010
JBe47	260 x 370 x 200(*)	Y	210	320	9	19.3	JBES 263720 0_	097025
JBe46	370 x 220 x 200(*)	R	320	170	8.5	16.6	JBES 372220 0_	–
JBe47	370 x 260 x 200(*)	Y	320	210	9	19.3	JBES 372620 0_	097020
JBe55	370 x 370 x 200(*)	Y	320	320	13	27.4	JBES 373720 0_	097030
JBe65	370 x 560 x 200(*)	Y	320	510	19	41.5	JBES 375620 0_	097045
JBe75	370 x 750 x 200(*)	Y	320	700	24	55.5	JBES 377520 0_	097055
JBe65	560 x 370 x 200(*)	Y	510	320	19	41.5	JBES 563720 0_	097040
JBe77	560 x 560 x 200(*)	Y	510	510	28	62.8	JBES 565620 0_	097060
JBe79	560 x 750 x 200(*)	Y	510	700	33	84	JBES 567520 0_	097075
JBe75	750 x 370 x 200(*)	Y	700	320	24	55.5	JBES 753720 0_	097050
JBe79	750 x 560 x 200(*)	Y	700	510	33	84	JBES 755620 0_	097070
JBe86	1130 x 750 x 300	Y	1080	700	50	235	JBES 117530 0_	097130

(*) 200 mm depth enclosure available with 300 mm depth – replace digit 2 with 3 – Example: JBES 373730 0

N: Not Available

R: On request or separate accessories

Y: Supplied

Junction Boxes & Enclosures

JBES and ECES Series: 316L Stainless Steel Enclosures – Increased Safety

Zone 1 & 2 – 21 & 22

Ex II 2 GD

ATEX / IEC

IP66 – IK10

Ordering Information – Continued:

JBES Series: Ex e II 316L Stainless Steel Terminal Junction Boxes with Gland Plates 3 mm Thick

For use only with Ex terminals (not supplied).

M8 External earth crossing terminal.

Mounting pan and rails to be ordered separately.



Type	Dimensions L x W x D (mm)	Hinged Door	One Gland Plate Catalog Number	Old Catalog Number	Two Gland Plates Catalog Number	Old Catalog Number
JBe36	220 x 260 x 150	N	JBES 222615 1_	097006	JBES 222615 2_	097004
JBe36	260 x 220 x 150	N	JBES 262215 1_	–	JBES 262215 2_	–
JBe46	220 x 370 x 200(*)	N	JBES 223720 1_	097011	JBES 223720 2_	097012
JBe47	260 x 370 x 200(*)	Y	JBES 263720 1_	097026	JBES 263720 2_	097027
JBe46	370 x 220 x 200(*)	N	JBES 372220 1_	–	JBES 372220 2_	–
JBe47	370 x 260 x 200(*)	Y	JBES 372620 1_	097021	JBES 372620 2_	097022
JBe55	370 x 370 x 200(*)	Y	JBES 373720 1_	097031	JBES 373720 2_	097032
JBe65	370 x 560 x 200(*)	Y	JBES 375620 1_	097046	JBES 375620 2_	097047
JBe75	370 x 750 x 200(*)	Y	JBES 377520 1_	097056	JBES 377520 2_	097057
JBe65	560 x 370 x 200(*)	Y	JBES 563720 1_	097041	JBES 563720 2_	097042
JBe77	560 x 560 x 200(*)	Y	JBES 565620 1_	097061	JBES 565620 2_	097062
JBe79	560 x 750 x 200(*)	Y	JBES 567520 1_	097076	JBES 567520 2_	097077
JBe75	750 x 370 x 200(*)	Y	JBES 753720 1_	097051	JBES 753720 2_	097052
JBe79	750 x 560 x 200(*)	Y	JBES 755620 1_	097071	JBES 755620 2_	097072
JBe86	1130 x 750 x 300	Y	JBES 117530 1_	097131	JBES 117530 2_	097132

(*) 200 mm depth enclosure available with 300 mm depth – replace digit 2 with 3 – Example: JBES 373730 1

N: Not Available

R: On request or separate accessories

Y: Supplied



Type	Dimensions L x W x D (mm)	Hinged Door	Three Gland Plates Catalog Number	Old Catalog Number	Four Gland Plates Catalog Number	Old Catalog Number
JBe36	220 x 260 x 150	N	JBES 222615 3_	097007	JBES 222615 4_	097005
JBe36	260 x 220 x 150	N	JBES 262215 3_	–	JBES 262215 4_	–
JBe46	220 x 370 x 200(*)	N	JBES 223720 3_	097013	JBES 223720 4_	097014
JBe47	260 x 370 x 200(*)	Y	JBES 263720 3_	097028	JBES 263720 4_	097029
JBe46	370 x 220 x 200(*)	N	JBES 372220 3_	–	JBES 372220 4_	–
JBe47	370 x 260 x 200(*)	Y	JBES 372620 3_	097023	JBES 372620 4_	097024
JBe55	370 x 370 x 200(*)	Y	JBES 373720 3_	097033	JBES 373720 4_	097034
JBe65	370 x 560 x 200(*)	Y	JBES 375620 3_	097048	JBES 375620 4_	097049
JBe75	370 x 750 x 200(*)	Y	JBES 377520 3_	097058	JBES 377520 4_	097059
JBe65	560 x 370 x 200(*)	Y	JBES 563720 3_	097043	JBES 563720 4_	097044
JBe77	560 x 560 x 200(*)	Y	JBES 565620 3_	097063	JBES 565620 4_	097064
JBe79	560 x 750 x 200(*)	Y	JBES 567520 3_	097078	JBES 567520 4_	097079
JBe75	750 x 370 x 200(*)	Y	JBES 753720 3_	097053	JBES 753720 4_	097054
JBe79	750 x 560 x 200(*)	Y	JBES 755620 3_	097073	JBES 755620 4_	097074
JBe86	1130 x 750 x 300	Y	JBES 117530 3_	097133	JBES 117530 4_	–

(*) 200 mm depth enclosure available with 300 mm depth – replace digit 2 with 3 – Example: JBES 373730 4

N: Not Available

R: On request or separate accessories

Y: Supplied

Junction Boxes & Enclosures

JBES and ECES Series: 316L Stainless Steel Enclosures – Increased Safety

Zone 1 & 2 – 21 & 22

Ex II 2 GD

ATEX / IEC

IP66 – IK10

Ordering Information – Continued:

ECES Series:

Ex de IIC 316L Stainless Steel Enclosures for Distribution and Control Panel

Replace JB by EC

Example: **JBES** 373720 0 becomes **ECES** 373720 0

Enclosures for distribution and control applications must be customized at our workshop to house a large range of components such as switches, breakers, transformers, meters, etc.

Options:

300 mm depth:

Replace digit 2 with 3

Example: **JBES** 2237**2**0 0 becomes **JBES** 2237**3**0 0

ECES 2237**2**0 0 becomes **ECES** 2237**3**0 0

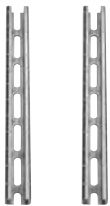
Component Certification U and/or Customized Enclosure #:

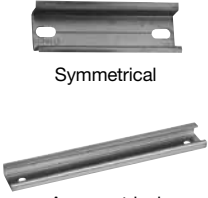


Add digits as examples:


JBES 373720 0 # becomes **JBES** 373720 0 U #

ECES 373720 0 # becomes **ECES** 373720 0 U #

Mounting Accessories:

	Enclosure Length (mm)	Rail Length (mm)	Catalog Number	Pack
	Zinc Plated Steel Uprights Set of two.			
	220	160	097230	1
	260	200	097231	1
	370	310	097232	1
	560	500	097233	1
	750	690	097234	1
	1130	1070	097235	1

	For Side Dimensions (mm)	Dimensions of Rail (mm)	Symmetrical Depth = 15 mm Catalog Number	Asymmetrical Catalog Number	Pack	
	Zinc Plated Steel Rail For fixing onto uprights with clip nut supplied.					
	Symmetrical	120	100	097246	-	1
		180	160	097247	-	1
		220	170	097240	097250	1
		260	210	097241	097251	1
		370	320	097242	097252	1
	Asymmetrical	560	510	097243	097253	1
		750	700	097244	097254	1
		1130	1080	097245	097255	1
						
						

	Height	Catalog Number	Pack
	Spacers for Mounting at Back of Box Set of two insulated pillars for copper bar 12 x 4 mm.		
	Height = 100 mm	097206	1
	Height = 50 mm	097207	1

Junction Boxes & Enclosures

JBES and ECES Series: 316L Stainless Steel Enclosures – Increased Safety

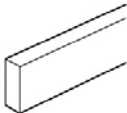





Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IEC

IP66 – IK10

Mounting Accessories – Continued:

	Enclosure Length (mm)	Bar Length (mm)	Catalog Number	Pack	
Copper Bar (12 x 4 mm)					
Copper bar not perforated for cable clamps.					
	220	160	097270	1	
	260	200	097271	1	
	370	310	097272	1	
	560	500	097273	1	
	750	690	097274	1	
	1130	1070	097275	1	
Cable Clamp for Copper Bar (12 x 4 mm)					
	1.5 mm ² to 4 mm ² Capacity		097203	1	
	6 mm ² to 16 mm ² Capacity		097204	1	
Mounting Pan – Zinc Plated Steel					
	Enclosure Dimensions (mm) Height	Width	Dimensions (mm)	Catalog Number	Pack
	120	120	100 x 100	097277	1
	120	180	100 x 160	097278	1
	180	180	160 x 160	097279	1
	220	260	160 x 200	097280	1
	220	370	160 x 310	097281	1
	260	370	200 x 310	097282	1
	370	370	310 x 310	097283	1
	370	560	310 x 500	097284	1
	370	750	310 x 690	097285	1
	560	560	500 x 500	097286	1
	560	750	500 x 690	097287	1
	1130	750	690 x 1070	097288	1
Additional Door Padlocking Device					
	Padlock not supplied.		097209	1	
Conversion Kit: (Door to Cover)					
	Must be used to remove hinges.		097202	1	
Locking Bracket					
Locks door in open position during wiring.			097265	1	
Self Adhesive Pocket for Drawings					
	External dimensions: 260 x 165 mm. Internal dimensions: 230 x 130 x 18 mm.		097263	1	
	External dimensions: 340 x 235 mm. Internal dimensions: 310 x 200 x 18 mm.		097264	1	

Junction Boxes & Enclosures

JBES and ECES Series: 316L Stainless Steel Enclosures – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IEC

IP66 – IK10

Mounting Accessories – Continued:

Description	Catalog Number	Pack
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Spare Hinges (Set of Two)

097201



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



Spare Mounting Brackets (Set of Two)
One left and one right.

097200

1

Enclosure Dimensions (mm) Width Height		Gland Plate Dimensions (mm)	Catalog Number	Old Catalog Number	Pack	
						Spare Gland Plate
		B/D	170 x 120	JBES GP221 B	097305	1
	220 150	A/C	250 x 120	JBES GP261 A	097306	1
	260 150	A/C	250 x 170	JBES GP262 A	097290	1
	260 200	B/D	210 x 170	JBES GP262 B	097304	1
	260 200	A/C	360 x 170	JBES GP372 A	097292	1
	370 200	B/D	320 x 170	JBES GP372 B	097291	1
	370 200	A/C	550 x 170	JBES GP562 A	097294	1
	560 200	B/D	510 x 170	JBES GP562 B	097293	1
	560 200	A/C	740 x 170	JBES GP752 A	097296	1
	750 200	B/D	700 x 170	JBES GP752 B	097295	1
	750 200	A/C	250 x 270	JBES GP263 A	097297	1
	260 300	A/C	360 x 270	JBES GP373 A	097299	1
	370 300	B/D	320 x 270	JBES GP373 B	097298	1
	370 300	A/C	550 x 270	JBES GP563 A	097301	1
	560 300	B/D	510 x 270	JBES GP563 B	097300	1
	560 300	A/C	740 x 270	JBES GP753 A	097303	1
750 300	B/D	700 x 270	JBES GP753 B	097302	1	

Enclosure Dimensions (mm) Width Height		Coupling Flange Dimensions (mm)	Catalog Number	Old Catalog Number	Pack	
						Coupling Flange
		A/C	250 x 170	JBES CF262 A	097310	1
	260 200	A/C	360 x 170	JBES CF372 A	097312	1
	370 200	B/D	320 x 170	JBES CF372 B	097311	1
	370 200	A/C	550 x 170	JBES CF562 A	097314	1
	560 200	B/D	510 x 170	JBES CF562 B	097313	1
	560 200	A/C	740 x 170	JBES CF752 A	097316	1
	750 200	B/D	700 x 170	JBES CF752 B	097315	1
	750 200	A/C	360 x 270	JBES CF373 A	097318	1
	370 300	B/D	320 x 270	JBES CF373 B	097317	1
	370 300	A/C	550 x 270	JBES CF563 A	097320	1
	560 300	B/D	510 x 270	JBES CF563 B	097319	1
	560 300	A/C	740 x 270	JBES CF753 A	097322	1
	750 300	B/D	700 x 270	JBES CF753 B	097321	1

Junction Boxes & Enclosures

JBES and ECES Series: 316L Stainless Steel Enclosures – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IEC

IP66 – IK10

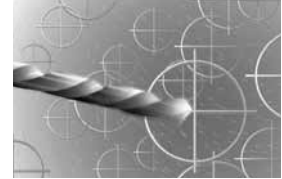
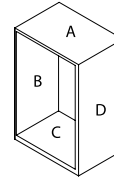
Technical Data:

JBES Series for Terminal Junction Box Application Only.

Use the table shown below to select the proper size junction box based upon your requirements. Custom drilled and equipped boxes can be configured using guides G0002 & G0004 available online at: www.egsatx.com

Define maximum cable entries according to number of modules available per side.

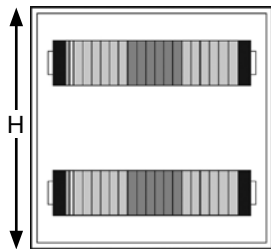
Cable entry Metric thread	Number of modules
M20	1
M25	1
M32	1
M40	2
M50	3



Type	Dimensions (mm)			Number of Modules		Number of Modules (1)	
	Height	Width	Depth	A/C	B/D	A'/C'	B'/D'
JBe10	120	120	95	5	5	–	–
JBe20	120	180	95	9	5	–	–
JBe30	180	180	95	9	9	–	–
JBe36	220	260	150	11	7	9	5
JBe36	260	220	150	7	11	5	9
JBe46	220	370	200	31	16	19	7
JBe46	370	220	200	16	31	7	9
JBe47	370	260	200	20	31	14	20
JBe47	260	370	200	31	20	19	10
JBe55	370	370	200	31	31	19	18
JBe65	560	370	200	31	49	19	31
JBe65	370	560	200	49	31	34	18
JBe75	750	370	200	31	66	19	47
JBe75	370	750	200	66	31	49	18
JBe77	560	560	200	49	49	34	31
JBe79	750	560	200	49	66	34	45
JBe79	560	750	200	66	49	49	31
JBe86	1130	750	300	102	–	82	–

(1) Enclosure with gland plate

Maximum rail arrangement according to physical dimensions:



		Terminals (Capacity mm ²)							
		H (mm)	2.5	4	6	10	16	35	50
Side of Enclosure	220	1	1	1	1	1	1	0	0
	260	2	2	2	1	1	1	0	0
	370	3	3	2	2	2	2	1	1
	560	5	5	4	4	4	3	2	2
	750	7	7	6	6	5	4	3	2
	1130	10	10	9	9	8	6	4	4

Junction Boxes & Enclosures

JBES and ECES Series: 316L Stainless Steel Enclosures – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IEC

IP66 – IK10

Technical Data – Continued:

Define maximum terminal block quantity according to power dissipation:

Junction boxes used for instrumentation applications carry very low current levels. Therefore there is no risk of overheating whatever the number of terminals inside the box.

For applications other than instrumentation, the following tables allow you to define your junction box depending on the number of terminals and the maximum authorized current being carried with feed-through terminals.

For single feed terminals using cross connection, consult factory for calculation.

T Rating: T6 @ Ta +55°C		Type		
		JBe10	JBe20	JBe30
		120 x 120 x 95 mm	120 x 180 x 95 mm	180 x 180 x 95 mm
2.5 mm ²	Qty. I max.	10 16 A	21 16 A	21 16 A
4 mm ²	Qty. I max.	8 25 A	17 25 A	16 25 A
6 mm ²	Qty. I max.	6 32 A	13 32 A	13 32 A
10 mm ²	Qty. I max.	5 50 A	10 50 A	9 50 A

For other terminal block configurations, please consult our guide G0002 available online at: www.egsatx.com

T Rating: T6 @ Ta +55°C		Type			
		JBe36	JBe46	JBe47	JBe55
		220 x 260 x 150 mm	220 x 370 x 200 mm	260 x 370 x 200 mm	370 x 370 x 200 mm
2.5 mm ²	Qty. I max.	33 16 A	50 14 A	70 12 A	110 10 A
4 mm ²	Qty. I max.	21 25 A	38 20 A	62 16 A	80 15 A
6 mm ²	Qty. I max.	19 32 A	22 32 A	23 32 A	26 32 A
10 mm ²	Qty. I max.	12 50 A	14 50 A	15 50 A	20 45 A
16 mm ²	Qty. I max.	8 63 A	10 63 A	17 50 A	20 50 A
25 mm ²	Qty. I max.	12 80 A	14 80 A	16 76 A	20 76 A
35 mm ²	Qty. I max.	9 100 A	11 100 A	12 100 A	16 93 A

T Rating: T6 @ Ta +55°C		Type			
		JBe65	JBe75	JBe77	JBe79
		560 x 370 x 200 mm	750 x 370 x 200 mm	560 x 560 x 200 mm	560 x 750 x 200 mm
35 mm ²	Qty. I max.	15 100 A	16 99 A	18 100 A	
50 mm ²	Qty. I max.	12 125 A	16 108 A		
70 mm ²	Qty. I max.	12 150 A	16 135 A	16 144 A	16 150 A
95 mm ²	Qty. I max.	9 200 A	12 178 A	12 190 A	16 173 A
120 mm ²	Qty. I max.		6 250 A		12 225 A
150 mm ²	Qty. I max.		9 250 A		12 250 A

For other terminal block configurations, please consult our guide G0004 available online at: www.egsatx.com

Junction Boxes & Enclosures

JBES and ECES Series: 316L Stainless Steel Enclosures – Increased Safety

Zone 1 & 2 – 21 & 22

⊕ II 2 GD

ATEX / IEC

IP66 – IK10

Compliances:

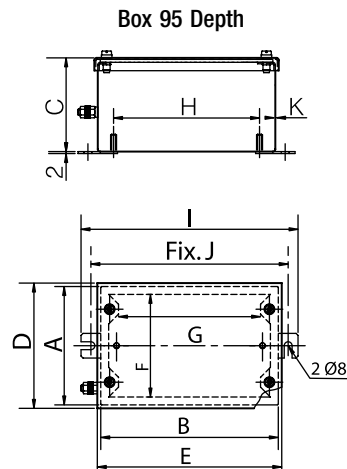
Hazardous Area	Gas	Dust
Certification Type	JBe	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081⊕II 2 G	CE 0081⊕II2 D
Symbol of Protection ATEX	Ex e II Ex ia IIC Ex ib IIC Ex de IIC Ex demb IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	T6 to T4	NA
Surface Temperature	NA	T80°C to T130°C
Ambient Temperature	-50°C to +70°C	
CE Declaration of Conformity	50232	
ATEX Certificate	LCIE 02 ATEX 6118X	
IEC Certificate	LCIE Ex 02.010X	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact resistance (shock)	IK10	

Hazardous Area	Gas	Dust
Certification Type	JBe U	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	0081⊕II 2 G	0081⊕II2 D
Symbol of Protection ATEX	Ex e II	Ex tD A21
Symbol of Protection IEC		
T Rating	NA	NA
Surface Temperature	NA	NA
Ambient Temperature	-50°C to +70°C	
CE Declaration of Conformity	5C240	
ATEX Certificate	LCIE 09 ATEX 3025U	
IEC Certificate	LCIE Ex 09.001U	
Other Certifications	–	
Index of Protection (solid and liquid)	IP66	
Impact resistance (shock)	IK10	

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 60079-7; 60079-11; 61241-0; 61241-1; 61241-11
Product Standards	–
EMC Standards	–
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Dimensions (mm):



Box Depth 95 L x W x D (mm)	A	B	C	D	E	F	G	H	I	J	K
120 x 120 x 95	120	120	95	127	127	104	84	88	160	140	1.5
120 x 180 x 95	120	180	95	127	187	104	144	148	220	200	1.5
180 x 180 x 95	180	180	95	187	187	164	144	148	220	200	1.5

Junction Boxes & Enclosures

JBES and ECES Series: 316L Stainless Steel Enclosures – Increased Safety

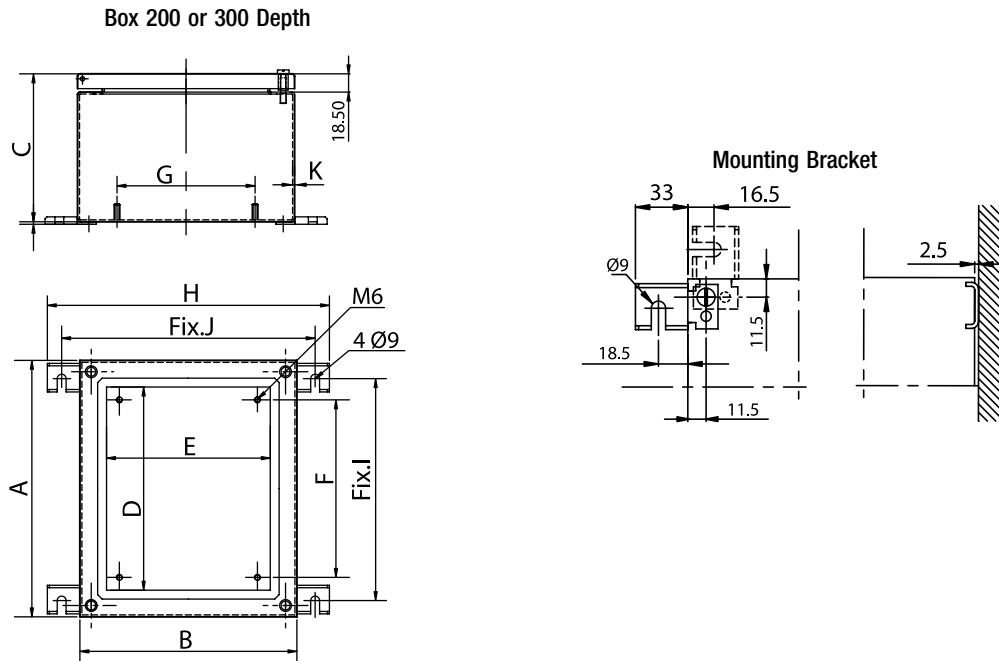
Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IEC

IP66 – IK10

Dimensions (mm) – Continued:



Box Depth 200 L x W x D (mm)	A	B	C	D	E	F	G	H	I	J	K
220 x 370 x 200	220	370	200	166	316	140	290	436	185	407	1.5
370 x 260 x 200	370	260	200	316	206	290	180	326	335	297	1.5
370 x 370 x 200	370	370	200	316	316	290	290	436	335	407	2
560 x 370 x 200	560	370	200	506	316	480	290	436	525	407	2
750 x 370 x 200	750	370	200	695	316	670	290	436	715	407	2
560 x 560 x 200	560	560	200	506	506	480	480	626	525	597	2
750 x 560 x 200	750	560	200	696	506	670	480	626	715	597	2

Box Depth 300 L x W x D (mm)	A	B	C	D	E	F	G	H	I	J	K
370 x 370 x 300	370	370	300	316	316	290	290	436	335	407	2
560 x 370 x 300	560	370	300	506	316	480	290	436	525	407	2
750 x 370 x 300	750	370	300	695	316	670	290	436	715	407	2
560 x 560 x 300	560	560	300	506	506	480	480	626	525	597	2
750 x 560 x 300	750	560	300	696	506	670	480	626	715	597	2
1130 x 750 x 300	1130	750	300	1076	506	1050	670	816	1095	787	2

Junction Boxes & Enclosures

JBEA Series: Pre-drilled Aluminum Junction Boxes – Increased Safety

JUNCTION BOXES & ENCLOSURES



Without Terminals



Equipped with Terminals

Compliance Data:

ATEX - IEC:



Zone 1 & 2, 21 & 22	ATEX	II 2 GD	IEC	CE
Ex e II; Ex eia IIC; Ex eib IIC	T6 to T5	Ex tD A21	T80°C to T95°C	IP66 – IK10

Operating Temperatures:

-55°C to 60°C (PCe Type)

-40°C to 55°C (CAe Type)

Junction Boxes & Enclosures

JBEA Series: Pre-drilled Aluminum Junction Boxes – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IEC

IP66 – IK10

Applications:

- Terminal junction boxes to facilitate electrical connections in hazardous areas.
- Designed for use in Zone 1 or 2 areas, where flammable gases or vapors are present either continuously or intermittently.
- Ideal for wet or corrosive atmospheres.
- Petroleum, chemical, refineries and other industrial process facilities.
- Designed for use in Zone 21 or 22 areas where flammable dusts are present either continuously or intermittently.
- Food processing, dairy, brewing, silos and other facilities.

Features:

- Operating temperature:
-55°C to +60°C (PCe type)
-40°C to +55°C (CAe type).
- For use only with Ex certified terminal blocks.
- Stainless steel hardware.
- Yellow laminated plastic label with black lettering.
- Factory drilled and equipped.

Standard Materials:

- Gray painted grade marine aluminum alloy.
- Stainless steel hardware.

Options:

- For use with equipment other than Ex terminal blocks, see ECEA series enclosures and controls.



PCe Type



CAe Type
Without Terminals



CAe Type
Equipped with Terminals

Catalog Number Logic:

JBEA	XX	XX	XX	XX
Series	Dimensions	Dimensions	Dimensions	Options:
ATEX / IEC Certified:	Length (mm):	Width (mm):	Depth (mm):	D1 = 5 x M20 as per Drilling Detail Table
JB = Junction Box	12 = 120	11 = 110	09 = 95	D2 = 4 x M20 + 1 x M25 as per Drilling Detail Table
E = Increased Safety	17 = 170	20 = 205	13 = 130	D3 = 7 x M20 + 1 x M25 as per Drilling Detail Table
I = Intrinsic Safety	21 = 215	38 = 380	19 = 190	D5 = 7 x M20 + 1 x M25 as per Drilling Detail Table
A = Aluminum	32 = 320			D6 = 12 x M20 + 1 x M32 as per Drilling Detail Table
	42 = 425			D7 = 19 x M20 + 1 x M32 as per Drilling Detail Table
	48 = 480			D8 = 27 x M20 + 1 x M40 as per Drilling Detail Table
				P-- = Unarmored Cable
				A-- = Armored Cable
				L-- = Lead Sheath Armored Cable
				E = Earth Continuity Brass Plate
				# = Customized Enclosure

#: 6 Digit number will be assigned at time of order placement.

Junction Boxes & Enclosures

JBEA Series: Pre-drilled Aluminum Junction Boxes – Increased Safety

Zone 1 & 2 – 21 & 22

Ex II 2 GD

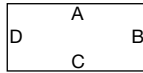
ATEX / IEC

IP66 – IK10

Ordering Information:

Factory Drilled Ex e II Aluminum Junction Boxes Fitted with:

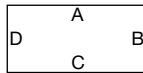
One horizontal symmetrical zinc plated rail.
For use with Ex terminals only (not supplied).
Yellow laminated plastic label with black lettering.
Internal earth terminal.
M5 external earth screw.
Cable glands and plugs ordered separately.



Type	Dimensions L x W x D (mm)	Rail Length Maximum (mm)	A	Clearance Holes Per Side			Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
				B	C	D				
PCe1	120 x 110 x 95	62	1 x M20	1 x M20	2 x M20	1 x M20	1	2.2	JBEA 121109 D1	096031
PCe2	170 x 110 x 95	112	–	1 x M20	2 x M20 1 x M25	1 x M20	1.3	2.7	JBEA 171109 D2	096032
PCe3	230 x 110 x 95	172	–	2 x M20	3 x M20 1 x M25	2 x M20	1.6	5.2	JBEA 231109 D3	096033

Factory Drilled Ex e II Aluminum Junction Boxes for Instrumentation Applications Fitted with:

Yellow laminated plastic label with black lettering.
Set of two insulated side supports (096115).
One horizontal symmetrical zinc plated rail.
For use with Ex terminals only (not supplied).
Also available for use with copper bar 12 x 2 mm or 12 x 4 mm.
Cable glands and plugs ordered separately.
M8 external earth crossing terminal.



Type	Dimensions L x W x D (mm)	Cable	Rail Length Maximum (mm)	Threaded Holes Side C		Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
CAe1	215 x 205 x 130	7 Pairs	105	1 x M25	7 x M20	4	13	JBEA 212013 D5	096026
CAe2	320 x 205 x 130	12 Pairs	206	1 x M32	12 x M20	5	23	JBEA 322013 D6	096027
CAe3	425 x 205 x 130	19 Pairs	310	1 x M32	19 x M20	6	33	JBEA 422013 D7	096028
CAe5	480 x 380 x 190	27 Pairs	315	1 x M40	27 x M20	11	53	JBEA 483819 D8	096029

Factory Assembled Ex Terminal Block for Junction Boxes Shown Above:

Screwed/Screwed Terminal Block Fitted with Continuity Shield.



For Junction Boxes	Cable	Terminals 0.5/2.5 mm ² Qty.	Continuity Shield Qty.	Weight (kg)	Volume (dm ³)	Catalog Number
215 x 205 x 130	7 Pairs	14	7	0.3	0.5	096039
320 x 205 x 130	12 Pairs	24	12	0.4	1.1	096041
425 x 205 x 130	19 Pairs	38	19	0.5	1.3	096043
480 x 380 x 190	27 Pairs	54	27	0.6	1.7	096044

Junction Boxes & Enclosures

JBEA Series: Pre-drilled Aluminum Junction Boxes – Increased Safety

Zone 1 & 2 – 21 & 22

Ex II 2 GD

ATEX / IEC

IP66 – IK10

Ordering Information – Continued:

Factory Drilled and Equipped with Terminals Ex e II Aluminum Junction Boxes for Instrumentation Applications with Unarmored Cables Fitted with:

- Horizontal beige terminal block.
- Copper bar with cable clamps or continuity shields.
- Yellow laminated plastic label with black lettering.
- M16 to M50 threaded entries.
- Cable glands and plugs ordered separately.

Unarmored cables



Type	For Cable U1000 R02V	Terminal Block 0.5/2.5 mm ² Qty.	Earth Terminal 0.5/2.5 mm ² Qty.	Copper Bar 10 x 3 mm Qty.	Cable Clamp 0.5/2.5 mm ² Qty.	Multi-cable Cable Entry Qty. 1	Single Cable Entries M20 Qty.	Catalog Number
CAe1	07G1.5	7	1	1	5	M20	3	JBEA 212013 P01
CAe1	12G1.5	12	1	1	8	M25	6	JBEA 212013 P02
CAe2	19G1.5	19	1	1	11	M25	9	JBEA 322013 P03
CAe2	24G1.5	24	1	1	14	M32	12	JBEA 322013 P04
CAe2	27G1.5	27	1	1	15	M32	13	JBEA 322013 P05
CAe3	37G1.5	37	1	1	20	M32	18	JBEA 422013 P06
CAe1	07G2.5	7	1	1	5	M20	3	JBEA 212013 P07
CAe1	12G2.5	12	1	1	8	M25	6	JBEA 212013 P08
CAe2	19G2.5	19	1	1	11	M32	9	JBEA 322013 P09
CAe2	24G2.5	24	1	1	14	M32	12	JBEA 322013 P10
CAe2	27G2.5	27	1	1	15	M32	13	JBEA 322013 P11
CAe3	37G2.5	37	1	1	20	M40	18	JBEA 422013 P12

Type	For Cable EGSF	Terminal Block 0.5/2.5 mm ² Qty.	Continuity Shield Qty.	Multi-cable Cable Entry Qty. 1	Single Cable Entries M20 Qty.	Catalog Number
CAe1	07IP05	14	7	M20	7	JBEA 212013 P21
CAe1	07IT05	21	7	M20	7	JBEA 212013 P22
CAe2	12IP05	24	12	M25	12	JBEA 322013 P23
CAe2	12IT05	36	12	M25	12	JBEA 322013 P24
CAe3	19IP05	38	19	M32	19	JBEA 422013 P25
CAe5	27IP05	54	27	M32	27	JBEA 483819 P26
CAe1	07IP09	14	7	M25	7	JBEA 212013 P27
CAe1	07IT09	21	7	M25	7	JBEA 212013 P28
CAe2	12IP09	24	12	M32	12	JBEA 322013 P29
CAe2	12IT09	36	12	M32	12	JBEA 322013 P30
CAe3	19IP09	38	19	M32	19	JBEA 422013 P31
CAe5	27IP09	54	27	M40	27	JBEA 483819 P32

Type	For Cable EISF	Terminal Block 0.5/2.5 mm ² Qty.	Continuity Shield Qty.	Multi-cable Cable Entry Qty. 1	Single Cable Entries M20 Qty.	Catalog Number
CAe1	07IP05	15	8	M25	7	JBEA 212013 P41
CAe1	07IT05	22	8	M32	7	JBEA 212013 P42
CAe2	12IP05	25	13	M32	12	JBEA 322013 P43
CAe2	12IT05	37	13	M32	12	JBEA 322013 P44
CAe3	19IP05	39	20	M40	19	JBEA 422013 P45
CAe5	27IP05	55	28	M40	27	JBEA 483819 P46
CAe1	07IP09	15	8	M32	7	JBEA 212013 P47
CAe1	07IT09	22	8	M32	7	JBEA 212013 P48
CAe2	12IP09	25	13	M40	12	JBEA 322013 P49
CAe2	12IT09	37	13	M40	12	JBEA 322013 P50
CAe3	19IP09	29	20	M50	19	JBEA 422013 P51
CAe5	27IP09	55	28	M50	27	JBEA 483819 P52

Junction Boxes & Enclosures

JBEA Series: Pre-drilled Aluminum Junction Boxes – Increased Safety

Zone 1 & 2 – 21 & 22

Ex II 2 GD

ATEX / IEC

IP66 – IK10

Ordering Information – Continued:

Factory Drilled and Equipped with Terminals Ex e II Aluminum Junction Boxes for Instrumentation Applications with Armored Cables Fitted with:

Horizontal beige terminal block.

Copper bar with cable clamps or continuity shields.

Yellow laminated plastic label with black lettering.

Earth continuity brass plate.

M8 external earth crossing terminal. M20 to M50 threaded entries.

Cable glands and plugs ordered separately.

Armored cables



Type	For Cable U1000 RVFV	Terminal Block 0.5/2.5 mm ² Qty.	Earth Terminal 0.5/2.5 mm ² Qty.	Copper Bar 10 x 3 mm Qty.	Cable Clamp 0.5/2.5 mm ² Qty.	Multi-cable Cable Entry Qty. 1	Single Cable Entries M20 Qty.	Catalog Number
CAe1	07G1.5	7	1	1	5	M20	3	JBEA 212013 A01
CAe1	12G1.5	12	1	1	8	M20	6	JBEA 212013 A02
CAe2	19G1.5	19	1	1	11	M25	9	JBEA 322013 A03
CAe2	24G1.5	24	1	1	14	M25	12	JBEA 322013 A04
CAe2	27G1.5	27	1	1	15	M25	13	JBEA 322013 A05
CAe3	37G1.5	37	1	1	20	M32	18	JBEA 422013 A06
CAe1	07G2.5	7	1	1	5	M20	3	JBEA 212013 A07
CAe1	12G2.5	12	1	1	8	M25	6	JBEA 212013 A08
CAe2	19G2.5	19	1	1	11	M25	9	JBEA 322013 A09
CAe2	24G2.5	24	1	1	14	M32	12	JBEA 322013 A10
CAe2	27G2.5	27	1	1	15	M32	13	JBEA 322013 A11
CAe3	37G2.5	37	1	1	20	M32	18	JBEA 422013 A12

Type	For Cable EGFA	Terminal Block 0.5/2.5 mm ² Qty.	Continuity Shield Qty.	Multi-cable Cable Entry Qty. 1	Single Cable Entries M20 Qty.	Catalog Number
CAe1	07IP05	14	7	M20	7	JBEA 212013 A21
CAe1	07IT05	21	7	M20	7	JBEA 212013 A22
CAe2	12IP05	24	12	M25	12	JBEA 322013 A23
CAe2	12IT05	36	12	M25	12	JBEA 322013 A24
CAe3	19IP05	38	19	M25	19	JBEA 422013 A25
CAe5	27IP05	54	27	M32	27	JBEA 483819 A26
CAe1	07IP09	14	7	M25	7	JBEA 212013 A27
CAe1	07IT09	21	7	M25	7	JBEA 212013 A28
CAe2	12IP09	24	12	M25	12	JBEA 322013 A29
CAe2	12IT09	36	12	M32	12	JBEA 322013 A30
CAe3	19IP09	38	19	M32	19	JBEA 422013 A31
CAe5	27IP09	54	27	M40	27	JBEA 483819 A32

Type	For Cable EIFA	Terminal Block 0.5/2.5 mm ² Qty.	Continuity Shield Qty.	Multi-cable Cable Entry Qty. 1	Single Cable Entries M20 Qty.	Catalog Number
CAe1	07IP05	15	8	M25	7	JBEA 212013 A41
CAe1	07IT05	22	8	M25	7	JBEA 212013 A42
CAe2	12IP05	25	13	M32	12	JBEA 322013 A43
CAe2	12IT05	37	13	M32	12	JBEA 322013 A44
CAe3	19IP05	39	20	M32	19	JBEA 422013 A45
CAe5	27IP05	55	28	M40	27	JBEA 483819 A46
CAe1	07IP09	15	8	M32	7	JBEA 212013 A47
CAe1	07IT09	22	8	M32	7	JBEA 212013 A48
CAe2	12IP09	25	13	M40	12	JBEA 322013 A49
CAe2	12IT09	37	13	M40	12	JBEA 322013 A50
CAe3	19IP09	39	20	M40	19	JBEA 422013 A51
CAe5	27IP09	55	28	M50	27	JBEA 483819 A52

Junction Boxes & Enclosures

JBEA Series: Pre-drilled Aluminum Junction Boxes – Increased Safety

Zone 1 & 2 – 21 & 22

Ex II 2 GD

ATEX / IEC

IP66 – IK10

Ordering Information – Continued:

Factory Drilled and Equipped with Terminals Ex e II Aluminum Junction Boxes for Instrumentation Applications with Lead Sheath Armored Cables Fitted with:

Horizontal beige terminal block.

Copper bar with cable clamps or continuity shields.

Yellow laminated plastic label with black lettering.

Earth continuity brass plate.

M8 external earth crossing terminal. M20 to M50 threaded entries.

Cable glands and plugs ordered separately.

Armored cables

 With lead sheath



Type	For Cable U1000 RGPV	Terminal Block 0.5/2.5 mm ² Qty.	Earth Terminal 0.5/2.5 mm ² Qty.	Copper Bar 10 x 3 mm Qty.	Cable Clamp 0.5/2.5 mm ² Qty.	Multi-cable Cable Entry Qty. 1	Single Cable Entries M20 Qty.	Catalog Number
CAe1	07 x 1.5	7	1	1	5	M20	3	JBEA 212013 L01
CAe1	12 x 1.5	12	1	1	8	M25	6	JBEA 212013 L02
CAe2	19 x 1.5	19	1	1	11	M25	9	JBEA 322013 L03
CAe2	24 x 1.5	24	1	1	14	M32	12	JBEA 322013 L04
CAe2	27 x 1.5	27	1	1	15	M32	13	JBEA 322013 L05
CAe3	37 x 1.5	37	1	1	20	M32	18	JBEA 422013 L06
CAe1	07 x 2.5	7	1	1	5	M20	3	JBEA 212013 L07
CAe1	12 x 2.5	12	1	1	8	M25	6	JBEA 212013 L08
CAe2	19 x 2.5	19	1	1	11	M32	9	JBEA 322013 L09
CAe2	24 x 2.5	24	1	1	14	M32	12	JBEA 322013 L10
CAe2	27 x 2.5	27	1	1	15	M32	13	JBEA 322013 L11
CAe3	37 x 2.5	37	1	1	20	M40	18	JBEA 422013 L12

Type	For Cable EGPF	Terminal Block 0.5/2.5 mm ² Qty.	Continuity Shield Qty.	Multi-cable Cable Entry Qty. 1	Single Cable Entries M20 Qty.	Catalog Number
CAe1	07IP05	14	7	M20	7	JBEA 212013 L21
CAe1	07IT05	21	7	M20	7	JBEA 212013 L22
CAe2	12IP05	24	12	M25	12	JBEA 322013 L23
CAe2	12IT05	36	12	M25	12	JBEA 322013 L24
CAe3	19IP05	38	19	M25	19	JBEA 422013 L25
CAe5	27IP05	54	27	M32	27	JBEA 483819 L26
CAe1	07IP09	14	7	M25	7	JBEA 212013 L27
CAe1	07IT09	21	7	M25	7	JBEA 212013 L28
CAe2	12IP09	24	12	M32	12	JBEA 322013 L29
CAe2	12IT09	36	12	M32	12	JBEA 322013 L30
CAe3	19IP09	38	19	M40	19	JBEA 422013 L31
CAe5	27IP09	54	27	M40	27	JBEA 483819 L32

Type	For Cable EIPF	Terminal Block 0.5/2.5 mm ² Qty.	Continuity Shield Qty.	Multi-cable Cable Entry Qty. 1	Single Cable Entries M20 Qty.	Catalog Number
CAe1	07IP05	15	8	M25	7	JBEA 212013 L41
CAe1	07IT05	22	8	M32	7	JBEA 212013 L42
CAe2	12IP05	25	13	M32	12	JBEA 322013 L43
CAe2	12IT05	37	13	M32	12	JBEA 322013 L44
CAe3	19IP05	39	20	M40	19	JBEA 422013 L45
CAe5	27IP05	55	28	M50	27	JBEA 483819 L46
CAe1	07IP09	15	8	M32	7	JBEA 212013 L47
CAe1	07IT09	22	8	M32	7	JBEA 212013 L48
CAe2	12IP09	25	13	M40	12	JBEA 322013 L49
CAe2	12IT09	37	13	M40	12	JBEA 322013 L50
CAe3	19IP09	39	20	M50	19	JBEA 422013 L51
CAe5	27IP09	55	28	M50	27	JBEA 483819 L52

Junction Boxes & Enclosures

JBEA Series: Pre-drilled Aluminum Junction Boxes – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IEC

IP66 – IK10

Technical Data:

Defining maximum terminal block quantity according to power dissipation:

Junction boxes used for instrumentation applications have very low current levels. Therefore there is no risk of overheating whatever the number of terminals inside the box.

For applications other than instrumentation, the following tables allow you to define your junction box depending on the number of terminals and the maximum authorized current being carried.

T Rating: T6		Type		
		PCe1 120 x 110 x 95 mm	PCe2 170 x 110 x 95 mm	PCe3 120 x 230 x 95 mm
2.5 mm ²	Qty. I max.	12 15 A	22 13 A	33 12 A
4 mm ²	Qty. I max.	10 20 A	18 19 A	28 16 A
6 mm ²	Qty. I max.	7 32 A	14 27 A	21 24 A
10 mm ²	Qty. I max.	4 50 A	6 50 A	8 50 A

T Rating: T6 @ Ta +40°C T5 @ Ta +55°C		Type			
		CAe1 215 x 205 x 130 mm	CAe2 320 x 205 x 130 mm	CAe3 425 x 205 x 130 mm	CAe5 480 x 380 x 190 mm
2.5 mm ²	Qty. I max.	20 16 A	21 16 A	23 16 A	38 16 A
4 mm ²	Qty. I max.	19 20 A	20 20 A	23 20 A	38 20 A
6 mm ²	Qty. I max.	12 32 A	13 32 A	14 32 A	23 32 A
10 mm ²	Qty. I max.	10 40 A	11 40 A	18 32 A	30 32 A
16 mm ²	Qty. I max.	8 28 A	10 27 A	13 25 A	22 26 A
25 mm ²	Qty. I max.	8 67 A	8 73 A	10 69 A	20 60 A
35 mm ²	Qty. I max.	8 79 A	8 86 A	10 80 A	12 100 A

For other terminal block configurations, please consult our guide G0002 available online at: www.egsatx.com

Compliances:

Hazardous Area	Gas	Dust
Certification Type	PCe	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081 II 2 G	CE 0081 II 2 D
Symbol of Protection ATEX	Ex e II Ex eia IIC Ex eib IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	T6	NA
Surface Temperature	NA	T80°C
Ambient Temperature	-55°C to +60°C	
CE Declaration of Conformity	50221	
ATEX Certificate	LCIE 00 ATEX 6047	
IEC Certificate	LCIE Ex 00.017	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact resistance (shock)	IK10	

Hazardous Area	Gas	Dust
Certification Type	CAe	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081 II 2 G	CE 0081 II 2 D
Symbol of Protection ATEX	Ex e II Ex eia IIC Ex eib IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	T6 for Ta ≤ +40°C T5 for +40°C ≤ Ta ≤ +55°C	NA
Surface Temperature	NA	T80°C to T95°C
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50235	
ATEX Certificate	LCIE 02 ATEX 6248X	
IECEx Certificate	IECEx LCI 04.0016X	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact resistance (shock)	IK10	

Standards:

Ex Standards	EN / IEC 60079-0; 60079-7; 60079-11; 61241-0; 61241-1; 61241-11
Product Standards	–
EMC Standards	–
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Junction Boxes & Enclosures

JBEA Series: Pre-drilled Aluminum Junction Boxes – Increased Safety

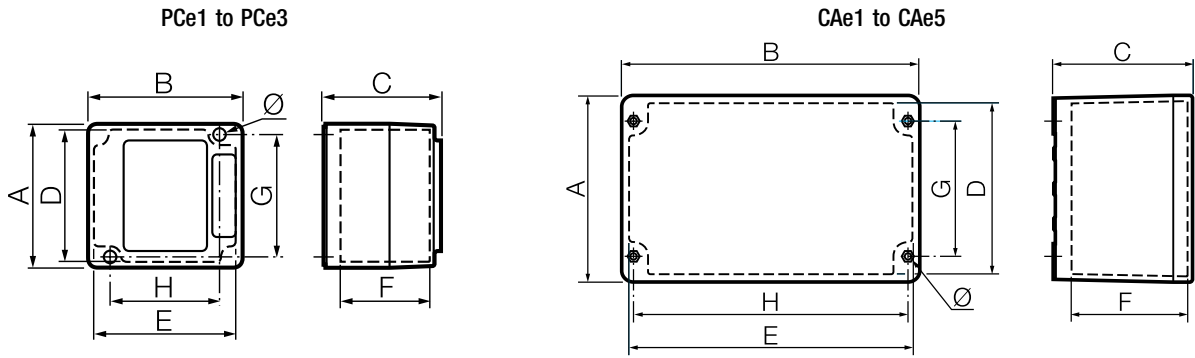
Zone 1 & 2 – 21 & 22

Ex II 2 GD

ATEX / IEC

IP66 – IK10

Dimensions (mm):



Type	External Dimensions			D	Internal Dimensions		G	H	Fixings Thick	Ø
	A	B	C		E	F				
PCe1	110	120	95	100	110	70	94	84	20	5
PCe2	110	170	95	100	160	70	94	134	20	5
PCe3	110	230	95	100	220	70	94	194	20	5
CAe1	205	215	130	190	200	105	146	186	10	7
CAe2	205	320	130	190	305	105	146	290	10	7
CAe3	205	425	130	190	410	105	146	398	10	7
CAe5	480	380	190	378	279	132	385	285	13	7

Junction Boxes & Enclosures

JBEA and ECEA Series: Aluminum Enclosures – Increased Safety

JUNCTION BOXES & ENCLOSURES



PCe Type



CAe Type

Compliance Data:

ATEX - IEC:



Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IEC	CE
Ex e II Ex ia IIC; Ex ib IIC Ex de IIC	T6 to T2	Ex tD A21	T80°C to T290°C	IP66 – IK10

Operating Temperatures:

-40°C to +55°C (CAe)
-55°C to +60°C (PCe)

Junction Boxes & Enclosures

JBEA and ECEA Series: Aluminum Enclosures – Increased Safety

Zone 1 & 2 – 21 & 22

Ex II 2 GD

ATEX / IEC

IP66 – IK10

Applications:

- Designed for use in Zone 1 or 2 areas where flammable gases or vapors are present either continuously or intermittently.
- Ideal for use in wet or corrosive atmospheres.
- Petroleum, chemical, refineries and other industrial process facilities.
- Designed for use in Zone 21 or 22 areas where flammable dusts are present either continuously or intermittently.
- Food processing, dairy, brewing and other commercial facilities.

JBEA Series:

- Terminal junction boxes for electrical low voltage and instrumentation connections in hazardous areas.
- Refer to technical data to define permitted number of terminal blocks and cable entries on selected junction boxes.

ECEA Series:

- Enclosure for distribution and control applications can be customized at our workshop to house a large range of components; i.e. control units, switches, breakers, transformers, meters, etc.

Features:

- Operating temperature -55°C to +60°C (PCe) and -40°C to +55°C (CAe).

Standard Materials:

- Gray painted marine grade aluminum alloy.
- Stainless steel hardware.

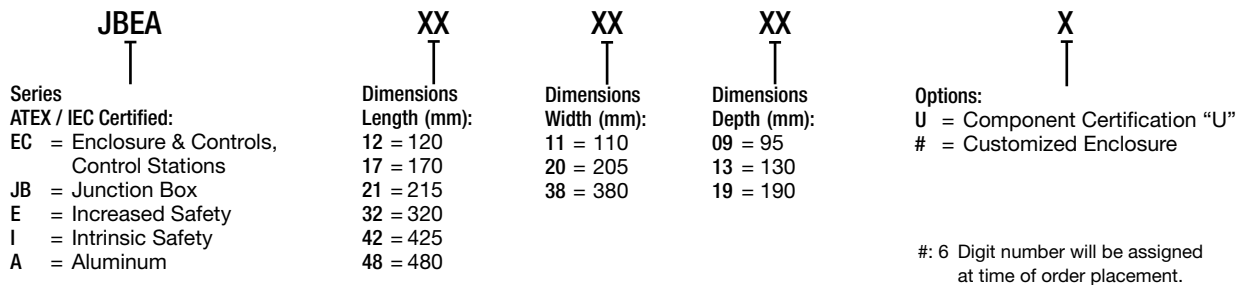
Accessories:

- Rail mounting.
- Refer to technical data to define permitted number and size of terminals and cable entries.

Options:

- Nameplates.
- Please consult us for:
 - Enclosures custom drilled and assembled at our factory.
 - Empty enclosure with Ex “U” component marking for re-certification by notified body for CAe type.

Catalog Number Logic:



Ordering Information:

JBEA Series:

Ex e II Aluminum Junction Boxes

For use with Ex certified terminals only (not supplied).

Mounting rails supplied.

Yellow laminated plastic label with black lettering.



Type	Dimensions L x W x D (mm)	Rail Length Maximum W (mm)	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
PCe1	120 x 110 x 95	94	1	2.2	JBEA 121109	095960
PCe2	170 x 110 x 95	144	1.3	2.7	JBEA 171109	095961
PCe3	230 x 110 x 95	204	1.6	5.2	JBEA 231109	095962
CAe1	215 x 205 x 130	191	4	13	JBEA 212013	095963
CAe2	320 x 205 x 130	293	5	23	JBEA 322013	095964
CAe3	425 x 205 x 130	400	6	33	JBEA 422013	095965
CAe5	480 x 380 x 190	335	11	53	JBEA 483819	095966

ECEA Series:

Aluminum Enclosure for Distribution and Control Applications

Designed to house a large range of components; i.e. control units, switches, breakers, transformers, meters, etc.

Must be customized at our workshop with the following Catalog Number:

Replace JB with EC, and add last digits and “#” for customized boxes. Example: ECEA 212013 #

Junction Boxes & Enclosures

JBEA and ECEA Series: Aluminum Enclosures – Increased Safety



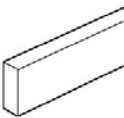

Zone 1 & 2 – 21 & 22

Ex II 2 GD

ATEX / IEC

IP66 – IK10

Mounting Accessories:

Enclosure Type	Rail Length (mm)	Catalog Number	Pack
 TS35 Zinc Plated Symmetrical Steel Rail For direct fixing. Set of two 60 mm height spacers supplied.			
CAe1	191	JBEP DR215	1
CAe2	293	JBEP DR320	1
CAe3	400	JBEP DR425	1
 Insulated Side Support for CAe Type – Set of Two For mounting symmetrical, asymmetrical rails and copper bar 12 x 2 mm or 12 x 4 mm. See dimensional data page for more details.			
 Copper Bar (12 x 4 mm) Copper bar not perforated for cable clamps.			
	160	097270	1
	200	097271	1
	310	097272	1
	500	097273	1
	690	097274	1
 Cable Clamp for Copper Bar (12 x 4 mm) 1.5 mm ² to 4 mm ² capacity 6 mm ² to 16 mm ² capacity			
		097203	1
		097204	1

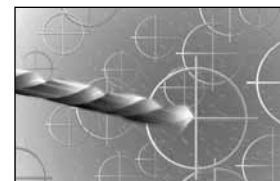
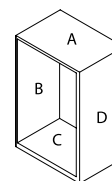
Technical Data:

JBEA Series.

The size of junction box needed to meet your requirements can be selected based upon the table shown below. We also offer you the option to drill and equip using guides G0002 available online at: www.egsatx.com

- 1) Define maximum cable entries according to number of modules available per side.

Cable Entry Metric Thread	Number of Modules
M20	1
M25	1
M32	1
M40	2
M50	3



Type	Dimensions (mm)			Number of Modules Allowable Max.		
	Length	Width	Depth	A/C	B/D	Size
PCe1	120	110	95	2	2	M25
PCe2	170	110	95	2	3	M32
PCe3	230	110	95	2	4	M32
CAe1	215	205	130	11	8	M50
CAe2	320	205	130	18	8	M50
CAe3	425	205	130	26	8	M50
CAe5	480	380	190	34	25	M50

Junction Boxes & Enclosures

JBEA and ECEA Series: Aluminum Enclosures – Increased Safety

Zone 1 & 2 – 21 & 22

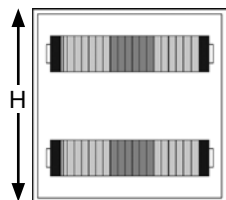
II 2 GD

ATEX / IEC

IP66 – IK10

Technical Data – Continued:

2) Maximum rail arrangement according to physical dimensions.



	H (mm)	Maximum Quantity of Horizontal Rails						
		Terminal Capacity (mm ²)						
		2.5	4	6	10	16	35	50
PCe1/2/3	110	1	1	1	1	0	0	0
CAe1/2/3	205	1	1	1	1	1	1	0
CAe5	380	3	3	2	2	2	1	1

3) Define maximum terminal block quantity according to power dissipation:

Junction boxes used for instrumentation applications have very low current levels. Therefore there is no risk of overheating whatever the number of terminals inside the box.

For applications other than instrumentation, the following tables allow you to define your junction box depending on the number of terminals and the maximum authorized current being carried with feed-through terminals.

For single feed terminals using cross connection, please consult factory for calculation.

T Rating: T6 @ Ta +40°C T5 @ Ta +60°C		Type		
		PCe1	PCe2	PCe3
		120 x 110 x 95 mm	170 x 110 x 95 mm	230 x 110 x 95 mm
2.5 mm ²	Qty. I max.	12 15 A	22 13 A	33 12 A
4 mm ²	Qty. I max.	10 20 A	18 19 A	28 16 A
6 mm ²	Qty. I max.	7 32 A	14 27 A	21 24 A
10 mm ²	Qty. I max.	4 50 A	6 50 A	8 50 A

T Rating: T6 @ Ta +40°C T5 @ Ta +55°C		Type			
		CAe1	CAe2	CAe3	CAe5
		215 x 205 x 130 mm	320 x 205 x 130 mm	425 x 205 x 130 mm	480 x 380 x 190 mm
2.5 mm ²	Qty. I max.	20 16 A	21 16 A	23 16 A	38 16 A
4 mm ²	Qty. I max.	19 20 A	20 20 A	23 20 A	38 20 A
6 mm ²	Qty. I max.	12 32 A	13 32 A	14 32 A	23 32 A
10 mm ²	Qty. I max.	10 40 A	11 40 A	18 32 A	30 32 A
16 mm ²	Qty. I max.	8 28 A	10 27 A	13 25 A	22 26 A
25 mm ²	Qty. I max.	8 67 A	8 73 A	10 69 A	20 60 A
35 mm ²	Qty. I max.	8 79 A	8 86 A	10 80 A	12 100 A

For other terminal block configurations, please consult our guide G0002 available online at: www.egsatx.com

Junction Boxes & Enclosures

JBEA and ECEA Series: Aluminum Enclosures – Increased Safety

Zone 1 & 2 – 21 & 22

⊕ II 2 GD

ATEX / IEC

IP66 – IK10

Compliances:

Hazardous Area	Gas	Dust
Certification Type	PCe	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex e II Ex ia IIC	Ex tD A21
Symbol of Protection IEC	Ex ib IIC Ex de IIC	
T Rating	T6 (+40°C) T5 (+60°C)	NA
Surface Temperature	NA	T80°C to T95°C
Ambient Temperature	-55°C to +60°C	
CE Declaration of Conformity	50221	
ATEX Certificate	LCIE 00 ATEX 6047	
IEC Certificate	LCIE Ex 00.017	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	

Hazardous Area	Gas	Dust
Certification Type	CAe	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex e II Ex ia IIC	Ex tD A21
Symbol of Protection IEC	Ex ib IIC Ex de IIC	
T Rating	T6 to T2	NA
Surface Temperature	NA	T80°C to T290°C
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50235	
ATEX Certificate	LCIE 02 ATEX 6248X	
IECEx Certificate	IECEx LCI 04.0016X	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	

JUNCTION BOXES & ENCLOSURES

Hazardous Area	Gas	Dust
Certification Type	CAe U	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	0081 ⊕ II 2 G	0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex e II	Ex tD A21
Symbol of Protection IEC		
T Rating	NA	NA
Surface Temperature	NA	NA
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	5C241	
ATEX Certificate	LCIE 09 ATEX 3036 U	
IEC Certificate	LCIE Ex 09.002 U	
Other Certifications	–	
Index of Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 60079-7; 60079-11; 61241-0; 61241-1; 61241-11
Product Standards	–
EMC Standards	–
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Junction Boxes & Enclosures

JBEA and ECEA Series: Aluminum Enclosures – Increased Safety

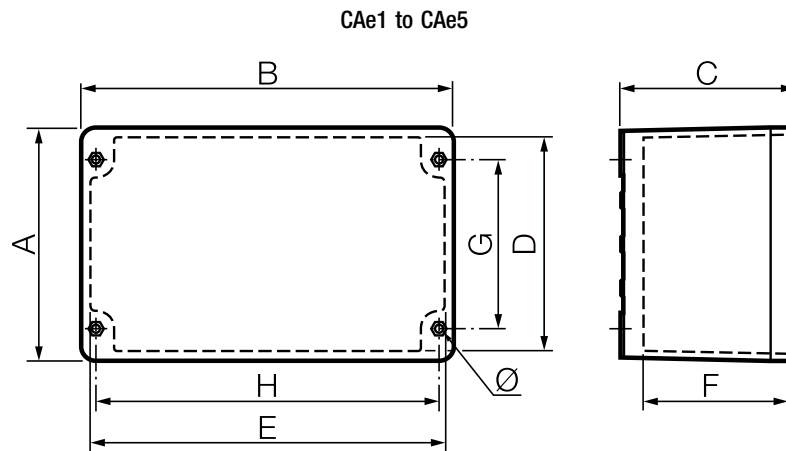
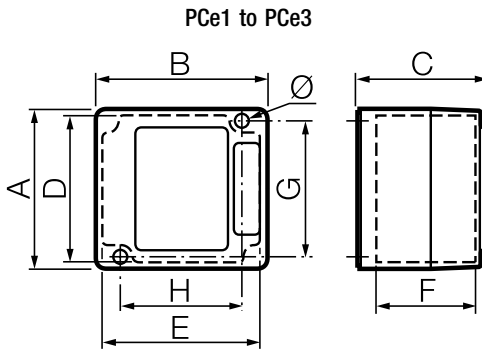
Zone 1 & 2 – 21 & 22

⊕ II 2 GD

ATEX / IEC

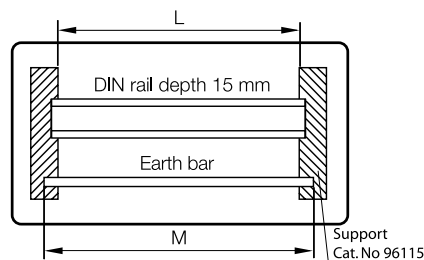
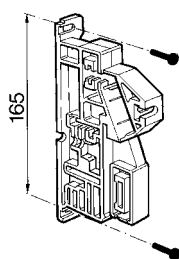
IP66 – IK10

Dimensions (mm):



Type	Dimensions (mm)								Fixings	
	External			Internal			G	H	Thick	Ø
	A	B	C	D	E	F				
PCe1	110	120	95	100	110	70	94	84	20	5
PCe2	110	170	95	100	160	70	94	134	20	5
PCe3	110	230	95	100	220	70	94	194	20	5
CAe1	205	215	130	190	200	105	146	186	10	6.5
CAe2	205	320	130	190	305	105	146	290	10	6.5
CAe3	205	425	130	190	410	105	146	398	10	6.5
CAe5	480	380	190	378	279	132	385	285	13	7

Insulated Side Support (Rail Holder) 096115



Type	Equipment Capacity	
	L (mm)	M (mm)
CAe1	105	129
CAe2	206	234
CAe3	310	339
CAe5	315	345

Junction Boxes & Enclosures

JBDR Series: Pre-drilled Round Junction Boxes – Flameproof

JUNCTION BOXES & ENCLOSURES



2 Entry Version
with Cable Glands



4 Entry Version



3 Entry Version

Compliance Data:

ATEX - IEC:



Zone 1 & 2, 21 & 22	ATEX	II 2 GD	IEC	CE
Ex d IIC	T6 or T5	Ex tD A21	T95°C	IP66 – IK10

Electrical Data:

Voltage	Amperage
Up to 690 V	Maximum 25 A

Operating Temperatures:

-40°C to + 55°C

Junction Boxes & Enclosures

JBDR Series: Pre-drilled Round Junction Boxes – Flameproof

Zone 1 & 2 – 21 & 22

Ⓢ II 2 GD

ATEX / IEC

IP66 – IK10

Applications:

- Small terminal junction boxes designed to facilitate electrical connections in hazardous areas.
- Designed for use in Zone 1 or 2 areas, where flammable gases or vapors are present either continuously or intermittently.
- Ideal for use in wet or corrosive atmospheres.
- Petroleum, chemical refineries and other industrial process facilities.
- Designed for use in Zone 21 or 22 areas, where flammable dusts are present either continuously or intermittently.
- Food processing, dairy, brewing, silos and other facilities.

Features:

- IK10 (20 Joules) high impact resistant box.
- Pillar type terminal block (4 x terminals) for easy connection.
- Terminal capacity: 4 x 4 mm² or 2 x 6 mm².
- Internal Earth: ground plate with 4 x M4 screws for connection to 4 mm diameter lugs.
- External Earth: M5 screw.

- Back plate supplied.
- Operating temperature -40°C to +55°C.

Standard Materials:

- Gray painted marine grade aluminum housing.
- Stainless steel hardware.



2 Entry Version
with Cable Glands



4 Entry Version



3 Entry Version

Catalog Number Logic:

JBDR ↓	X ↓	X ↓	X ↓
Series	Entries (nos.):	Entry Size: (1)	Options:
ATEX / IEC Certified:	1	0 = M20	G = Cable Gland supplied
JB = Junction Box	2	5 = M25	T = With Pillar Terminal Block
D = Flameproof	3	3 = 3/4" NPT	
R = Round Shape in Aluminum	4	1 = 1" NPT	

(1) For other entry size, use adaptor.

Ordering Information:

Equipment	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
Threaded Entries with M25 Integrated Cable Gland: For unarmored cable: – sealed Ø: 9 to 15 mm (093496)				
2 x M25 entries (feed through) 2 integrated cable glands supplied	0.8	2	JBDR25G	093210
3 x M25 entries (in a "T") 3 integrated cable glands supplied	0.8	2	JBDR35G	093211
4 x M25 entries (in a cross) 4 integrated cable glands supplied	0.9	2	JBDR45G	093212
Threaded Entries for M20 Cable Gland – Not Supplied:				
2 x M20 entries (feed through)	0.7	2	JBDR20	093219
3 x M20 entries (in a "T")	0.7	2	JBDR30	093220
4 x M20 entries (in a cross)	0.8	2	JBDR40	093221
Threaded Entries for NPT 3/4" Cable Gland – Not Supplied:				
2 x 3/4" NPT entries (feed through)	0.7	2	JBDR23	093216
3 x 3/4" NPT entries (in a "T")	0.7	2	JBDR33	093217
4 x 3/4" NPT entries (in a cross)	0.8	2	JBDR43	093218
Threaded Entries for NPT 1" Cable Gland – Not Supplied:				
4 x 1" NPT entries (in a cross)	0.8	2	JBDR41	–

Junction Boxes & Enclosures

JBDR Series: Pre-drilled Round Junction Boxes – Flameproof

Zone 1 & 2 – 21 & 22

⊕ II 2 GD

ATEX / IEC

IP66 – IK10

Accessories:

Description	Weight (Kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Pillar Terminal Block 4 terminals 4 x 4 mm ² or 2 x 6 mm ² cables	0.1	0.4	TBP44	093230	1
M25 Integrated Cable Gland for unarmored cables (dia. 9 to 15 mm)	0.6	0.9	093496	093496	5

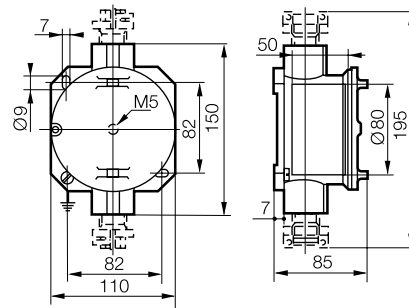
Compliances:

Hazardous Area	Gas	Dust
Certification Type	BR1d	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081⊕II 2 G	CE 0081⊕II 2 D
Symbol of Protection ATEX	Ex d IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	T6 for Ta = +40°C T5 for Ta = +55°C	NA
Surface Temperature	NA	T95°C
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50230	
ATEX Certificate	LCIE 02 ATEX 6056	
IEC Certificate	LCIE Ex 02.005	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact resistance (shock)	IK10	
Internal Volume	≤ 2dm ³ (2 liters)	

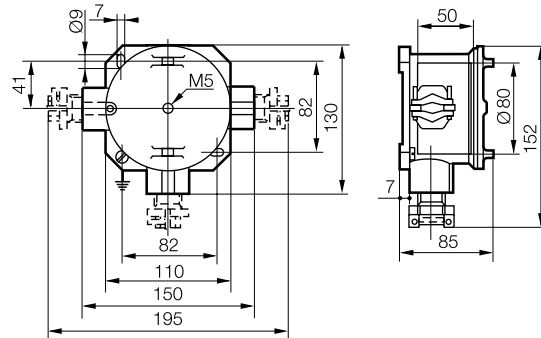
Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 61241-0; 61241-1
Product Standards	–
EMC Standards	–
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

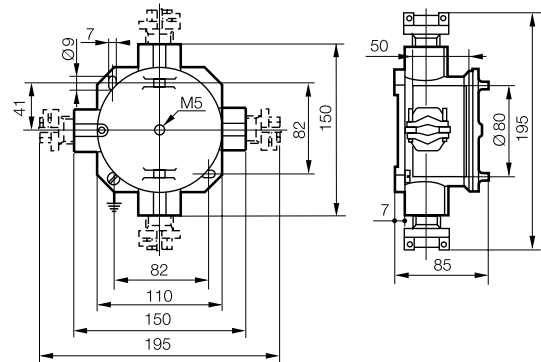
Dimensions (mm):



2 Entry Version



3 Entry Version



4 Entry Version

Junction Boxes & Enclosures

JBD Series: Pre-drilled Terminal Junction Boxes – Flameproof



JBDAB – Aluminum Version



JBDFB – Cast Iron Version



JBDFC – Cast Iron Version

JUNCTION BOXES & ENCLOSURES

Compliance Data:

ATEX - IEC:

Zone 1 & 2, 21 & 22	ATEX	II 2 GD	IEC	CE
Ex d IIB or IIC	T6 to T5	Ex td A21	T80°C to T95°C	IP66 – IK10

Operating Temperature:

-40°C to + 55°C



Junction Boxes & Enclosures

JBD Series: Pre-drilled Terminal Junction Boxes – Flameproof

Zone 1 & 2 – 21 & 22

Ex II 2 GD

ATEX / IEC

IP66 – IK10

Applications:

- Terminal junction boxes to facilitate electrical connections in hazardous areas.
- Designed for use in Zone 1 or 2 areas, where flammable gases or vapors are present either continuously or intermittently.
- Ideal for use in wet or corrosive atmospheres.
- Petroleum, chemical, refineries and other industrial process facilities.
- Designed for use in Zone 21 or 22 areas where flammable dusts are present either continuously or intermittently.
- Food processing, dairy, brewing, silos and other facilities.

Features:

- Flanged flameproof joint for square enclosures.
- Screwed flameproof joint for round enclosure.
- External earth crossing terminal.
- Supplied with one symmetrical zinc plated rail.
- Terminal block not supplied.
- Yellow laminated plastic nameplate with black lettering.
- Pre-drilled entries.
- Operating temperature -40°C to +55°C.

Standard Materials:

- Gray painted cast iron and marine grade aluminum alloy.
- Stainless steel hardware.

Options:

- For use with equipment other than terminal blocks, please consult factory.



JBDAB
– Aluminum Version



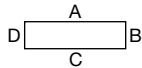
JBDFB
– Cast Iron Version



JBDFC
– Cast Iron Version

Ordering Information:

Ex d IIB Enclosure in Cast Iron



Type	Dimensions (mm)	Threaded Entry Per Side				Rail Length Capacity	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
		A	B	C	D						
CF2C	130 x 130 x 90	1 x M20	1 x M20	2 x M20	1 x M20	64 mm	4	3	JBDFB131309D1	093200	1
CF2A	205 x 145 x 127	2 x M20	1 x M20	3 x M20	1 x M20	120 mm	9.4	3	JBDFB201413D2	093201	1
CF2B	270 x 190 x 120	–	2 x M20	3 x M20	2 x M20	162 mm	12.6	7	JBDFB271912D3	093202	1
			1 x M25								

Ex d IIB Enclosure in Aluminum

Type	Dimensions (mm)	Threaded Entry Per Side				Rail Length Capacity	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
		A	B	C	D						
CF20B	370 x 270 x 208	–	3 x M20	5 x M20	3 x M20	260 mm	12.8	24	JBDAB372720D4	093204	1
				1 x M32							

Ex d IIC Enclosure in Cast Iron

Type	Dimensions (mm)	Threaded Entry Per Side				Rail Length Capacity	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
		A	B	C	D						
CF1F	167 x 167 x 126	1 x M32	1 x M32	1 x M32	1 x M32	100 mm	6.7	13	JBDFC161612D5	–	1
CF1F	167 x 167 x 126	1 x 1" NPT	1 x 1" NPT	1 x 1" NPT	1 x 1" NPT	100 mm	6.7	13	JBDFC161612D6	–	1

Junction Boxes & Enclosures

JBD Series: Pre-drilled Terminal Junction Boxes – Flameproof

Zone 1 & 2 – 21 & 22

Ⓜ II 2 GD

ATEX / IEC

IP66 – IK10

Compliances:

Hazardous Area	Gas	Dust
Certification Type	CF2/A/B/C	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081Ⓜ II 2 G	CE 0081Ⓜ II2 D
Symbol of Protection ATEX	Ex d IIB	Ex tD A21
Symbol of Protection IEC		
T Rating	T6 for $T_a \leq +40^\circ\text{C}$ T5 for $+40^\circ\text{C} < T_a \leq +55^\circ\text{C}$	NA
Surface Temperature	NA	T95°C
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50254	
ATEX Certificate	LCIE 03 ATEX 6061X	
IEC Certificate	LCIE Ex 03.006X	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact resistance (shock)	IK10	
Internal Volume	$\leq 2\text{dm}^3$ (2 liters)	

Hazardous Area	Gas	Dust
Certification Type	CF1F	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081Ⓜ II 2 G	CE 0081Ⓜ II2 D
Symbol of Protection ATEX	Ex d IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	T6 for $T_a \leq +40^\circ\text{C}$ T5 for $+40^\circ\text{C} < T_a \leq +55^\circ\text{C}$	NA
Surface Temperature	NA	T95°C
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50257	
ATEX Certificate	LCIE 03 ATEX 6044X	
IEC Certificate	LCIE Ex 03.003X	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact resistance (shock)	IK10	
Internal Volume	$\leq 2\text{dm}^3$ (2 liters)	

Hazardous Area	Gas	Dust
Certification Type	CF20B	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081Ⓜ II 2 G	CE 0081Ⓜ II2 D
Symbol of Protection ATEX	Ex d IIB	Ex tD A21
Symbol of Protection IEC		
T Rating	T6	NA
Surface Temperature	NA	T80°C
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50229	
ATEX Certificate	LCIE 02 ATEX 6057X	
IECEX Certificate	IECEX LCI 08.0023X	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact resistance (shock)	IK10	
Internal Volume	$> 2\text{dm}^3$ (2 liters)	

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 61241-0; 61241-1
Product Standards	–
EMC Standards	–
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Junction Boxes & Enclosures

JBD Series: Pre-drilled Terminal Junction Boxes – Flameproof

Zone 1 & 2 – 21 & 22

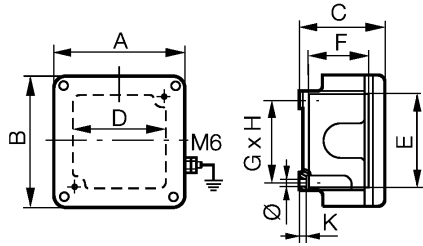
⊕ II 2 GD

ATEX / IEC

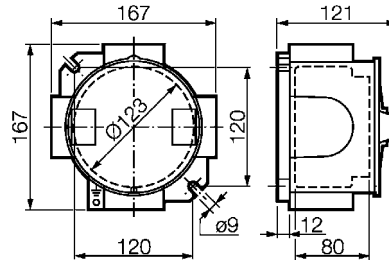
IP66 – IK10

Dimensions (mm):

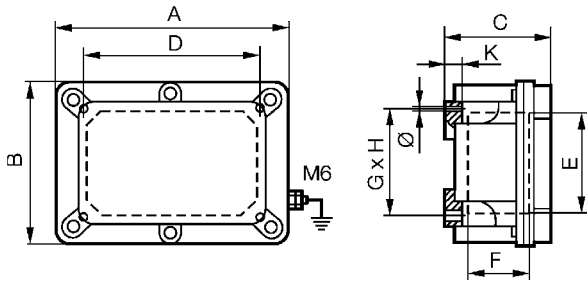
Cast Iron Versions:



CF2C



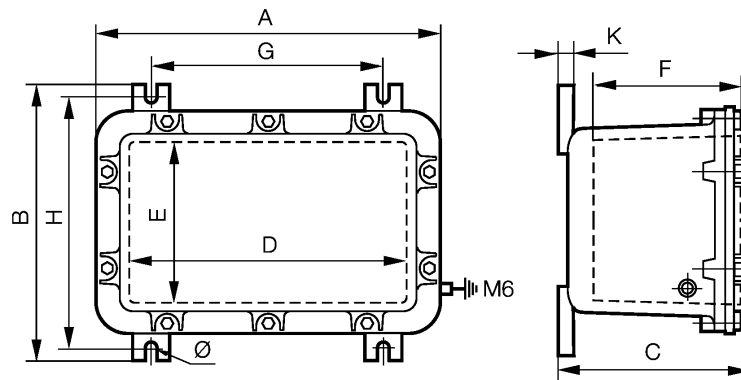
CF1F



CF2A / CF2B

Type	External Dimensions (mm)			Internal Dimensions (mm)			Fixings				
	A	B	C	D	E	F	G	H	K	Ø	
CF2C	130	130	90	90	90	65	86	86	10	7	
CF2A	202	144	127	155	95	65	156	98	12	7	
CF2B	267	187	120	200	120	78	202	122	12	7	

Aluminum Version:



Type	External Dimensions (mm)			Internal Dimensions (mm)			Fixings				
	A	B	C	D	E	F	G	H	K	Ø	
CF20B	370	270	208	300	175	159	250	245	15	11	

Junction Boxes & Enclosures

JBDA and JBDF – ECDA, ECDF and ACSEW Series: Customized Enclosures – Flameproof



CF40B



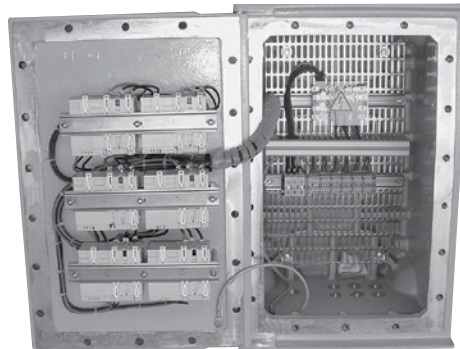
JBEW



CF50C



CF1E



Customized Enclosures



CF2C

JUNCTION BOXES & ENCLOSURES

Compliance Data:

ATEX - IEC:

Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IEC	CE
Ex d IIB and IIC	T6 to T2	Ex tD A21	T80°C to T290°C	IP66 – IK10

Operating Temperatures:

-20°C to +55°C; -50°C to +55°C
-40°C to +55°C



Junction Boxes & Enclosures

JBDA and JBDF – ECDA, ECDF and ACSEW Series: Customized Enclosures – Flameproof

Zone 1 & 2 – 21 & 22

⊕ II 2 GD

ATEX / IEC

IP66 – IK10

Applications:

- Designed for use in Zones 1, 2, 21 and 22 in the oil and gas industry; i.e. petroleum, chemical, refineries and other industrial process facilities.
- Junction box applications:
JBD series enclosures may be customized to house terminal blocks.
- Enclosure and control applications:
ECD series enclosures may be customized to house a large range of components; i.e. control units, breakers, starters, relays, meters, etc.

Features:

- Enclosures are available in a wide range of sizes.
- Precision machined flameproof joint between body and cover.
- Wall thickness suitable for all sizes of cable entries.
- External fixing lugs.
- Internal mounting pan.

- Square and round windows available in a wide range of sizes.
- Machining and drilling must be completed in our workshops.
- Power dissipated calculation including cables must be completed according to each size of certified enclosure.

Standard Materials:

- Gray painted cast iron and marine grade aluminum alloy enclosures.
- Stainless steel hardware.



Options:

- Indirect cable entries available through Ex e connection enclosure.
- Factory assembled and wired.
- Switch rack assembly.
- Empty enclosure with Ex "U" component marking for re-certification by notified body (CF10B to CF70B & JBEW).

Catalog Number Logic:

JBDA ↓	X ↓	XX XX XX ↓	X ↓
Series ATEX / IEC Certified: JB = Junction Box EC = Enclosure & Controls D = Flameproof A = Aluminum F = Cast Iron	Classification: B = IIB C = IIC	Dimensions (mm): Length x Width x Depth (see ordering information below)	Options: Options must be listed alphabetically U = Component Certification U # = Customized Enclosure
			#: 6 Digit number will be assigned at time of order placement.

Ordering Information:

Type	Dimensions L x W x D (mm)	Hinged Door	Weight (kg)	Volume (dm ³)	JBD Series Catalog Number	ECD Series Catalog Number	Old Catalog Number
Ex d IIB Enclosure in Cast Iron with Flanged Flameproof Joint							
 CF2C	130 x 130 x 90 mm	–	4	3	JBDFB 131309_	ECDFB 131309_	095310
CF2A	205 x 145 x 127 mm	–	9.4	3	JBDFB 201413_	ECDFB 201413_	095311
CF2B	270 x 190 x 120 mm	–	12.6	7	JBDFB 271912_	ECDFB 271912_	095313
Ex d IIB Enclosure in Cast Aluminum with Flanged Flameproof Joint							
 CF10B	260 x 270 x 208 mm	–	9	17	JBDAB 262720_	ECDAB 262720_	095403
CF20B	370 x 270 x 208 mm	–	13	24	JBDAB 372720_	ECDAB 372720_	095405
CF30B	340 x 320 x 230 mm	Yes	29	68	JBDAB 343223_	ECDAB 343223_	095406
CF40B	455 x 320 x 347 mm	Yes	50	126	JBDAB 453234_	ECDAB 453234_	095407
CF50B	455 x 440 x 347 mm	Yes	65	240	JBDAB 454434_	ECDAB 454434_	095409
CF60B	680 x 440 x 413 mm	Yes	106	378	JBDAB 684441_	ECDAB 684441_	095410
CF70B	680 x 640 x 413 mm	Yes	130	382	JBDAB 686441_	ECDAB 686441_	095412

Junction Boxes & Enclosures

JBDA and JBDF – ECDA, ECDF and ACSEW Series: Customized Enclosures – Flameproof

Zone 1 & 2 – 21 & 22

Ex II 2 GD

ATEX / IEC

IP66 – IK10

Class 1, Div. 1

Group B, C, D

NEMA 4X



Ex d IIB+H2 Tri-Rated Enclosure in Cast Aluminum with Flanged Flameproof Joint

Type	Overall Dimensions			Hinged Door	Approximate Weight (kg)	Catalog Number
	L	W	D			
JBEW	343	227	156	–	10	ACSEW050903*
JBEW	234	245	159	–	10	ACSEW060604*
JBEW	315	264	165	–	9	ACSEW060804*
JBEW	387	270	172	–	12	ACSEW061004*
JBEW	422	270	162	–	11	ACSEW061204*
JBEW	521	279	175	–	15	ACSEW061604*
JBEW	403	311	254	–	16	ACSEW071106*
JBEW	311	311	210	–	14	ACSEW080806*
JBEW	368	318	216	–	16	ACSEW081006*
JBEW	443	318	264	–	14	ACSEW081307*
JBEW	394	353	221	–	10	ACSEW091105*
JBEW	519	362	216	–	15	ACSEW091504*
JBEW	376	376	232	–	20	ACSEW101006*
JBEW	470	368	214	–	25	ACSEW101406*
JBEW	470	368	245	–	27	ACSEW101408*
JBEW	638	416	191	–	39	ACSEW112005*
JBEW	746	400	259	–	33	ACSEW112406*
JBEW	889	416	260	–	51	ACSEW113006*
JBEW	442	442	235	Yes	29	ACSEW121206*
JBEW	442	442	292	Yes	32	ACSEW121208*
JBEW	584	432	232	Yes	41	ACSEW121806*
JBEW	584	432	283	Yes	46	ACSEW121808*
JBEW	730	425	283	Yes	63	ACSEW122408*
JBEW	1080	457	265	Yes	86	ACSEW133806*
JBEW	492	492	243	Yes	44	ACSEW141406*
JBEW	492	492	294	Yes	48	ACSEW141408*
JBEW	1092	540	306	Yes	113	ACSEW153707*
JBEW	533	533	249	Yes	132	ACSEW161606*
JBEW	533	533	315	Yes	60	ACSEW161608*
JBEW	593	543	383	Yes	68	ACSEW161812*
JBEW	711	533	308	Yes	82	ACSEW162408*
JBEW	594	594	253	Yes	85	ACSEW181806*
JBEW	594	594	303	Yes	90	ACSEW181808*
JBEW	762	608	309	Yes	102	ACSEW182408*
JBEW	762	608	360	Yes	107	ACSEW182410*
JBEW	880	575	308	Yes	120	ACSEW183008*
JBEW	1061	597	313	Yes	68	ACSEW183608*
JBEW	1061	597	364	Yes	122	ACSEW183610*
JBEW	1216	607	302	Yes	141	ACSEW184207*
JBEW	746	746	313	Yes	102	ACSEW242408*
JBEW	889	737	330	Yes	191	ACSEW243008*
JBEW	1092	781	332	Yes	191	ACSEW243608*
JBEW	1092	781	332	Yes	204	ACSEW243610*
JBEW	1118	914	349	Yes	272	ACSEW303808*
JBEW	1118	914	510	Yes	363	ACSEW303816*

* ATEX complete product certification will bear an X suffix.
ATEX U Component certification will bear an XU suffix.

Junction Boxes & Enclosures

JBDA and JBDF – ECDA, ECDF and ACSEW Series: Customized Enclosures – Flameproof



Zone 1 & 2 – 21 & 22

⊕ II 2 GD

ATEX / IEC

IP66 – IK10

Ordering Information – Continued:

Type	Dimensions L x W x D (mm)	Hinged Door	Weight (kg)	Volume (dm ³)	JBD Series Catalog Number	ECD Series Catalog Number	Old Catalog Number
Ex d IIC Enclosure in Cast Aluminum with Spigot Flameproof Joint							
 CF1E	140 x 162 x 100 mm	–	1.5	2.2	JBDAC 141610_	ECDAC 141610_	095306
CF1B	210 x 230 x 125 mm	–	4	5.5	JBDAC 212312_	ECDAC 212312_	095301
CF1A	295 x 265 x 195 mm	–	10	9.6	JBDAC 292619_	ECDAC 292619_	095303
CF1D	360 x 335 x 200 mm	–	10	14.6	JBDAC 363320_	ECDAC 363320_	095304
Ex d IIC Enclosure in Cast Aluminum with Screwed Flameproof Joint							
 CF10C	230 x 215 x 238 mm	–	12	16	JBDAC 232124_	ECDAC 232124_	095402
CF30C	320 x 340 x 234 mm	–	28	68	JBDAC 323423_	ECDAC 323423_	095404
CF50C	440 x 455 x 345 mm	–	64	245	JBDAC 444534_	ECDAC 444534_	095408
Ex d IIC Enclosure in Cast Iron with Screwed Flameproof Joint							
CF70C	680 x 640 x 450 mm	Yes	310	382	JBDFC 686445_	ECDFC 686445_	095411

Options:

Component Certification “U” and/or Customized Enclosure # add digits as per examples:

JBDA 2627203 #

JBDA 2627203 U #

Compliances:

Hazardous Area	Gas	Dust
Certification Type	CF2/A/B/C	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081⊕ II 2 G	CE 0081⊕ II 2 D
Symbol of Protection ATEX	Ex d IIB	Ex tD A21
Symbol of Protection IEC		
T Rating	T6 to T2	NA
Surface Temperature	NA	T95°C to T290°C
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50254	
ATEX Certificate	LCIE 03 ATEX 6061X	
IEC Certificate	LCIE Ex 03.006X	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact resistance (shock)	IK10	
Internal Volume	≤ 2 dm ³ (2 liters)	

Hazardous Area	Gas	Dust
Certification Type	CF10B to CF70B CF10C to CF70C	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081⊕ II 2 G	CE 0081⊕ II 2 D
Symbol of Protection ATEX	Ex d IIB (CF10B to CF70B) Ex d IIC (CF10C to CF70C)	Ex tD A21
Symbol of Protection IEC		
T Rating	T6 to T4	NA
Surface Temperature	NA	T80°C to T130°C
Ambient Temperature	-20°C to +55°C (CF30B, CF70B, CF70C) -40°C to +55°C (CF10B, CF20B, CF40B, CF50B, CF10C, CF30C, CF50C) -50°C to +55°C (CF60B)	
CE Declaration of Conformity	50229	
ATEX Certificate	LCIE 02 ATEX 6057X	
IECEX Certificate	IECEX LCI 08.0023X	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	
Internal Volume	> 2 dm ³ (2 liters)	

Junction Boxes & Enclosures

JBDA and JBDF – ECDA, ECDF and ACSEW Series: Customized Enclosures – Flameproof

Zone 1 & 2 – 21 & 22

⊕ II 2 GD

ATEX / IEC

IP66 – IK10

Compliances – Continued:

Hazardous Area	Gas	Dust
Certification Type	CF1A/B/D/E	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081⊕ II 2 G	CE 0081⊕ II 2 D
Symbol of Protection ATEX	Ex d IIB	Ex tD A21
Symbol of Protection IEC		
T Rating	T6 to T2	NA
Surface Temperature	NA	T95°C to T290°C
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50257	
ATEX Certificate	LCIE 03 ATEX 6044X	
IEC Certificate	LCIE Ex 03.003X	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact resistance (shock)	IK10	
Internal Volume	> 2 dm ³ (2 liters) — CF1A/B/D ≤ 2 dm ³ (2 liters) — CF1E	

Hazardous Area	Gas	Dust
Certification Type	JBEW	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081⊕ II 2 G	CE 0081⊕ II 2 D
Symbol of Protection ATEX	Ex d IIB + H ₂	Ex tD A21
Symbol of Protection IEC		
T Rating	T6 to T4	NA
Surface Temperature	NA	T80°C to T130°C
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50279	
ATEX Certificate	LCIE 07 ATEX 6069X	
IEC Certificate	-	
Other Certifications	-	
Index of Protection (solid and liquid)	IP66	
Impact resistance (shock)	IK10	
Internal Volume	> 2 dm ³ (2 liters)	

Hazardous Area	Gas	Dust
Certification Type	CF10BU to CF70BU	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	0081⊕ II 2 G	0081⊕ II 2 D
Symbol of Protection ATEX	Ex d IIB	Ex tD A21
Symbol of Protection IEC		
T Rating	NA	NA
Surface Temperature	NA	NA
Ambient Temperature	-20°C to +55°C (CF30BU, CF60BU, CF70BU) -40°C to +55°C (CF10BU, CF20BU, CF40BU, CF50B)	
CE Declaration of Conformity	5C238	
ATEX Certificate	LCIE 07 ATEX 0005U	
IEC Certificate	-	
Other Certifications	-	
Index of Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	
Internal Volume	> 2 dm ³ (2 liters)	

Hazardous Area	Gas	Dust
Certification Type	JBEW U2	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	0081⊕ II 2 G	0081⊕ II 2 D
Symbol of Protection ATEX	Ex d IIB + H ₂	Ex tD A21
Symbol of Protection IEC		
T Rating	NA	
Surface Temperature	NA	
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	5C239	
ATEX Certificate	LCIE 06 ATEX 0010U	
IEC Certificate	LCIE Ex 08.001U	
Other Certifications	-	
Index of Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	
Internal Volume	> 2 dm ³ (2 liters)	

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 61241-0; 61241-1
Product Standards	-
EMC Standards	-
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Junction Boxes & Enclosures

JBDA and JBDF – ECDA, ECDF and ACSEW Series: Customized Enclosures – Flameproof

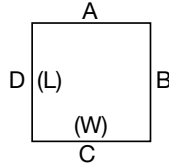
Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IEC

IP66 – IK10

Technical Data:

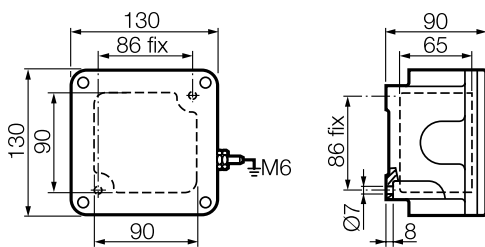


Type	Dimensions L x W x D (mm)	Maximum Quantity of Threaded Entries Per Side				Max. Size (1)	Rail Length Capacity for Terminal Block	
		A M20	B M20	C M20	D M20		(L)	(W)
Ex d IIB Enclosure in Cast Iron								
CF2C	130 x 130 x 90 mm	1	2	1	2	M25	64 mm	
CF2A	205 x 145 x 127 mm	1	3	1	1	M32	120 mm	
CF2B	270 x 190 x 120 mm	2	4	2	4	M50	162 mm	
Ex d IIB Enclosure in Cast Aluminum								
CF10B	260 x 270 x 208 mm	8	6	8	6	M75	155 mm	148 mm
CF20B	370 x 270 x 208 mm	6	12	6	12	M75	260 mm	148 mm
CF30B	340 x 320 x 230 mm	8	8	8	8	M75	260 mm	218 mm
CF40B	455 x 320 x 347 mm	16	28	16	28	M75	330 mm	200 mm
CF50B	455 x 440 x 347 mm	26	26	26	26	M75	295 mm	330 mm
CF60B	680 x 440 x 413 mm	26	51	26	51	M100	540 mm	300 mm
CF70B	680 x 640 x 413 mm	38	42	38	42	M100	530 mm	530 mm
Ex d IIC Enclosure in Cast Iron								
CF1E	140 x 162 x 100 mm	1	2	1	2	M32		99 mm
CF1B	210 x 230 x 125 mm	1	3	2	3	M32		155 mm
CF1A	295 x 265 x 195 mm	6	6	5	6	M63	190 mm	190 mm
CF1D	360 x 335 x 200 mm	16	17	15	17	M63	180 mm	250 mm
Ex d IIC Enclosure in Cast Aluminum								
CF10C	230 x 215 x 238 mm	5	5	5	5	M75	120 mm	105 mm
CF30C	320 x 340 x 234 mm	8	8	8	8	M75	260 mm	215 mm
CF50C	440 x 455 x 345 mm	26	26	26	26	M75	295 mm	330 mm

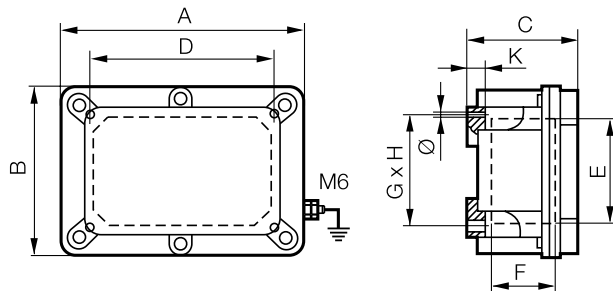
(1) Please consult us for quantity.

Dimensions (mm):

CF2C Type



CF2A & CF2B Type



Type	A	B	C	D	E	F	G	H	K	Ø
CF2A	202	144	96	156	154	65.5	98	156	10	7
CF2B	267	187	115	202	200	81	122	202	12	7

Junction Boxes & Enclosures

JBDA and JBDF – ECDA, ECDF and ACSEW Series: Customized Enclosures – Flameproof

Zone 1 & 2 – 21 & 22

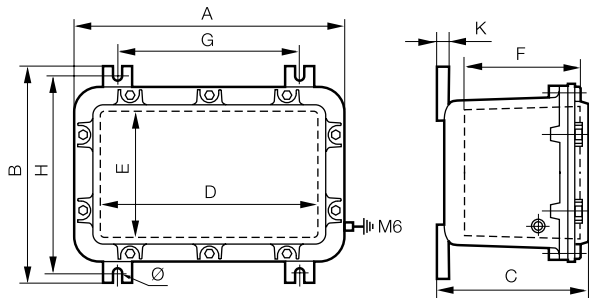
Ex II 2 GD

ATEX / IEC

IP66 – IK10

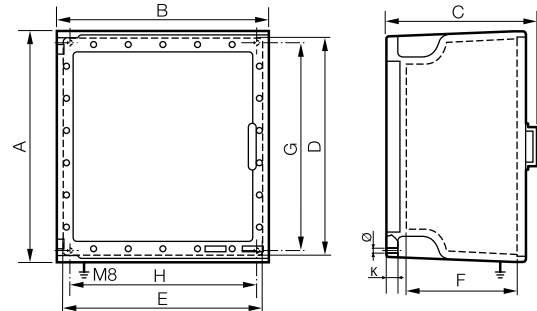
Dimensions (mm) – Continued:

CF10B & CF20B Type



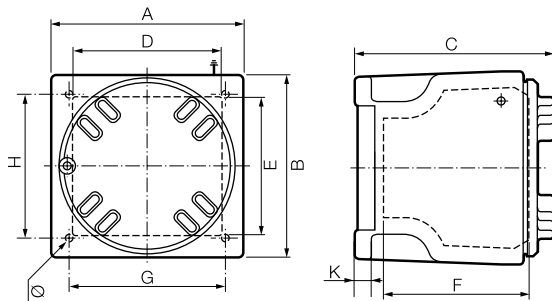
Type	A	B	C	D	E	F	G	H	K	Ø
CF10B	259	270	207	190	175	161	140	245	15	11
CF20B	369	270	207	300	175	161	250	245	15	11

CF30B & CF70B Type



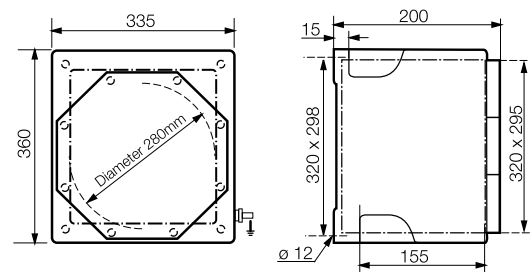
Type	A	B	C	D	E	F	G	H	K	Ø
CF30B	340	320	238	285	265	164	298	278	20	9
CF40B	455	320	377	395	256	253	391	256	25	11
CF50B	455	440	380	400	376	253	391	376	25	11
CF60B	680	440	445	610	376	292	616	376	25	14
CF70B	680	640	445	610	576	292	616	576	25	14

CF10C to CF70C Type



Type	A	B	C	D	E	F	G	H	K	Ø
CF10C	230	215	238	180	165	175	188	173	20	9
CF30C	320	340	234	271	290	154	278	298	20	9
CF50C	440	455	345	386	401	241	376	391	25	11
CF70C	680	640	450	616	576	290	616	576	25	14

CF1D Type



Junction Boxes & Enclosures

JBDA and JBDF – ECDA, ECDF and ACSEW Series: Customized Enclosures – Flameproof

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IEC

IP66 – IK10

JBEW Type:

Catalog Number	Mounting Dimensions						Inside Dimensions	
	A	B	C	D	E	F	G	I
ACSEW050903	102	N/A	279	N/A	129	241	89	51
ACSEW060604	N/A	222	N/A	308	152	152	101	61
ACSEW060804	116	232	268	114	152	203	95	64
ACSEW061004	140	N/A	334	N/A	156	273	97	51
ACSEW061204	N/A	232	N/A	216	156	308	103	57
ACSEW061604	152	N/A	457	N/A	165	406	105	59
ACSEW071106	162	N/A	343	N/A	188	289	149	86
ACSEW080806	114	N/A	273	N/A	203	203	146	83
ACSEW081006	178	273	318	165	203	254	146	89
ACSEW081307	N/A	254	N/A	216	203	332	89	70
ACSEW091105	184	300	334	217	238	283	122	83
ACSEW091504	184	300	454	338	241	395	121	76
ACSEW101006	165	N/A	330	N/A	260	260	146	86
ACSEW101406	178	330	422	270	254	356	149	80
ACSEW101408	N/A	330	N/A	270	254	356	197	113
ACSEW112005	260	368	575	429	289	508	124	89
ACSEW112406	216	359	689	508	273	619	152	102
ACSEW113006	241	384	835	692	286	759	157	106
ACSEW121206	219	397	397	219	311	311	146	95
ACSEW121208	219	397	397	219	311	311	197	121
ACSEW121806	N/A	400	N/A	359	311	464	146	89
ACSEW121808	N/A	400	N/A	359	311	464	222	108
ACSEW122408	N/A	400	N/A	467	305	610	197	108
ACSEW133806	410	302	1035	857	346	962	156	110
ACSEW141406	248	451	451	248	375	375	146	99
ACSEW141408	248	451	451	248	375	375	197	102
ACSEW153707	349	508	1057	813	397	946	189	133
ACSEW161606	279	502	502	279	419	419	146	99
ACSEW161608	279	502	502	279	419	419	213	124
ACSEW161812	305	483	533	356	413	464	302	178
ACSEW162408	N/A	502	N/A	467	413	616	210	135
ACSEW181806	330	553	553	330	464	464	146	105
ACSEW181808	330	553	553	330	464	464	197	114
ACSEW182408	410	553	705	467	464	614	197	129
ACSEW182410	410	553	705	467	464	614	248	146
ACSEW183008	N/A	553	N/A	584	464	769	197	121
ACSEW183608	279	553	1003	737	464	927	197	121
ACSEW183610	279	553	1003	737	464	927	248	139
ACSEW184207	406	584	1153	975	473	1073	178	127
ACSEW242408	467	711	711	467	622	622	197	127
ACSEW243008	457	711	864	584	610	762	203	133
ACSEW243608	464	711	1016	737	616	921	197	130
ACSEW243610	464	711	1016	737	616	921	248	152
ACSEW303808	N/A	889	N/A	736	762	965	197	156
ACSEW303816	N/A	889	N/A	736	762	965	197	156

Junction Boxes & Enclosures

JBDA and JBDF – ECDA, ECDF and ACSEW Series: Customized Enclosures – Flameproof

Zone 1 & 2 – 21 & 22

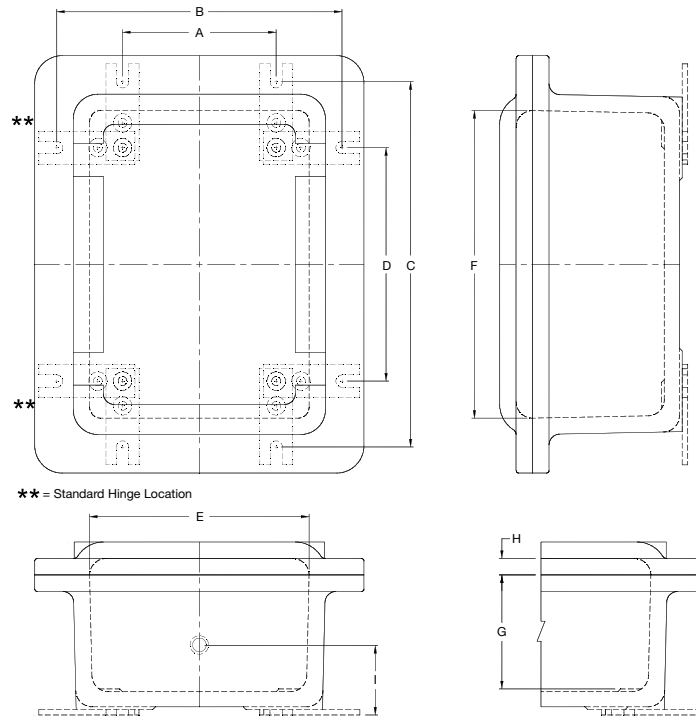
Ex II 2 GD

ATEX / IEC

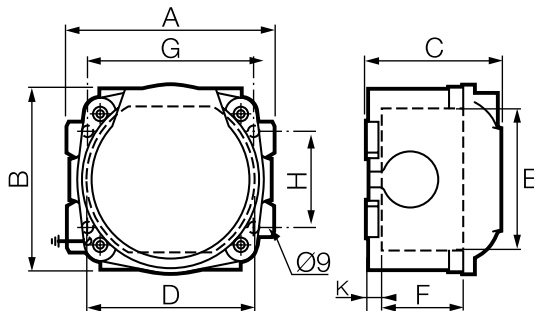
IP66 – IK10

Dimensions (mm) – Continued:

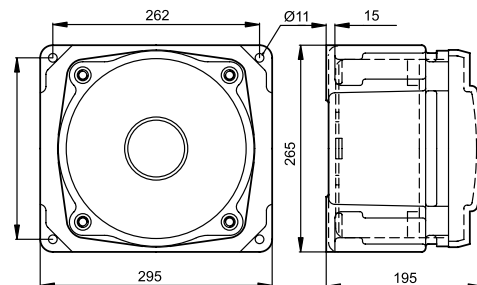
JBEW Type



CF1B & CF1E Type



CF1A Type



Type	A	B	C	D	E	F	G	H	K	Ø
CF1B	230	210	125	175	175	90	210	100	15	9
CF1E	140	162	121	120	120	80	120	120	12	9

Junction Boxes & Enclosures

ECDX Series: Customized Welded Steel Enclosures – Flameproof

JUNCTION BOXES & ENCLOSURES



ECDX Series

Compliance Data:

ATEX – IEC:

Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IEC	CE
Ex d IIB	T6 to T4	Ex tD A21	T80°C to T130°C	IP66 – IK10

Operating Temperatures:

-20°C to + 55°C



Junction Boxes & Enclosures

ECDX Series: Customized Welded Steel Enclosures – Flameproof

Zone 1 & 2 – 21 & 22

Ex II 2 GD

ATEX

IP66 – IK10

Applications:

- Designed for use in Zones 1, 2, 21 and 22 in the oil and gas industry; i.e. petroleum, chemical, refineries, and other industrial process facilities.
- Enclosures may be customized to house terminal blocks, and a large range of components; i.e. control units, breakers, starters, relays, meters, etc.

Features:

- Enclosures are available in a wide range of sizes.
- Precision machined flameproof joint between body and cover.
- Hinged door.
- External fixing lugs.
- Internal mounting pan.
- Square and round windows available in a wide range of sizes.
- Machining and drilling must be completed in our workshops.
- Power dissipated calculation including cables must be completed according to each size of certified enclosure.

Standard Materials:

- Gray painted mechanically welded steel enclosure.
- Stainless steel hardware.

Options:

- Indirect cable entries available through Ex e connection enclosure.
- Factory assembled and wired.
- Switch rack assembly.
- Empty enclosure with Ex “U” component marking for recertification by notified body (CMS3-4-5-6-7-40-43-44U).

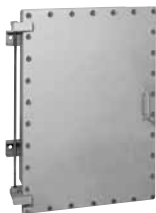


ECDX series

Catalog Number Logic:

ECDX ↓	X ↓	XX XX XX ↓	X ↓
Series ATEX / IEC Certified: EC = Enclosure & Controls D = Flameproof X = Welded Steel	Classification: B = IIB	Internal Dimensions (mm): Length x Width x Depth (see ordering information below)	Options: S = 316L Stainless Steel U = Component Certification U # = Customized Enclosures
			#: 6 digit number will be assigned at time of order placement.

Ordering Information:

Type	Dimensions L x W x D (mm)	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	
Ex d IIB Enclosure in Welded Steel						
	CMS3	300 x 270 x 180 mm	92	234	ECDXB 302718_	095344
	CMS4	415 x 260 x 285 mm	152	234	ECDXB 412628_	095345
	CMS5	415 x 385 x 285 mm	180	369	ECDXB 413828_	095346
	CMS6	635 x 375 x 345 mm	336	647	ECDXB 633734_	095347
	CMS7	635 x 575 x 345 mm	384	647	ECDXB 635734_	095348
	CMS47	700 x 500 x 295 mm	268	698	ECDXB 705029_	095323
	CMS43	700 x 600 x 295 mm	298	698	ECDXB 706029_	095324
	CMS46	700 x 700 x 295 mm	318	698	ECDXB 707029_	095325
	CMS44	800 x 500 x 295 mm	298	698	ECDXB 805029_	095326
	CMS40	800 x 600 x 295 mm	318	698	ECDXB 806029_	095327
	CMS42	800 x 700 x 295 mm	308	698	ECDXB 807029_	095328
	CMS45	900 x 500 x 295 mm	348	698	ECDXB 905029_	095329
	CMS41	900 x 600 x 295 mm	348	698	ECDXB 906029_	095330
	CMS57	1000 x 550 x 295 mm	395	1144	ECDXB 105529_	095331
	CMS52	1000 x 630 x 295 mm	430	1144	ECDXB 106329_	095332
	CMS55	1000 x 700 x 295 mm	452	1144	ECDXB 107029_	095333
	CMS53	1200 x 550 x 295 mm	445	1144	ECDXB 125529_	095334
	CMS50	1200 x 630 x 295 mm	485	1144	ECDXB 126329_	095335
	CMS54	1200 x 700 x 295 mm	515	1144	ECDXB 127029_	095336
	CMS56	1400 x 550 x 295 mm	495	1144	ECDXB 145529_	095337
	CMS51	1400 x 630 x 295 mm	540	1144	ECDXB 146329_	095338

Options:
For component certification and/or customized enclosure add digits as per examples:
ECDXB 302718 #
ECDXB 302718U #

Junction Boxes & Enclosures

ECDX Series: Customized Welded Steel Enclosures – Flameproof

Zone 1 & 2 – 21 & 22

⊕ II 2 GD

ATEX

IP66 – IK10

Ordering Information – Continued:

Type	Dimensions L x W x D (mm)	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
Ex d IIB Enclosure in 316L Stainless Steel					
CMS3	300 x 270 x 180 mm	92	234	ECDXB 302718S_	095344SS
CMS4	415 x 260 x 285 mm	152	234	ECDXB 412628S_	095345SS
CMS5	415 x 385 x 285 mm	180	369	ECDXB 413828S_	095346SS
CMS6	635 x 375 x 345 mm	336	647	ECDXB 633734S_	095347SS
CMS7	635 x 575 x 345 mm	384	647	ECDXB 635734S_	095348SS
CMS47	700 x 500 x 295 mm	268	698	ECDXB 705029S_	095323SS
CMS43	700 x 600 x 295 mm	298	698	ECDXB 706029S_	095324SS
CMS46	700 x 700 x 295 mm	318	698	ECDXB 707029S_	095325SS
CMS44	800 x 500 x 295 mm	298	698	ECDXB 805029S_	095326SS
CMS40	800 x 600 x 295 mm	318	698	ECDXB 806029S_	095327SS
CMS42	800 x 700 x 295 mm	308	698	ECDXB 807029S_	095328SS
CMS45	900 x 500 x 295 mm	348	698	ECDXB 905029S_	095329SS
CMS41	900 x 600 x 295 mm	348	698	ECDXB 906029S_	095330SS
CMS57	1000 x 550 x 295 mm	395	1144	ECDXB 105529S_	095331SS
CMS52	1000 x 630 x 295 mm	430	1144	ECDXB 106329S_	095332SS
CMS55	1000 x 700 x 295 mm	452	1144	ECDXB 107029S_	095333SS
CMS53	1200 x 550 x 295 mm	445	1144	ECDXB 125529S_	095334SS
CMS50	1200 x 630 x 295 mm	485	1144	ECDXB 126329S_	095335SS
CMS54	1200 x 700 x 295 mm	515	1144	ECDXB 127029S_	095336SS
CMS56	1400 x 550 x 295 mm	495	1144	ECDXB 145529S_	095337SS
CMS51	1400 x 630 x 295 mm	540	1144	ECDXB 146329S_	095338SS



Options:

For component certification and/or customized enclosure add digits as per example:

ECDXB 302718S #

ECDXB 302718SU #

Compliances:

Hazardous Area	Gas	Dust
Certification Type	CMS	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081⊕ II 2 G	CE 0081⊕ II 2 D
Symbol of Protection ATEX	Ex d IIB	Ex tD
Symbol of Protection IEC		
T Rating	T6 to T4	NA
Surface Temperature	NA	T80°C to T130°C
Ambient Temperature	-20°C to +55°C	
CE Declaration of Conformity	50236	
ATEX Certificate	LCIE 02 ATEX 6247X	
IEC Certificate	LCIE Ex 02.031X	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	
Internal Volume	> 2 dm ³ (2 liters)	

Hazardous Area	Gas	Dust
Certification Type	CMS 3U-4U-5U-6U-7U-40U-43U	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	0081⊕ II 2 G	0081⊕ II 2 D
Symbol of Protection ATEX	Ex d IIB	Ex tD
Symbol of Protection IEC		
T Rating	NA	NA
Surface Temperature	NA	NA
Ambient Temperature	-20°C to +55°C	
CE Declaration of Conformity	5C235	
ATEX Certificate	LCIE 07 ATEX 0008U	
IEC Certificate	LCIE Ex 07.007U	
Other Certifications	–	
Index of Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	
Internal Volume	> 2 dm ³ (2 liters)	

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 61241-0; 61241-1
Product Standards	–
EMC Standards	–
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Junction Boxes & Enclosures

ECDX Series: Customized Welded Steel Enclosures – Flameproof

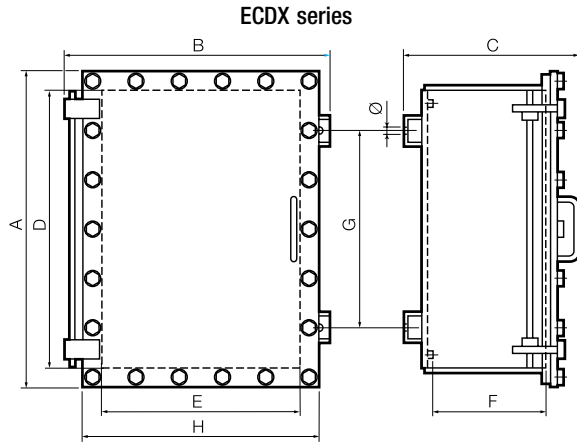
Zone 1 & 2 – 21 & 22

II 2 GD

ATEX

IP66 – IK10

Dimensions (mm):



Type	External Dimensions (mm)			Internal Dimensions (mm)			Fixings Lug Thick		(mm)	Ø
	A	B	C	D	E	F	G	H		
CMS3	388	440	318	300	270	180	200	370	7	16
CMS4	503	429	418	415	260	280	315	360	7	16
CMS5	503	554	418	415	385	280	315	485	7	16
CMS6	723	554	478	635	375	340	455	475	7	16
CMS7	723	745	478	635	575	340	470	675	7	16
CMS47	796	650	445	700	500	295	500	600	7	18
CMS43	796	750	445	700	600	295	500	700	7	18
CMS46	796	850	445	700	700	295	500	800	7	18
CMS44	896	650	445	800	500	295	600	600	7	18
CMS40	896	750	445	800	600	295	600	700	7	18
CMS42	896	850	445	800	700	295	600	800	7	18
CMS45	996	650	445	900	500	295	600	600	7	18
CMS41	996	750	445	900	600	295	600	700	7	18
CMS57	1125	730	452	1000	550	295	700	660	7	22
CMS52	1125	810	452	1000	630	295	700	740	7	22
CMS55	1125	880	452	1000	700	295	700	810	7	22
CMS53	1325	730	452	1200	550	295	900	660	7	22
CMS50	1325	810	452	1200	630	295	900	740	7	22
CMS54	1325	880	452	1200	700	295	900	810	7	22
CMS56	1525	730	452	1400	550	295	1100	660	7	22
CMS51	1525	810	452	1400	630	295	1100	740	7	22

Example of Customized Enclosures:



CONTROL STATIONS & SWITCHES

Appleton's ATX control stations and switches, available in both Increased Safety and Flameproof, are engineered to exceed the demands of industrial facilities all over the globe, including those where wet, high-humidity and corrosive environments are the norm.

In addition, our control stations are available in a wide range of materials that are impact and corrosion resistant. They are user friendly, easy to install and easy to reconfigure in the field, with operators that can be DIN Rail or panel-mounted. They are made to keep your machinery and the workers using them safe now and for years into the future.



CONTROL STATIONS & SWITCHES

Control Stations – Increased Safety

252–307



Components for Increased Safety Enclosures

308–328



Control Stations – Flameproof

329–338



Components for Flameproof Enclosures

339–348



Switches, Circuit Breakers
and "Break Glass" Call Points

349-373



CONTROL STATIONS & SWITCHES

Control Stations & Switches: Control Stations

Description	Page
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Control Stations – Increased Safety: Unicode2 Series	252-307
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Polyamide Control Stations	252-260
Polyester Control Stations	261-271
Stainless Steel Control Stations	272-279
Aluminum Control Stations	280-287
Customized Control Stations	288-298
Pre-drilled Control Stations	299-307

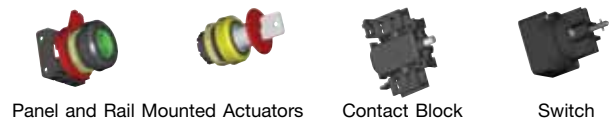
Unicode2 Series



Polyamide Control Station Polyester Control Station Stainless Steel Pre-drilled Aluminum Pre-drilled

Components for Increased Safety Enclosures: Unicode 2 Series	308-328
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Actuators, Pilot Lights, Contact Blocks, Switches and Accessories	308-320
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Panel and Rail Mounted Actuators Contact Block Switch

V Series	321-323
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AC Ammeter	
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V Series



Ammeter

FU40 Series	324-325
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Fuse Carrier	
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FU40 Series



Fuse Carrier

TRE Series	326-328
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Ex e Transformers	
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TRE Series



Transformer

Control Stations – Flameproof: D Series	329-338
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Aluminum Control Stations	329-333
Pre-drilled Control Stations	334-338

D Series



Flameproof Aluminum Control Station Flameproof Pre-Drilled Control Station

Components for Flameproof Enclosures: D Series	339-348
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Actuators, Pilot Lights, Contact Blocks, Switches and Accessories	339-345
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Rail Mounted Version Panel Mounted Version

RSI Series	346-348
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Intrinsic Safety Relay for Safe Areas	
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RSI Series



1-Channel Relay 2-Channel Relay Intrinsic Safety Terminal

CONTROL STATIONS & SWITCHES

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Polyamide Control Stations



U41W2 D9



U42W2 A5A9



U43W2 VA13A5A9



U43W2 PGA5A9

Compliance Data:

ATEX – IECEx:

Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IEC	CE
Ex de IIC / Ex demb IIC	T6	Ex tD A21	T75°C	IP66 – IK09

Voltage and Amperage:

Voltage	Amperage	Pilot Light Voltage
Up to 500 V	16 A	12 Vac to 254 Vac 50/60 Hz and 12 Vdc to 60 Vdc

Operating Temperature:

-20°C to +55°C



Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Polyamide Control Stations

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

IP66 – IK10

Applications:

- Local control stations and motor control stations for use in hazardous areas covering the broadest possible range of applications.
- Control of equipment at power plants, chemical and petrochemical plants, petroleum refineries, reverse osmosis plants, pulp and paper processing plants and various industrial applications.
- Push buttons and selector switches are used in conjunction with contactors or magnetic starters for remote control of motors in hazardous locations. They provide circuit control and/or selection.
- Pilot lights provide visual assurance that an electrical function is being performed at a remote or hazardous location.
- For use in wash down areas.

Features - Polyamide:

- Employs Ex de (factory sealed) operators including push buttons, illuminated push buttons, selector switches, control and load break switches, contact blocks, pilot lights (LED), and terminal blocks.
- Pilot light employs high intensity single LED with lifetime of 100,000 hours that can be used at:
 - 12 Vac to 254 Vac 50/60 Hz
 - 12 Vdc to 60 Vdc
- Enclosures are rated for IP66 with firmly secured gasket.
- Operators and contact blocks are spaced so as to have easy and ample space for wiring.
- Wide selection of cable glands, union adapter entries at top and bottom locations.

- Choice of DIN rail mounted high performance contact block suitable for low intensity (less than 5mA).
- TS35 rail mounted components held securely in place during operation and easily removed for service.
- Brass Inserts are provided for TS35 DIN rails or mounting plate to be installed inside the enclosure.
- Captive, corrosion resistant stainless steel cover screws.

Standard Material of Fixtures:

- Polyamide, black finish.
- Stainless steel cover screws.
- Polyamide cable gland and blanking plug.

Accessories:

- Key for changing actuator blocks.
- Guard for mushroom head actuator.
- Padlockable guard.
- M5 earth stud.
- Combination drain and breather available in brass, polyamide and stainless steel.

Options:











- Nameplates: Lamacoid with different color combinations. Stainless steel.
- Padlocking facility at left, center, right or any position on selector switches.
- Padlocking facility for momentary and maintained push buttons.
- Special contact arrangements available upon request, see options for details.

Ordering Information:

Size 1 Polyamide Control Station:

Standard equipment: 1 white self-adhesive laminated plastic nameplate, 2 x M20 bottom clearance entries, 1 blanking plug, 1 cable gland in polyamide (Ø 6.5 to 14.5 mm), 2 locknuts.



Version	Description/ Function	Diagram	Bottom Entries	Catalog Number	Weight (kg)	Volume (dm ³)
Impulse Push Button						
	Green insert 'I' + red insert 'O' with 1NO + 1NC momentary contacts		2 x M20	U41W2 A3	0.48	2.5
	1x green push button "I" with 1NO momentary contact		2 x M20	U41W2 A5	0.48	2.5
	1x red push button "O" with 1NC momentary contact		2 x M20	U41W2 A9	0.48	2.5
Emergency Stop						
	Red mushroom head push-pull 1NC maintained contact		2 x M20	U41W2 D9	0.48	2.5
	Red mushroom head push-pull 1NO + 1NC maintained contacts		2 x M20	U41W2 D3	0.48	2.5
	Red mushroom head key release 1NC maintained contact		2 x M20	U41W2 C9	0.48	2.5
	Red mushroom head key release 1NO + 1NC maintained contacts		2 x M20	U41W2 C3	0.48	2.5

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Polyamide Control Stations

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx


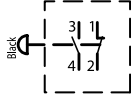
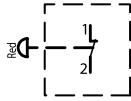

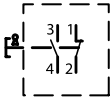

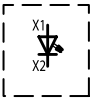

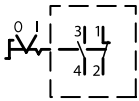


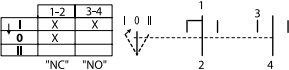
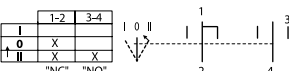
IP66 – IK10

Ordering Information - Continued:

Size 1 Polyamide Control Station:

Standard equipment: 1 white self-adhesive laminated plastic nameplate, 2 x M20 bottom clearance entries, 1 blanking plug, 1 cable gland in polyamide (Ø 6.5 to 14.5 mm), 2 locknuts.



Version	Description/ Function	Diagram	Bottom Entries	Catalog Number	Weight (kg)	Volume (dm ³)
Mushroom Head Push Button						
	Black mushroom head push button 1NO + 1NC momentary contacts		2 x M20	U41W2 B3	0.48	2.5
	Red mushroom head push button 1NC momentary contact		2 x M20	U41W2 R9	0.48	2.5
Key Push Button						
	With key removable in both positions 1NO + 1NC maintained contacts		2 x M20	U41W2 E3	0.48	2.5
Pilot Light						
	1x red pilot light (1)		2 x M20	U41W2 PR	0.48	2.5
	1x green pilot light (1)		2 x M20	U41W2 PG	0.48	2.5
	1x blue pilot light (1)		2 x M20	U41W2 PB	0.48	2.5
	1x yellow pilot light (1)		2 x M20	U41W2 PY	0.48	2.5
	1x white pilot light (1)		2 x M20	U41W2 PW	0.48	2.5
	(1) 12 Vac to 254 Vac 50/60 Hz - 12 Vdc to 60 Vdc					
2-Position Selector Switch						
	2 fixed positions '0 - I' 1NO + 1NC contacts		2 x M20	U41W2 H3	0.48	2.5
3-Position Selector Switch						
	3 fixed positions 'I - 0 - II' 2NO contact		2 x M20	U41W2 J1	0.48	2.5
	3 positions 'I - 0 - II' With spring return from I to 0 1NO + 1NC contacts		2 x M20	U41W2 N3	0.48	2.5
	3 positions 'I - 0 - II' With spring return from II to 0 1NO + 1NC contacts		2 x M20	U41W2 M3	0.48	2.5

Additional combinations available, please refer to Unicode 2 Series - Customized Control Stations section

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Polyamide Control Stations

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

IP66 – IK10

Ordering Information - Continued:

Size 2 Polyamide Control Station:

Standard equipment: 1 white self-adhesive laminated plastic nameplate, 2 x M20 bottom clearance entries, 1 blanking plug, 1 cable gland in polyamide (Ø 6.5 to 14.5 mm), 2 locknuts.



Version	Description/ Function	Diagram	Bottom Entries	Catalog Number	Weight (kg)	Volume (dm ³)
Twin Push Buttons						
	1x green push button 'I' with 1NO contact 1x red push button 'O' with 1NC contact Momentary contacts		2 x M20	U42W2 A5A9	0.62	2.5
	1x green push button 'I' with 1NO + 1NC contacts 1x red push button 'O' with 1NO + 1NC contacts Momentary contacts		2 x M20	U42W2 A3A3	0.62	2.5
Push Button + Push-Pull Emergency Stop						
	1x green push button 'I' with 1NO momentary contact 1x red mushroom head push-pull with 1NC maintained contact		2 x M20	U42W2 A5D9	0.62	2.5
	1x green push button 'I' with 1NO + 1NC momentary contacts 1x red mushroom head push-pull with 1NO + 1NC maintained contacts		2 x M20	U42W2 A3D3	0.62	2.5
Pilot Light + Push Button						
	1x green light (1) 1x green push button 'I' with 1NO Momentary contact		2 x M20	U42W2 PGA5	0.62	2.5
	1x green light (1) 1x green push button 'I' with 1NO + 1NC Momentary contacts		2 x M20	U42W2 PGA3	0.62	2.5
	1x red light (1) 1x red push button 'O' with 1NC Momentary contact		2 x M20	U42W2 PRA9	0.62	2.5
	1x red light (1) 1x red push button 'O' with 1NO + 1NC Momentary contacts		2 x M20	U42W2 PRA3	0.62	2.5

(1) 12 Vac to 254 Vac 50/60 Hz - 12 Vdc to 60 Vdc

Additional combinations available, please refer to Unicode 2 Series - Customized Control Stations section

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Polyamide Control Stations

Zone 1 & 2 – 21 & 22

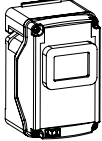
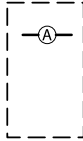
II 2 GD

ATEX / IECEx

IP66 – IK10

Ordering Information - Continued:

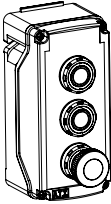
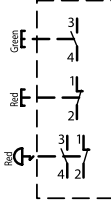
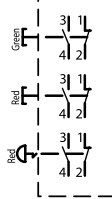


Version	Description/ Function	Diagram	Bottom Entries	Catalog Number	Weight (kg)	Volume (dm ³)
Ammeter						
	 <p>1x ammeter 48 x 48 mm, 1A C.T., 3 F.L.C., with 0 - 1 - 3 scale</p>		2 x M20	U42W2 VA13	0.56	2.5

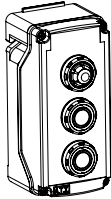
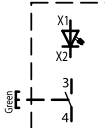
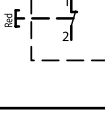
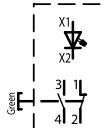
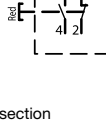
Size 3 Polyamide Control Station:

Standard equipment: 1 white self-adhesive laminated plastic nameplate, 2 x M20 bottom clearance entries, 1 blanking plug, 1 cable gland in polyamide (Ø 6.5 to 14.5 mm), 2 locknuts.



Version	Description/ Function	Diagram	Bottom Entries	Catalog Number	Weight (kg)	Volume (dm ³)
Twin Push Buttons + Push-Pull Emergency Stop						
	 <p>1x green push button 'I' with 1NO contact 1x red push button 'O' with 1NC contact Momentary contacts 1x red mushroom head push-pull emergency button with 1NO + 1NC maintained contacts</p>		2 x M20	U43W2 A5A9D3	0.78	2.5
	<p>1x green push button 'I' with 1NO + 1NC contacts 1x red push button 'O' with 1NO + 1NC contacts Momentary contacts 1x red mushroom head push-pull emergency button with 1NO + 1NC maintained contacts</p>		2 x M20	U43W2 A3A3D3	0.78	2.5

Pilot Light + Twin Push Buttons

	 <p>1x green light (1) 1x green push button 'I' with 1NO contact 1x red push button 'O' with 1NC contact Momentary contacts</p>		2 x M20	U43W2 PGA5A9	0.78	2.5
	<p>1x red light (1) 1x green push button 'I' with 1NO contact 1x red push button 'O' with 1NO contact Momentary contacts</p>		2 x M20	U43W2 PRA5A9	0.78	2.5
	<p>1x green light (1) 1x green push button 'I' with 1NO + 1NC contacts 1x red push button 'O' with 1NO + 1NC contacts Momentary contacts</p>		2 x M20	U43W2 PGA3A3	0.78	2.5
	<p>1x red light (1) 1x green push button 'I' with 1NO + 1NC contacts 1x red push button 'O' with 1NO + 1NC contacts Momentary contacts</p>		2 x M20	U43W2 PRA3A3	0.78	2.5

(1) 12 Vac to 254 Vac 50/60 Hz - 12 Vdc to 60 Vdc

Additional combinations available, please refer to Unicode 2 Series - Customized Control Stations section

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Polyamide Control Stations

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

IP66 – IK10

Ordering Information - Continued:

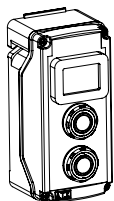
Size 3 Polyamide Control Station:

Standard equipment: 1 white self-adhesive laminated plastic nameplate, 2 x M20 bottom clearance entries, 1 blanking plug, 1 cable gland in polyamide (Ø 6.5 to 14.5 mm), 2 locknuts.

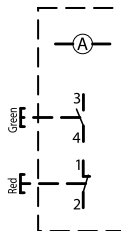


Version	Description/ Function	Diagram	Bottom Entries	Catalog Number	Weight (kg)	Volume (dm ³)
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Ammeter + Twin Push Buttons



1x ammeter 48 x 48 mm, 1A C.T.,
3 F.L.C., with 0 - 1 - 3 scale
1x green push button 'I' with 1NO contact
1x red push button 'O' with 1NC contact
Momentary contacts



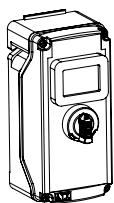
2 x M20

U43W2 VA13A5A9

0.80

2.5

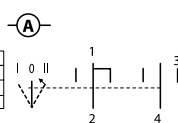
Ammeter + 3-Position Selector Switch



1x ammeter 48 x 48 mm, 1A C.T.,
3 F.L.C., with 0 - 1 - 3 scale
1x 3-position selector switch 'I - 0 - II'
with spring return from II to 0
1NO + 1NC contacts

	1-2	3-4
I		
0	X	
II	X	X

"NC" "NO"



2 x M20

U43W2 VA13M3

0.80

2.5

Additional combinations available, please refer to Unicode 2 Series - Customized Control Stations section

Special Accessories for Polyamide Enclosure:

Brass Earthing Plate for 2 x M20



Equipped with 2 earth connections

098661

Tube or Fame Fixing



FOR SIZE 1 ONLY
For all tube (diameter ≥ 80 mm)
Using a metal strip (not supplied) maximum width 22 mm

098656

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Polyamide Control Stations

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

IP66 – IK10

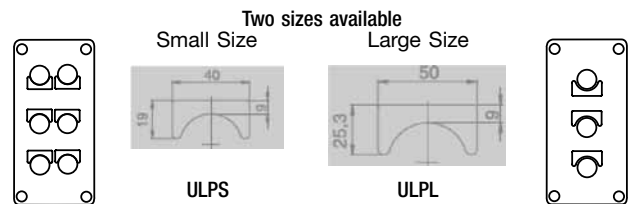
Accessories:

Description	Color	Catalog Number	Pack
Nameplates (set of 10)			
Blank self-adhesive, laminated plastic 58 x 18 mm	White (black letters)	UNPW	1
	Yellow (black letters)	UNPY	1
	Red (white letters)	UNPR	1
	Blue (white letters)	UNPB	1
	Black (white letters)	UNPN	1
	Green (white letters)	UNPG	1

Standard Legend Plates:

Self-adhesive yellow laminated plastic (black lettering)

Text	Small	Large	Pack
Blank (set of 10)	ULPS	ULPL	1
ON	ULPSA 01	ULPLA 01	1
OFF	ULPSA 02	ULPLA 02	1
FORWARD	ULPSA 03	ULPLA 03	1
REVERSE	ULPSA 04	ULPLA 04	1
JOG	ULPSA 05	ULPLA 05	1
RUN	ULPSA 06	ULPLA 06	1
START	ULPSA 07	ULPLA 07	1
STOP	ULPSA 08	ULPLA 08	1
UP	ULPSA 09	ULPLA 09	1
DOWN	ULPSA 10	ULPLA 10	1
FAST	ULPSA 11	ULPLA 11	1
SLOW	ULPSA 12	ULPLA 12	1
RAISE	ULPSA 13	ULPLA 13	1
LOWER	ULPSA 14	ULPLA 14	1
OPEN	ULPSA 15	ULPLA 15	1
CLOSE	ULPSA 16	ULPLA 16	1
LOW	ULPSA 17	ULPLA 17	1
HIGH	ULPSA 18	ULPLA 18	1
TEST	ULPSA 19	ULPLA 19	1
RESET	ULPSA 20	ULPLA 20	1
EMERGENCY STOP	ULPSA 21	ULPLA 21	1
MARCHE	ULPSA 22	ULPLA 22	1
ARRET	ULPSA 23	ULPLA 23	1
ARRET D'URGENCE	ULPSA 24	ULPLA 24	1
HAUT	ULPSA 25	ULPLA 25	1
BAS	ULPSA 26	ULPLA 26	1



Text	Small	Large	Pack
O - I	ULPSH 01	ULPLH 01	1
ON - OFF	ULPSH 02	ULPLH 02	1
START - STOP	ULPSH 03	ULPLH 03	1
STOP - START	ULPSH 04	ULPLH 04	1
HAND - AUTO	ULPSH 05	ULPLH 05	1
MANU - AUTO	ULPSH 06	ULPLH 06	1
FORWARD - REVERSE	ULPSH 07	ULPLH 07	1
REMOTE - LOCAL	ULPSH 08	ULPLH 08	1
MARCHE - ARRET	ULPSH 09	ULPLH 09	1

Text	Small	Large	Pack
I - O - II	ULPSJ 01	ULPLJ 01	1
OFF - O - ON	ULPSJ 02	ULPLJ 02	1
START - NORMAL - STOP	ULPSJ 03	ULPLJ 03	1
HAND - OFF - AUTO	ULPSJ 04	ULPLJ 04	1
MANU - O - AUTO	ULPSJ 05	ULPLJ 05	1
FORWARD - OFF - REVERSE	ULPSJ 06	ULPLJ 06	1
LOCAL - REMOTE - AUTO	ULPSJ 07	ULPLJ 07	1
LOCAL - O - REMOTE	ULPSJ 08	ULPLJ 08	1
MARCHE - NORMAL - ARRET	ULPSJ 09	ULPLJ 09	1

Inserts for Push button (set of 5):

Marking	Color	Catalog Number	Pack
(unmarked)	Green	UIA G	1
(unmarked)	Red	UIA R	1
(unmarked)	Yellow	UIA Y	1
(unmarked)	White	UIA W	1
(unmarked)	Blue	UIA B	1
(unmarked)	Black	UIA N	1
ON	Green	UIA 01	1
OFF	Red	UIA 02	1
START	Green	UIA 03	1
STOP	Red	UIA 04	1
MARCHE	Green	UIA 05	1
ARRET	Red	UIA 06	1
I	Green	UIA 07	1
O	Red	UIA 08	1

Inserts for Illuminated Push button (set of 5):

Marking	Color	Catalog Number	Pack
(unmarked)	Green	UII G	1
(unmarked)	Red	UII R	1
(unmarked)	Yellow	UII Y	1
(unmarked)	White	UII W	1
(unmarked)	Blue	UII B	1
ON	Green	UII 01	1
OFF	Red	UII 02	1
START	Green	UII 03	1
STOP	Red	UII 04	1
MARCHE	Green	UII 05	1
ARRET	Red	UII 06	1
I	Green	UII 07	1
O	Red	UII 08	1

Spare Key

For all key-operated buttons.

Description	Catalog Number	Pack
Spare key type 4 A 185	SK4A185	1

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Polyamide Control Stations


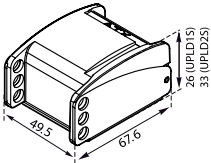




Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

IP66 – IK10

Accessories - Continued:

	Description	Catalog Number
	<p>Additional Contacts Each actuator is capable of activating 3 contacts. Exception: Illuminated push button and all actuators with key: 2 contacts maximum</p> <p>1NO contact 1NC contact</p>	<p>UCB5R UCB9R</p>
	<p>Yellow Guard Mushroom head protection for emergency stop</p>	098657
	<p>Padlockable Guard Stainless steel and plastic cover, capacity: 3 padlocks dia. 6 mm maximum (not supplied)</p> <p>For push button and rotary actuator</p>	UPLD1S
	<p>For mushroom head actuator</p>	UPLD2S
	<p>Cable Gland Exe For unarmored cable Exe - IP66 - in polyamide entry thread seal</p> <p>M20 (capacity 6.5-14.5 mm)</p>	095605
	For armored cable Exe / Exd - IP66 - in nickel plated brass (without entry thread seal)	
	<p>Braid and Tape type: M20 (inner: 6.4-14.0 / outer: 12.5-20.9 mm)</p>	20E1FX5
	<p>Single Wired Armor (SWA): M20 (inner: 6.4-14.0 / outer: 12.5-20.9 mm)</p>	20E1FW5
	<p>Adaptors Exd / Exe - IP66 in nickel plated brass (without entry thread seal)</p> <p>Male M20 - Female 1/2" NPT Male M20 - Female 3/4" NPT</p>	<p>737DM2T15 737DM2T25</p>
	<p>Entry Thread Seal</p> <p>M20 (in black neoprene)</p> <p>M20 (in white nylon)</p>	<p>20ETS 20ETS2</p>
	<p>Combination Drain and Breather Exe - IP66 - supplied with entry thread seal and locknut</p> <p>M20 male thread in Polyamide M20 male thread in Brass M20 male thread in Stainless Steel</p>	<p>DBE20P DBE20B DBE20S</p>
	<p>Feedthrough Earth Stud Terminal Exe - IP66 – supplied with weatherproof seal and green/yellow earth conductor (length 300 mm)</p> <p>M20 with M5 earth and 2.5 mm² conductor</p>	PREESTM20

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Polyamide Control Stations

Zone 1 & 2 – 21 & 22

⊕ II 2 GD

ATEX / IECEx

IP66 – IK10

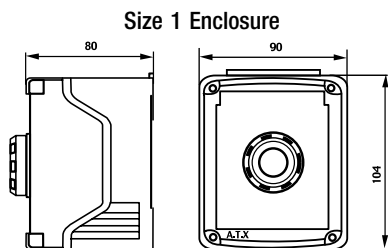
Compliances:

Hazardous Area	Gas	Dust
Certified Type	PCe	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex de IIC / Ex demb IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	T6	N.A.
Surface Temperature	N.A.	T75°C
Ambient Temperature	-20°C to +55°C	
CE Declaration of Conformity	50221	
ATEX Certificate	LCIE 00 ATEX 6047	
IEC Certificate	LCIE Ex 00.017	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK09	

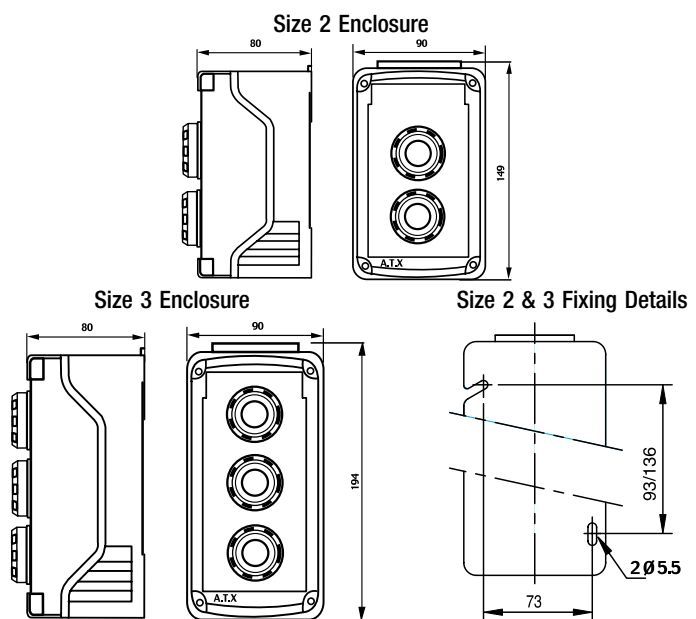
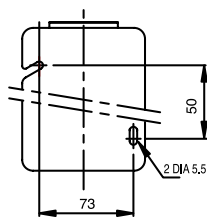
Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 60079-7; 60079-18; 61241-0; 61241-1
Product Standards	EN / IEC 60947-1; 60947-5
EMC Standards	–
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Dimensions (mm):



Size 1 Fixing Details



Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Polyester Control Stations



U22W2 PGA5



U23W2 PRA3A3



U21W2 D3



U21W2 J1

Compliance Data:

ATEX – IECEx:



Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IECEx	CE
Ex de IIC / Ex demb IIC	T6	Ex tD A21	T75°C	IP66 - IK10

Voltage and Amperage:

Voltage	Amperage	Pilot Light Voltage
Up to 500 V	16 A	12 Vac to 250 Vac 50/60 Hz and 12 Vdc to 60 Vdc

Operating Temperature:

-55°C to +60°C				
-40°C to +60°C				
-25°C to +60°C				
(depending on type of actuator)				

CONTROL STATIONS & SWITCHES

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Polyester Control Stations

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

IP66 – IK10

Applications:

- Local control stations and motor control stations for use in hazardous areas covering the broadest possible range of applications.
- Control of equipment at power plants, chemical and petrochemical plants, petroleum refineries, reverse osmosis plants, pulp and paper processing plants and various industrial applications.
- Push buttons and selector switches are used in conjunction with contactors or magnetic starters for remote control of motors in hazardous locations. They provide circuit control and/or selection.
- Pilot lights provide visual assurance that an electrical function is being performed at a remote or hazardous location.
- For use in wash down areas.

Features:

- Employs Ex de (factory sealed) operators including push buttons, illuminated push buttons, selector switches, control and load break switches, contact blocks, pilot lights (LED), and terminal blocks.
- Pilot light employs high intensity single LED with lifetime of 100,000 hours that can be used at 12 Vac to 254 Vac 50/60 Hz, 12 Vdc to 60 Vdc.
- Enclosures are rated for IP66 with firmly secured gasket.
- Operators and contact blocks are spaced so as to have easy and ample space for wiring.
- Wide selection of cable glands, union adapter entries at top and bottom locations.
- Choice of DIN rail mounted high performance contact block suitable for low intensity (less than 5mA).
- TS35 rail mounted components held securely in place during operation and easily removed for service.
- Brass inserts are provided for TS35 DIN rails or mounting plate to be installed inside the enclosure.
- Captive, corrosion resistant stainless steel cover screws.

Standard Material of Fixtures:

- Fiberglass reinforced polyester, black finish.
- Stainless steel cover screws.
- Polyamide cable gland and blanking plug.

Accessories:

- Key for changing actuator blocks.
- Guard for mushroom head actuator.
- Padlockable guard.
- M5 and M6 earth stud.
- Combination drain and breather available in brass, polyamide and stainless steel.

Options:

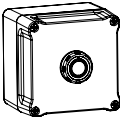
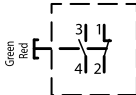
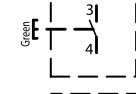
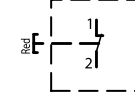
- Nameplates: Lamacoid with different color combinations. Stainless steel.
- Padlocking facility at left, center, right or any position on selector switches.
- Padlocking facility for momentary and maintained push buttons.
- Special contact arrangements available upon request, see options for details.

Ordering Information:

Size 1 Polyester Control Station:

Standard equipment: 1 white self-adhesive laminated plastic nameplate, 1 brass earth continuity plate, 2 bottom threaded entries, 1 blanking plug, 1 cable gland in polyamide.



Version	Description/ Function	Diagram	Bottom Entries	Catalog Number	Weight (kg)	Volume (dm ³)
Impulse Push Button						
	Green insert 'I' + red insert 'O' with 1NO + 1NC momentary contact		2 x M20	U21W2 A3	1	4
			2 x M25	U21W4 A3	1	4
	1x green push button 'I' with 1NO momentary contact		2 x M20	U21W2 A5	1	4
			2 x M25	U21W4 A5	1	4
	1x red push button 'O' with 1NC momentary contact		2 x M20	U21W2 A9	1	4
			2 x M25	U21W4 A9	1	4

Additional combinations available, please refer to Unicode 2 Series - Customized Control Stations section

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Polyester Control Stations

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

IP66 – IK10

Ordering Information - Continued:

Size 1 Polyester Control Station:

Standard equipment: 1 white self-adhesive laminated plastic nameplate,
1 brass earth continuity plate, 2 bottom threaded entries, 1 blanking plug,
1 cable gland in polyamide.



Version	Description/ Function	Diagram	Bottom Entries	Catalog Number	Weight (kg)	Volume (dm ³)
Twin Impulse Push Buttons						
	1x green push button 'I' with 1NO contact		2 x M20	U21W2 A5A9	1.1	4
	1x red push button 'O' with 1NC contact		2 x M25	U21W4 A5A9	1.1	4
	1x green push button 'I' with 1NO + 1NC contact		2 x M20	U21W2 A3A3	1.1	4
	1x red push button 'O' with 1NO + 1NC contact		2 x M25	U21W4 A3A3	1.1	4
Emergency Stop						
	Red mushroom head push-pull		2 x M20	U21W2 D9	1	4
	1NC maintained contact		2 x M25	U21W4 D9	1	4
	Red mushroom head push-pull		2 x M20	U21W2 D3	1	4
	1NO + 1NC maintained contact		2 x M25	U21W4 D3	1	4
	Red mushroom head key release		2 x M20	U21W2 C9	1	4
	1NC maintained contact		2 x M25	U21W4 C9	1	4
	Red mushroom head key release		2 x M20	U21W2 C3	1	4
	1NO + 1NC maintained contact		2 x M25	U21W4 C3	1	4
Push Pull Emergency Stop + Push Button						
	1x red mushroom head push-pull with 1NC maintained contact		2 x M20	U21W2 D9A5	1.1	4
	1x green push button 'I' with 1NO momentary contact		2 x M25	U21W4 D9A5	1.1	4
Mushroom Head Push Button						
	Black mushroom head push button		2 x M20	U21W2 B3	1	4
	1NO + 1NC momentary contact		2 x M25	U21W4 B3	1	4
	Red mushroom head push button		2 x M20	U21W2 R9	1	4
	1NC momentary contact		2 x M25	U21W4 R9	1	4

Additional combinations available, please refer to Unicode 2 Series - Customized Control Stations section

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Polyester Control Stations

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx


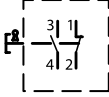
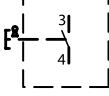
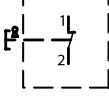
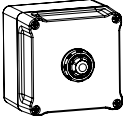

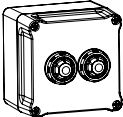
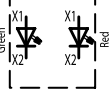
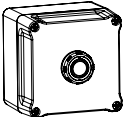
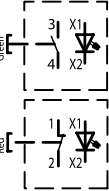
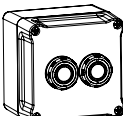
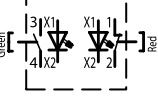
IP66 – IK10

Ordering Information - Continued

Size 1 Polyester Control Station:

Standard equipment: 1 white self-adhesive laminated plastic nameplate,
1 brass earth continuity plate, 2 bottom threaded entries, 1 blanking plug,
1 cable gland in polyamide.



Version	Description/ Function	Diagram	Bottom Entries	Catalog Number	Weight (kg)	Volume (dm ³)
Key Push Button						
	With key removable in both positions 1NO + 1NC maintained contact		2 x M20 2 x M25	U21W2 E3 U21W4 E3	1 1	4 4
	With key removable in both positions 1NO maintained contact		2 x M20 2 x M25	U21W2 E5 U21W4 E5	1 1	4 4
	With key removable in both positions 1NC maintained contact		2 x M20 2 x M25	U21W2 E9 U21W4 E9	1 1	4 4
Pilot Light						
	1x red pilot light (1)		2 x M20 2 x M25	U21W2 PR U21W4 PR	1 1	4 4
	1x green pilot light (1)		2 x M20 2 x M25	U21W2 PG U21W4 PG	1 1	4 4
	1x blue pilot light (1)		2 x M20 2 x M25	U21W2 PB U21W4 PB	1 1	4 4
	1x yellow pilot light (1)		2 x M20 2 x M25	U21W2 PY U21W4 PY	1 1	4 4
	1x white pilot light (1) (1) 12 Vac to 254 Vac 50/60 Hz - 12 Vdc to 60 Vdc		2 x M20 2 x M25	U21W2 PW U21W4 PW	1 1	4 4
Twin Pilot Lights						
	1x green pilot light (1)		2 x M20	U21W2 PGPR	1.1	4
	1x red pilot light (1) (1) 12 Vac to 254 Vac 50/60 Hz - 12 Vdc to 60 Vdc		2 x M25	U21W4 PGPR	1.1	4
Illuminated Push Button						
	1x green illuminated (1) push button with 1NO momentary contact		2 x M20 2 x M25	U21W2 LG5 U21W4 LG5	1 1	4 4
	1x red illuminated (1) push button with 1NC momentary contact (1) 12 Vac to 254 Vac 50/60 Hz - 12 Vdc to 60 Vdc		2 x M20 2 x M25	U21W2 LR9 U21W4 LR9	1 1	4 4
Twin Illuminated Push Buttons						
	1x green illuminated push button with 1NO contact 1x red illuminated push button with 1NC contact Momentary contacts (1) 12 Vac to 254 Vac 50/60 Hz - 12 Vdc to 60 Vdc		2 x M20 2 x M25	U21W2 LG5LR9 U21W4 LG5LR9	1.1 1.1	4 4

Additional combinations available, please refer to Unicode 2 Series - Customized Control Stations section

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Polyester Control Stations

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

IP66 – IK10

Ordering Information - Continued

Size 1 Polyester Control Station:

Standard equipment: 1 white self-adhesive laminated plastic nameplate, 1 brass earth continuity plate, 2 bottom threaded entries, 1 blanking plug, 1 cable gland in polyamide.



Version	Description/ Function	Diagram	Bottom Entries	Catalog Number	Weight (kg)	Volume (dm ³)
2-Position Selector Switch						
	2 fixed positions '0 - I' 1NO + 1NC contact		2 x M20	U21W2 H3	1	4
			2 x M25	U21W4 H3	1	4
3-Position Selector Switch						
	3 fixed positions 'I - 0 - II' 2NO contact		2 x M20	U21W2 J1	1	4
			2 x M25	U21W4 J1	1	4
			3 positions 'I - 0 - II' with spring return from I to 0 1NO + 1NC contact		2 x M20	U21W2 N3
2 x M25	U21W4 N3	1			4	
3 positions 'I - 0 - II' with spring return from II to 0 1NO + 1NC contact		2 x M20	U21W2 M3	1	4	
		2 x M25	U21W4 M3	1	4	

Size 2 Polyester Control Station:

Standard equipment: 1 white self-adhesive laminated plastic nameplate, 1 brass earth continuity plate, 2 bottom threaded entries, 1 blanking plug, 1 cable gland in polyamide.



Version	Description/ Function	Diagram	Bottom Entries	Catalog Number	Weight (kg)	Volume (dm ³)		
Twin Push Buttons								
	1x green push button 'I' with 1NO contact 1x red push button 'O' with 1NC contact Momentary contacts		2 x M20	U22W2 A5A9	1.2	4		
			2 x M25	U22W4 A5A9	1.2	4		
			1x green push button 'I' with 1NO + 1NC contact 1x red push button 'O' with 1NO + 1NC contact Momentary contacts		2 x M20	U22W2 A3A3	1.2	4
					2 x M25	U22W4 A3A3	1.2	4
Push Button + Push-Pull Emergency Stop								
	1x green push button 'I' with 1NO momentary contact 1x red mushroom head push-pull with 1NC maintained contact		2 x M20	U22W2 A5D9	1.2	4		
			2 x M25	U22W4 A5D9	1.2	4		
			1x green push button 'I' with 1NO + 1NC momentary contact 1x red mushroom head push-pull with 1NO + 1NC maintained contact		2 x M20	U22W2 A3D3	1.2	4
					2 x M25	U22W4 A3D3	1.2	4

Additional combinations available, please refer to Unicode 2 Series - Customized Control Stations section

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Polyester Control Stations

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

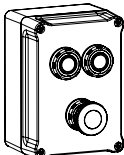
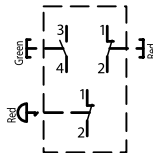
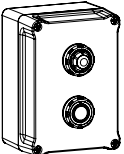
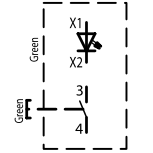
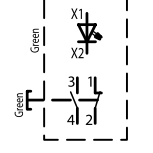
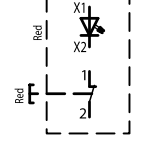
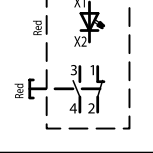
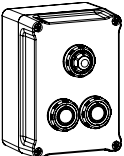
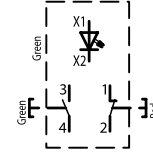
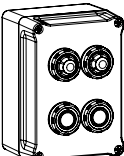
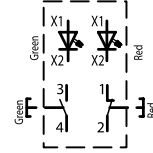
IP66 – IK10

Ordering Information - Continued

Size 2 Polyester Control Station:

Standard equipment: 1 white self-adhesive laminated plastic nameplate, 1 brass earth continuity plate, 2 bottom threaded entries, 1 blanking plug, 1 cable gland in polyamide.



Version	Description/ Function	Diagram	Bottom Entries	Catalog Number	Weight (kg)	Volume (dm ³)
Twin Push Buttons + Push-Pull Emergency Stop						
	1x green push button 'I' with 1NO contact		2 x M20	U22W2 A5A9D9	1.3	4
	1x red push button 'O' with 1NC contact Momentary contacts 1x red mushroom head push-pull with 1x NC maintained contact		2 x M25	U22W4 A5A9D9	1.3	4
Pilot Light + Push Button						
	1x green light (1) 1x green push button 'I' with 1NO Momentary contact		2 x M20	U22W2 PGA5	1.2	4
			2 x M25	U22W4 PGA5	1.2	4
	1x green light (1) 1x green push button 'I' with 1NO + 1NC Momentary contacts		2 x M20	U22W2 PGA3	1.2	4
			2 x M25	U22W4 PGA3	1.2	4
1x red light (1) 1x red push button 'O' with 1NC Momentary contact		2 x M20	U22W2 PRA9	1.2	4	
		2 x M25	U22W4 PRA9	1.2	4	
1x red light (1) 1x red push button 'O' with 1NO + 1NC Momentary contact		2 x M20	U22W2 PRA3	1.2	4	
		2 x M25	U22W4 PRA3	1.2	4	
(1) 12 Vac to 254 Vac 50/60 Hz - 12 Vdc to 60 Vdc						
Pilot Light + Twin Push Buttons						
	1x green light (1) 1x green push button 'I' with 1NO 1x red push button 'O' with 1NC Momentary contacts		2 x M20	U22W2 PGA5A9	1.3	4
			2 x M25	U22W4 PGA5A9	1.3	4
(1) 12 Vac to 254 Vac 50/60 Hz - 12 Vdc to 60 Vdc						
Twin Pilot Lights + Twin Push Buttons						
	1x green light + 1x red light (1) 1x green push button 'I' with 1NO 1x red push button 'O' with 1NC Momentary contacts		2 x M20	U22W2 PGPRA5A9	1.3	4
			2 x M25	U22W4 PGPRA5A9	1.3	4
(1) 12 Vac to 254 Vac 50/60 Hz - 12 Vdc to 60 Vdc						

Additional combinations available, please refer to Unicode 2 Series - Customized Control Stations section

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Polyester Control Stations

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

IP66 – IK10

Ordering Information - Continued

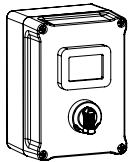
Size 2 Polyester Control Station:

Standard equipment: 1 white self-adhesive laminated plastic nameplate, 1 brass earth continuity plate, 2 bottom threaded entries, 1 blanking plug, 1 cable gland in polyamide.

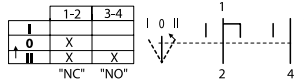


Version	Description/ Function	Diagram	Bottom Entries	Catalog Number	Weight (kg)	Volume (dm ³)
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Ammeter + 3-Position Selector Switch



1x ammeter 48 x 48 mm, 1A C.T.,
3 F.L.C., with 0 - 1 - 3 scale
1x switch 3 positions 'I - 0 - II'
with spring return from II to 0
1NO + 1NC contact



2 x M20	U22W2 VA13M3	1.2	4
2 x M25	U22W4 VA13M3	1.2	4

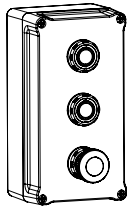
Size 3 Polyester Control Station:

Standard equipment: 1 white self-adhesive laminated plastic nameplate, 1 brass earth continuity plate, 2 bottom threaded entries, 1 blanking plug, 1 cable gland in polyamide.

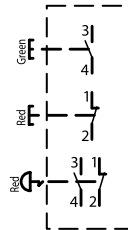


Version	Description/ Function	Diagram	Bottom Entries	Catalog Number	Weight (kg)	Volume (dm ³)
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Twin Push Buttons + Push-Pull Emergency Stop



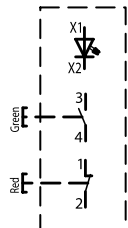
1x green push button 'I' with 1NO contact
1x red push button 'O' with 1NC contact
Momentary contacts
1x red mushroom head push-pull
Emergency button with 1NO + 1NC
Maintained contacts



2 x M20	U23W2 A5A9D3	1.4	6
2 x M25	U23W4 A5A9D3	1.4	6

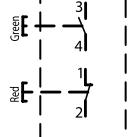
Pilot Light + Twin Push Buttons

1x green light (1)
1x green push button 'I' with 1NO contact
1x red push button 'O' with 1NC contact
Momentary contacts

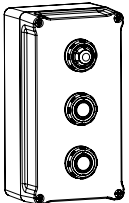


2 x M20	U23W2 PGA5A9	1.4	6
2 x M25	U23W4 PGA5A9	1.4	6

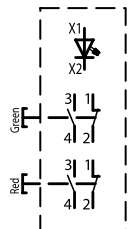
1x red light (1)
1x green push button 'I' with 1NO contact
1x red push button 'O' with 1NC contact
Momentary contacts



2 x M20	U23W2 PRA5A9	1.4	6
2 x M25	U23W4 PRA5A9	1.4	6

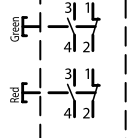


1x green light (1)
1x green push button 'I' with 1NO + 1NC contact
1x red push button 'O' with 1NO + 1NC contact
Momentary contacts



2 x M20	U23W2 PGA3A3	1.4	6
2 x M25	U23W4 PGA3A3	1.4	6

1x red light (1)
1x green push button 'I' with 1NO + 1NC contact
1x red push button 'O' with 1NO + 1NC contact
Momentary contacts



2 x M20	U23W2 PRA3A3	1.4	6
2 x M25	U23W4 PRA3A3	1.4	6

(1) 12 Vac to 254 Vac 50/60 Hz - 12 Vdc to 60 Vdc

Additional combinations available, please refer to Unicode 2 Series - Customized Control Stations section

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Polyester Control Stations

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

IP66 – IK10

Ordering Information - Continued

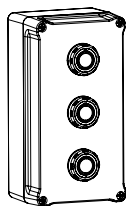
Size 3 Polyester Control Station:

Standard equipment: 1 white self-adhesive laminated plastic nameplate, 1 brass earth continuity plate, 2 bottom threaded entries, 1 blanking plug, 1 cable gland in polyamide.

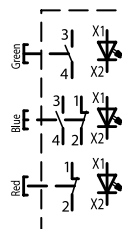


Version	Description/ Function	Diagram	Bottom Entries	Catalog Number	Weight (kg)	Volume (dm ³)
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Triple Illuminated Push Buttons



1x green illuminated push button with 1NO contact (1)
1x blue illuminated push button with 1NO + 1NC contact (1)
1x red illuminated push button with NC contact (1)
Momentary contacts



2 x M20

U23W2 LG5LB3LR9

1.4

6

2 x M25

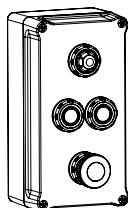
U23W4 LG5LB3LR9

1.4

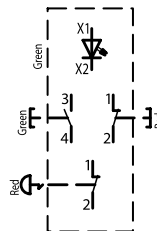
6

(1) 12 Vac to 254 Vac 50/60 Hz - 12 Vdc to 60 Vdc

Pilot Light + Twin Push Buttons + Push-Pull Emergency Stop



1x green light (1)
1x green push button 'I' with 1NO contact
1x red push button 'O' with 1NC contact
Momentary contacts
1x red mushroom head push-pull with 1x NC maintained contact



2 x M20

U23W2 PGA5A9D9

1.4

6

2 x M25

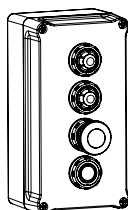
U23W4 PGA5A9D9

1.4

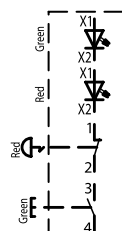
6

(1) 12 Vac to 254 Vac 50/60 Hz - 12 Vdc to 60 Vdc

Twin Pilot Lights + Push-Pull Emergency Stop + Push Button



1x green light + 1x red light (1)
1x red mushroom head push-pull with 1x NC maintained contact
1x green push button 'I'
with 1NO momentary contact



2 x M20

U23W2 PGPRD9A5

1.4

6

2 x M25

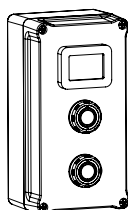
U23W4 PGPRD9A5

1.4

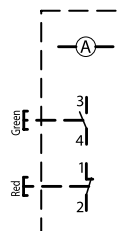
6

(1) 12 Vac to 254 Vac 50/60 Hz - 12 Vdc to 60 Vdc

Ammeter + Twin Push Buttons



1x ammeter 48 x 48 mm, 1A C.T., 3 F.L.C., with 0 - 1 - 3 scale
1x green push button 'I' with 1NO contact
1x red push button 'O' with 1NC contact
Momentary contacts



2 x M20

U23W2 VA13A5A9

1.4

6

2 x M25

U23W4 VA13A5A9

1.4

6

Additional combinations available, please refer to Unicode 2 Series - Customized Control Stations section

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ATX Product Catalog

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Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Polyester Control Stations

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

IP66 – IK10

Accessories:

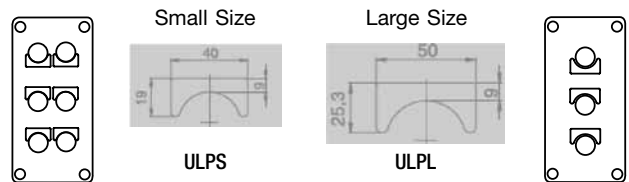
Description	Catalog Number		Pack
Nameplates (set of 10)	Color		
Blank self-adhesive laminated plastic 58 x 18 mm	White (black letters)	UNPW	1
	Yellow (black letters)	UNPY	1
	Red (white letters)	UNPR	1
	Blue (white letters)	UNPB	1
	Black (white letters)	UNPN	1
	Green (white letters)	UNPG	1

Standard Legend Plates:

Self-adhesive yellow laminated plastic (black lettering)

Text	Small	Large	Pack
Blank (set of 10)	ULPS	ULPL	1
ON	ULPSA 01	ULPLA 01	1
OFF	ULPSA 02	ULPLA 02	1
FORWARD	ULPSA 03	ULPLA 03	1
REVERSE	ULPSA 04	ULPLA 04	1
JOG	ULPSA 05	ULPLA 05	1
RUN	ULPSA 06	ULPLA 06	1
START	ULPSA 07	ULPLA 07	1
STOP	ULPSA 08	ULPLA 08	1
UP	ULPSA 09	ULPLA 09	1
DOWN	ULPSA 10	ULPLA 10	1
FAST	ULPSA 11	ULPLA 11	1
SLOW	ULPSA 12	ULPLA 12	1
RAISE	ULPSA 13	ULPLA 13	1
LOWER	ULPSA 14	ULPLA 14	1
OPEN	ULPSA 15	ULPLA 15	1
CLOSE	ULPSA 16	ULPLA 16	1
LOW	ULPSA 17	ULPLA 17	1
HIGH	ULPSA 18	ULPLA 18	1
TEST	ULPSA 19	ULPLA 19	1
RESET	ULPSA 20	ULPLA 20	1
EMERGENCY STOP	ULPSA 21	ULPLA 21	1
MARCHE	ULPSA 22	ULPLA 22	1
ARRET	ULPSA 23	ULPLA 23	1
ARRET D'URGENCE	ULPSA 24	ULPLA 24	1
HAUT	ULPSA 25	ULPLA 25	1
BAS	ULPSA 26	ULPLA 26	1

Two Sizes Available



Text	Small	Large	Pack
O - I	ULPSH 01	ULPLH 01	1
ON - OFF	ULPSH 02	ULPLH 02	1
START - STOP	ULPSH 03	ULPLH 03	1
STOP - START	ULPSH 04	ULPLH 04	1
HAND - AUTO	ULPSH 05	ULPLH 05	1
MANU - AUTO	ULPSH 06	ULPLH 06	1
FORWARD - REVERSE	ULPSH 07	ULPLH 07	1
REMOTE - LOCAL	ULPSH 08	ULPLH 08	1
MARCHE - ARRET	ULPSH 09	ULPLH 09	1

Text	Small	Large	Pack
I - O - II	ULPSJ 01	ULPLJ 01	1
OFF - O - ON	ULPSJ 02	ULPLJ 02	1
START - NORMAL - STOP	ULPSJ 03	ULPLJ 03	1
HAND - OFF - AUTO	ULPSJ 04	ULPLJ 04	1
MANU - O - AUTO	ULPSJ 05	ULPLJ 05	1
FORWARD - OFF - REVERSE	ULPSJ 06	ULPLJ 06	1
LOCAL - REMOTE - AUTO	ULPSJ 07	ULPLJ 07	1
LOCAL - O - REMOTE	ULPSJ 08	ULPLJ 08	1
MARCHE - NORMAL - ARRET	ULPSJ 09	ULPLJ 09	1

Inserts for Push button (set of 5):

Marking	Color	REF	Pack
(unmarked)	Green	UIA G	1
(unmarked)	Red	UIA R	1
(unmarked)	Yellow	UIA Y	1
(unmarked)	White	UIA W	1
(unmarked)	Blue	UIA B	1
(unmarked)	Black	UIA N	1
ON	Green	UIA 01	1
OFF	Red	UIA 02	1
START	Green	UIA 03	1
STOP	Red	UIA 04	1
MARCHE	Green	UIA 05	1
ARRET	Red	UIA 06	1
I	Green	UIA 07	1
O	Red	UIA 08	1

Inserts for Illuminated Push button (set of 5):

Marking	Color	REF	Pack
(unmarked)	Green	UIL G	1
(unmarked)	Red	UIL R	1
(unmarked)	Yellow	UIL Y	1
(unmarked)	White	UIL W	1
(unmarked)	Blue	UIL B	1
ON	Green	UIL 01	1
OFF	Red	UIL 02	1
START	Green	UIL 03	1
STOP	Red	UIL 04	1
MARCHE	Green	UIL 05	1
ARRET	Red	UIL 06	1
I	Green	UIL 07	1
O	Red	UIL 08	1

Spare Key:

For all key-operated buttons.

Description	REF	Pack
Spare key type 4 A 185	SK4A185	1

Earth Continuity Brass Plate:

Description	REF	Pack
2 x M20	U2EP2M20	1
2 x M25	U2EP2M25	1

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Polyester Control Stations



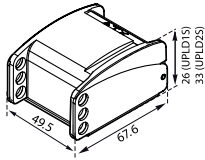






Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

IP66 – IK10

Accessories - Continued:

	Description	Catalog Number
	<p>Additional Contacts Each actuator is capable of activating 3 contacts. Exception: Illuminated push button and all actuators with key: 2 contacts maximum</p> <p>1NO contact 1NC contact</p>	UCB5R UCB9R
	<p>Yellow Guard Mushroom head protection for emergency stop</p>	098657
	<p>Padlockable Guard Stainless steel body and plastic cover. Capacity: 3 padlocks dia. 6 mm maximum (not supplied)</p> <p>For push button and rotary actuator</p>	UPLD1S
	<p>For mushroom head actuator</p>	UPLD2S
	<p>Cable Gland Exe For unarmored cable Exe - IP66 - in polyamide with entry thread seal</p> <p>M20 (capacity 6.5-14.5 mm) M25 (capacity 8-18.5 mm)</p> <p>For armored cable Exe / Exd - IP66 - in nickel plated brass (without entry thread seal)</p>	095605 095606
	<p>Braid and Tape type: M20 (inner: 6.4-14.0 / outer: 12.5-20.9 mm) M25 (inner: 11.1-20.0 / outer: 18.2-26.2 mm)</p> <p>Single Wired Armor (SWA): M20 (inner: 6.4-14.0 / outer: 12.5-20.9 mm) M25 (inner: 11.1-20.0 / outer: 18.2-26.2 mm)</p>	20E1FX5 25E1FX5 20E1FW5 25E1FW5
	<p>Adaptors Exd & Exe - IP66 in nickel plated brass (without entry thread seal)</p> <p>Male M20 - Female 1/2" NPT Male M20 - Female 3/4" NPT</p> <p>Male M25 - Female 1" NPT Male M25 - Female 3/4" NPT</p>	737DM2T15 737DM2T25 737DM3T35 737DM3T25
	<p>Entry Thread Seal M20 (in black neoprene) M25 (in black neoprene)</p> <p>M20 (in white nylon) M25 (in white nylon)</p>	20ETS 25ETS 20ETS2 25ETS2
	<p>Combination Drain and Breather Exe - IP66 - supplied with entry thread seal and locknut</p> <p>M20 male thread in polyamide M20 male thread in brass M20 male thread in stainless steel</p>	DBE20P DBE20B DBE20S
	<p>Feedthrough Earth Stud Terminal Exe - IP66 – supplied with entry thread seal, locknut and green/yellow earth conductor (length 300 mm)</p> <p>M20 with M5 earth and 2.5 mm² conductor M25 with M6 earth and 6 mm² conductor</p>	PREESTM20 PREESTM25

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Polyester Control Stations



Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

IP66 – IK10

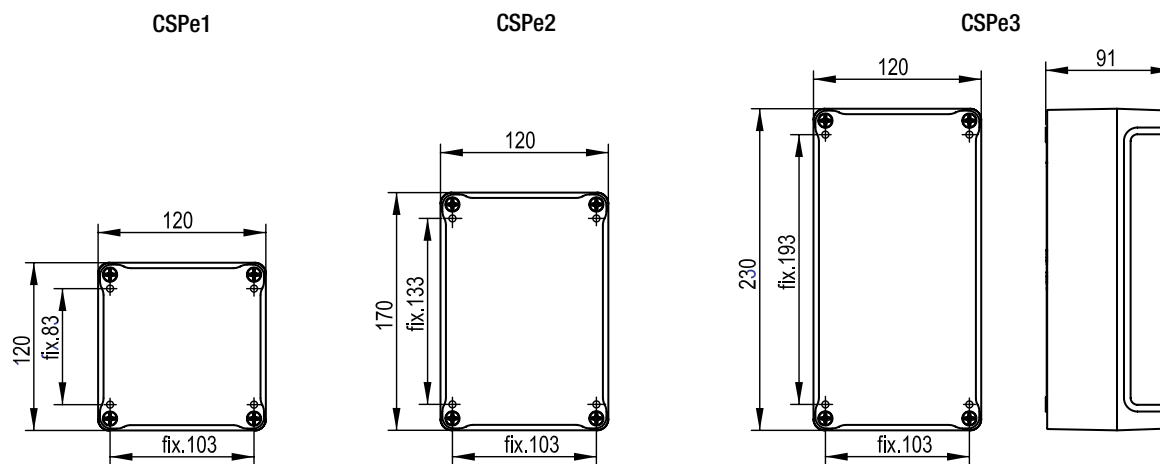
Compliances:

Hazardous Area	Gas	Dust
Certified Type	CSPe	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081  II 2 G	CE 0081  II 2 D
Symbol of Protection ATEX	Ex de IIC / Ex demb IIC	Ex td A21
Symbol of Protection IEC		
T Rating	T6	N.A.
Surface Temperature	N.A.	T75°C
Ambient Temperature	-55°C to +60°C	
CE Declaration of Conformity	50284	
ATEX Certificate	LCIE 09 ATEX 3032X	
IECEx Certificate	IECEx LCI 09.0016X	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 60079-7; 60079-18; 61241-0 ; 61241-1
Product Standards	EN / IEC 60947-1; 60947-5
EMC Standards	–
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Dimensions (mm):



Fixing Details for Above Boxes: Four Holes Ø 5

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Stainless Steel Control Stations



U62W2 PRA5A9

Compliance Data:

ATEX – IEC:



Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IEC	CE
Ex de IIC / Ex demb IIC	T6 to T5	Ex td A21	T80°C to T95°C	IP66 – IK10

Voltage and Amperage:

Voltage	Amperage	Pilot Light Voltage	
Up to 500 V	16 A	12 Vac to 254 Vac 50/60 Hz and 12 Vdc to 60 Vdc	

Operating Temperature:

-50°C to +60°C				
-40°C to +60°C				
-25°C to +60°C				
(depending on type of actuator)				

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Stainless Steel Control Stations

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IEC

IP66 – IK10

Applications:

- Local control stations and motor control stations for use in hazardous areas covering the broadest possible range of applications.
- Control of equipment at power plants, chemical and petrochemical plants, petroleum refineries, reverse osmosis plants, pulp and paper processing plants and various industrial applications.
- Push buttons and selector switches are used in conjunction with contactors or magnetic starters for remote control of motors in hazardous locations. They provide circuit control and/or selection.
- Pilot lights provide visual assurance that an electrical function is being performed at a remote or hazardous location.
- For use in wash down areas.

Features:

- Employs Ex de (factory sealed) operators including push buttons, illuminated push buttons, selector switches, control and load break switches, contact blocks, pilot lights (LED), and terminal blocks.
- Pilot light employs high intensity single LED with lifetime of 100,000 hours that can be used at 12 Vac to 254 Vac 50/60 Hz, 12 Vdc to 60 Vdc.
- Enclosures are rated for IP66 with firmly secured gasket.
- Operators and contact blocks are spaced so as to have easy and ample space for wiring.
- Wide selection of cable glands, union adapter entries at top and bottom locations.
- Choice of DIN rail mounted high performance contact block suitable for low intensity (less than 5 mA).

- TS35 rail mounted components held securely in place during operation and easily removed for service.
- Brass inserts are provided for TS35 DIN rails or mounting plate to be installed inside the enclosure.
- Captive, corrosion resistant stainless steel cover screws.

Standard Material of Fixtures:

- 316L stainless steel, natural finish.
- Stainless steel cover screws.
- Polyamide cable gland and blanking plug.

Accessories:

- Key for changing actuator blocks.
- Guard for mushroom head actuator.
- Padlockable guard.
- M6 earth stud.
- Combination drain and breather available in brass, polyamide, and stainless steel.

Options:

- Nameplates: Lamacoid with different color combinations. Stainless steel.
- Padlocking facility at left, center, right or any position on selector switches.
- Padlocking facility for momentary and maintained push buttons.
- Special contact arrangements available upon request, see options for details.

Ordering Information:

Size 1 – 316L Stainless Steel Control Station:

Standard equipment: 1 white self-adhesive laminated plastic nameplate, 2 x M20 bottom clearance entries, 1 blanking plug, 1 cable gland in polyamide, 2 locknuts.



Version	Description/ Function	Diagram	Bottom entries	Catalog Number	Weight (kg)	Volume (dm ³)
Impulse Push Button						
	Green insert 'I' + red insert 'O' with 1NO + 1NC momentary contacts		2 x M20	U61W2 A3	1.2	4.3
Twin Impulse Push Buttons						
	1x green push button 'I' with 1NO contact 1x red push button 'O' with 1NC contact Momentary contacts		2 x M20	U61W2 A5A9	1.3	4.3
Emergency Stop						
	Red mushroom head push-pull 1NC maintained contact		2 x M20	U61W2 D9	1.2	4.3
	Red mushroom head push-pull 1NO + 1NC maintained contacts		M20	U61W2 D3	1.2	4.3

Additional combinations available, please refer to Unicode 2 Series – Customized Control Stations Section

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Stainless Steel Control Stations

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IEC

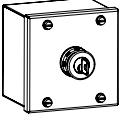
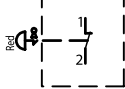
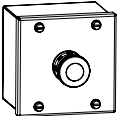
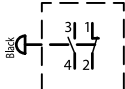
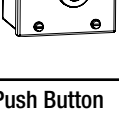
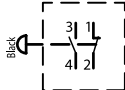
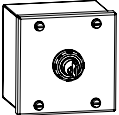
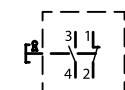
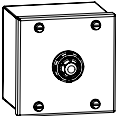
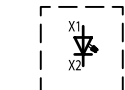
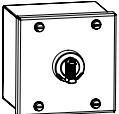
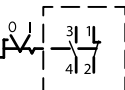
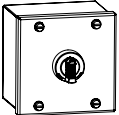
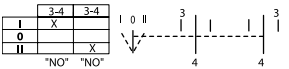
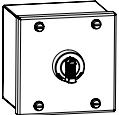

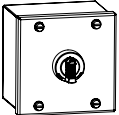
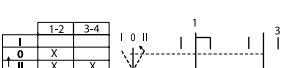
IP66 – IK10

Ordering Information - Continued:

Size 1 – 316 L Stainless Steel Control Station:

Standard equipment: 1 white self-adhesive laminated plastic nameplate, 2 x M20 bottom clearance entries, 1 blanking plug, 1 cable gland in polyamide, 2 locknuts.



Version	Description/ Function	Diagram	Bottom entries	Catalog Number	Weight (kg)	Volume (dm ³)
Emergency Stop						
	Red mushroom head key release 1NC maintained contact		2 x M20	U61W2 C9	1.2	4.3
Mushroom Head Push Button						
	Black mushroom head push button 1NO + 1NC momentary contacts		2 x M20	U61W2 B3	1.2	4.3
	Red mushroom head push button 1NC momentary contact		2 x M20	U61W2 R9	1.2	4.3
Key Push Button						
	With key removable in both positions 1NO + 1NC maintained contacts		2 x M20	U61W2 E3	1.2	4.3
Pilot Light						
	1x red pilot light (1) 1x green pilot light (1) 1x blue pilot light (1) 1x yellow pilot light (1) 1x white pilot light (1)		2 x M20	U61W2 PR U61W2 PG U61W2 PB U61W2 PY U61W2 PW	1.2	4.3
	(1) 12 Vac to 254 Vac 50/60 Hz - 12 Vdc to 60 Vdc					
2-Position Selector Switch						
	2 fixed positions '0 - I' 1NO + 1NC contacts		2 x M20	U61W2 H3	1.2	4.3
3-Position Selector Switch						
	3 fixed positions 'I - 0 - II' 2NO contacts		2 x M20	U61W2 J1	1.2	4.3
	3 fixed positions 'I - 0 - II' With spring return from I to 0 1NO + 1NC contacts		2 x M20	U61W2 N3	1.2	4.3
	3 positions 'I - 0 - II' With spring return from II to 0 1NO + 1NC contacts		2 x M20	U61W2 M3	1.2	4.3

Additional combinations available, please refer to Unicode 2 Series – Customized Control Stations Section

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Stainless Steel Control Stations

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IEC

IP66 – IK10

Ordering Information – Continued:

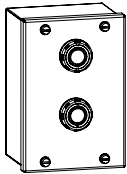
Size 2 - 316 L Stainless Steel Control Station:

Standard equipment: 1 white self-adhesive laminated plastic nameplate, 2x M20 bottom clearance entries, 1 blanking plug, 1 cable gland in polyamide, 2 locknuts.

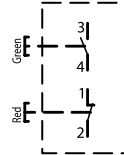


Version	Description/ Function	Diagram	Bottom entries	Catalog Number	Weight (kg)	Volume (dm ³)
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Twin Push Buttons



1x green push button 'I' with 1NO contact
1x red push button 'O' with 1NC contact
Momentary contacts



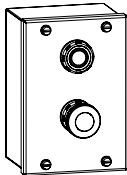
2 x M20

U62W2 A5A9

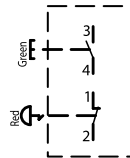
1.8

4.3

Push Button + Push-Pull Emergency Stop



1x green push button 'I'
with 1NO momentary contact
1x red mushroom head push-pull
emergency button with 1NC
maintained contact



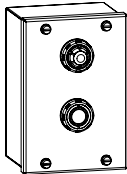
2 x M20

U62W2 A5D9

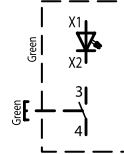
1.8

4.3

Pilot Light + Push Button



1x green light (1)
1x green push button 'I' with 1NO
Momentary contact



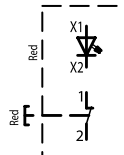
2 x M20

U62W2 PGA5

1.8

4.3

1x red light (1)
1x red push button 'O' with 1NC
Momentary contact



2 x M20

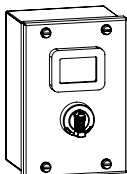
U62W2 PRA9

1.8

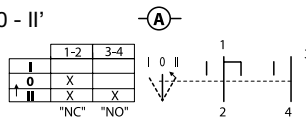
4.3

(1) 12 Vac to 254 Vac 50/60 Hz - 12 Vdc to 60 Vdc

Ammeter + 3-Position Selector Switch



1x ammeter 48 x 48 mm, 1A C.T.,
3 F.L.C., with 0 - 1 - 3 scale
1x 3-position selector switch 'I - 0 - II'
With spring return from II to 0
1NO + 1NC contacts



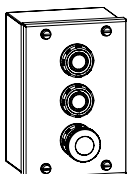
2 x M20

U62W2 VA13M3

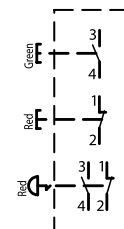
1.8

4.3

Twin Push Buttons + Push-Pull Emergency Stop



1x green push button 'I' with 1NO contact
1x red push button 'O' with 1NC contact
Momentary contacts
1x red mushroom head push-pull emergency
button with 1NO + 1NC maintained contacts



2 x M20

U62W2 A5A9D3

1.8

4.3

Additional combinations available, please refer to Unicode 2 Series – Customized Control Stations Section

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Stainless Steel Control Stations

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IEC

IP66 – IK10

Ordering Information – Continued:

Size 2 - 316 L Stainless Steel Control Station:

Standard equipment: 1 white self-adhesive laminated plastic nameplate, 2x M20 bottom clearance entries, 1 blanking plug, 1 cable gland in polyamide, 2 locknuts.



Version	Description/ Function	Diagram	Bottom entries	Catalog Number	Weight (kg)	Volume (dm ³)
	1x green pilot light (1) 1x green push button 'I' with 1NO contact 1x red push button 'O' with 1NC contact Momentary contacts		2 x M20	U62W2 PGA5A9	1.8	4.3
	1x red pilot light (1) 1x green push button 'I' with 1NO contact 1x red push button 'O' with 1NC contact Momentary contacts		2 x M20	U62W2 PRA5A9	1.8	4.3
	1x green pilot light (1) 1x green push button 'I' with 1NO + 1NC contacts 1x red push button 'O' with 1NO + 1NC contacts Momentary contacts		2 x M20	U62W2 PGA3A3	1.8	4.3
	1x red pilot light (1) 1x green push button 'I' with 1NO + 1NC contacts 1x red push button 'O' with 1NO + 1NC contacts Momentary contacts		2 x M20	U62W2 PRA3A3	1.8	4.3

(1) 12 Vac to 254 Vac 50/60 Hz - 12 Vdc to 60 Vdc

Size 3 - 316 L Stainless Steel Control Station:

Standard equipment: 1 white self-adhesive laminated plastic nameplate, 2 bottom clearance entries, 1 blanking plug, 1 cable gland in polyamide, 2 locknuts.

Version	Description/ Function	Diagram	Bottom entries	Catalog Number	Volume (kg)	Weight (dm ³)
	1x green pilot light (1) 1x red pilot light (1) 1x green push button 'I' with 1NO contact 1x red push button 'O' with 1NC contact Momentary contacts		2 x M20 2 x M25	U63W2 PGPRA5A9 U63W4 PGPRA5A9	2.1	10.5

(1) 12 Vac to 254 Vac 50/60 Hz - 12 Vdc to 60 Vdc

Additional combinations available, please refer to Unicode 2 Series – Customized Control Stations Section

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Stainless Steel Control Stations

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IEC

IP66 – IK10

Accessories:

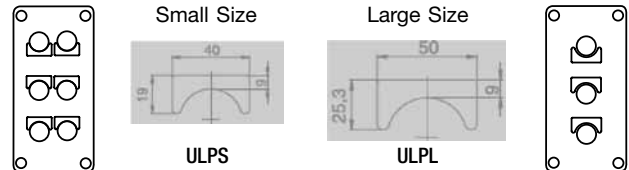
Description	Color	Catalog Number	Pack
Nameplates (set of 10)			
Blank self-adhesive, laminated plastic 58x18 mm	White (black letters)	UNPW	1
	Yellow (black letters)	UNPY	1
	Red (white letters)	UNPR	1
	Blue (white letters)	UNPB	1
	Black (white letters)	UNPN	1
	Green (white letters)	UNPG	1

Standard Legend Plates:

Self-adhesive yellow laminated plastic (black lettering)

Text	Small	Large	Pack
Blank (set of 10)	ULPS	ULPL	1
ON	ULPSA 01	ULPLA 01	1
OFF	ULPSA 02	ULPLA 02	1
FORWARD	ULPSA 03	ULPLA 03	1
REVERSE	ULPSA 04	ULPLA 04	1
JOG	ULPSA 05	ULPLA 05	1
RUN	ULPSA 06	ULPLA 06	1
START	ULPSA 07	ULPLA 07	1
STOP	ULPSA 08	ULPLA 08	1
UP	ULPSA 09	ULPLA 09	1
DOWN	ULPSA 10	ULPLA 10	1
FAST	ULPSA 11	ULPLA 11	1
SLOW	ULPSA 12	ULPLA 12	1
RAISE	ULPSA 13	ULPLA 13	1
LOWER	ULPSA 14	ULPLA 14	1
OPEN	ULPSA 15	ULPLA 15	1
CLOSE	ULPSA 16	ULPLA 16	1
LOW	ULPSA 17	ULPLA 17	1
HIGH	ULPSA 18	ULPLA 18	1
TEST	ULPSA 19	ULPLA 19	1
RESET	ULPSA 20	ULPLA 20	1
EMERGENCY STOP	ULPSA 21	ULPLA 21	1
MARCHE	ULPSA 22	ULPLA 22	1
ARRET	ULPSA 23	ULPLA 23	1
ARRET D'URGENCE	ULPSA 24	ULPLA 24	1
HAUT	ULPSA 25	ULPLA 25	1
BAS	ULPSA 26	ULPLA 26	1

Two Sizes Available



Text	Small	Large	Pack
O - I	ULPSH 01	ULPLH 01	1
ON - OFF	ULPSH 02	ULPLH 02	1
START - STOP	ULPSH 03	ULPLH 03	1
STOP - START	ULPSH 04	ULPLH 04	1
HAND - AUTO	ULPSH 05	ULPLH 05	1
MANU - AUTO	ULPSH 06	ULPLH 06	1
FORWARD - REVERSE	ULPSH 07	ULPLH 07	1
REMOTE - LOCAL	ULPSH 08	ULPLH 08	1
MARCHE - ARRET	ULPSH 09	ULPLH 09	1

Text	Small	Large	Pack
I - O - II	ULPSJ 01	ULPLJ 01	1
OFF - O - ON	ULPSJ 02	ULPLJ 02	1
START - NORMAL - STOP	ULPSJ 03	ULPLJ 03	1
HAND - OFF - AUTO	ULPSJ 04	ULPLJ 04	1
MANU - O - AUTO	ULPSJ 05	ULPLJ 05	1
FORWARD - OFF - REVERSE	ULPSJ 06	ULPLJ 06	1
LOCAL - REMOTE - AUTO	ULPSJ 07	ULPLJ 07	1
LOCAL - O - REMOTE	ULPSJ 08	ULPLJ 08	1
MARCHE - NORMAL - ARRET	ULPSJ 09	ULPLJ 09	1

Inserts for Push button (set of 5):

Marking	Color	REF	Pack
(unmarked)	Green	UIA G	1
(unmarked)	Red	UIA R	1
(unmarked)	Yellow	UIA Y	1
(unmarked)	White	UIA W	1
(unmarked)	Blue	UIA B	1
(unmarked)	Black	UIA N	1
ON	Green	UIA 01	1
OFF	Red	UIA 02	1
START	Green	UIA 03	1
STOP	Red	UIA 04	1
MARCHE	Green	UIA 05	1
ARRET	Red	UIA 06	1
I	Green	UIA 07	1
O	Red	UIA 08	1

Inserts for Illuminated Push button (set of 5):

Marking	Color	REF	Pack
(unmarked)	Green	UII G	1
(unmarked)	Red	UII R	1
(unmarked)	Yellow	UII Y	1
(unmarked)	White	UII W	1
(unmarked)	Blue	UII B	1
ON	Green	UII 01	1
OFF	Red	UII 02	1
START	Green	UII 03	1
STOP	Red	UII 04	1
MARCHE	Green	UII 05	1
ARRET	Red	UII 06	1
I	Green	UII 07	1
O	Red	UII 08	1

Spare Key:

For all key-operated buttons.

Description	REF	Pack
Spare key type 4 A 185	SK4A185	1

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Stainless Steel Control Stations



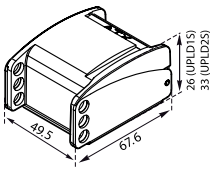








Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IEC

IP66 – IK10

Accessories - Continued:

	Description	Catalog Number
	Additional Contacts Each actuator is capable of activating 3 contacts. Exception: Illuminated push button and all actuators with key: 2 contacts maximum 1NO contact 1NC contact	UCB5R UCB9R
	Yellow Guard Mushroom head protection for emergency stop	098657
	Padlockable Guard Stainless steel and plastic cover, capacity: 3 padlocks dia. 6 mm maximum (not supplied)	
	For push button and rotary actuator 	UPLD1S
	For mushroom head actuator 	UPLD2S
	Cable Gland Exe For unarmored cable Exe - IP66 - in polyamide with entry thread seal M20 (capacity 6.5-14.5 mm) M25 (capacity 8-18.5 mm)	095605 095606
	For armored cable Exe / Exd - IP66 - in nickel plated brass (without entry thread seal)	
	Braid and Tape type: M20 (inner: 6.4-14.0 / outer: 12.5-20.9 mm) M25 (inner: 11.1-20.0 / outer: 18.2-26.2 mm)	20E1FX5 25E1FX5
	Single Wired Armor (SWA): M20 (inner: 6.4-14.0 / outer: 12.5-20.9 mm) M25 (inner: 11.1-20.0 / outer: 18.2-26.2 mm)	20E1FW5 25E1FW5
	Adaptors Exd / Exe - IP66 in nickel plated brass (without entry thread seal)	
	Male M25 - Female 1" NPT	737DM3T35
	Male M25 - Female 3/4" NPT	737DM3T25
	Male M20 - Female 1/2" NPT	737DM2T15
	Male M20 - Female 3/4" NPT	737DM2T25
	Entry Thread Seal M20 (in black neoprenne) M25 (in black neoprenne)	20ETS 25ETS
	M20 (in white nylon) M25 (in white nylon)	20ETS2 25ETS2
	Combination Drain and Breather Exe - IP66 - supplied with entry thread seal and locknut	
	M20 male thread in polyamide	DBE20P
	M20 male thread in brass	DBE20B
	M20 male thread in stainless steel	DBE20S
	Feedthrough Earth Stud Terminal Exe - IP66 – supplied with entry thread seal, locknut and green/yellow earth conductor (length 300 mm)	
	M20 with M5 earth and 2.5 mm ² conductor	PREESTM20
	M25 with M6 earth and 6 mm ² conductor	PREESTM25

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Stainless Steel Control Stations

Zone 1 & 2 – 21 & 22

⊕ II 2 GD

ATEX / IEC

IP66 – IK10

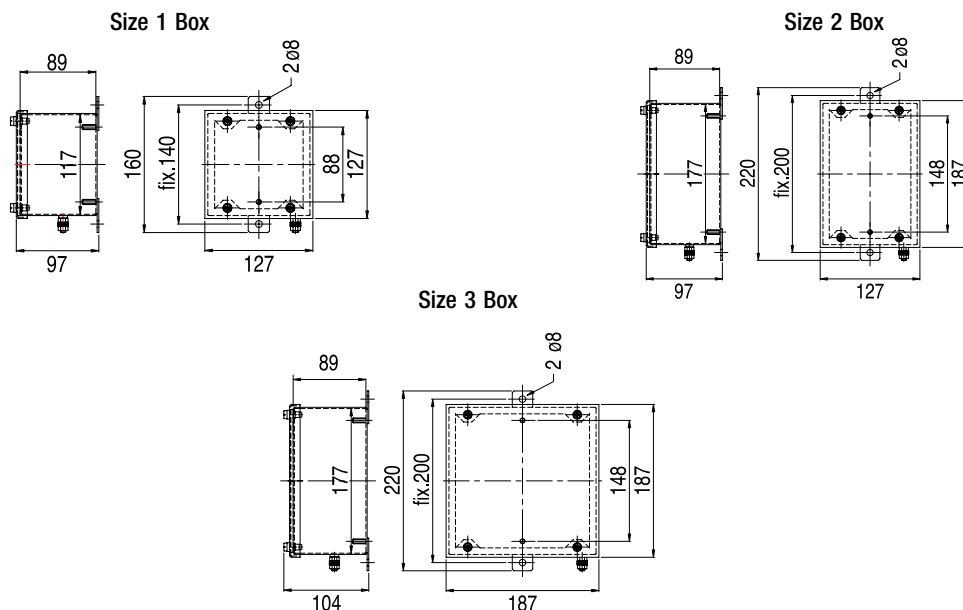
Compliances:

Hazardous Area	Gas	Dust
Certified Type	JBe	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex de IIC / Ex demb IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	T6 to T5	N.A.
Surface Temperature	N.A.	T80°C to T95°C
Ambient Temperature	-50°C to +70°C	
CE Declaration of Conformity	50232	
ATEX Certificate	LCIE 02 ATEX 6118X	
IEC Certificate	LCIE Ex 02.010X	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 60079-7; 60079-18; 61241-0; 61241-1
Product Standards	EN / IEC 60947-1; 60947-5
EMC Standards	–
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Dimensions (mm):



Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Aluminum Control Stations



U83W2 PRA5A9

Compliance Data:

ATEX – IEC:



Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IEC	CE
Ex de IIC / Ex demb IIC	T6	Ex tD A21	T80°C	IP66 – IK10

Voltage and Amperage:

Voltage	Amperage	Pilot Light Voltage	
Up to 500 V	16 A	12 Vac to 254 Vac 50/60 Hz and 12 Vdc to 60 Vdc	

Operating Temperature:

-55°C to +60°C			
-40°C to +60°C			
-25°C to +60°C			
(depending on type of actuator)			

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Aluminum Control Stations

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IEC

IP66 – IK10

Applications:

- Local control stations and motor control stations for use in hazardous areas covering the broadest possible range of applications.
- Control of equipment at power plants, chemical and petrochemical plants, petroleum refineries, reverse osmosis plants, pulp and paper processing plants and various industrial applications.
- Push buttons and selector switches are used in conjunction with contactors or magnetic starters for remote control of motors in hazardous locations. They provide circuit control and/or selection.
- Pilot lights provide visual assurance that an electrical function is being performed at a remote or hazardous location.
- For use in wash down areas.

Features:

- Employs Ex de (factory sealed) operators including push buttons, illuminated push buttons, selector switches, control and load break switches, contact blocks, pilot lights (LED), and terminal blocks.
- Pilot light employs high intensity single LED with lifetime of 100,000 hours that can be used at 12 Vac to 254 Vac 50/60 Hz, 12 Vdc to 60 Vdc.
- Enclosures are rated for IP66 with firmly secured gasket.
- Operators and contact blocks are spaced so as to have easy and ample space for wiring.
- Wide selection of cable glands, union adapter entries at top and bottom locations.
- Choice of DIN rail mounted high performance contact block suitable for low intensity (less than 5 mA).
- TS35 rail mounted components held securely in place during operation and easily removed for service.
- Brass inserts are provided for TS35 DIN rails or mounting plate to be installed inside the enclosure.
- Captive, corrosion resistant stainless steel cover screws.

Standard Material of Fixtures:

- Aluminum gray epoxy powder coated.
- Stainless steel cover screws.
- Polyamide cable gland and blanking plug.

Accessories:

- Key for changing actuator blocks.
- Guard for mushroom head actuator.
- Padlockable guard.
- M5 and M6 earth stud.
- Combination drain and breather available in brass, polyamide and stainless steel.

Options:

- Nameplates: Lamacoid with different color combinations. Stainless steel.
- Padlocking facility at left, center, right or any position on selector switches.
- Padlocking facility for momentary and maintained push buttons.
- Special contact arrangements available upon request, see options for details.

Ordering Information:

Size 1 Aluminum Control Station:

Standard equipment: 1 white self-adhesive laminated plastic nameplate, 2 x M20 bottom clearance entries, 1 blanking plug, 1 cable gland in polyamide, 2 locknuts.



Version	Description/ Function	Diagram	Bottom entries	Catalog Number	Weight (kg)	Volume (dm ³)
Impulse Push Button						
	Green insert 'I' + red insert 'O' with 1NO + 1NC momentary contacts		2 x M20	U81W2 A3	1	2.7
Twin Impulse Push Buttons						
	1x green push button 'I' with 1NO contact 1x red push button 'O' with 1NC contact Momentary contacts		2 x M20	U81W2 A5A9	1.1	2.7

Additional combinations available, please refer to Unicode 2 Series - Customized Control Stations section

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Aluminum Control Stations

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IEC


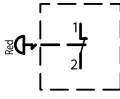

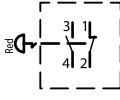
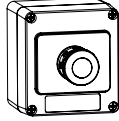
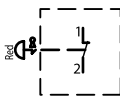
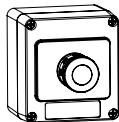
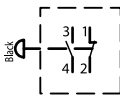
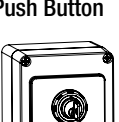
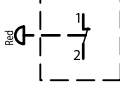

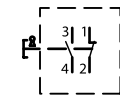



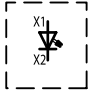



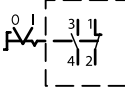
IP66 – IK10

Ordering Information - Continued:

Size 1 Aluminum Control Station:

Standard equipment: 1 white self-adhesive laminated plastic nameplate, 2 x M20 bottom clearance entries, 1 blanking plug, 1 cable gland in polyamide, 2 locknuts.



Version	Description/ Function	Diagram	Bottom entries	Catalog Number	Weight (kg)	Volume (dm ³)
Emergency Stop						
	Red mushroom head push-pull 1NC maintained contact		2 x M20	U81W2 D9	1	2.7
	Red mushroom head push-pull 1NO + 1NC maintained contacts		2 x M20	U81W2 D3	1	2.7
	Red mushroom head key release 1NC maintained contact		2 x M20	U81W2 C9	1	2.7
Mushroom Head Push Button						
	Black mushroom head push button 1NO + 1NC momentary contacts		2 x M20	U81W2 B3	1	2.7
	Red mushroom head push button 1NC momentary contact		2 x M20	U81W2 R9	1	2.7
Key Push Button						
	With key removable in both positions 1NO + 1NC momentary contacts		2 x M20	U81W2 E3	1	2.7
Pilot Light						
	1x red pilot light (1)		2 x M20	U81W2 PR	1	2.7
	1x green pilot light (1)		2 x M20	U81W2 PG	1	2.7
	1x blue pilot light (1)		2 x M20	U81W2 PB	1	2.7
	1x yellow pilot light (1)		2 x M20	U81W2 PY	1	2.7
	1x white pilot light (1)		2 x M20	U81W2 PW	1	2.7
	(1) 12 Vac to 254 Vac 50/60 Hz - 12 Vdc to 60 Vdc					
2-Position Selector Switch						
	2 fixed positions '0 - I' 1NO + 1NC contacts		2 x M20	U81W2 H3	1	2.7

Additional combinations available, please refer to Unicode 2 Series - Customized Control Stations section

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Aluminum Control Stations

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IEC

IP66 – IK10

Ordering Information – Continued

Size 1 Aluminum Control Station:

Standard equipment: 1 white self-adhesive laminated plastic nameplate, 2 x M20 bottom clearance entries, 1 blanking plug, 1 cable gland in polyamide, 2 locknuts.

Version	Description/ Function	Diagram	Bottom entries	Catalog Number	Weight (kg)	Volume (dm ³)
3-Position Selector Switch						
	3 fixed positions 'I - 0 - II' 2NO contacts		2 x M20	U81W2 J1	1	2.7
	3 positions 'I - 0 - II' with spring return from I to 0 1NO + 1NC contacts		2 x M20	U81W2 N3	1	2.7
	3 positions 'I - 0 - II' with spring return from II to 0 1NO + 1NC contacts		2 x M20	U81W2 M3	1	2.7

Size 2 Aluminum Control Station:

Standard equipment: 1 white self-adhesive laminated plastic nameplate, 2 x M20 bottom clearance entries, 1 blanking plug, 1 cable gland in polyamide, 2 locknuts.



Version	Description/ Function	Diagram	Bottom entries	Catalog Number	Weight (kg)	Volume (dm ³)
Twin Push Buttons						
	1x green push button 'I' with 1NO contact 1x red push button 'O' with 1NC contact momentary contacts		2 x M20	U82W2 A5A9	1.3	2.7
Push Button + Push-Pull Emergency Stop						
	1x green push button 'I' with 1NO momentary contact 1x red mushroom head push-pull emergency button with 1NC maintained contact		2 x M20	U82W2 A5D9	1.3	2.7
Pilot Light + Push Button						
	1x green pilot light (1) 1x green push button 'I' with 1NO Momentary contact		2 x M20	U82W2 PGA5	1.3	2.7
	1x red pilot light (1) 1x red push button 'O' with 1NC Momentary contact (1) 12 Vac to 254 Vac 50/60 Hz - 12 Vdc to 60 Vdc		2 x M20	U82W2 PRA9	1.3	2.7

Additional combinations available, please refer to Unicode 2 Series - Customized Control Stations section

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Aluminum Control Stations

Zone 1 & 2 – 21 & 22

Ex II 2 GD

ATEX / IEC

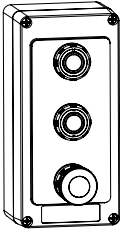
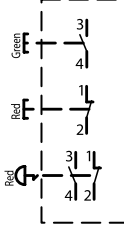
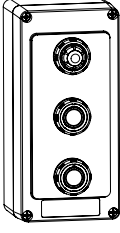
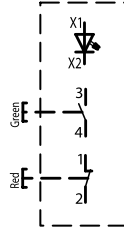
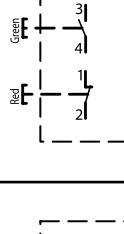
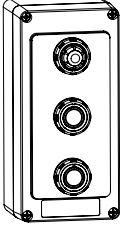
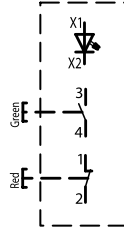
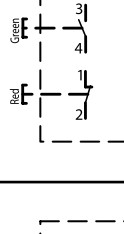
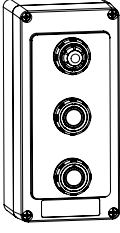
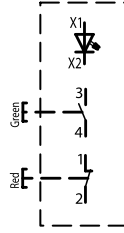
IP66 – IK10

Ordering Information – Continued:

Size 3 Aluminum Control Station:

Standard equipment: 1 white self-adhesive laminated plastic nameplate, 2 bottom clearance entries, 1 blanking plug, 1 cable gland in polyamide, 2 locknuts.



Version	Description/ Function	Diagram	Bottom entries	Catalog Number	Weight (kg)	Volume (dm ³)
Twin Push Buttons + Push-Pull Emergency Stop						
	1x green push button 'I' with 1NO contact		2 x M20	U83W2 A5A9D3	1.6	4.2
	1x red push button 'O' with 1NC contact		2 x M25	U83W4 A5A9D3	1.6	4.2
Pilot Light + Twin Push Buttons						
	1x green pilot light (1)		2 x M20	U83W2 PGA5A9	1.6	4.2
	1x green push button 'I' with 1NO contact		2 x M25	U83W4 PGA5A9	1.6	4.2
	1x red pilot light (1)		2 x M20	U83W2 PRA5A9	1.6	4.2
	1x green push button 'I' with 1NO contact		2 x M25	U83W4 PRA5A9	1.6	4.2
	1x red push button 'O' with 1NC contact		2 x M20	U83W2 PGA3A3	1.6	4.2
	Momentary contacts		2 x M25	U83W4 PGA3A3	1.6	4.2
	1x red pilot light (1)		2 x M20	U83W2 PRA3A3	1.6	4.2
	1x green push button 'I' with 1NO + 1NC contacts		2 x M25	U83W4 PRA3A3	1.6	4.2
	1x red push button 'O' with 1NO + 1NC contacts		2 x M20	U83W2 PGA3A3	1.6	4.2
	Momentary contacts		2 x M25	U83W4 PGA3A3	1.6	4.2

(1) 12 Vac to 254 Vac 50/60 Hz - 12 Vdc to 60 Vdc

Additional combinations available, please refer to Unicode 2 Series - Customized Control Stations section

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Aluminum Control Stations

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IEC

IP66 – IK10

Accessories:

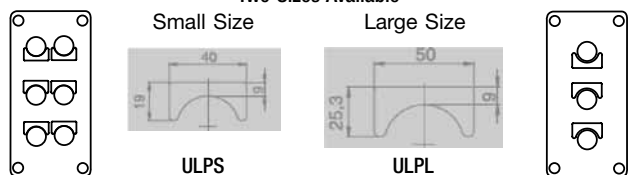
Description	Color	Catalog Number	Pack
Nameplates (set of 10)			
Blank self-adhesive, laminated plastic 58x18 mm	White (black letters)	UNPW	1
	Yellow (black letters)	UNPY	1
	Red (white letters)	UNPR	1
	Blue (white letters)	UNPB	1
	Black (white letters)	UNPN	1
	Green (white letters)	UNPG	1

Standard Legend Plates:

Self-adhesive yellow laminated plastic (black lettering)

Text	Small	Large	Pack
Blank (set of 10)	ULPS	ULPL	1
ON	ULPSA 01	ULPLA 01	1
OFF	ULPSA 02	ULPLA 02	1
FORWARD	ULPSA 03	ULPLA 03	1
REVERSE	ULPSA 04	ULPLA 04	1
JOG	ULPSA 05	ULPLA 05	1
RUN	ULPSA 06	ULPLA 06	1
START	ULPSA 07	ULPLA 07	1
STOP	ULPSA 08	ULPLA 08	1
UP	ULPSA 09	ULPLA 09	1
DOWN	ULPSA 10	ULPLA 10	1
FAST	ULPSA 11	ULPLA 11	1
SLOW	ULPSA 12	ULPLA 12	1
RAISE	ULPSA 13	ULPLA 13	1
LOWER	ULPSA 14	ULPLA 14	1
OPEN	ULPSA 15	ULPLA 15	1
CLOSE	ULPSA 16	ULPLA 16	1
LOW	ULPSA 17	ULPLA 17	1
HIGH	ULPSA 18	ULPLA 18	1
TEST	ULPSA 19	ULPLA 19	1
RESET	ULPSA 20	ULPLA 20	1
EMERGENCY STOP	ULPSA 21	ULPLA 21	1
MARCHE	ULPSA 22	ULPLA 22	1
ARRET	ULPSA 23	ULPLA 23	1
ARRET D'URGENCE	ULPSA 24	ULPLA 24	1
HAUT	ULPSA 25	ULPLA 25	1
BAS	ULPSA 26	ULPLA 26	1

Two Sizes Available



Text	Small	Large	Pack
O - I	ULPSH 01	ULPLH 01	1
ON - OFF	ULPSH 02	ULPLH 02	1
START - STOP	ULPSH 03	ULPLH 03	1
STOP - START	ULPSH 04	ULPLH 04	1
HAND - AUTO	ULPSH 05	ULPLH 05	1
MANU - AUTO	ULPSH 06	ULPLH 06	1
FORWARD - REVERSE	ULPSH 07	ULPLH 07	1
REMOTE - LOCAL	ULPSH 08	ULPLH 08	1
MARCHE - ARRET	ULPSH 09	ULPLH 09	1

Text	Small	Large	Pack
I - O - II	ULPSJ 01	ULPLJ 01	1
OFF - O - ON	ULPSJ 02	ULPLJ 02	1
START - NORMAL - STOP	ULPSJ 03	ULPLJ 03	1
HAND - OFF - AUTO	ULPSJ 04	ULPLJ 04	1
MANU - O - AUTO	ULPSJ 05	ULPLJ 05	1
FORWARD - OFF - REVERSE	ULPSJ 06	ULPLJ 06	1
LOCAL - REMOTE - AUTO	ULPSJ 07	ULPLJ 07	1
LOCAL - O - REMOTE	ULPSJ 08	ULPLJ 08	1
MARCHE - NORMAL - ARRET	ULPSJ 09	ULPLJ 09	1

Inserts for Push Button (set of 5):

Marking	Color	REF	Pack
(unmarked)	Green	UIA G	1
(unmarked)	Red	UIA R	1
(unmarked)	Yellow	UIA Y	1
(unmarked)	White	UIA W	1
(unmarked)	Blue	UIA B	1
(unmarked)	Black	UIA N	1
ON	Green	UIA 01	1
OFF	Red	UIA 02	1
START	Green	UIA 03	1
STOP	Red	UIA 04	1
MARCHE	Green	UIA 05	1
ARRET	Red	UIA 06	1
I	Green	UIA 07	1
O	Red	UIA 08	1

Inserts for Illuminated Push Button (set of 5):

Marking	Color	REF	Pack
(unmarked)	Green	UIL G	1
(unmarked)	Red	UIL R	1
(unmarked)	Yellow	UIL Y	1
(unmarked)	White	UIL W	1
(unmarked)	Blue	UIL B	1
ON	Green	UIL 01	1
OFF	Red	UIL 02	1
START	Green	UIL 03	1
STOP	Red	UIL 04	1
MARCHE	Green	UIL 05	1
ARRET	Red	UIL 06	1
I	Green	UIL 07	1
O	Red	UIL 08	5

Spare Key:

For all key-operated buttons.

Description	REF	Pack
Spare key type 4 A 185	SK4A185	1

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Aluminum Control Stations



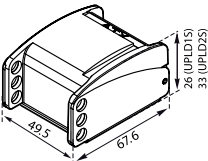






Zone 1 & 2 – 21 & 22

Ex II 2 GD

ATEX / IEC

IP66 – IK10

Accessories - Continued:

	Description	Catalog Number
	<p>Additional Contacts Each actuator is capable of activating 3 contacts. Exception: Illuminated push button and all actuators with key: 2 contacts maximum</p> <p>1NO contact 1NC contact</p>	UCB5R UCB9R
	<p>Yellow Guard Mushroom head protection for emergency stop</p>	098657
	<p>Padlockable Guard Stainless steel and plastic cover, capacity: 3 padlocks dia. 6 mm maximum (not supplied)</p> <p>For push button and rotary actuator</p>	UPLD1S
	<p>For mushroom head actuator</p>	UPLD2S
	<p>Cable Gland Exe For unarmored cable Exe - IP66 - in polyamide with entry thread seal</p> <p>M20 (capacity 6.5-14.5 mm) M25 (capacity 8-18.5 mm)</p>	095605 095606
	<p>For armored cable Exe / Exd - IP66 - in nickel plated brass (without entry thread seal)</p> <p>Braid and Tape type: M20 (inner: 6.4-14.0 / outer: 12.5-20.9 mm) M25 (inner: 11.1-20.0 / outer: 18.2-26.2 mm)</p> <p>Single Wired Armor (SWA): M20 (inner: 6.4-14.0 / outer: 12.5-20.9 mm) M25 (inner: 11.1-20.0 / outer: 18.2-26.2 mm)</p>	20E1FX5 25E1FX5 20E1FW5 25E1FW5
	<p>Adaptors Exd / Exe - IP66 in nickel plated brass (without entry thread seal)</p> <p>Male M25 - Female 1" NPT Male M25 - Female 3/4" NPT</p> <p>Male M20 - Female 1/2" NPT Male M20 - Female 3/4" NPT</p>	737DM3T35 737DM3T25 737DM2T15 737DM2T25
	<p>Entry Thread Seal M20 (in black neoprene) M25 (in black neoprene)</p> <p>M20 (in white nylon) M25 (in white nylon)</p>	20ETS 25ETS 20ETS2 25ETS2
	<p>Combination Drain and Breather Exe - IP66 - supplied with entry thread seal and locknut</p> <p>M20 male thread in polyamide M20 male thread in brass M20 male thread in stainless steel</p>	DBE20P DBE20B DBE20S
	<p>Feedthrough Earth Stud Terminal Exe - IP66 – supplied with entry thread seal, locknut and green/yellow earth conductor (length 300 mm)</p> <p>M20 with M5 earth and 2.5 mm² conductor M25 with M6 earth and 6 mm² conductor</p>	PREESTM20 PREESTM25

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Aluminum Control Stations

Zone 1 & 2 – 21 & 22

⊕ II 2 GD

ATEX / IEC

IP66 – IK10

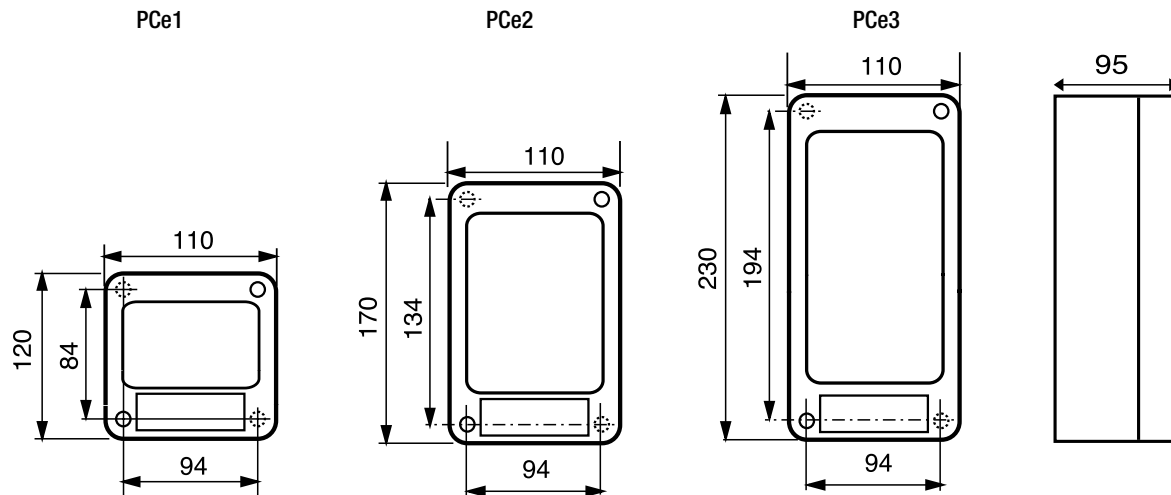
Compliances:

Hazardous Area	Gas	Dust
Certified Type	PCe	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex de IIC / Ex demb IIC	Ex td A21
Symbol of Protection IEC		
T Rating	T6	N.A.
Surface Temperature	N.A.	T75°C
Ambient Temperature	-55°C to +60°C	
CE Declaration of Conformity	50221	
ATEX Certificate	LCIE 00 ATEX 6047	
IEC Certificate	LCIE Ex 00.017	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 60079-7; 60079-18; 61241-0; 61241-1
Product Standards	EN / IEC 60947-1; 60947-5
EMC Standards	–
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Dimensions (mm):



Fixing Details for above Boxes: Two Holes Ø 5

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Customized Control Stations



Polyester



Polyamide



Stainless Steel



Aluminum



Compliance Data:

ATEX – IEC and IECEx (Polyester):

Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IEC / IECEx	CE
Ex de IIC / Ex demb IIC	T6 to T5	Ex tD A21	T75°C to T95°C	IP66 – IK09/10

Voltage and Amperage:

Voltage	Amperage	Pilot Light Voltage	
Up to 500 V	16 A	12 Vac to 254 Vac 50/60 Hz and 12 Vdc to 60 Vdc	

Operating Temperature:

Polyamide (PCe)	Polyester (CSPe)	Stainless Steel (JBe)	Aluminum (PCe)	
-20°C to +55°C	-55°C to +60°C -40°C to +60°C -25°C to +60°C	-50°C to +60°C -40°C to +60°C -25°C to +60°	-55°C to +60°C -40°C to +60°C -25°C to +60°C	
(depending on type of actuator)				

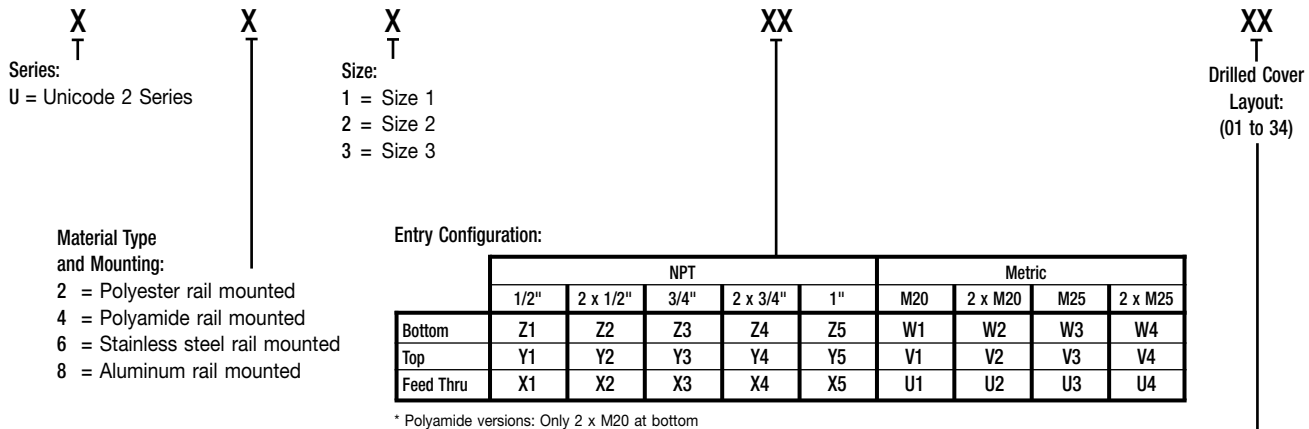
Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Customized Control Stations – Catalog Number Logic

Catalog Number Logic:

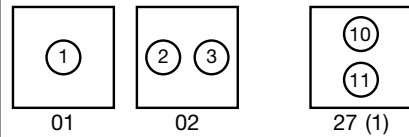
Box (7 digits)
(See Catalog number logic on next page for further number logic breakdown)

U23W211

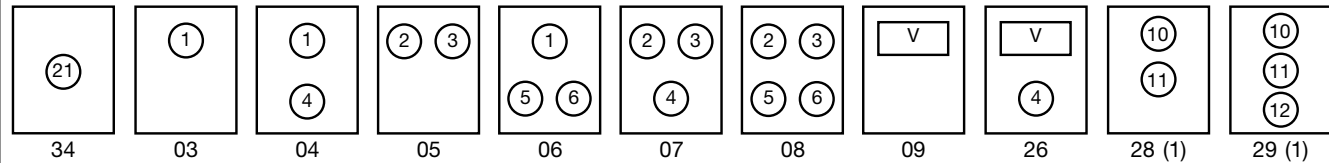


Drilled Cover Layout

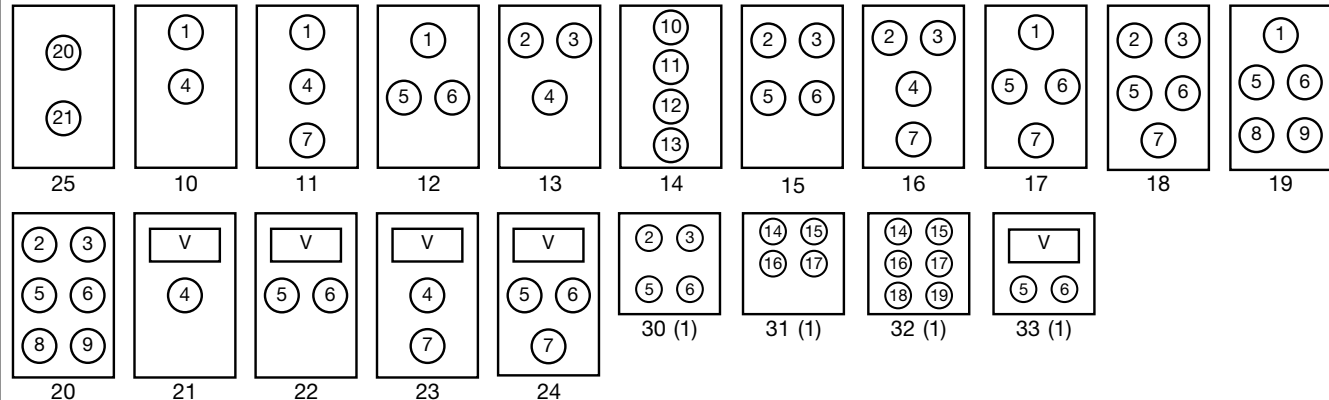
Size 1



Size 2



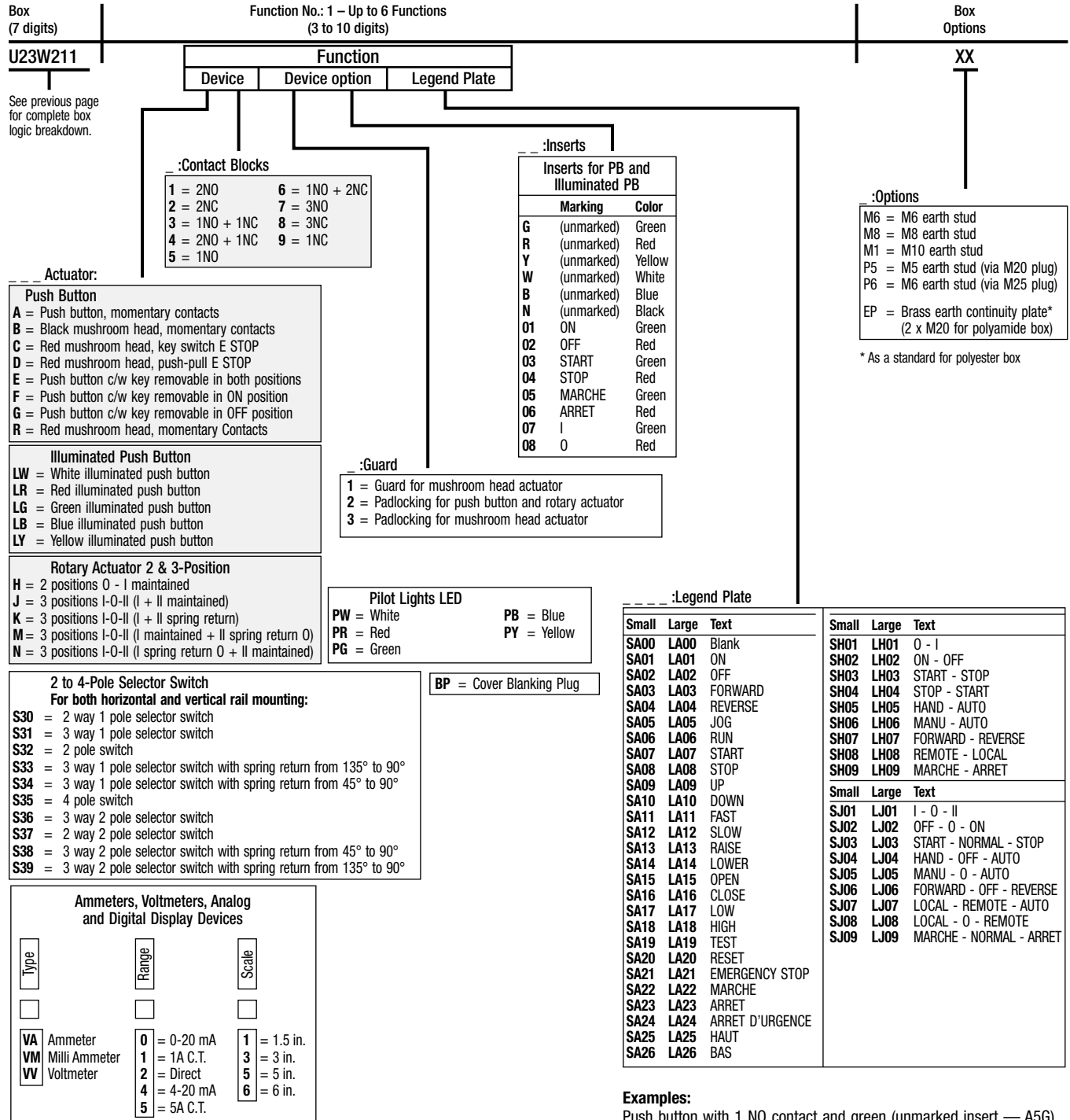
Size 3



Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Customized Control Stations – Catalog Number Logic

Catalog Number Logic – Continued:



Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Customized Control Stations – Devices and Options

Zone 1 & 2 – 21 & 22

Ⓢ II 2 GD

Devices:

Push Buttons, Momentary Contacts (3 maximum)

With 2 NO momentary contacts	A1
With 2 NC momentary contacts	A2
With 1 NO + 1 NC momentary contacts	A3
With 2 NO + 1 NC momentary contacts	A4
With 1 NO momentary contact	A5
With 1 NO + 2 NC momentary contacts	A6
With 3 NO momentary contacts	A7
With 3 NC momentary contacts	A8
With 1 NC momentary contact	A9

Illuminated Push Buttons, Momentary Contacts (2 maximum)

Green with 2 NO momentary contacts	LG1
Green with 2 NC momentary contacts	LG2
Green with 1 NO + 1 NC momentary contacts	LG3
Green with 1 NO momentary contacts	LG5
Green with 1 NC momentary contacts	LG9
Red with 2 NO momentary contacts	LR1
Red with 2 NC momentary contacts	LR2
Red with 1 NO + 1 NC momentary contacts	LR3
Red with 1 NO momentary contacts	LR5
Red with 1 NC momentary contacts	LR9

For other colors replace 2nd digit by proper letter

B for Blue, W for White and Y for Yellow

example: Blue — LB1

Push buttons complete with key removable in both positions, (2 contacts maximum)

With 2 NO contacts	E1
With 2 NC contacts	E2
With 1 NO + 1 NC contacts	E3
With 1 NO contact	E5
With 1 NC contact	E9

Push buttons complete with key removable in ON position, (2 contacts maximum)

With 2 NO contacts	F1
With 2 NC contacts	F2
With 1 NO + 1 NC contacts	F3
With 1 NO contact	F5
With 1 NC contact	F9

Push buttons complete with key removable in OFF position, (2 contacts maximum)

With 2 NO contacts	G1
With 2 NC contacts	G2
With 1 NO + 1 NC contacts	G3
With 1 NO contact	G5
With 1 NC contact	G9

Black Mushroom Head Push Buttons, Momentary Contacts (3 maximum)

With 2 NO momentary contacts	B1
With 2 NC momentary contacts	B2
With 1 NO + 1 NC momentary contacts	B3
With 2 NO + 1 NC momentary contacts	B4
With 1 NO momentary contact	B5
With 1 NO + 2 NC momentary contacts	B6
With 3 NO momentary contacts	B7
With 3 NC momentary contacts	B8
With 1 NC momentary contact	B9

Red Mushroom Head Push Buttons, Momentary Contacts (3 maximum)

With 2 NO momentary contacts	R1
With 2 NC momentary contacts	R2
With 1 NO + 1 NC momentary contacts	R3
With 2 NO + 1 NC momentary contacts	R4
With 1 NO momentary contact	R5
With 1 NO + 2 NC momentary contacts	R6
With 3 NO momentary contacts	R7
With 3 NC momentary contacts	R8
With 1 NC momentary contact	R9

Red Mushroom Head Emergency Stop Buttons, Maintained Contacts (3 maximum)

Push-pull version with 2 NO maintained contacts	D1
Push-pull version with 2 NC maintained contacts	D2
Push-pull version with 1 NO + 1 NC maintained contacts	D3
Push-pull version with 2 NO + 1 NC maintained contacts	D4
Push-pull version with 1 NO maintained contact	D5
Push-pull version with 1 NO + 2 NC maintained contacts	D6
Push-pull version with 3 NO maintained contacts	D7
Push-pull version with 3 NC maintained contacts	D8
Push-pull version with 1 NC maintained contact	D9

Red Mushroom Head Emergency Stop Buttons, Maintained Contacts (2 maximum)

Key to release with 2 NO maintained contacts	C1
Key to release with 2 NC maintained contacts	C2
Key to release with 1 NO + 1 NC maintained contacts	C3
Key to release with 1 NO maintained contact	C5
Key to release with 1 NC maintained contact	C9

2 Positions 0-I Rotary Actuator (0 and I maintained)

With 2 NO maintained contacts	H1
With 2 NC maintained contacts	H2
With 1 NO + 1 NC maintained contacts	H3
With 2 NO + 1 NC maintained contacts	H4
With 1 NO maintained contact	H5
With 1 NO + 2 NC maintained contacts	H6
With 3 NO maintained contacts	H7
With 3 NC maintained contacts	H8
With 1 NC maintained contact	H9

3 Positions I-0-II Rotary Actuator (I and II maintained)

With 2 NO maintained contacts	J1
With 2 NC maintained contacts	J2
With 1 NO + 1 NC maintained contacts	J3
With 2 NO + 1 NC maintained contacts	J4
With 1 NO + 2 NC maintained contacts	J6
With 3 NO maintained contacts	J7
With 3 NC maintained contacts	J8

3 Positions I-0-II Rotary Actuator (I and II spring-return to 0)

With 2 NO contacts	K1
With 2 NC contacts	K2
With 1 NO + 1 NC contacts	K3
With 2 NO + 1 NC contacts	K4
With 1 NO + 2 NC contacts	K6
With 3 NO contacts	K7
With 3 NC contacts	K8

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Customized Control Stations – Devices and Options

Zone 1 & 2 – 21 & 22

Ⓢ II 2 GD

Devices – Continued:

3 Positions I-O-II Rotary Actuator (I Maintained and II Spring-Return to 0)

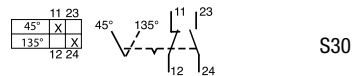
With 2 NO contacts	M1
With 2 NC contacts	M2
With 1 NO + 1 NC contacts	M3
With 2 NO + 1 NC contacts	M4
With 1 NO + 2 NC contacts	M6
With 3 NO contacts	M7
With 3 NC contacts	M8

3 Positions I-O-II Rotary Actuator (I Spring-Return to 0 + II Maintained)

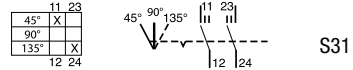
With 2 NO contacts	N1
With 2 NC contacts	N2
With 1 NO + 1 NC contacts	N3
With 2 NO + 1 NC contacts	N4
With 1 NO + 2 NC contacts	N6
With 3 NO contacts	N7
With 3 NC contacts	N8

Selector Switches

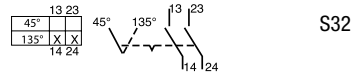
2 ways 1-pole
Selector switch



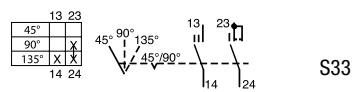
3 ways 1-pole
Selector switch



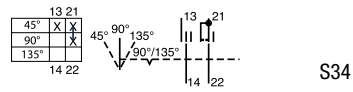
2-pole switch



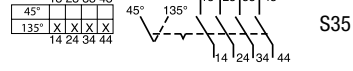
3 ways 1-pole
Selector switch with
spring return from 135° to 90°



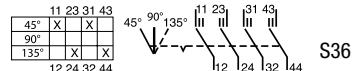
3 ways 1-pole
Selector switch with
spring return from 45° to 90°



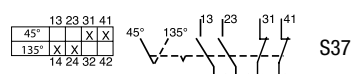
4-pole switch



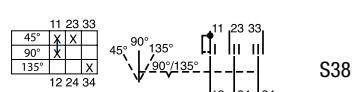
3 ways 2-pole
Selector switch



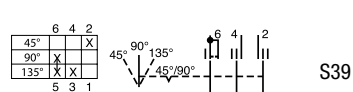
2 ways 2-pole
Selector switch



3 ways 2-pole
Selector switch with
spring return from 45° to 90°



3 ways 2-pole
Selector switch with
spring return from 135° to 90°



LED Pilot Lights

Blue color	PB
Green color	PG
Red color	PR
White color	PW
Yellow color	PY

Ammeters 48 x 48 mm

1A C.T. and 3 F.L.C. with 0-1-3 scale	VA13
1A C.T. and 5 F.L.C. with 0-1-5 scale	VA15
1A C.T. and 6 F.L.C. with 0-1-6 scale	VA16
5A C.T. and 3 F.L.C. with 0-1-3 scale	VA53
5A C.T. and 5 F.L.C. with 0-1-5 scale	VA55
5A C.T. and 6 F.L.C. with 0-1-6 scale	VA56

Device Options:

Guard and Padlocking Devices

Guard for mushroom head push button	1
Padlocking device for push button and rotary actuator	2
Padlocking device for for mushroom head push button	3

Inserts for Push Buttons

Green (unmarked)	G
Red (unmarked)	R
Yellow (unmarked)	Y
White (unmarked)	W
Blue (unmarked)	B
Black (unmarked)	N
ON (green)	01
OFF (red)	02
START (green)	03
STOP (red)	04
MARCHE (green)	05
ARRET (red)	06
I (green)	07
O (red)	08

Inserts for Illuminated Push Buttons

ON (green)	01
OFF (red)	02
START (green)	03
STOP (red)	04
MARCHE (green)	05
ARRET (red)	06
I (green)	07
O (red)	08

CONTROL STATIONS & SWITCHES

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Customized Control Stations – Devices and Options

Zone 1 & 2 – 21 & 22

Ⓢ II 2 GD

Legend Plates:

Legend Plates for Push Buttons and Pilot Lights (Located Above Device)

Text	Small	Large
Blank	SA00	LA00
ON	SA01	LA01
OFF	SA02	LA02
FORWARD	SA03	LA03
REVERSE	SA04	LA04
JOG	SA05	LA05
RUN	SA06	LA06
START	SA07	LA07
STOP	SA08	LA08
UP	SA09	LA09
DOWN	SA10	LA10
FAST	SA11	LA11
SLOW	SA12	LA12
RAISE	SA13	LA13
LOWER	SA14	LA14
OPEN	SA15	LA15
CLOSE	SA16	LA16
LOW	SA17	LA17
HIGH	SA18	LA18
TEST	SA19	LA19
RESET	SA20	LA20
EMERGENCY STOP	SA21	LA21
MARCHE	SA22	LA22
ARRET	SA23	LA23
ARRET D'URGENCE	SA24	LA24
HAUT	SA25	LA25
BAS	SA26	LA26

Legend Plates for 2-Position Selector Switches (Located Above Device)

Text	Small	Large
0 - I	SH01	LH01
ON - OFF	SH02	LH02
START - STOP	SH03	LH03
STOP - START	SH04	LH04
HAND - AUTO	SH05	LH05
MANU - AUTO	SH06	LH06
FORWARD - REVERSE	SH07	LH07
REMOTE - LOCAL	SH08	LH08
MARCHE - ARRET	SH09	LH09

Legend Plates for 3-Position Selector Switches (Located Above Device)

Text	Small	Large
I - 0 - II	SJ01	LJ01
OFF - 0 - ON	SJ02	LJ02
START - NORMAL - STOP	SJ03	LJ03
HAND - OFF - AUTO	SJ04	LJ04
MANUAL - 0 - AUTO	SJ05	LJ05
FORWARD - OFF - REVERSE	SJ06	LJ06
LOCAL - REMOTE - AUTO	SJ07	LJ07
LOCAL - 0 - REMOTE	SJ08	LJ08
MARCHE - NORMAL - ARRET	SJ09	LJ09

Box Options:

Earth Stud

M6 earth stud	M6
M8 earth stud	M8
M10 earth stud	M1
M6 earth stud (via M25 blanking plug)	P5
M5 earth stud (via M20 blanking plug)	P6

Earth Continuity Plate

Brass	EP
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Examples:

- Push button with 1 NO contact and green (unmarked) insert	A5 G
- Push button with 1 NC contact, padlocking device and red (unmarked) insert	A9 2R
- Push button with 2 NO contacts and START green insert	A1 03
- Push button with 2 NO contacts, padlocking device and START green insert	A1 203
- Push button with 2 NO contacts, padlocking device, START green insert and DOWN small legend plate	A1 203 SA10
- Red push-pull emergency stop button with 2 NC contacts	D2
- Red push-pull emergency stop button with 1 NO + 1 NC contacts and protective guard	D3 1
- Red push-pull emergency stop button with 1 NO + 1 NC contacts and padlocking device	D3 3
- Green illuminated push button with 1 NO contact	LG5
- Green illuminated push button with 2 NO contacts, padlocking device and START green insert	LG1 203
- Green pilot light	PG
- Red pilot light with STOP large legend plate	PR LA08
- 2-position rotary actuator with 2 NO contacts	H1
- 2-position rotary actuator with 2 NO contacts and HAND - AUTO small legend plate	H1 SH05
- 3-position I-0-II rotary actuator (I + II maintained) with 2 NO contacts	J1
- 3-position I-0-II rotary actuator (I + II maintained) with 2 NO contacts and FORWARD-OFF-REVERSE large legend plate	J1 LJ06
- 2-pole switch	S32
- 2-pole switch with 0 - I large legend plate	S32 LH01
- 4-pole switch	S35
- 4-pole switch with 0 - I large legend plate	S35 LH01
- 2 way 1-pole selector switch with STOP - START large legend plate	S30 LH04
- 3 way 1-pole selector switch with OFF - 0 - ON large legend plate	S31 LJ02

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Customized Control Stations – Ordering Example

Zone 1 & 2 – 21 & 22

II 2 GD

Ordering Example:



Polyester Control Station

Size 3 with 3 vertical actuators. 2 x M20 entries at bottom with brass earth continuity plate.

Without earth stud.

Without cable glands and plugs.

White self-adhesive name plate with black lettering.

Text: MOTOR 4

Position 1: Green pilot light without legend plate.

Position 2: Green start push button with 2 x NO contacts.

Green start insert without legend plate and guard.

Position 7: Emergency stop push-pull mushroom head with 2 x NC contacts without legend plate and guard.

Part No.:

U23W211 PG A103 D2

Polyester Customized Control Station Specifications – Type U2

Company: _____	Address: _____
Contact: _____	_____
Phone/Fax: _____	Project: _____
E-mail: _____	_____

Box Definition

Size 1: 01, 02, 03, 04, 05, 06, 07, 08, 09, 26

Size 2: 01, 02, 03, 04, 05, 06, 07, 08, 09, 26

Size 3: 25, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24

*Terminal block available as option. (maximum: 10 x terminals 2.5mm²)

Entry Positions	Entries (Threaded)	Earth Stud
<input type="checkbox"/> Without <input type="checkbox"/> Type: _____ Quantity: _____	<input checked="" type="checkbox"/> M20 <input type="checkbox"/> M25 <input type="checkbox"/> 3/4" NPT (via HUB) Earth Continuity Plate <input type="checkbox"/> Brass earth plate as standard <input type="checkbox"/> Stainless Steel Earth Plate	<input checked="" type="checkbox"/> Without <input type="checkbox"/> M6 Stainless Steel Earth Stud <input type="checkbox"/> M8 Stainless Steel Earth Stud Location: <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/> E

Cable Glands	Plugs
<input checked="" type="checkbox"/> Without <input type="checkbox"/> Type: _____ Quantity: _____	<input checked="" type="checkbox"/> Without <input type="checkbox"/> Type: _____ Quantity: _____

Name Plate

<input type="checkbox"/> Without	Type	Colour
	<input checked="" type="checkbox"/> 58 x 18 self adhesive Laminated Plastic <input type="checkbox"/> 65 x 18 screwed Laminated Plastic	<input checked="" type="checkbox"/> White (black letters) Blue (white letters) <input type="checkbox"/> <input type="checkbox"/> Yellow (black letters) Black (white letters) <input type="checkbox"/> <input type="checkbox"/> Red (white letters) Green (white letters) <input type="checkbox"/>
	<input type="checkbox"/> 65 x 18 screwed in Stainless steel (black lettering)	

Text (1 line): _____ MOTOR 4

Position	Actuator	Contacts	Insert	Legend Plate	Guard
1	PG	0	0	0	0
4	A	1	03	0	0
7	D	2	0	0	0

* Terminal Blocks (Optional)	Type	Quantity (10 maximum)
Option for box No. 03-05-09-10-12-13-15-21-22 only	2.5 mm ²	

Additional Instructions:

Following inquiry forms should be filled out and sent to your local APPLETON / ATX Representative.

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Customized Control Stations – Polyamide Specifications

Polyamide Customized Control Station Specifications — Type: U4

Company: _____ Contact: _____ Phone/Fax: _____ E-mail: _____	Address: _____ _____ _____ Project: _____
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Box Definition							
Size 1	Size 2	Size 3	Size 3	Size 3	Size 3	Size 3	Size 3
 01 <input type="checkbox"/>	 34 <input type="checkbox"/>	 04 <input type="checkbox"/>	 09 <input type="checkbox"/>	 25 <input type="checkbox"/>	 11 <input type="checkbox"/>	 21 <input type="checkbox"/>	 23 <input type="checkbox"/>

Entry Positions	Entries (clearance hole)	Earth Stud (At Bottom)
	<input type="checkbox"/> M20 Earth Continuity Plate <input type="checkbox"/> Brass Earth Plate <input type="checkbox"/> Stainless Steel Earth Plate	<input type="checkbox"/> Without <input type="checkbox"/> M6 Stainless Steel Earth Stud (via M20 entry)

Cable Glands	Plugs
<input type="checkbox"/> Without <input type="checkbox"/> Type: _____ Quantity: _____	<input type="checkbox"/> Without <input type="checkbox"/> Type: _____ Quantity: _____

Name Plate			
<input type="checkbox"/> Without	Type <input type="checkbox"/> 58 x 18 Self-Adhesive Laminated Plastic	Color <input type="checkbox"/> White (black letters) <input type="checkbox"/> Yellow (black letters) <input type="checkbox"/> Red (white letters)	<input type="checkbox"/> Blue (white letters) <input type="checkbox"/> Black (white letters) <input type="checkbox"/> Green (white letters)
Text (1 line): _____			

Position	Actuator	Contacts	Insert	Legend Plate	Guard

Additional Instructions:

CONTROL STATIONS & SWITCHES

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Customized Control Stations – Polyester Specifications

Polyester Customized Control Station Specifications — Type: U2

Company: _____ Contact: _____ Phone/Fax: _____ E-mail: _____	Address: _____ _____ _____ Project: _____
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Box Definition	
Size 1 	Size 2
<small>*Terminal block available as option. (maximum: 10 x terminals 2.5mm²)</small>	

Entry Positions	Entries (Threaded)	Earth Stud
	<input type="checkbox"/> M20 <input type="checkbox"/> M25 <input type="checkbox"/> 3/4" NPT (via HUB)	<input type="checkbox"/> Without <input type="checkbox"/> M6 Stainless Steel Earth Stud <input type="checkbox"/> M8 Stainless Steel Earth Stud
	Earth Continuity Plate <input type="checkbox"/> Brass Earth Plate as Standard <input type="checkbox"/> Stainless Steel Earth Plate	Location: <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/> A/B/C

Cable Glands	Plugs
<input type="checkbox"/> Without <input type="checkbox"/> Type: _____ Quantity: _____	<input type="checkbox"/> Without <input type="checkbox"/> Type: _____ Quantity: _____

Name Plate					
<input type="checkbox"/> Without	<table style="width: 100%; border: none;"> <tr> <th style="text-align: center; border: none;">Type</th> <th style="text-align: center; border: none;">Color</th> </tr> <tr> <td style="border: none;"> <input type="checkbox"/> 58 x 18 Self-Adhesive Laminated Plastic <input type="checkbox"/> 65 x 18 Screw On Laminated Plastic <input type="checkbox"/> 65 x 18 Screw On in Stainless steel (black lettering) </td> <td style="border: none;"> <input type="checkbox"/> White (black letters) <input type="checkbox"/> Yellow (black letters) <input type="checkbox"/> Red (white letters) <input type="checkbox"/> Blue (white letters) <input type="checkbox"/> Black (white letters) <input type="checkbox"/> Green (white letters) </td> </tr> </table>	Type	Color	<input type="checkbox"/> 58 x 18 Self-Adhesive Laminated Plastic <input type="checkbox"/> 65 x 18 Screw On Laminated Plastic <input type="checkbox"/> 65 x 18 Screw On in Stainless steel (black lettering)	<input type="checkbox"/> White (black letters) <input type="checkbox"/> Yellow (black letters) <input type="checkbox"/> Red (white letters) <input type="checkbox"/> Blue (white letters) <input type="checkbox"/> Black (white letters) <input type="checkbox"/> Green (white letters)
Type	Color				
<input type="checkbox"/> 58 x 18 Self-Adhesive Laminated Plastic <input type="checkbox"/> 65 x 18 Screw On Laminated Plastic <input type="checkbox"/> 65 x 18 Screw On in Stainless steel (black lettering)	<input type="checkbox"/> White (black letters) <input type="checkbox"/> Yellow (black letters) <input type="checkbox"/> Red (white letters) <input type="checkbox"/> Blue (white letters) <input type="checkbox"/> Black (white letters) <input type="checkbox"/> Green (white letters)				
Text (1 line): _____					

Position	Actuator	Contacts	Insert	Legend Plate	Guard

* Terminal Blocks (Optional)	Type	Quantity (10 maximum)
Option for Box No. 03-05-09-10-12-13-15-21-22 only	2.5 mm ²	

Additional Instructions:

CONTROL STATIONS & SWITCHES

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Customized Control Stations – Stainless Steel Specifications

Stainless Steel Customized Control Station Specifications — Type: U6

Company: _____	Address: _____
Contact: _____	_____
Phone/Fax: _____	_____
E-mail: _____	Project: _____

Box Definition

Size 1

01 27

Size 2

03* 04 28* 29 09* 26

Size 3

30 31* 32 33

*Terminal block available as option. (maximum: 10 x terminals 2.5mm²)

Entry Positions	Entries (Clearance Hole)	Earth Stud
	<input type="checkbox"/> M20 <input type="checkbox"/> M25 <input type="checkbox"/> 3/4" NPT (via HUB)	M6 Stainless Steel Earth Stud as Standard <input type="checkbox"/> M8 Stainless Steel Earth Stud Location: <div style="display: flex; justify-content: space-around; align-items: center;"> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> </div>

Cable Glands	Plugs
<input type="checkbox"/> Without <input type="checkbox"/> Type: _____ Quantity: _____	<input type="checkbox"/> Without <input type="checkbox"/> Type: _____ Quantity: _____

Name Plate

<input type="checkbox"/> Without	<p style="text-align: center;">Type</p> <input type="checkbox"/> 58 x 18 Self-Adhesive Laminated Plastic <input type="checkbox"/> 65 x 18 Screw On Laminated Plastic <input type="checkbox"/> 65 x 18 Screw On Stainless Steel (black lettering)	<p style="text-align: center;">Color</p> <input type="checkbox"/> White (black letters) <input type="checkbox"/> Blue (white letters) <input type="checkbox"/> Yellow (black letters) <input type="checkbox"/> Black (white letters) <input type="checkbox"/> Red (white letters) <input type="checkbox"/> Green (white letters)
Text (1 line): _____		

Position	Actuator	Contacts	Insert	Legend Plate	Guard

* Terminal Blocks (Optional)	Type	Quantity (10 maximum)
Option for Box No. 03-09-28-31 only	2.5 mm ²	

Additional Instructions:

CONTROL STATIONS & SWITCHES











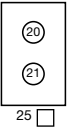
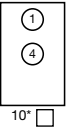

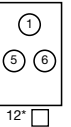
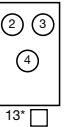
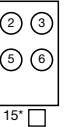
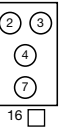
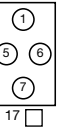
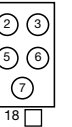
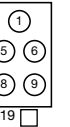
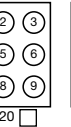
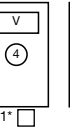
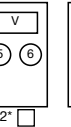
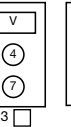
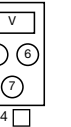


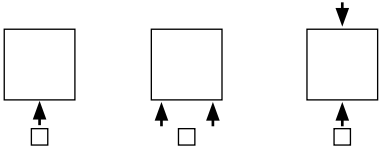
Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Customized Control Stations – Aluminum Specifications

Aluminum Customized Control Station Specifications — Type: U8

Company: _____	Address: _____
Contact: _____	_____
Phone/Fax: _____	_____
E-mail: _____	Project: _____

Box Definition	
<p>Size 1</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  01 <input type="checkbox"/> </div> <div style="text-align: center;">  02 <input type="checkbox"/> </div> </div> <p>Size 2</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  03* <input type="checkbox"/> </div> <div style="text-align: center;">  04 <input type="checkbox"/> </div> <div style="text-align: center;">  05* <input type="checkbox"/> </div> <div style="text-align: center;">  06 <input type="checkbox"/> </div> <div style="text-align: center;">  07 <input type="checkbox"/> </div> <div style="text-align: center;">  08 <input type="checkbox"/> </div> <div style="text-align: center;">  09* <input type="checkbox"/> </div> <div style="text-align: center;">  26 <input type="checkbox"/> </div> </div> <p>Size 3</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  25 <input type="checkbox"/> </div> <div style="text-align: center;">  10* <input type="checkbox"/> </div> <div style="text-align: center;">  11 <input type="checkbox"/> </div> <div style="text-align: center;">  12* <input type="checkbox"/> </div> <div style="text-align: center;">  13* <input type="checkbox"/> </div> <div style="text-align: center;">  15* <input type="checkbox"/> </div> <div style="text-align: center;">  16 <input type="checkbox"/> </div> <div style="text-align: center;">  17 <input type="checkbox"/> </div> <div style="text-align: center;">  18 <input type="checkbox"/> </div> <div style="text-align: center;">  19 <input type="checkbox"/> </div> <div style="text-align: center;">  20 <input type="checkbox"/> </div> <div style="text-align: center;">  21* <input type="checkbox"/> </div> <div style="text-align: center;">  22* <input type="checkbox"/> </div> <div style="text-align: center;">  23 <input type="checkbox"/> </div> <div style="text-align: center;">  24 <input type="checkbox"/> </div> </div>	<p>*Terminal block available as option. (maximum: 10 x terminals 2.5mm²)</p>

Entry Positions	Entries (Clearance Hole)	Earth Stud				
	<input type="checkbox"/> M20 <input type="checkbox"/> M25 <input type="checkbox"/> 3/4" NPT (via HUB)	M5 External Earth as Standard <input type="checkbox"/> M6 Stainless Steel Earth Stud <input type="checkbox"/> M8 Stainless Steel Earth Stud Location: <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">A <input type="checkbox"/></div> <div style="text-align: center;">B <input type="checkbox"/></div> <div style="text-align: center;">C <input type="checkbox"/></div> <div style="text-align: center;">D <input type="checkbox"/></div> <div style="text-align: center;"> <table border="1" style="font-size: 8px;"> <tr><td>A</td><td>B</td></tr> <tr><td>D</td><td>C</td></tr> </table> </div> </div>	A	B	D	C
A	B					
D	C					

Cable Glands	Plugs
<input type="checkbox"/> Without <input type="checkbox"/> Type: _____ Quantity: _____	<input type="checkbox"/> Without <input type="checkbox"/> Type: _____ Quantity: _____

Name Plate									
<input type="checkbox"/> Without	<table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left; border-bottom: 1px dotted black;">Type</th> <th style="text-align: left; border-bottom: 1px dotted black;">Color</th> </tr> <tr> <td style="border-bottom: 1px dotted black;"> <input type="checkbox"/> 58 x 18 Self-Adhesive Laminated Plastic </td> <td style="border-bottom: 1px dotted black;"> <input type="checkbox"/> White (black letters) <input type="checkbox"/> Blue (white letters) </td> </tr> <tr> <td style="border-bottom: 1px dotted black;"> <input type="checkbox"/> 65 x 18 Screw On Laminated Plastic </td> <td style="border-bottom: 1px dotted black;"> <input type="checkbox"/> Yellow (black letters) <input type="checkbox"/> Black (white letters) </td> </tr> <tr> <td style="border-bottom: 1px dotted black;"> <input type="checkbox"/> 65 x 18 Screw On in Stainless Steel (black lettering) </td> <td style="border-bottom: 1px dotted black;"> <input type="checkbox"/> Red (white letters) <input type="checkbox"/> Green (white letters) </td> </tr> </table> <p>Text (1 line): _____</p>	Type	Color	<input type="checkbox"/> 58 x 18 Self-Adhesive Laminated Plastic	<input type="checkbox"/> White (black letters) <input type="checkbox"/> Blue (white letters)	<input type="checkbox"/> 65 x 18 Screw On Laminated Plastic	<input type="checkbox"/> Yellow (black letters) <input type="checkbox"/> Black (white letters)	<input type="checkbox"/> 65 x 18 Screw On in Stainless Steel (black lettering)	<input type="checkbox"/> Red (white letters) <input type="checkbox"/> Green (white letters)
Type	Color								
<input type="checkbox"/> 58 x 18 Self-Adhesive Laminated Plastic	<input type="checkbox"/> White (black letters) <input type="checkbox"/> Blue (white letters)								
<input type="checkbox"/> 65 x 18 Screw On Laminated Plastic	<input type="checkbox"/> Yellow (black letters) <input type="checkbox"/> Black (white letters)								
<input type="checkbox"/> 65 x 18 Screw On in Stainless Steel (black lettering)	<input type="checkbox"/> Red (white letters) <input type="checkbox"/> Green (white letters)								

Position	Actuator	Contacts	Insert	Legend Plate	Guard

* Terminal Blocks (Optional)	Type	Quantity (10 maximum)
Option for Box No. 03-05-09-10-12-13-15-21-22 only	2.5 mm ²	

Additional Instructions:

CONTROL STATIONS & SWITCHES

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Pre-drilled Control Stations



Polamide U43W211



Polyester U23W211



Stainless Steel U62W229



Aluminum U83W211

Compliance Data:

ATEX – IEC and IECEx (Polyester):



Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IEC / IECEx	CE
Ex de IIC / Ex demb IIC	T6 to T5	Ex tD A21	T75°C to T95°C	IP66 – IK09/10

Voltage and Amperage:

Voltage	Amperage	Pilot Light Voltage
Up to 500 V	16 A	12 Vac to 254 Vac 50/60 Hz and 12 Vdc to 60 Vdc

Operating Temperature:

Polyamide (PCe)	Polyester (CSPe)	Stainless Steel (JBe)	Aluminum (PCe)
-20°C to +55°C	-55°C to +60°C -40°C to +60°C -25°C to +60°C	-50°C to +60°C -40°C to +60°C -25°C to +60°	-55°C to +60°C -40°C to +60°C -25°C to +60°C
	(depending on type of actuator)		

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Pre-drilled Polyamide Control Stations

Zone 1 & 2 – 21 & 22

II 2 GD

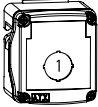

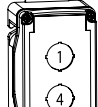

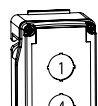
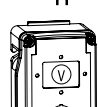
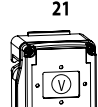
ATEX / IEC

IP66 – IK09

Ordering Information - Polyamide Pre-drilled Boxes for Control Stations

Standard equipment: 1 white self-adhesive laminated plastic nameplate (black lettering), 2 clearance entries at bottom.



	Description/ Function	Entries	Catalog Number 2 Bottom	Weight (kg)	Volume (dm ³)
Size 1 Pre-drilled Enclosures					
	For 1 actuator 1 vertical rail	M20	U41W2 01	0.7	2.5
01					
Size 2 Pre-drilled Enclosures					
	For 1 actuator 1 vertical rail	M20	U42W2 34	0.9	2.5
34					
	For 2 actuators 1 vertical rail	M20	U42W2 04	0.9	2.5
04					
Size 3 Pre-drilled Enclosures					
	For 2 actuators 1 vertical rail	M20	U43W2 25	1	2.5
25					
	For 3 actuators 1 vertical rail	M20	U43W2 11	1	2.5
11					
	For 1 ammeter 48 x 48 + 1 actuator 1 vertical rail	M20	U43W2 21	1	2.5
21					
	For 1 ammeter 48 x 48 + 2 actuators 1 vertical rail	M20	U43W2 23	1	2.5
23					

CONTROL STATIONS & SWITCHES

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Pre-drilled Polyester Control Stations

Zone 1 & 2 – 21 & 22

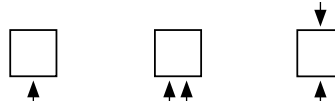
II 2 GD

ATEX / IECEx

IP66 – IK10

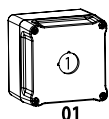
Ordering Information - Polyester Pre-Drilled Boxes for Control Stations:

Standard equipment: 1 white self-adhesive laminated plastic nameplate (black lettering), 1 earth continuity brass plate, threaded entries.



Description/ Function	Entries	Catalog Number 1 Bottom	Catalog Number 2 Bottom	Catalog Number Feed-Thru	Weight (kg)	Volume (dm ³)
--------------------------	---------	----------------------------	----------------------------	-----------------------------	----------------	------------------------------

Size 1 Pre-Drilled Enclosures



01

For 1 actuator
1 horizontal rail

M20
M25

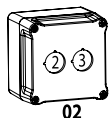
U21W1 01
U21W3 01

U21W2 01
U21W4 01

U21U1 01
U21U3 01

0.8

2.7



02

For 2 actuators
1 horizontal rail

M20
M25

U21W1 02
U21W3 02

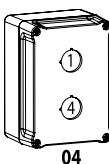
U21W2 02
U21W4 02

U21U1 02
U21U3 02

0.8

2.7

Size 2 Pre-Drilled Enclosures



04

For 2 actuators
1 vertical rail

M20
M25

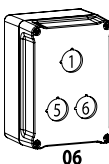
U22W1 04
U22W3 04

U22W2 04
U22W4 04

U22U1 04
U22U3 04

1

4.2



06

For 3 actuators
2 horizontal rails

M20
M25

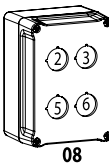
U22W1 06
U22W3 06

U22W2 06
U22W4 06

U22U1 06
U22U3 06

1

4.2



08

For 4 actuators
2 horizontal rails

M20
M25

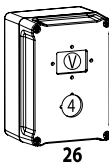
U22W1 08
U22W3 08

U22W2 08
U22W4 08

U22U1 08
U22U3 08

1

4.2



26

For 1 ammeter 48x48
+1 actuator
1 vertical rail

M20
M25

U22W1 26
U22W3 26

U22W2 26
U22W4 26

U22U1 26
U22U3 26

1

4.2

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Pre-drilled Polyester Control Stations

Zone 1 & 2 – 21 & 22

Ex II 2 GD

ATEX / IECEx

IP66 – IK10

Ordering Information - Polyester Pre-drilled Boxes for Control Stations — Continued:

Standard equipment: 1 white self-adhesive laminated plastic nameplate (black lettering), 1 earth continuity brass plate, threaded entries.



Description/ Function	Entries	Catalog Number 1 Bottom	Catalog Number 2 Bottom	Catalog Number Feed-Thru	Weight (kg)	Volume (dm ³)
Size 3 Pre-drilled Enclosures (230 mm x 120 mm x 91 mm)						
11	For 3 actuators 1 vertical rail	M20 M25	U23W1 11 U23W3 11	U23W2 11 U23W4 11	U23U1 11 U23U3 11	1.1 4.2
14	For 4 actuators 1 vertical rail	M20 M25	U23W1 14 U23W3 14	U23W2 14 U23W4 14	U23U1 14 U23U3 14	1.1 4.2
16	For 4 actuators 3 horizontal rails	M20 M25	U23W1 16 U23W3 16	U23W2 16 U23W4 16	U23U1 16 U23U3 16	1.1 4.2
17	For 4 actuators 3 horizontal rails	M20 M25	U23W1 17 U23W3 17	U23W2 17 U23W4 17	U23U1 17 U23U3 17	1.1 4.2
18	For 5 actuators 3 horizontal rails	M20 M25	U23W1 18 U23W3 18	U23W2 18 U23W4 18	U23U1 18 U23U3 18	1.1 4.2
20	For 6 actuators 3 horizontal rails	M20 M25	U23W1 20 U23W3 20	U23W2 20 U23W4 20	U23U1 20 U23U3 20	1.1 4.2
23	For 1 ammeter 48x48 + 2 actuators 1 vertical rail	M20 M25	U23W1 23 U23W3 23	U23W2 23 U23W4 23	U23U1 23 U23U3 23	1.1 4.2
24	For 1 ammeter 48x48 + 3 actuators 1 vertical rail (V) 2 horizontal rails (5-6-7)	M20 M25	U23W1 24 U23W3 24	U23W2 24 U23W4 24	U23U1 24 U23U3 24	1.1 4.2

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Pre-drilled Stainless Steel Control Stations

Zone 1 & 2 – 21 & 22

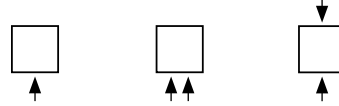
II 2 GD

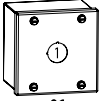
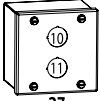
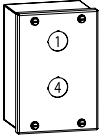
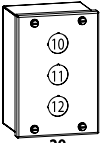
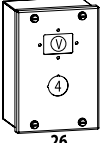
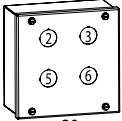
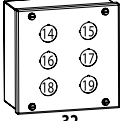
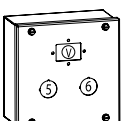
ATEX / IEC

IP66 – IK10

Ordering Information - Stainless Steel Pre-drilled Boxes for Control Stations:

Standard equipment: 1 white self-adhesive laminated plastic nameplate (black lettering), clearance entries.



Description/ Function	Entries	Catalog Number 1 Bottom	Catalog Number 2 Bottom	Catalog Number Feed-Thru	Weight (kg)	Volume (dm ³)
Size 1 Pre-drilled Enclosures						
 01	For 1 actuator 1 vertical rail	M20 M25	U61W1 01 U61W3 01	U61W2 01 U61W4 01	U61U1 01 U61U3 01	1 2.7
 27	For 2 actuators 1 vertical rail	M20 M25	U61W1 27 U61W3 27	U61W2 27 U61W4 27	U61U1 27 U61U3 27	1 2.7
Size 2 Pre-drilled Enclosures						
 04	For 2 actuators 1 vertical rail	M20 M25	U62W1 04 U62W3 04	U62W2 04 U62W4 04	U62U1 04 U62U3 04	1.5 3.6
 29	For 3 actuators 1 vertical rail	M20 M25	U62W1 29 U62W3 29	U62W2 29 U62W4 29	U62U1 29 U62U3 29	1.5 3.6
 26	For 1 ammeter 48x48 + 1 actuator 1 vertical rail	M20 M25	U62W1 26 U62W3 26	U62W2 26 U62W4 26	U62U1 26 U62U3 26	1.5 3.6
Size 3 Pre-drilled Enclosures						
 30	For 4 actuators 2 vertical rails	M20 M25	U63W1 30 U63W3 30	U63W2 30 U63W4 30	U63U1 30 U63U3 30	1.8 5.3
 32	For 6 actuators 2 vertical rails	M20 M25	U63W1 32 U63W3 32	U63W2 32 U63W4 32	U63U1 32 U63U3 32	1.8 5.3
 33	For 1 ammeter 48 x 48 + 2 actuators 1 vertical rail (V) 1 horizontal rail (5-6)	M20 M25	U63W1 33 U63W3 33	U63W2 33 U63W4 33	U63U1 33 U63U3 33	1.8 5.3

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Pre-drilled Aluminum Control Stations

Zone 1 & 2 – 21 & 22

Ex II 2 GD

ATEX / IEC

IP66 – IK10

Ordering Information - Aluminium Pre-drilled boxes for Control Stations:

Standard equipment: 1 white self-adhesive laminated plastic nameplate (black lettering), clearance entries.



Description/ Function	Entries	1 Bottom	2 Bottom	Feed-Thru	Weight (kg)	Volume (dm ³)
Size 1 Pre-drilled Enclosures						
 01	For 1 actuator 1 horizontal rail	M20	U81W1 01	U81W2 01	U81U1 01	1 2.7
 02	For 2 actuators 1 horizontal rail	M20	U81W1 02	U81W2 02	U81U1 02	1 2.7
Size 2 Pre-drilled Enclosures						
 04	For 2 actuators 1 vertical rail	M20	U82W1 04	U82W2 04	U82U1 04	1.5 2.7
 07	For 3 actuators 2 horizontal rails	M20	U82W1 07	U82W2 07	U82U1 07	1.5 2.7
 08	For 4 actuators 2 horizontal rails	M20	U82W1 08	U82W2 08	U82U1 08	1.5 2.7
 26	For 1 Ammeter 48x48 + 1 actuator 1 vertical rail	M20	U82W1 26	U82W2 26	U82U1 26	1.5 2.7

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Pre-drilled Aluminum Control Stations

Zone 1 & 2 – 21 & 22

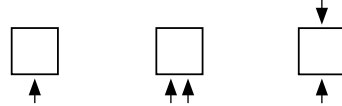
Ⓢ II 2 GD

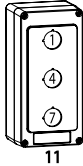
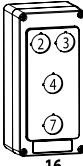
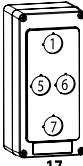
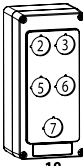
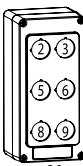
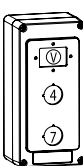
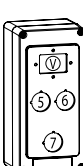
ATEX / IEC

IP66 – IK10

Ordering Information - Aluminum Pre-drilled Boxes for Control Stations — Continued:

Standard equipment: 1 white self-adhesive laminated plastic nameplate (black lettering), clearance entries.



Description/ Function	Entries	Catalog Number 1 Bottom	Catalog Number 2 Bottom	Catalog Number Feed-Thru	Weight (kg)	Volu (dm ³)	
Size 3 Pre-drilled Enclosures (230 mm x 110 mm x 95 mm)							
 <p>11</p>	For 3 actuators	M20	U83W1 11	U83W2 11	U83U1 11	1.8	4.2
	1 vertical rail	M25	U83W3 11	U83W4 11	U83U3 11		
 <p>16</p>	For 4 actuators	M20	U83W1 16	U83W2 16	U83U1 16	1.8	4.2
	3 horizontal rails	M25	U83W3 16	U83W4 16	U83U3 16		
 <p>17</p>	For 4 actuators	M20	U83W1 17	U83W2 17	U83U1 17	1.8	4.2
	3 horizontal rails	M25	U83W3 17	U83W4 17	U83U3 17		
 <p>18</p>	For 5 actuators	M20	U83W1 18	U83W2 18	U83U1 18	1.8	4.2
	3 horizontal rails	M25	U83W3 18	U83W4 18	U83U3 18		
 <p>20</p>	For 6 actuators	M20	U83W1 20	U83W2 20	U83U1 20	1.8	4.2
	3 horizontal rails	M25	U83W3 20	U83W4 20	U83U3 20		
 <p>23</p>	For 1 ammeter 48x48	M20	U83W1 23	U83W2 23	U83U1 23	1.8	4.2
	+ 2 actuators	M25	U83W3 23	U83W4 23	U83U3 23		
 <p>24</p>	For 1 ammeter 48x48	M20	U83W1 24	U83W2 24	U83U1 24	1.8	4.2
	+ 3 actuators	M25	U83W3 24	U83W4 24	U83U3 24		
	1 vertical rail (V)						
	2 horizontal rails (5-6-7)						

CONTROL STATIONS & SWITCHES

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Pre-drilled Control Stations

Zone 1 & 2 – 21 & 22

⊕ II 2 GD

ATEX / IEC / IECEx

IP66 – IK09/10

Compliances:

Hazardous Area	Polyester		Polyamide	
	Gas	Dust	Gas	Dust
Certified Type	CSPe		PCe	
Zones	1–2	21–22	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex de IIC / Ex demb IIC	Ex tD A21	Ex de IIC / Ex demb IIC	Ex tD A21
Symbol of Protection IEC				
T Rating	T6	N.A.	T6	N.A.
Surface Temperature	N.A.	T75°C	N.A.	T75°C
Ambient Temperature	-55°C to +60°C		-20°C to +55°C	
CE Declaration of Conformity	50284		50221	
ATEX Certificate	LCIE 09 ATEX 3032X		LCIE 00 ATEX 6047	
IEC or IECEx Certificate	IECEx LCI 09.0016X		LCIE Ex 00.017	
Other Certifications	GOST			
Index of Protection (solid and liquid)	IP66			
Impact Resistance (shock)	IK10		IK09	

Hazardous Area	Stainless Steel		Aluminum	
	Gas	Dust	Gas	Dust
Certified Type	JBe		PCe	
Zones	1–2	21–22	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex de IIC / Ex demb IIC	Ex tD A21	Ex de IIC / Ex demb IIC	Ex tD A21
Symbol of Protection IEC				
T Rating	T6 to T5	N.A.	T6	N.A.
Surface Temperature	N.A.	T80°C to 95°C	N.A.	T80°C
Ambient Temperature	-50°C to +70°C		-55°C to +60°C	
CE Declaration of Conformity	50232		50221	
ATEX Certificate	LCIE 02 ATEX 6118X		LCIE 00 ATEX 6047	
IEC Certificate	LCIE Ex 02.010X		LCIE Ex 00.017	
Other Certifications	GOST			
Index of Protection (solid and liquid)	IP66			
Impact Resistance (shock)	IK10		IK10	

CONTROL STATIONS & SWITCHES

Control Stations & Switches: Control Stations – Increased Safety

Unicode 2 Series: Pre-drilled Control Stations

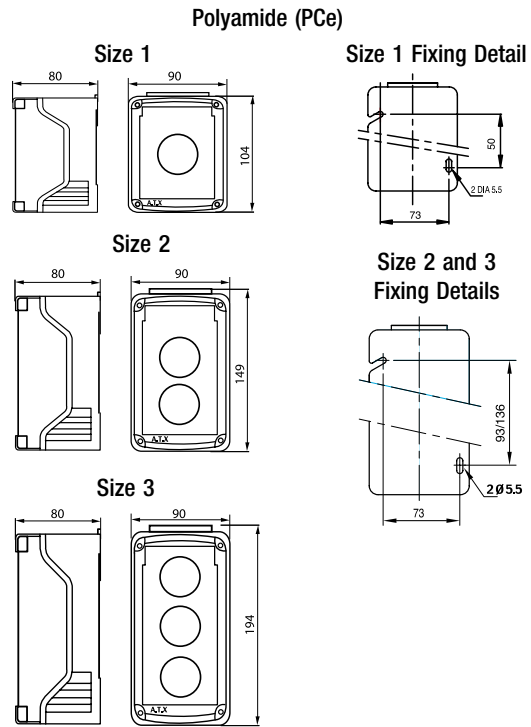
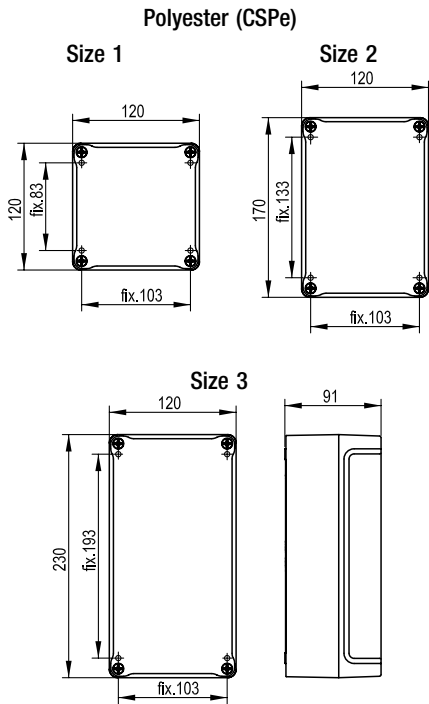
Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IEC / IECEx

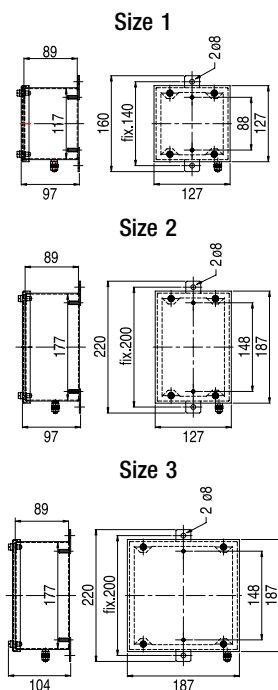
IP66 – IK09/10

Dimensions (mm):

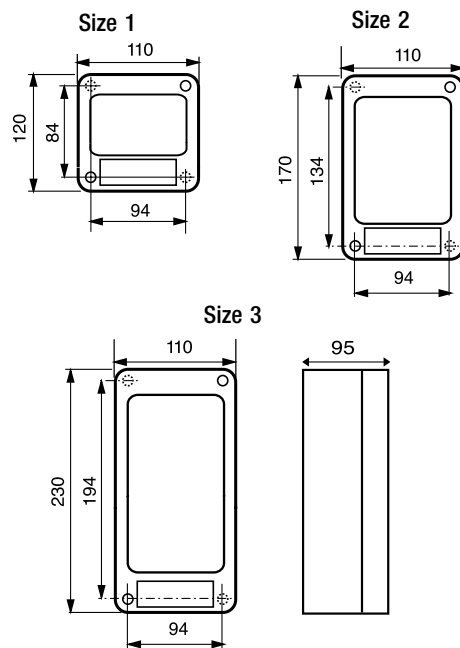


Fixing: Four holes dia. 5 mm

Stainless Steel (JBe)



Aluminum (PCe)



Fixing: Two holes dia. 5 mm

CONTROL STATIONS & SWITCHES

Control Stations & Switches: Components for Increased Safety Enclosures

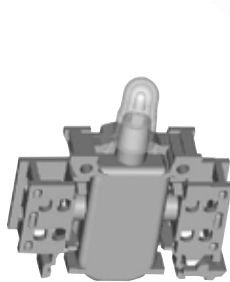
Unicode 2 Series: Actuators, Pilot Lights, Contact Blocks, Switches and Accessories



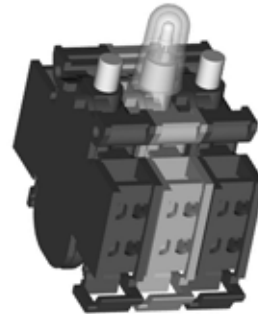
Actuators



Stackable Contact Blocks (1, 2, or 3)



Pilot Light



Stackable Pilot Light with Contact Blocks



Panel Mounting Adaptor

Compliance Data:

ATEX – IEC and IECEx:



Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IEC / IECEx	CE
Ex de IIC / Ex e II	Ex tD A21			IP66 – IK10 (TCe)

Voltage and Amperage:

Voltage	Amperage	Pilot Light Voltage
Up to 500 V	16 A	12 Vac to 254 Vac 50/60 Hz and 12 Vdc to 60 Vdc

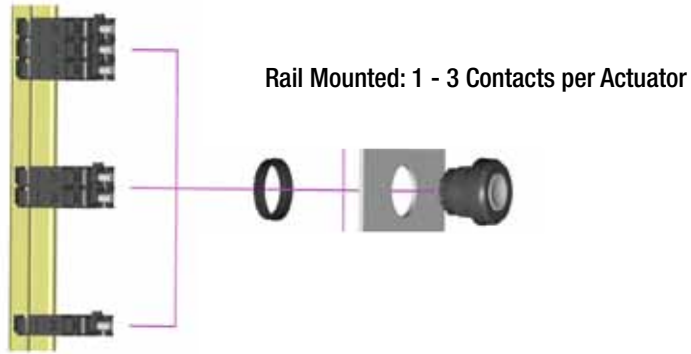
Operating Temperature:

-40°C to +60°C				
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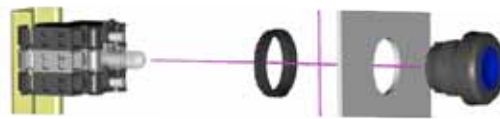
Control Stations & Switches: Components for Increased Safety Enclosures

Unicode 2 Series: Rail and Panel Mounted

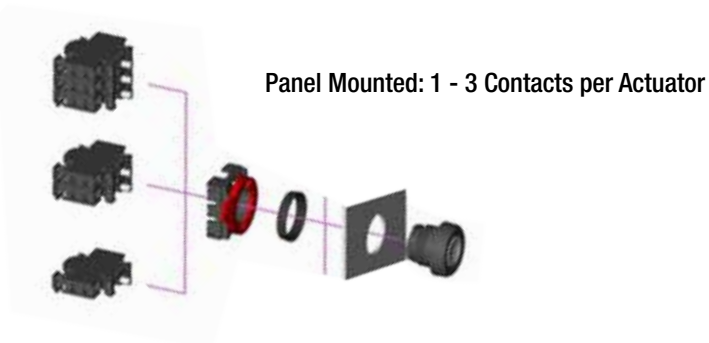
Rail Mounted:



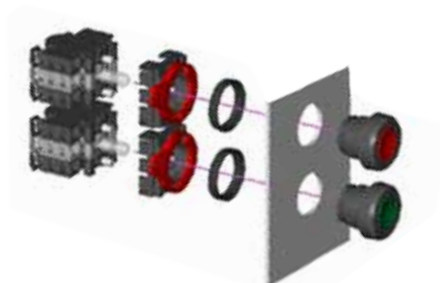
Rail Mounted: Illuminated Push Button



Panel Mounted:



Panel Mounted: Illuminated Push Button



Control Stations & Switches: Components for Increased Safety Enclosures

Unicode 2 Series: Push Button



UA0GR
(rail mounted)



UA0GP
(panel mounted)



Contact Block



UIA08

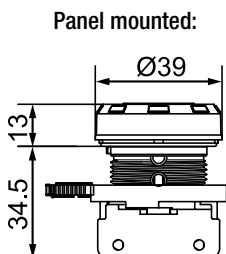
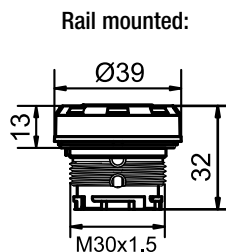
Features:

- Can be equipped with up to 3 contact blocks UCB series.
- ATEX and IECEx certified.
- TS35 rail mounted.
- Panel mounted.

Standard Materials:

- Polyamide body.
- EPDM seal.

Dimensions (mm):



Ordering Information:

Spring Return - Push Button (contact block to be ordered separately)

Push Button with insert (unmarked)	Rail Mounted Catalog Number	Panel Mounted Catalog Number	Weight (kg)	Volume (dm ³)	Pack
Red + Green	UAORGR	UAORGP			1
Green	UA0GR	UA0GP			1
Red	UAORR	UAORP	0.033	0.06	1
White	UAOWR	UAOWP			1
Blue	UA0BR	UA0BP			1
Yellow	UA0YR	UA0YP	0.046	0.17	1
Legend plates, guards, blanking plugs (see accessories page)					

1-Pole Contact Blocks

Contacts	Rail Mounted Catalog Number	Panel Mounted Catalog Number	Weight (kg)	Volume (dm ³)	Pack
1 x NO	UCB5R	UCB5P	0.032	0.06	1
1 x NC	UCB9R	UCB9P			

Spare Parts

Part	Catalog Number	Weight (kg)	Volume (dm ³)	Pack
Rail to panel mounted conversion adaptor	UPMA	0.020	0.08	1

Set of Five Spare Inserts

Marking	Color	Catalog Number	Weight (kg)	Volume (dm ³)	Pack
(unmarked)	Green	UIA G	0.007	0.008	1
(unmarked)	Red	UIA R	0.007	0.008	1
(unmarked)	Yellow	UIA Y	0.007	0.008	1
(unmarked)	White	UIA W	0.007	0.008	1
(unmarked)	Blue	UIA B	0.007	0.008	1
(unmarked)	Black	UIA N	0.007	0.008	1
ON	Green	UIA 01	0.007	0.008	1
OFF	Red	UIA 02	0.007	0.008	1
START	Green	UIA 03	0.007	0.008	1
STOP	Red	UIA 04	0.007	0.008	1
MARCHE	Green	UIA 05	0.007	0.008	1
ARRET	Red	UIA 06	0.007	0.008	1
I	Green	UIA 07	0.007	0.008	1
O	Red	UIA 08	0.007	0.008	1

Compliances:

Hazardous Area	Gas	Dust
Certified Type	TCe	
Zones	1-2	21-22
Conforming to ATEX 94/9/CE	0081 II 2 G	0081 II 2 D
Symbol of Protection ATEX	Ex e II	Ex tD A21
Symbol of Protection IEC		
Service Temperature	-40°C to +60°C	
CE Declaration of Conformity	5C242	
ATEX Certificate	LCIE 09 ATEX 3010U	
IECEx Certificate	IECEx LCI 09.0011U	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	

Standards:

Standard Type	Standards
Ex Standards	EN / IEC 60079-0; 60079-7; 61241-0; 61241-1
Product Standards	-
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Control Stations & Switches: Components for Increased Safety Enclosures

Unicode 2 Series: Mushroom Head Push Button



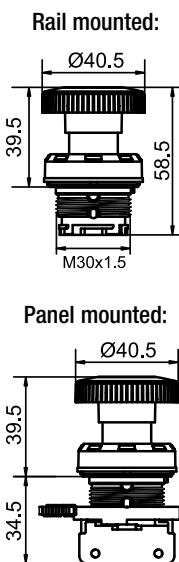
Features:

- Can be equipped with up to 3 contact blocks UCB series.
- ATEX and IECEx certified.
- TS35 rail mounted.
- Panel mounted.

Standard Materials:

- Polyamide body.
- EPDM seal.

Dimensions (mm):



Ordering Information:

Spring Return Mushroom Head Push Button (contact block to be ordered separately)

Color	Rail Mounted Catalog Number	Panel Mounted Catalog Number	Weight (kg)	Volume (dm ³)	Pack
Red	UR0R	UR0P	Rail mounted:		1
Black	UB0R	UB0P	0.045	0.12	1
			Panel mounted:		
			0.060	0.26	

Push-Pull Mushroom Head Push Button (contact block to be ordered separately)

Color	Rail Mounted Catalog Number	Panel Mounted Catalog Number	Weight (kg)	Volume (dm ³)	Pack
Red emergency stop	UD0R	UD0P	Rail mounted:		1
			0.045	0.12	
			Panel mounted:		
			0.060	0.26	

Legend plates, guards and blanking plugs (see accessories page)

1 Pole Contact Blocks

Contacts	Rail Mounted Catalog Number	Panel Mounted Catalog Number	Weight (kg)	Volume (dm ³)	Pack
1 x NO	UCB5R	UCB5P	0.032	0.06	1
1 x NC	UCB9R	UCB9P			

Spare Parts

Rail to panel mounted conversion adaptor	UPMA	0.020	0.08	1
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Compliances:

Hazardous Area	Gas	Dust
Certified Type	TCe	
Zones	1-2	21-22
Conforming to ATEX 94/9/CE	0081 Ex II 2 G	0081 Ex II 2 D
Symbol of Protection ATEX	Ex e II	Ex tD A21
Symbol of Protection IEC		
Service Temperature	-40°C to +60°C	
CE Declaration of Conformity	5C242	
ATEX Certificate	LCIE 09 ATEX 3010U	
IECEx Certificate	IECEx LCI 09.0011U	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	

Standards:

Ex Standards	EN / IEC 60079-0; 60079-7; 61241-0; 61241-1
Product Standards	-
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Control Stations & Switches: Components for Increased Safety Enclosures

Unicode 2 Series: Key Release Mushroom Head Push Button



UCOR
(rail mounted)



UCOP
(panel mounted)



Contact Block

Features:

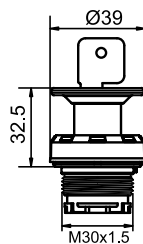
- Can be equipped with up to 2 contact blocks UCB series.
- ATEX and IEC certified.
- TS35 rail mounted.
- Panel mounted.

Standard Materials:

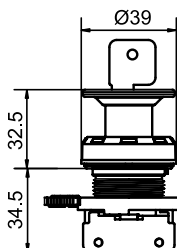
- Thermosetting plastic body.
- EPDM seal.

Dimensions (mm):

Rail mounted:



Panel mounted:



Ordering Information:

Key Release Mushroom Head Push Button (contact block to be ordered separately)

Color	Rail Mounted Catalog Number	Panel Mounted Catalog Number	Weight (kg)	Volume (dm ³)	Pack
Red	UCOR (098302)	UCOP	Rail mounted:		1
			0.085	0.09	
			Panel mounted:		
			0.096	0.25	

Legend plates, guards and blanking plugs (see accessories page)

1-Pole Contact Blocks

Contacts	Rail Mounted Catalog Number	Panel Mounted Catalog Number	Weight (kg)	Volume (dm ³)	Pack
1 x NO	UCB5R	UCB5P	0.032	0.06	1
1 x NC	UCB9R	UCB9P			

Spare Parts

Spare key (type 4 A 185)	SK4A185	/	/	1
Rail to panel mounted conversion adaptor	UPMA	0.020	0.08	1

Compliances:

Hazardous Area	Gas	Dust
Certified Type	AUX	
Zones	1-2	21-22
Conforming to ATEX 94/9/CE	0081 II 2 G	0081 II 2 D
Symbol of Protection ATEX	Ex e II	Ex tD A21
Symbol of Protection IEC		
Service Temperature	-20°C to +70°C	
CE Declaration of Conformity	5C206	
ATEX Certificate	LCIE 00 ATEX 0002U	
IEC Certificate	LCIE Ex 00.012U	
Other Certifications	UL, GOST	
Index of Protection (solid and liquid)	IP66	
Impact Resistance (shock)	7 Joules	

Standards:

Ex Standards	EN / IEC 60079-0; 60079-7; 61241-0; 61241-1
Product Standards	-
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Control Stations & Switches: Components for Increased Safety Enclosures

Unicode 2 Series: Key Impulse Push Button



UE0R
(rail mounted)



UE0P
(panel mounted)



Contact Block

Features:

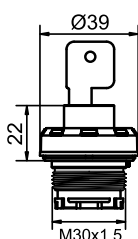
- Can be equipped with up to 2 contact blocks UCB series.
- ATEX and IEC certified.
- TS35 rail mounted.
- Panel mounted.

Standard Materials:

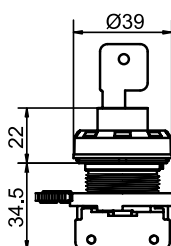
- Thermosetting plastic body.
- EPDM seal.

Dimensions (mm):

Rail mounted:



Panel mounted:



Ordering Information:

Key Impulse Push Button (contact block to be ordered separately)

Description	Rail Mounted Catalog Number	Panel Mounted Catalog Number	Weight (kg)	Volume (dm ³)	Pack
Key removable in both positions	UE0R (098320)	UE0P	Rail mounted: 0.080	0.08	1
Key removable in ON position	UF0R (098321)	UF0P			Panel mounted: 0.093
Key removable in Off position	UG0R (098322)	UG0P			1

Legend plates, guards and blanking plugs (see accessories page).

1-Pole Contact Blocks

Contacts	Rail Mounted Catalog Number	Panel Mounted Catalog Number	Weight (kg)	Volume (dm ³)	Pack
1 x NO	UCB5R	UCB5P	0.032	0.06	1
1 x NC	UCB9R	UCB9P			

Spare Parts

Spare key (type 4 A 185)		SK4A185	/	/	1
Rail to panel mounted conversion adaptor		UPMA	0.020	0.08	1

Compliances:

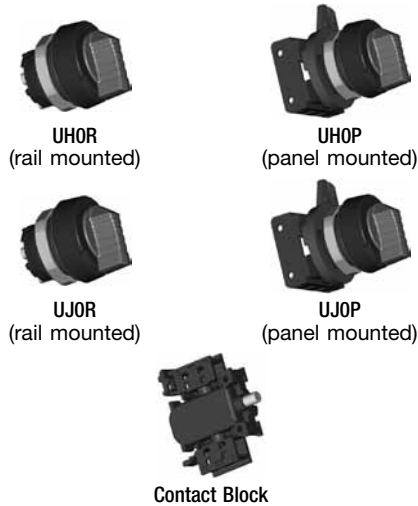
Hazardous Area	Gas	Dust
Certified Type	AUX	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	0081 Ex II 2 G	0081 Ex II 2 D
Symbol of Protection ATEX	Ex e II	Ex tD A21
Symbol of Protection IEC		
Service Temperature	-55°C to +70°C	
CE Declaration of Conformity	5C206	
ATEX Certificate	LCIE 00 ATEX 0002U	
IEC Certificate	LCIE Ex 00.012U	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact Resistance (shock)	7 Joules	

Standards:

Ex Standards	EN / IEC 60079-0; 60079-7; 61241-0; 61241-1
Product Standards	–
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Control Stations & Switches: Components for Increased Safety Enclosures

Unicode 2 Series: Rotary Actuator



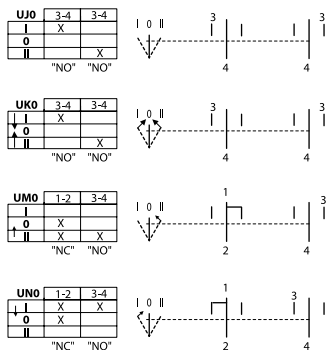
Features:

- Can be equipped with up to 3 contact blocks UCB series.
- ATEX and IEC certified.
- TS35 rail mounted.
- Panel mounted.

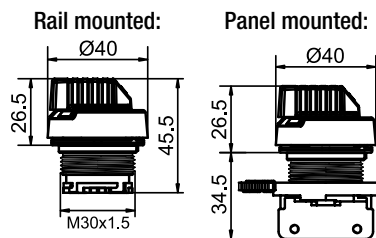
Standard Materials:

- Polyamide body.
- EPDM seal.

Wiring Diagram:



Dimensions (mm):



Ordering Information:

2-Position Rotary Actuator (contact block to be ordered separately)

2-Positions Selector Switch (0-I)	Rail Mounted Catalog Number	Panel Mounted Catalog Number	Weight (kg)	Volume (dm ³)	Pack
2 maintained positions	UHOR	UHOP	Rail mounted: 0.038	0.09	1
			Panel mounted: 0.051	0.22	

3-Position Rotary Actuator (contact block to be ordered separately)

3-Positions Selector Switch (I-O-II)	Rail Mounted Catalog Number	Panel Mounted Catalog Number	Weight (kg)	Volume (dm ³)	Pack
I and II position maintained (I-O-II)	UJOR	UJOP			1
I and II spring return to O (I->O<-II)	UKOR	UKOP	Rail mounted: 0.038	0.09	1
I maintained, II spring return to O (I-O<-II)	UMOR	UMOP	Panel mounted: 0.051	0.22	1
I spring return to O, II maintained (I->O-II)	UNOR	UNOP			1

Legend plates, guards and blanking plugs (see accessories page).

1 Pole Contact Blocks

Contacts	Rail Mounted Catalog Number	Panel Mounted Catalog Number	Weight (kg)	Volume (dm ³)	Pack
1 x NO	UCB5R	UCB5P	0.032	0.06	1
1 x NC	UCB9R	UCB9P			

Spare Parts

Rail to panel mounted conversion adaptor	UPMA	0.020	0.08	1
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Compliances:

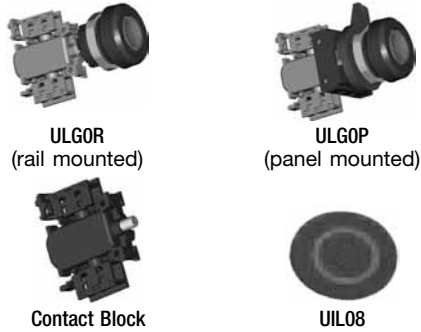
Hazardous Area	Gas	Dust
Certified Type	TCe	
Zones	1-2	21-22
Conforming to ATEX 94/9/CE	0081 (Ex) II 2 G	0081 (Ex) II 2 D
Symbol of Protection ATEX	Ex e II	Ex tD A21
Symbol of Protection IEC		
Service Temperature	-40°C to +60°C	
CE Declaration of Conformity	5C242	
ATEX Certificate	LCIE 09 ATEX 3010U	
IECEx Certificate	IECEx LCI 09.0011U	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	

Standards:

Ex Standards	EN / IEC 60079-0; 60079-7; 61241-0; 61241-1
Product Standards	-
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Control Stations & Switches: Components for Increased Safety Enclosures

Unicode 2 Series: Illuminated Push Button



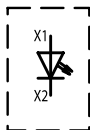
Features:

- Can be equipped with up to 2 contact blocks UCB series (not supplied).
- Contact block and indicating lamp combined below one actuator.
- ATEX and IECEx certified.
- TS35 rail mounted.
- High intensity single LED light.
- Long lifetime over 100,000 hours.
- Panel mounted.

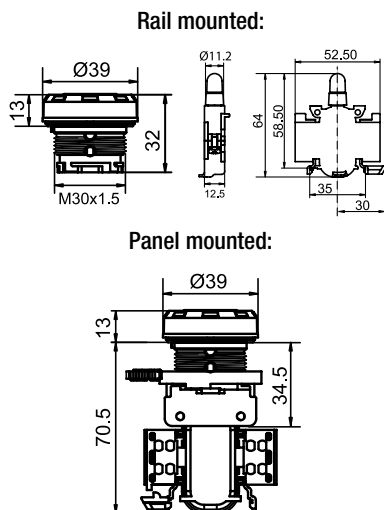
Standard Materials:

- Polyamide body.
- Polycarbonate lens.
- EPDM seal.

Wiring Diagram:



Dimensions (mm):



Ordering Information:

Spring Return Illuminated Push Button (contact block to be ordered separately)

Device Color	Rail Mounted Catalog Number	Panel Mounted Catalog Number	Weight (kg)	Volume (dm ³)	Pack
Green	ULGOR	ULGOP	Rail mounted: 0.062	0.26	1
Red	ULROR	ULROP			1
White	ULWOR	ULWOP			1
Blue	ULBOR	ULBOP	Panel mounted: 0.075	0.28	1
Yellow	ULYOR	ULYOP			1

Legend plates, guards, blanking plugs (see accessories page).

1-Pole Contact Blocks

Contacts	Rail Mounted Catalog Number	Panel Mounted Catalog Number	Weight (kg)	Volume (dm ³)	Pack
1 x NO	UCB5R	UCB5P	0.032	0.06	1
1 x NC	UCB9R	UCB9P			

Spare Parts

Part Description	Catalog Number	Weight (kg)	Volume (dm ³)	Pack
Rail to panel mounted conversion adaptor	UPMA	0.020	0.08	1

Set of Five Spare Inserts

Marking	Color	REF	Weight (kg)	Volume (dm ³)	Pack
(unmarked)	Green	UIL G	0.007	0.008	1
(unmarked)	Red	UIL R	0.007	0.008	1
(unmarked)	Yellow	UIL Y	0.007	0.008	1
(unmarked)	White	UIL W	0.007	0.008	1
(unmarked)	Blue	UIL B	0.007	0.008	1
ON	Green	UIL 01	0.007	0.008	1
OFF	Red	UIL 02	0.007	0.008	1
START	Green	UIL 03	0.007	0.008	1
STOP	Red	UIL 04	0.007	0.008	1
MARCHE	Green	UIL 05	0.007	0.008	1
ARRET	Red	UIL 06	0.007	0.008	1
I	Green	UIL 07	0.007	0.008	1
O	Red	UIL 08	0.007	0.008	1

Technical Data:

Rated Operating Voltage (Ue)	12 Vac to 254 Vac 50/60 Hz & 12 Vdc to 60 Vdc
Terminal Connection	2.5 mm ²
Operational Life	100,000 hours

Compliances:

Hazardous Area	Actuator and Lens		Contact Block and Pilot Light	
	Gas	Dust	Gas	Dust
Certified Type	TCe		CVe	
Zones	1-2	21-22	1-2	21-22
Conforming to 94/9/CE ATEX	0081 Ex II 2 G	0081 Ex II 2 D	0081 Ex II 2 G	0081 Ex II 2 D
Symbol of Protection ATEX	Ex e II	Ex tD A21	Ex de IIC	Ex tD A21
Symbol of Protection IEC				
Ambient Temperature	-40°C to +60°C		-40°C to +75°C	
CE Declaration of Conformity	5C242		5C243	
ATEX Certificate	LCIE 09 ATEX 3010U		LCIE 09 ATEX 3001U	
IECEx Certificate	IECEx LCI 09.0011U		IECEx LCI 09.0002U	
Other Certifications	GOST		GOST	
Index of Protection (solid and liquid)	IP66		NA	NA
Impact Resistance (shock)	IK10		NA	NA

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 60079-7; 61241-0; 61241-1
Product Standards	EN / IEC 60947-1
EMC Standards	-
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Control Stations & Switches: Components for Increased Safety Enclosures

Unicode 2 Series: Pilot Lights



UPGOR
(rail mounted)



UPGOP
(panel mounted)

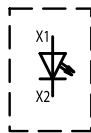
Features:

- ATEX and IECEx certified.
- TS35 rail mounted.
- Panel mounted.
- High intensity single LED light.
- Long life time over 100,000 hours.

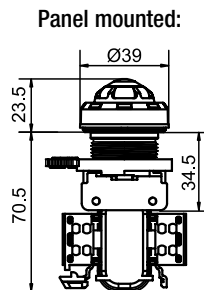
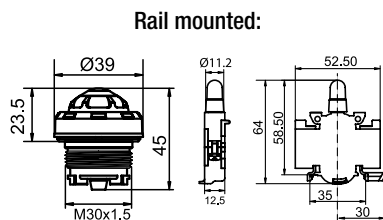
Standard Materials:

- Polyamide body.
- Polycarbonate lens.
- EPDM seal.

Wiring Diagram:



Dimensions (mm):



Ordering Information:

Pilot Light

12 Vac to 254 Vac 50/60 Hz 12 Vdc to 60 Vdc

Device Color	Rail Mounted Catalog Number	Panel Mounted Catalog Number	Weight (kg)	Volume (dm ³)	Pack
Green	UPGOR	UPGOP	Rail mounted: 0.056	0.29	1
Red	UPROR	UPROP			1
White	UPWOR	UPWOP	Panel mounted: 0.069	0.31	1
Blue	UPBOR	UPBOP			1
Yellow	UPYOR	UPYOP			1

Legend plates and blanking plugs (see accessories page).

Spare Parts

Rail to panel mounted conversion adaptor	UPMA	0.020	0.08	1
--	------	-------	------	---

Spare Lenses

Device Color	Catalog Number	Weight (kg)	Volume (dm ³)	Pack
Green	UPGL	0.030	0.06	1
Red	UPRL	0.030	0.06	1
White	UPWL	0.030	0.06	1
Blue	UPBL	0.030	0.06	1
Yellow	UPYL	0.030	0.06	1

Technical Data:

Rated Operating Voltage (Ue)	12 Vac to 254 Vac 50/60 Hz & 12 Vdc to 60 Vdc
Terminal Connection	2 x 2.5 mm ²
Operational Life	100,000 hours

Compliances:

Hazardous Area	Actuator and Lens		Contact Block and Pilot Light	
	Gas	Dust	Gas	Dust
Certified Type	TCe		CVe	
Zones	1-2	21-22	1-2	21-22
Conforming to 94/9/CE ATEX	0081 Ⓜ II 2 G	0081 Ⓜ II 2 D	0081 Ⓜ II 2 G	0081 Ⓜ II 2 D
Symbol of Protection ATEX	Ex e II	Ex tD A21	Ex de IIC	Ex tD A21
Symbol of Protection IEC				
Ambient Temperature	-40°C to +60°C		-40°C to +75°C	
CE Declaration of Conformity	5C242		5C243	
ATEX Certificate	LCIE 09 ATEX 3010U		LCIE 09 ATEX 3001U	
IECEx Certificate	IECEx LCI 09.0011U		IECEx LCI 09.0002U	
Other Certifications	GOST		GOST	
Index of Protection (solid and liquid)	IP66		NA	NA
Impact Resistance (shock)	IK10		NA	NA

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 60079-7; 61241-0; 61241-1
Product Standards	EN / IEC 60947-1
EMC Standards	-
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Control Stations & Switches: Components for Increased Safety Enclosures

Unicode 2 Series: 1 Pole Contact Block

Rail Mounted



UCB5R
(rail mounted)

Front Access

Panel Mounted



UCB5P
(panel mounted)

Rear Access

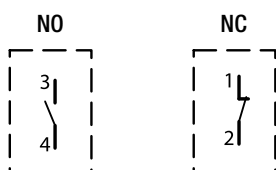
Features:

- ATEX and IECEx certified.
- TS35 rail mounted.
- Panel mounted.
- High performance contact block suitable for low intensity (less than 5mA).

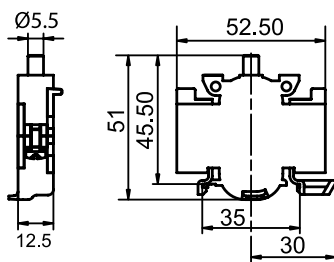
Standard Materials:

- Polyamide body.
- Silver alloy contact.

Wiring Diagram:



Dimensions (mm):



Ordering Information:

1-Pole Contact Blocks

Contacts	Rail Mounted Catalog Number	Panel Mounted Catalog Number	Weight (kg)	Volume (dm ³)	Pack
1 x NO	UCB5R	UCB5P	0.032	0.06	1
1 x NC	UCB9R	UCB9P			

Technical Data:

Rated Operating Voltage (Ue)	500 Vac – 110 Vdc
Switching capacity	
AC 12	16 A / 400 V
AC 14	10 A / 400V
AC 15	6 A / 500 V
DC 13	2 A / 24 V and 1 A / 110 V
Terminal connections	2 x 2.5 mm ²
Operational life	100,000 operations

Compliances:

Hazardous Area	Gas	Dust
Certified Type	CVe	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	0081 II 2 G	0081 II 2 D
Symbol of Protection ATEX	Ex de IIC	Ex tD A21
Symbol of Protection IEC		
Service Temperature	-40°C to +75°C	
CE Declaration of Conformity	5C243	
ATEX Certificate	LCIE 09 ATEX 3001U	
IECEx Certificate	IECEx LCI 09.0002U	
Other Certifications	GOST	
Index of Protection (solid and liquid)	NA	
Impact Resistance (shock)	NA	

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 60079-7; 61241-0; 61241-1
Product Standards	EN / IEC 60947-1; 60947-5
EMC Standards	–
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Control Stations & Switches: Components for Increased Safety Enclosures

Unicode 2 Series: 16 A Switches



US30R
(rail mounted)



US30P
(panel mounted)

Features:

- ATEX and IECEx certified.
- 1 to 4 pole switches.
- TS35 rail mounted.
- Panel mounted.

Standard Materials:

- Polyamide.
- Neoprene sealing material.



USH2R
(rail mounted)



**USH2P / USH3P
USH4P**
(panel mounted)

Features:

- Padlockable.
- Can be equipped with switch and changeover switch contact blocks.
- ATEX and IECEx certified.

Standard Materials:

- Polyamide.

Ordering Information:

Two Contact Switches (handle to be ordered separately)

Description	Wiring Diagram	Rail Mounted Catalog Number	Panel Mounted Catalog Number	Pack
2-pole switch 002		US32R (098654)	US32P (098855)	1
2 ways 1-pole Selector switch 016		US30R (098652)	US30P (098853)	1
3 ways 1-pole Selector switch 027		US31R (098653)	US31P (098854)	1
3 ways 1-pole Selector switch with spring return from 135° to 90° 038		US33R	US33P	1
3 ways 1-pole Selector switch with spring return from 45° to 90° 048		US34R	US34P	1
Padlockable handle		USH2R (098658)	USH2P (098851)	1

Three or Four Contact Switches (handle to be ordered separately)

Description	Wiring Diagram	Rail Mounted Catalog Number	Panel Mounted Catalog Number	Pack
4-pole switch 102		US35R	US35P	1
3 ways 2-pole Selector switch 119		US36R	US36P	1
2 ways 2-pole Selector switch 106		US37R	US37P	1
3 ways 2 pole Selector switch with spring return from 45° to 90° 138		US38R	US38P	1
3 ways 2-pole Selector switch with spring return from 135° to 90° 197		US39R	US39P	1
Padlockable handle for rail mounted			USH2R	1
Padlockable handle for panel mounted				
For stainless steel enclosures ECES Series			USH3P	1
For polyester or aluminum enclosures ECEP & ECEA Series			USH4P	1

Control Stations & Switches: Components for Increased Safety Enclosures

Unicode 2 Series: 16 A Switches



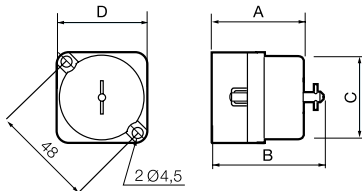
US30R
(rail mounted)



US30P
(panel mounted)

Dimensions (mm):

Changeover Switch / Switch



	A	B	C	D
2 Contacts	47.5	65	48	45
3 & 4 Contacts	60.5	73	48	45

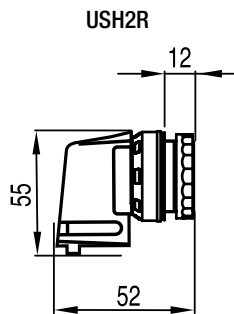


USH2R
(rail mounted)

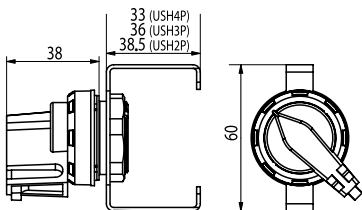


USH2P
(panel mounted)

Dimensions (mm):



USH2P / USH3P / USH4P



Technical Data:

Insulation Voltage (Ui)	750 V
Rated Operating Voltage (Ue)	AC 1: 690 V +/-5% – DC 1: 110 V
Rated Operating Current (Ie)	max. 16 A
Switching capacity	
AC 1	16 A / 690 V
AC 15	16 A / 415 V
AC 3	8A 500 V and 4 A / 690 V
DC 1	10 A / 24 V; 6 A / 60 V
DC 1	6 A / 110 V (1) and 6 A / 220 V (2)
Terminal connections (flexible / solid)	1.5 to 2.5 mm ² / 1.5 to 4 mm ²
Operational life	1,000,000 operations

(1) for 110 V 2 contacts connected in series.
(2) for 220 V 3 contacts connected in series.

Compliances: Switches

Hazardous Area	Gas	Dust
Certified Type	8008/2	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	0102 Ex II 2 G	Authorized to be used in an approved dustproof enclosure
Symbol of Protection ATEX	Ex de IIC	
Symbol of Protection IEC		
Service Temperature	-55°C to +100°C	
CE Declaration of Conformity	5C243	
ATEX Certificate	PTB 00 ATEX 1111U	
IECEx Certificate	IECEx PTB 06.0010U	
Other Certifications	CSA, UL, FM	
Index of Protection (solid and liquid)	NA	
Impact Resistance (shock)	NA	

Compliances: Handles

Hazardous Area	Gas	Dust
Certified Type	AUXe	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	0081 Ex II 2 G	0081 Ex II 2 D
Symbol of Protection ATEX	Ex e II	Ex tD A21
Symbol of Protection IEC		
Service Temperature	-20°C to +75°C	
CE Declaration of Conformity	5C221	
ATEX Certificate	LCIE 03 ATEX 0012U	
IECEx Certificate	LCIE Ex 03.011U	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 60079-7; 61241-0; 61241-1
Product Standards	EN / IEC 60947-1; 60947-4; 60947-5
EMC Standards	–
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Control Stations & Switches: Components for Increased Safety Enclosures

Unicode 2 Series: Accessories

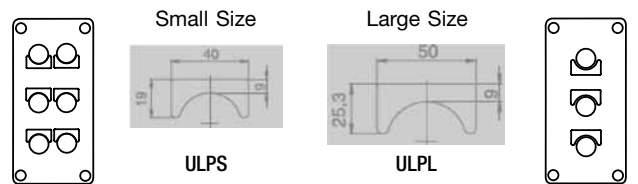
Accessories:

Standard Legend Plates

Self-adhesive yellow laminated plastic (black lettering)


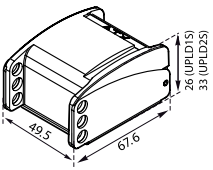




Text	Small	Large	Pack
Blank (set of 10)	ULPS	ULPL	1
ON	ULPSA 01	ULPLA 01	1
OFF	ULPSA 02	ULPLA 02	1
FORWARD	ULPSA 03	ULPLA 03	1
REVERSE	ULPSA 04	ULPLA 04	1
JOG	ULPSA 05	ULPLA 05	1
RUN	ULPSA 06	ULPLA 06	1
START	ULPSA 07	ULPLA 07	1
STOP	ULPSA 08	ULPLA 08	1
UP	ULPSA 09	ULPLA 09	1
DOWN	ULPSA 10	ULPLA 10	1
FAST	ULPSA 11	ULPLA 11	1
SLOW	ULPSA 12	ULPLA 12	1
RAISE	ULPSA 13	ULPLA 13	1
LOWER	ULPSA 14	ULPLA 14	1
OPEN	ULPSA 15	ULPLA 15	1
CLOSE	ULPSA 16	ULPLA 16	1
LOW	ULPSA 17	ULPLA 17	1
HIGH	ULPSA 18	ULPLA 18	1
TEST	ULPSA 19	ULPLA 19	1
RESET	ULPSA 20	ULPLA 20	1
EMERGENCY STOP	ULPSA 21	ULPLA 21	1
MARCHE	ULPSA 22	ULPLA 22	1
ARRET	ULPSA 23	ULPLA 23	1
ARRET D'URGENCE	ULPSA 24	ULPLA 24	1
HAUT	ULPSA 25	ULPLA 25	1
BAS	ULPSA 26	ULPLA 26	1

Two Sizes Available



Text	Small	Large	Pack
O - I	ULPSH 01	ULPLH 01	1
ON - OFF	ULPSH 02	ULPLH 02	1
START - STOP	ULPSH 03	ULPLH 03	1
STOP - START	ULPSH 04	ULPLH 04	1
HAND - AUTO	ULPSH 05	ULPLH 05	1
MANU - AUTO	ULPSH 06	ULPLH 06	1
FORWARD - REVERSE	ULPSH 07	ULPLH 07	1
REMOTE - LOCAL	ULPSH 08	ULPLH 08	1
MARCHE - ARRET	ULPSH 09	ULPLH 09	1

Text	Small	Large	Pack
I - O - II	ULPSJ 01	ULPLJ 01	1
OFF - O - ON	ULPSJ 02	ULPLJ 02	1
START - NORMAL - STOP	ULPSJ 03	ULPLJ 03	1
HAND - OFF - AUTO	ULPSJ 04	ULPLJ 04	1
MANU - O - AUTO	ULPSJ 05	ULPLJ 05	1
FORWARD - OFF - REVERSE	ULPSJ 06	ULPLJ 06	1
LOCAL - REMOTE - AUTO	ULPSJ 07	ULPLJ 07	1
LOCAL - O - REMOTE	ULPSJ 08	ULPLJ 08	1
MARCHE - NORMAL - ARRET	ULPSJ 09	ULPLJ 09	1

Description	Catalog Number
 <p>Yellow Guard Mushroom head protection for emergency stop</p>	098657
 <p>Padlockable Guard Stainless steel body and plastic cover. Capacity: 3 padlocks dia. 6mm maximum (not supplied)</p>	
<p>For push button and rotary actuator</p> 	UPLD1S
<p>For mushroom head actuator</p> 	UPLD2S
 <p>Cover Blanking Plug for cover drilling (dia. 30.5 mm)</p>	UBP
 <p>Adaptor Rail to panel mounted conversion adaptor</p>	UPMA

Control Stations & Switches: Components for Increased Safety Enclosures

V Series: AC Ammeter



Ammeter

CONTROL STATIONS & SWITCHES

Compliance Data:

ATEX - IEC:



Zone 1&2	ATEX	II 2 G	IEC	CE
Ex e m II				

Operating Temperature:

-25°C to +55°C				
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Control Stations & Switches: Components for Increased Safety Enclosures

V Series: AC Ammeter

Zone 1 & 2

Ex II 2 G

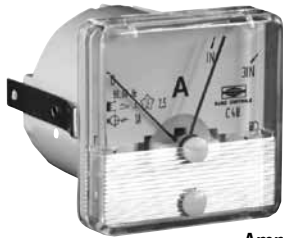
ATEX / IEC

Applications:

- Suitable for use with certified Ex e enclosures for control equipment in industrial processes.

Features:

- DIN rail mounted (TS35) and panel mounted versions.



Ammeter

Ordering Information:

AC Ammeter 48 x 48 mm:

Connection on current transformer.

Deflection 90°.

Red adjustable index.

Accuracy class 1.5.

Round barrel.



Description	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Rail Mounted					
1A C.T. 3 x F.L.C. with 0-1-3 Scale	0.1	0.4	VA1348R	098651	1
1A C.T. 5 x F.L.C. with 0-1-5 Scale	0.1	0.4	VA1548R	098952	1
1A C.T. 6 x F.L.C. with 0-1-6 Scale	0.1	0.4	VA1648R	098953	1
5A C.T. 3 x F.L.C. with 0-1-3 Scale	0.1	0.4	VA5348R	098954	1
5A C.T. 5 x F.L.C. with 0-1-5 Scale	0.1	0.4	VA5548R	098955	1
5A C.T. 6 x F.L.C. with 0-1-6 Scale	0.1	0.4	VA5648R	098956	1
Panel Mounted					
1A C.T. 3 x F.L.C. with 0-1-3 Scale	0.1	0.4	VA1348P	098850	1
1A C.T. 5 x F.L.C. with 0-1-5 Scale	0.1	0.4	VA1548P	098856	1
1A C.T. 6 x F.L.C. with 0-1-6 Scale	0.1	0.4	VA1648P	098857	1
5A C.T. 3 x F.L.C. with 0-1-3 Scale	0.1	0.4	VA5348P	098858	1
5A C.T. 5 x F.L.C. with 0-1-5 Scale	0.1	0.4	VA5548P	098859	1
5A C.T. 6 x F.L.C. with 0-1-6 Scale	0.1	0.4	VA5648P	098860	1

Window for Ammeter 48 x 48



0.1 0.4 VAW48 098852 1

Interchangeable Dials for Above Ammeter:

1 A Current Transformer 3 x F.L.C.

Scale	Catalog Number	Old Catalog Number
0 - 5 - 15 A	DA135	098861
0 - 10 - 30 A	DA1310	098862
0 - 15 - 45 A	DA1315	098863
0 - 20 - 60 A	DA1320	098864
0 - 30 - 90 A	DA1330	098865
0 - 40 - 120 A	DA1340	098866
0 - 50 - 150 A	DA1350	098867
0 - 60 - 180 A	DA1360	098868
0 - 75 - 225 A	DA1375	098869
0 - 100 - 300 A	DA13100	098870
0 - 125 - 375 A	DA13125	098871
0 - 150 - 450 A	DA13150	098872
0 - 200 - 600 A	DA13200	098873
0 - 250 - 750 A	DA13250	098874

1 A Current Transformer 5 x F.L.C.

Scale	Catalog Number	Old Catalog Number
0 - 5 - 25 A	DA155	098875
0 - 10 - 50 A	DA1510	098876
0 - 15 - 75 A	DA1515	098877
0 - 20 - 100 A	DA1520	098878
0 - 30 - 150 A	DA1530	098879
0 - 40 - 200 A	DA1540	098880
0 - 50 - 250 A	DA1550	098881
0 - 60 - 300 A	DA1560	098882
0 - 75 - 375 A	DA1575	098883
0 - 100 - 500 A	DA15100	098884
0 - 125 - 625 A	DA15125	098885
0 - 150 - 750 A	DA15150	098886
0 - 200 - 1000 A	DA15200	098887
0 - 250 - 1250 A	DA15250	098888

1 A Current Transformer 6 x F.L.C.

Scale	Catalog Number	Old Catalog Number
0 - 5 - 30 A	DA165	098889
0 - 10 - 60 A	DA1610	098890
0 - 15 - 90 A	DA1615	098891
0 - 20 - 120 A	DA1620	098892
0 - 30 - 180 A	DA1630	098893
0 - 40 - 240 A	DA1640	098894
0 - 50 - 300 A	DA1650	098895
0 - 60 - 360 A	DA1660	098896
0 - 75 - 450 A	DA1675	098897
0 - 100 - 600 A	DA16100	098898
0 - 125 - 750 A	DA16125	098899
0 - 150 - 900 A	DA16150	098900
0 - 200 - 1200 A	DA16200	098901
0 - 250 - 1500 A	DA16250	098902

5 A Current Transformer 3 x F.L.C.

Scale	Catalog Number	Old Catalog Number
0 - 5 - 15 A	DA535	098903
0 - 10 - 30 A	DA5310	098904
0 - 15 - 45 A	DA5315	098905
0 - 20 - 60 A	DA5320	098906
0 - 30 - 90 A	DA5330	098907
0 - 40 - 120 A	DA5340	098908
0 - 50 - 150 A	DA5350	098909
0 - 60 - 180 A	DA5360	098910
0 - 75 - 225 A	DA5375	098911
0 - 100 - 300 A	DA53100	098912
0 - 125 - 375 A	DA53125	098913
0 - 150 - 450 A	DA53150	098914
0 - 200 - 600 A	DA53200	098915
0 - 250 - 750 A	DA53250	098916

5 A Current Transformer 5 x F.L.C.

Scale	Catalog Number	Old Catalog Number
0 - 5 - 25 A	DA555	098917
0 - 10 - 50 A	DA5510	098918
0 - 15 - 75 A	DA5515	098919
0 - 20 - 100 A	DA5520	098920
0 - 30 - 150 A	DA5530	098921
0 - 40 - 200 A	DA5540	098922
0 - 50 - 250 A	DA5550	098923
0 - 60 - 300 A	DA5560	098924
0 - 75 - 375 A	DA5575	098925
0 - 100 - 500 A	DA55100	098926
0 - 125 - 625 A	DA55125	098927
0 - 150 - 750 A	DA55150	098928
0 - 200 - 1000 A	DA55200	098929
0 - 250 - 1250 A	DA55250	098930

5 A Current Transformer 6 x F.L.C.

Scale	Catalog Number	Old Catalog Number
0 - 5 - 30 A	DA565	098931
0 - 10 - 60 A	DA5610	098932
0 - 15 - 90 A	DA5615	098933
0 - 20 - 120 A	DA5620	098934
0 - 30 - 180 A	DA5630	098935
0 - 40 - 240 A	DA5640	098936
0 - 50 - 300 A	DA5650	098937
0 - 60 - 360 A	DA5660	098938
0 - 75 - 450 A	DA5675	098939
0 - 100 - 600 A	DA56100	098940
0 - 125 - 750 A	DA56125	098941
0 - 150 - 900 A	DA56150	098942
0 - 200 - 1200 A	DA56200	098943
0 - 250 - 1500 A	DA56250	098944

Control Stations & Switches: Components for Increased Safety Enclosures

V Series: AC Ammeter

Zone 1 & 2

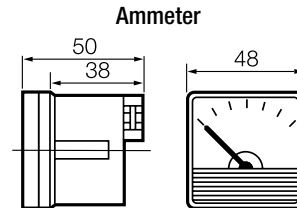
⊕ II 2 G

ATEX / IEC

Technical Data:

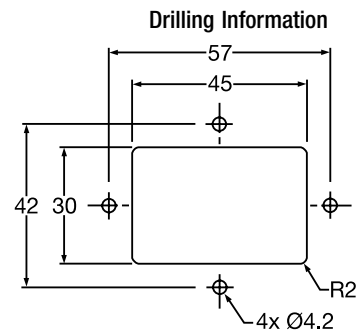
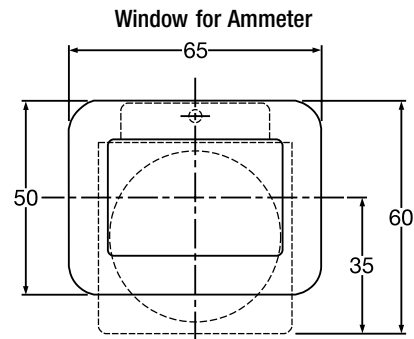
Rated Voltage	500 V
Frequency	25 to 100 Hz
Consumption	0.7 VA
Permanent overload	1.2 In
Instantaneous overload	10 In/5s
Terminal connections	M5 Terminals for lugs

Dimensions (mm):



Compliances:

Hazardous Area	Gas	Dust
Certification Type	C48D	
Zones	1-2	21-22
Conforming to ATEX 94/9/CE	0081 ⊕ II 2 G	⊕
Symbol of Protection ATEX	Ex em II	Authorized to be used with an approved dustproof Enclosure
Symbol of Protection IEC		
T Rating	NA	NA
Ambient Temperature	NA	NA
Service Temperature	-25°C to +55°C	
Declaration of Conformity	5C215	
ATEX Certificate	LCIE 02 ATEX 0006U	
IEC Certificate	LCIE Ex 02.019U	
Other Certifications	-	
Index of Protection	NA	
Impact Resistance (shock)	NA	

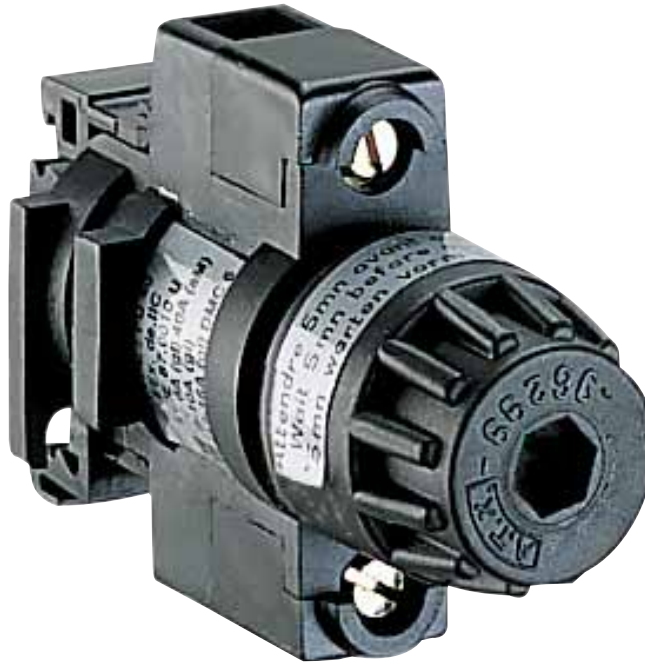


Standards:

Ex Standards	EN / IEC 60079-0; 60079-7; EN 60079-18
Product Standards	EN / IEC 60951-1
EMC Standards	-
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Control Stations & Switches: Components for Increased Safety Enclosures

FU40 Series: Fuse Carrier



Fuse Carrier
FU40

Compliances:

ATEX - IEC:



Zone 1 & 2	ATEX	II 2 G	IEC	CE
Ex de IIC				

Ratings:

Cartridge Fuse gG	Cartridge Fuse aM	Voltage		
16A maximum	40A maximum	Up to 500 V		

Service Temperature:

-40°C to +120°C				
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Control Stations & Switches: Components for Increased Safety Enclosures

FU40 Series: Fuse Carrier

Zone 1 & 2

⊕ II 2 G

ATEX / IEC

Applications:

- Useful as back-up fuse protection or as main fuse protection for hazardous locations.
- Can be fitted inside increased safety Ex e enclosures.

Features:

- For 14 x 51 mm cylindrical cartridge fuse 16A gG Max. and 40 A aM Max.
- Adaptor which clips onto EN 50 022 and EN 50 035 rail.
- Connection via 2 x 10 mm² terminals.

Standard Material of Fixtures:

- Polyamide.



Fuse Carrier
FU40

Ordering Information:

Weight (kg)	Volume (dm ³)	Fuse Size (mm)	Catalog Number	Old Catalog Number	Pack
0.1	0.4	14 x 51	FU40	096299	1

Compliances:

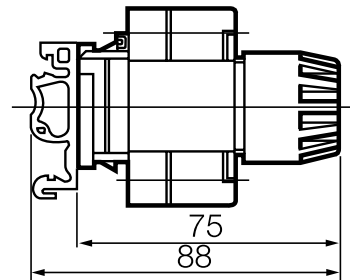
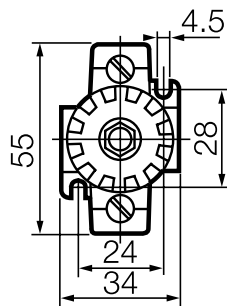
Hazardous Area	Gas
Certification Type	FU40
Zones	1-2
Conforming to ATEX 94/9/CE	0081⊕ II 2 G
Symbol of Protection ATEX	Ex de IIC
Symbol of Protection IEC	
T Rating	N.A.
Ambient Temperature	N.A.
Service Temperature	-40°C to +120°C
Declaration of Conformity	5C207
ATEX Certificate	LCIE 02 ATEX 0003U
IEC Certificate	LCIE Ex 02.021U
Other Certifications	-
Index of Protection	-
Impact Resistance (shock)	-

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 60079-7
Product Standards	EN / IEC 60947-1; 60947-3
EMC Standards	-
Other Standards	EN / IEC 60529 (IP)

Dimensions (mm):

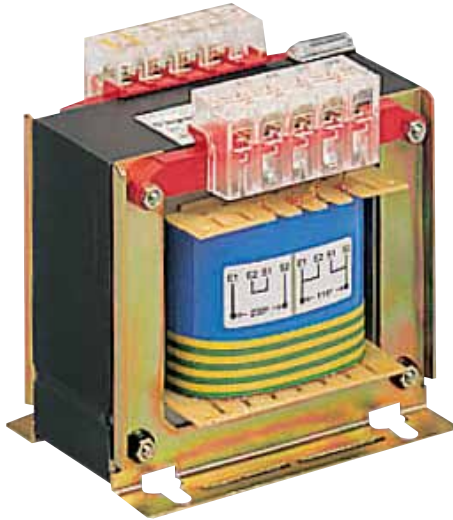
Fuse carrier



FU40

Control Stations & Switches: Components for Increased Safety Enclosures

TRE Series: Ex e Transformers



400 VA version



100 VA version

Compliances:

ATEX - IEC:



Zone 1 – 2	ATEX	II 2 G	IEC	CE
Ex e II				

Electrical Data:

Primary	Secondary	Power		
230/400 V	24 V/48 V	100 VA up to 400 VA		
240 V/415 V	2 x 110 V			

Service Temperature:

-20°C to +80°C				
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Control Stations & Switches: Components for Increased Safety Enclosures

TRE Series: Ex e Transformers

Zone 1 & 2

Ex II 2 G

ATEX / IEC

Applications:

- Equipment transformers are useful where the available voltage must be changed to accommodate the voltage required by the load and safety voltage.
- Suitable for use in certified increased safety enclosures and OEM increased safety applications.
- Requires primary and secondary protection by fuses or Branch Circuit Breaker.

Features:

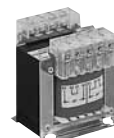
- Single phase 50/60 Hz.
- Class I.
- Circuit insulation voltage between:
 - 4500 V between windings.
 - 2300 V between primary winding and earth.
 - 1800 V between secondary winding and earth.
- Ex e Terminals capacity 4 mm².

Standard Material of Fixtures:

- Copper windings.
- Insulation Class F.



400 VA version



100 VA version

Catalog Number Logic:

TRE	XXX	X	X
Series: TRE = TRE Series Zone 1, 2 ATEX / IEC Certified	Power: 100 = 100 VA 250 = 250 VA 160 = 160 VA 400 = 400 VA	Primary Voltage: A = 230/400 V B = 240/415 V	Secondary Voltage: 2 = 24/48 V 3 = 2 x 110 V

Ordering Information:

Primary	Secondary	Power	Weight (kg)	Volume (dm ³)	Certified Type	Catalog Number	Old Catalog Number	Pack
230/400 V	24/48 V	100 VA	2.7	4	TSN	TRE100A2	096670	1
230/400 V	24/48 V	160 VA	4.9	4	TSN	TRE160A2	096671	1
230/400 V	24/48 V	250 VA	5.4	7	TSN	TRE250A2	096672	1
230/400 V	24/48 V	400 VA	6.9	7	TSN	TRE400A2	096673	1
230/400 V	2x110 V	100 VA	2.7	4	TSCN	TRE100A3	096674	1
230/400 V	2x110 V	160 VA	4.9	4	TSCN	TRE160A3	096675	1
230/400 V	2x110 V	250 VA	5.4	7	TSCN	TRE250A3	096676	1
230/400 V	2x110 V	400 VA	6.9	7	TSCN	TRE400A3	096677	1
240/415 V	24/48 V	100 VA	2.7	4	TSN	TRE100B2	096678	1
240/415 V	24/48 V	160 VA	4.9	4	TSN	TRE160B2	096679	1
240/415 V	24/48 V	250 VA	5.4	7	TSN	TRE250B2	096680	1
240/415 V	24/48 V	400 VA	6.9	7	TSN	TRE400B2	096681	1

Technical Data:

Power	Power Loss	Primary Overcurrent Protection						Secondary Overcurrent Protection					
		Fuses		MCB Curve C	MCB Curve D	MCB Curve C	MCB Curve D	Fuses			MCB Curve C		
		230/240 V	400/415 V	230/240 V		400/415 V		24 V	48 V	110 V	24 V	48 V	110 V
100 VA	6 W	1A aM	1A aM	3 A	1 A	2 A	1 A	4 A gG	2 A gG	1 A gG	4 A	2 A	1 A
160 VA	10 W	2A aM	1A aM	6 A	2 A	2 A	1 A	8 A gG	4 A gG	1 A gG	6 A	4 A	2 A
250 VA	15 W	2A aM	2A aM	6 A	3 A	3 A	2 A	10 A gG	6 A gG	2 A gG	10 A	6 A	2 A
400 VA	25 W	4A aM	2A aM	10 A	6 A	6 A	2 A	16 A gG	8 A gG	4 A gG	16 A	4 A	4 A

Control Stations & Switches: Components for Increased Safety Enclosures

TRE Series: Ex e Transformers

Zone 1 & 2

II 2 G

ATEX / IEC

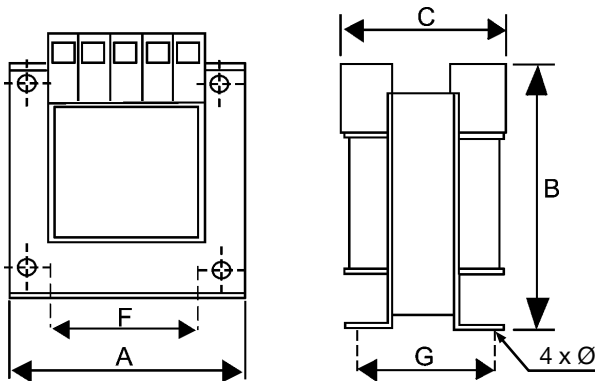
Compliances:

Hazardous Area	Gas
Certification Type	TSN/TSCN
Zones	1–2
Conforming to ATEX 94/9/CE	0081 II 2 G
Symbol of Protection ATEX	Ex e II
Symbol of Protection IEC	
T Rating	N.A.
Service Temperature	-20°C to +80°C
CE Declaration of Conformity	5C222
ATEX Certificate	LCIE 03 ATEX 0021U
IEC Certificate	LCIE Ex 04.010U
Other Certifications	N.A.
Ingress Protection (solid and liquid)	N.A.
Impact Resistance (shock)	N.A.

Standards:

Ex Standards	EN / IEC 60079-0; 60079-7
Product Standards	EN 61558-2-4; 61558-2-6
EMC Standards	–
Other Standards	–

Dimensions (mm):



Power	Fixing						Weight (kg)
	A	B	C	F	G	Ø	
100 VA	94	91	91	64	66	4.8	1.8
160 VA	96	102	96	84	78	5.8	3.2
150 VA	108	110	100	84	82	5.8	4.4
400 VA	126	126	115	90	99	6.5	6.0

Control Stations & Switches: Control Stations – Flameproof

D Series: Aluminum Control Stations



1 Function



2 Functions



2 Functions



3 Functions

CONTROL STATIONS & SWITCHES

Compliance Data:

ATEX - IEC:

Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IEC	CE
Ex d IIB / Ex d IIC	T6 to T5	Ex tD A21	T95°C	IP66 – IK10

Operating Temperature:

-40°C to +55°C				
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Control Stations & Switches: Control Stations – Flameproof

D Series: Aluminum Control Stations

Zone 1 & 2 - 21 & 22

Ex II 2 GD

ATEX / IEC

IP66 - IK10

Applications:

- Local control stations for use in hazardous areas.
- Control of electrical equipment at power plants, chemical and petrochemical plants, petroleum refineries, pulp and paper processing plants and various industrial applications.

Features:

1 & 2 Function Ex d IIC:

- Supplied with actuators, contact blocks and pilot lights.
- TS35 rail mounted contact blocks.
- Threaded flameproof joint.
- Connection: 2 x 2.5 mm² maximum.
- Internal earth: 2 x 4 mm².
- External ground: M5
- 1 x M20 or M25 threaded entry at bottom.
- Cable glands and plugs to be ordered separately.

2 & 3 Function Exd IIB:

- Supplied with actuators and rail mounting pilot lights and contact blocks.
- Flanged flameproof joint.
- Yellow laminated plastic legend plate with black lettering.
- Connection : 2 x 2.5 mm² max.
- Internal earth: 2 x 4 mm².
- External earth: M6 screw.
- 2 x M20 threaded entries at the bottom.
- Cable glands and plugs to be ordered separately.

Standard Material of Fixtures:




- Gray painted marine grade aluminum alloy box.

Options:

- For other configurations, see pre-drilled control stations or consult factory.

Ordering Information:

1 Function Ex d IIC Control Stations:

Type	Description/Function	Bottom Entries	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
Spring Return Push Button						
	BR1d 1x black spring return push button with 1NO + 1NC momentary contacts	1 x M20	1	3.75	DA1W1T101	093881
	BR1d 1x black spring return push button with 1NO + 1NC momentary contacts	1 x M25	1	3.75	DA1W3T101	093880
Mushroom Head Push Button						
	BR1d 1x red mushroom head push-pull with 1NO + 1NC maintained contacts Padlockable in both positions	1 x M20	1.2	3.75	DA1W1T102	093887
	BR1d 1x red mushroom head push-pull with 1NO + 1NC maintained contacts Padlockable in both positions	1 x M25	1.2	3.75	DA1W3T102	093885
	BR1d Red mushroom head key release with 1NO + 1NC maintained contact Unlocked with key (MS1)	1 x M20	1.2	3.75	DA1W1T104	–
	BR1d Red mushroom head key release with 1NO + 1NC maintained contact Unlocked with key (MS1)	1 x M25	1.2	3.75	DA1W3T104	–
Time Delayed Push Button 230 V 50/60 Hz						
	BR1d 1x time delayed black impulse push button adjustable from 25s to 15mn For 1000 W incandescent or 400 W fluorescent max.	1 x M20	1.2	3.75	DA1W1T103	093888
	BR1d 1x time delayed black impulse push button adjustable from 25 s to 15 mn For 1000 W incandescent or 400 W fluorescent max.	1 x M25	1.2	3.75	DA1W3T103	093889

Control Stations & Switches: Control Stations – Flameproof

D Series: Aluminum Control Stations

Zone 1 & 2 - 21 & 22


Ex II 2 GD

ATEX / IEC


IP66 - IK10

Ordering Information – Continued:

2 Function Ex d IIC Control Stations:

Type	Description/Function	Bottom Entries	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	
Twin Push Buttons							
	BR1d	1x green spring return 'I' push button with 1NO momentary contact 1x red spring return 'O' push button with 1NC momentary contact	1 x M20	1.2	3.75	DA1W1T201	–
	BR1d	1x green spring return 'I' push button with 1NO momentary contact 1x red spring return 'O' push button with 1NC momentary contact	1 x M25	1.2	3.75	DA1W3T201	093890

2 Function Ex d IIB Control Stations:

Twin Push Buttons							
	CF2D	1x green spring return 'I' push button with 1NO momentary contact 1x red spring return 'O' push button with 1NC momentary contact	2 x M20	2.5	7	D4W2T201	–
	CF2D	1x green spring return 'I' push button with 1NO momentary contact 1x red mushroom head push-pull with 1NO+1NC maintained contacts	2 x M20	2.5	7	D4W2T202	–

3 Function Ex d IIB Control Stations:

Pilot Light and Twin Push Buttons



CF2D	1x red/green LED light 85 to 264 Vac 1x green spring return 'I' push button with 1NO momentary contact 1x red spring return 'O' push button with 1NC momentary contact	2 x M20	3.3	9	DA5W2T301	093891
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Ammeter and Twin Push Buttons

CF2D	1x ammeter 48 x 48 CT1A 3 x FLC 0-1-3A 1x green spring return 'I' push button with 1NO momentary contact 1x red spring return 'O' push button with 1NC momentary contact	2 x M20	3.3	9	DA5W2T302	–
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Ex d IIC Limit Switch:

Limit Switch – Stainless steel roller control perpendicular for surface fixing.

1/4 turn fixing (may be modified by end user).



BR1d	1x roller plunger - travel 7 mm max. - Force 22 newtons with 1NO+1NC momentary contacts	1 x M20	1	4.6	DA1W1L001	093807
BR1d	1x roller plunger - travel 7 mm max. - Force 22 newtons with 1NO+1NC momentary contacts	1 x M25	1	4.6	DA1W3L001	093805

Control Stations & Switches: Control Stations – Flameproof

D Series: Aluminum Control Stations

Zone 1 & 2 - 21 & 22

Ⓢ II 2 GD

ATEX / IEC

IP66 - IK10

Technical Data:

Contact Block

Insulation Voltage (Ui)	500 V
Switching Capacity	AC 15 4 A/115 V 4 A/230 V 2 A/500 V DC 13 3 A/24 V 1.7 A/42 V 1.2 A/60 V 0.8 A/110 V 0.3 A/220 V
Terminal connections	0.75 to 2.5 mm ²
Operation life	>5,000,000 Operations

Light Switch

Insulation Voltage (Ui)	500 V
Switching Capacity	AC 15 450 W/48 V 900 W/110 V 1900 W/230 V DC 13 100 W/48 V 100 W/110 V 95 W/230 V
Terminal connections	0.75 to 2.5 mm ²
Operation life	> 1,000,000 Operations

LED Pilot Light

Rated Voltage	85 Vac to 264 Vac, 50/60 Hz
Rating	5-15 mA
Max. Power	0.33 W
Operation life	Average 100,000 Hours at +25°C

Compliances:

Hazardous Area	Gas	Dust
Certification Type	BR1d	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081ⓈII 2 G	CE 0081ⓈII 2 D
Symbol of Protection ATEX	Ex d IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	T6 for Ta = +40°C T5 for Ta = +55°C	NA
Surface Temperature	NA	T95°C
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50230	
ATEX Certificate	LCIE 02 ATEX 6056	
IEC Certificate	LCIE Ex 02.005	
Other Certifications	GOST	
Ingress Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	
Internal Volume	≤ 2 dm ³ (2 liters)	

Hazardous Area	Gas	Dust
Certification Type	CF2D	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081ⓈII 2 G	CE 0081ⓈII 2 D
Symbol of Protection ATEX	Ex d IIB	Ex tD A21
Symbol of Protection IEC		
T Rating	T6 for Ta ≤ +40°C T5 for +40°C < Ta ≤ +55°C	NA
Surface Temperature	NA	T95°C
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50254	
ATEX Certificate	LCIE 03 ATEX 6061X	
IEC Certificate	LCIE Ex 03.006X	
Other Certifications	GOST	
Ingress Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	
Internal Volume	≤ 2 dm ³ (2 liters)	

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 61241-0; 61241-1
Product Standards	EN / IEC 60947-1; 60947-5
EMC Standards	–
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Control Stations & Switches: Control Stations – Flameproof

D Series: Aluminum Control Stations

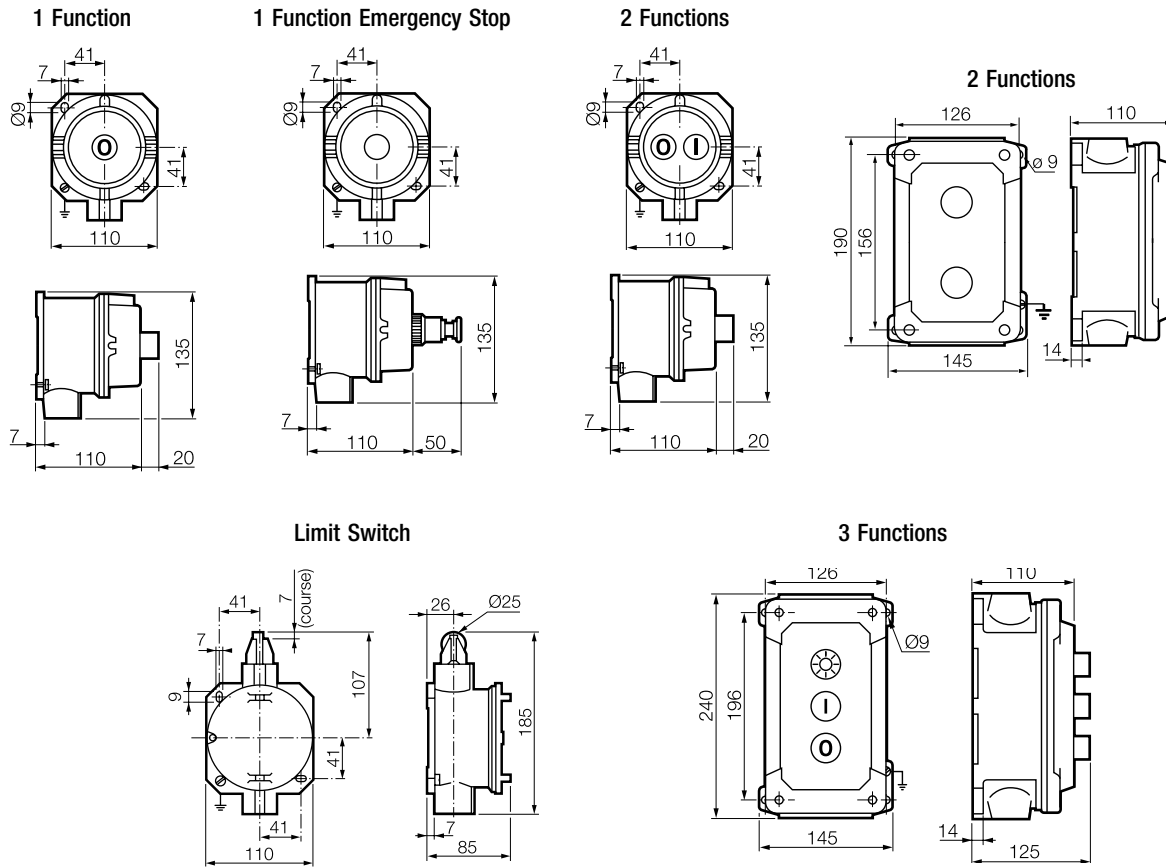
Zone 1 & 2 - 21 & 22

II 2 GD

ATEX / IEC

IP66 - IK10

Dimensions (mm):

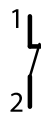


Electrical Diagrams:

NO Contact Block



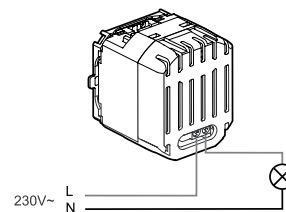
NC Contact Block



LED Pilot Light



Time Delayed Push Button



Control Stations & Switches: Control Stations – Flameproof

D Series: Pre-drilled Control Stations



1 Function



2 Functions



2 Functions



3 Functions



6 Functions

Compliance Data:

ATEX - IEC:

Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IEC	CE
Ex d IIB / Ex d IIC	T6 to T5	Ex tD A21	T80°C to T95°C	IP66 – IK10

Operating Temperature:

-40°C to +55°C				
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Control Stations & Switches: Control Stations – Flameproof

D Series: Pre-drilled Control Stations

Zone 1 & 2 - 21 & 22

Ex II 2 GD

ATEX / IEC

IP66 - IK10

Applications:

- Local control stations for use in hazardous areas.
- Control of equipment at power plants, chemical and petrochemical plants, petroleum refineries, pulp and paper processing plants and various industrial applications.

Features:

1 & 2 Function Ex d IIC:

- For TS35 rail mounted contact block.
- Actuators and contact blocks to be ordered separately.
- Up to 3 contacts per function.
- Threaded flameproof joint.
- Internal earth terminal 2 x 4 mm².
- External ground terminal: M5.
- 1 x M20 or M25 threaded entry at bottom.
- Cable glands and plugs to be ordered separately.

2 to 6 Function Ex d IIB:

- For TS35 rail mounted contact block.
- Actuators and contact blocks to be ordered separately.
- Up to 3 contacts per function.
- Flanged flameproof joint.
- Yellow laminated plastic legend plate with black lettering.
- Internal earth terminal: 2 x 4 mm².
- External earth terminal: M6 screw and M8 earth stud (CF2B type).
- 2 x M20 threaded entries at the bottom.
- Cable glands and plugs to be ordered separately.


Standard Material of Fixtures:

- Gray painted marine grade aluminum alloy.
- Gray painted cast iron for CF2B.


Ordering Information:

For TS35 Rail Mounted Actuators


1 Function Ex d IIC Control Stations:

Type	Description/Function	Bottom Entries	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
 BR1d	For push button, pilot light or selector switch	1 x M20	0.9	2	DA1W1E101	-
BR1d	For push button, pilot light or selector switch	1 x M25	0.9	2	DA1W3E101	093151



2 Function Ex d IIC Pre-drilled Box:

 BR1d	For push button (non-mushroom type) 2 contacts maximum for each function	1 x M20	0.9	2	DA1W1E201	-
BR1d	For push button (non-mushroom type) 2 contacts maximum for each function	1 x M25	0.9	2	DA1W3E201	093152

2 Function Ex d IIB Pre-drilled Box:

 CF2D	For push button, pilot light or selector switch	2 x M20	2.3	7	DA4W2E202	093158
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3 Function Ex d IIB Pre-drilled Box:

 CF2D	For push button, pilot light or selector switch (2 switches maximum)	2 x M20	3	7	DA5W2E301	093159
 CF2D	For push button, pilot light and ammeter 48 x 48 mm (ammeter with round barrel)	2 x M20	3	7	DA5W2E302	093160

Control Stations & Switches: Control Stations – Flameproof

D Series: Pre-drilled Control Stations

Zone 1 & 2 - 21 & 22


Ex II 2 GD

ATEX / IEC



IP66 - IK10

Ordering Information – Continued:


4 Function Ex d IIB Pre-drilled Box:

Type	Description/Function	Bottom Entries	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
 CF2D	For push button, pilot light and ammeter 48 x 48 mm (ammeter with round barrel)	2 x M20	3	7	DA5W2E401	–

6 Function Ex d IIB Pre-drilled Box:

 CF2D	For push button and pilot light 2 Contacts maximum for each function	2 x M20	3	7	DA5W2E601	–
 CF2B	For push button, pilot light or selector switch (3 switches maximum)	2 x M20	13	13	DA3W2E601	093161

1 Meter Ex d IIC Pre-drilled Box:

 BR2d	For indicator 72 x 72 mm or 96 x 96 mm with round barrel Mounting plate for indicator dia. 67 mm	2 x M20	4	11	DA2W2E102	093155
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Compliances:

Hazardous Area	Gas	Dust
Certification Type	BR1d	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081 Ex II 2 G	CE 0081 Ex II 2 D
Symbol of Protection ATEX	Ex d IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	T6 (Ta = +40°C) T5 (Ta = +55°C)	NA
Surface Temperature	NA	T95°C
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50230	
ATEX Certificate	LCIE 02 ATEX 6056	
IEC Certificate	LCIE Ex 02.005	
Other Certifications	GOST	
Ingress Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	
Internal Volume	≤2 dm ³ (2 liters)	

Hazardous Area	Gas	Dust
Certification Type	CF2D	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081 Ex II 2 G	CE 0081 Ex II 2 D
Symbol of Protection ATEX	Ex d IIB	Ex tD A21
Symbol of Protection IEC		
T Rating	T6 for Ta ≤ +40°C T5 for +40°C < Ta ≤ +55°C	NA
Surface Temperature	NA	T95°C
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50254	
ATEX Certificate	LCIE 03 ATEX 6061X	
IEC Certificate	LCIE Ex 03.006X	
Other Certifications	GOST	
Ingress Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	
Internal Volume	≤2 dm ³ (2 liters)	

Control Stations & Switches: Control Stations – Flameproof

D Series: Pre-drilled Control Stations

Zone 1 & 2 - 21 & 22

⊕ II 2 GD

ATEX / IEC

IP66 - IK10

Compliances – Continued:

Hazardous Area	Gas	Dust
Certification Type	CF2B	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081⊕ II 2 G	CE 0081⊕ II 2 D
Symbol of Protection ATEX	Ex d IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	T6 for $T_a \leq +40^\circ\text{C}$ T5 for $+40^\circ\text{C} < T_a \leq +55^\circ\text{C}$	NA
Surface Temperature	NA	T95°C
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50254	
ATEX Certificate	LCIE 03 ATEX 6061X	
IEC Certificate	LCIE Ex 03.006X	
Other Certifications	GOST	
Ingress Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	
Internal Volume	$\leq 2 \text{ dm}^3$ (2 liters)	

Hazardous Area	Gas	Dust
Certification Type	BR2d	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081⊕ II 2 G	CE 0081⊕ II 2 D
Symbol of Protection ATEX	Ex d IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	T6	NA
Surface Temperature	NA	T80°C
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50256	
ATEX Certificate	LCIE 03 ATEX 6062	
IEC Certificate	LCIE Ex 03.007	
Other Certifications	GOST	
Ingress Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	
Internal Volume	$\leq 2 \text{ dm}^3$ (2 liters)	

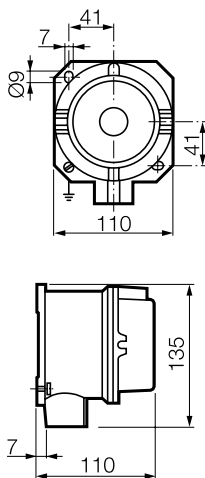
Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 61241-0; 61241-1
Product Standards	EN / IEC 60947-1; 60947-5
EMC Standards	–
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

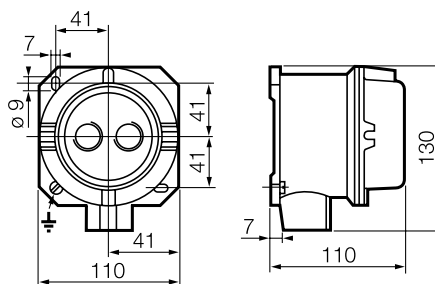
Dimensions (mm):

For TS35 Rail Mounted Operators

BR1d (1 Function)



BR1d (2 Functions)



Control Stations & Switches: Control Stations – Flameproof

D Series: Pre-drilled Control Stations

Zone 1 & 2 - 21 & 22

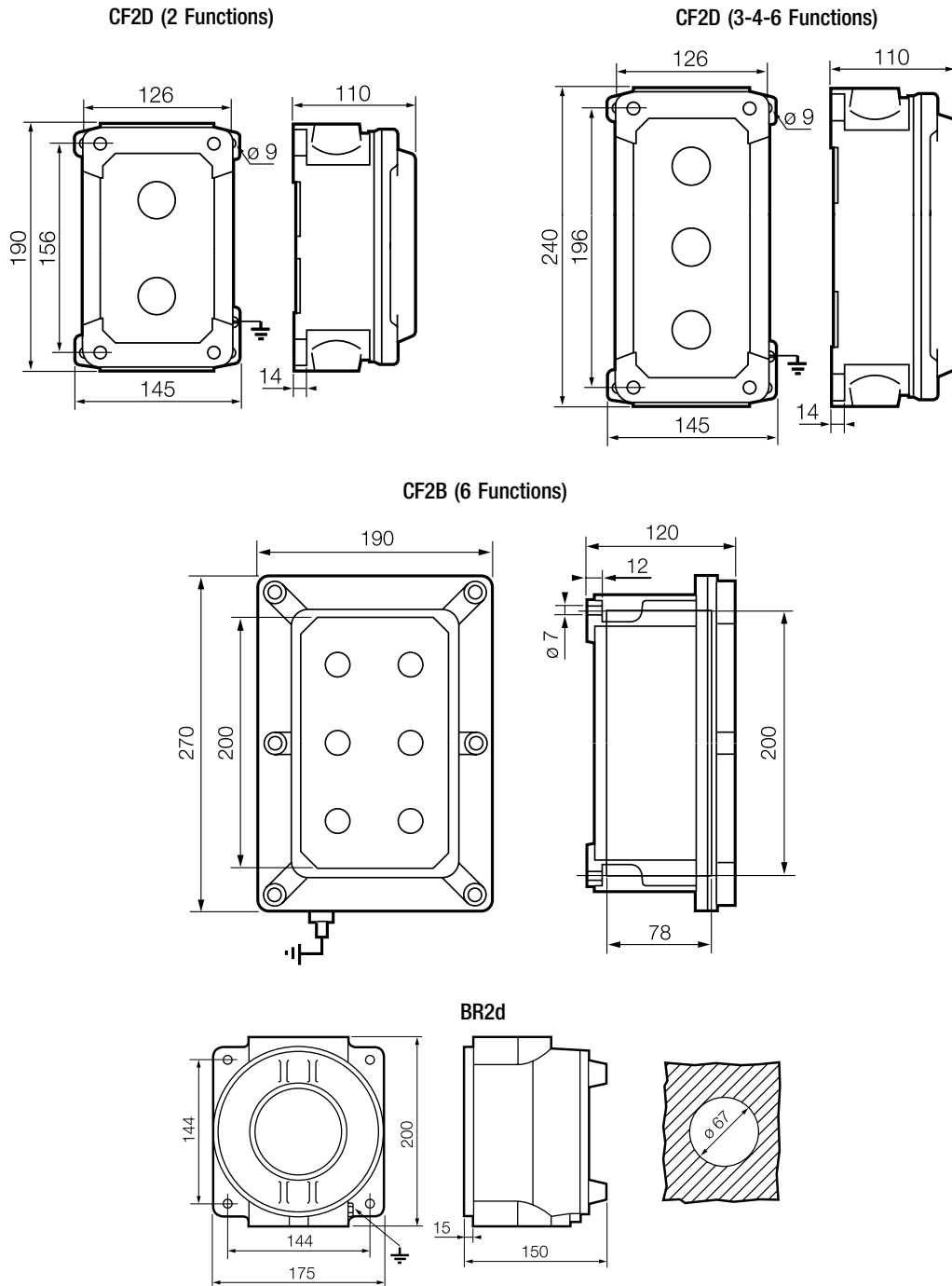
Ex II 2 GD

ATEX / IEC

IP66 - IK10

Dimensions (mm) – Continued:

For TS35 Rail Mounted Operators

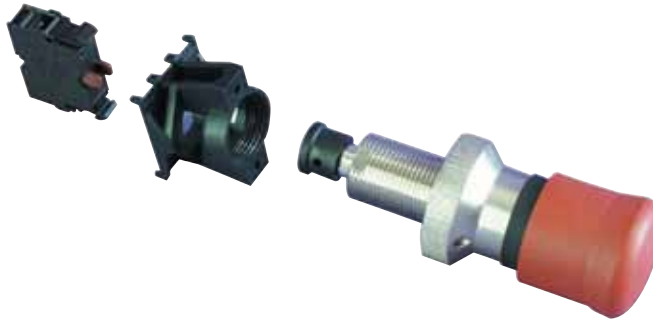


Control Stations & Switches: Components for Flameproof Enclosures

D Series: Actuators, Pilot Lights, Contact Blocks, Switches and Accessories



Rail Mounted Version



Panel Mounted Version

Compliance Data:

ATEX - IEC:

Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IEC	CE
Ex d IIC		Ex tD A21		IP66 – IK10

Service Temperature:

-40°C to +60°C				
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Control Stations & Switches: Components for Flameproof Enclosures

D Series: Actuators, Pilot Lights, Contact Blocks, Switches and Accessories

Zone 1 & 2 - 21 & 22

II 2 GD

ATEX / IEC

IP66 - IK10

Applications:

- Suitable for use with certified flameproof Ex d enclosures for control equipment.



Rail Mounted



Panel Mounted








Features:

- DIN rail mounted (TS35) and panel mounted versions.
- Large range of M22 x 1.5 mm screwed actuator operators including, push buttons, rotary actuators, pilot lights, ammeters and selector switches.
- Fully supplied with actuator, shaft, contact block and yellow laminated plastic legend plate with black lettering 60 x 50 mm.

Ordering Information:

TS35 Rail Mounted Actuators and Contact Blocks

Legend Plate Supplied:

Description/Function	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
 Spring Return Push Button Green spring return 'I' push button with 1NO momentary contact Red spring return 'O' push button with 1NC momentary contact	0.2	0.4	DA5GR	093918	1
	0.2	0.4	DA9RR	093919	1
 Mushroom Head Push Button Red mushroom head spring return with 1NC momentary contact Padlockable in both positions Red mushroom head push pull with 1NC maintained contact Padlockable in both positions Red mushroom head key release with 1NC maintained contact Unlocked with key (MS1)	0.2	0.4	DR9R	093920	1
	0.2	0.4	DD9R	093921	1
	0.2	0.4	DC9R	093922	1
 Rotary Actuator 2 maintained positions with 1NO maintained contact 2 maintained positions key operated with 1NO maintained contact key removable in both positions (MS1)	0.2	0.4	DH5R	094007	1
	0.2	0.4	DG5R	094008	1
 Additional Contacts 1 x NO contact 1 x NC contact	0.1	0.2	DCB5R	093924	5
	0.1	0.2	DCB9R	093923	5
 LED Pilot Lights Red 12 to 30 Vac/Vdc Green 12 to 30 Vac/Vdc White 12 to 30 Vac/Vdc Blue 12 to 30 Vac/Vdc Yellow 12 to 30 Vac/Vdc Red 48 to 60 Vac/Vdc Green 48 to 60 Vac/Vdc White 48 to 60 Vac/Vdc Blue 48 to 60 Vac/Vdc Yellow 48 to 60 Vac/Vdc Red 85 to 264 Vac Green 85 to 264 Vac White 85 to 264 Vac Blue 85 to 264 Vac Yellow 85 to 264 Vac	0.1	0.4	DPR12R	093927	1
	0.1	0.4	DPG12R	093928	1
	0.1	0.4	DPW12R	093929	1
	0.1	0.4	DPB12R	093930	1
	0.1	0.4	DPY12R	093951	1
	0.1	0.4	DPR48R	093931	1
	0.1	0.4	DPG48R	093932	1
	0.1	0.4	DPW48R	093933	1
	0.1	0.4	DPB48R	093934	1
	0.1	0.4	DPY48R	093952	1
	0.1	0.4	DPR85R	093935	1
	0.1	0.4	DPG85R	093936	1
0.1	0.4	DPW85R	093937	1	
0.1	0.4	DPB85R	093938	1	
0.1	0.4	DPY85R	093953	1	
 Transfer Kit To be used when replacing old range of contacts 094055 & 094056 and old range of indicators 093992-093993 & 094092-094099	0.2	0.4	093958		1
 16 A Switches 1-pole switch with non-padlockable handle "0-1" 2-pole switch with non-padlockable handle "0-1" 3-pole switch with non-padlockable handle "0-1" 4-pole switch with non-padlockable handle "0-1" 2 way 1-pole selector switch with non-padlockable handle "1-2" 3 way 1-pole selector switch with non-padlockable handle "1-0-2"	0.3	0.5	DS116R	094064	1
	0.3	0.5	DS216R	094065	1
	0.3	0.5	DS316R		1
	0.3	0.5	DS416R	094066	1
	0.3	0.5	DS21601R	093903	1
	0.3	0.5	DS21602R	093904	1

Control Stations & Switches: Components for Flameproof Enclosures

D Series: Actuators, Pilot Lights, Contact Blocks, Switches and Accessories

Zone 1 & 2 - 21 & 22

II 2 GD








ATEX / IEC

IP66 - IK10

Ordering Information – Continued:

Panel Mounted Actuators and Contacts Blocks

Legend Plate Supplied:

Description/Function	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
 Spring Return Push Button Green spring return 'I' push button with 1NO momentary contact Red spring return 'O' push button with 1NC momentary contact	0.2	0.4	DA5GP	093913	1
	0.2	0.4	DA9RP	093914	1
 Mushroom Head Push Button Red mushroom head spring return with 1NC momentary contact Padlockable in both positions Red mushroom head push pull with 1NC maintained contact Padlockable in both positions Red mushroom head key release with 1NC maintained contact Unlocked with key (MS1)	0.2	0.4	DR9P	093915	1
	0.2	0.4	DD9P	093916	1
	0.2	0.4	DC9P	093917	1
 Rotary Actuator 2 maintained positions with 1NO maintained contact 2 maintained positions key operated with 1NO maintained contact key removable in both positions (MS1)	0.2	0.4	DH5P	094012	1
	0.2	0.4	DG5P	094013	1
 Additional Contacts 1 x NO contact 1 x NC contact	0.1	0.2	DCB5P	093926	5
	0.1	0.2	DCB9P	093925	5
 LED Pilot Lights Red 12 to 30 Vac/Vdc Green 12 to 30 Vac/Vdc White 12 to 30 Vac/Vdc Blue 12 to 30 Vac/Vdc Yellow 12 to 30 Vac/Vdc Red 48 to 60 Vac/Vdc Green 48 to 60 Vac/Vdc White 48 to 60 Vac/Vdc Blue 48 to 60 Vac/Vdc Yellow 48 to 60 Vac/Vdc Red 85 to 264 Vac Green 85 to 264 Vac White 85 to 264 Vac Blue 85 to 264 Vac Yellow 85 to 264 Vac	0.1	0.4	DPR12P	093939	1
	0.1	0.4	DPG12P	093940	1
	0.1	0.4	DPW12P	093941	1
	0.1	0.4	DPB12P	093942	1
	0.1	0.4	DPY12P	093954	1
	0.1	0.4	DPR48P	093943	1
	0.1	0.4	DPG48P	093944	1
	0.1	0.4	DPW48P	093945	1
	0.1	0.4	DPB48P	093946	1
	0.1	0.4	DPY48P	093956	1
	0.1	0.4	DPR85P	093947	1
	0.1	0.4	DPG85P	093948	1
	0.1	0.4	DPW85P	093949	1
	0.1	0.4	DPB85P	093950	1
0.1	0.4	DPY85P	093957	1	
 Transfer Kit To be used when replacing old range of contacts 094057 & 094058 and old range of indicators 093990-093991 & 094090-094091	0.2	0.4	093959	093959	1
 16 A Switches 1-pole switch with non-padlockable handle "0-1" 2-pole switch with non-padlockable handle "0-1" 3-pole switch with non-padlockable handle "0-1" 4-pole switch with non-padlockable handle "0-1" 2 way 1-pole selector switch with non-padlockable handle "1-2" 3 way 1-pole selector switch with non-padlockable handle "1-0-2" 2 way 2-pole selector switch with non-padlockable handle "1-2" 3 way 2-pole selector switch with non-padlockable handle "1-0-2"	0.3	0.5	DS116P	–	1
	0.3	0.5	DS216P	–	1
	0.3	0.5	DS316P	–	1
	0.3	0.5	DS416P	–	1
	0.3	0.5	DS21601P	–	1
	0.3	0.5	DS21602P	–	1
	0.3	0.5	DS41601P	–	1
0.3	0.5	DS41602P	–	1	

Control Stations & Switches: Components for Flameproof Enclosures

D Series: Actuators, Pilot Lights, Contact Blocks, Switches and Accessories






Zone 1 & 2 - 21 & 22

II 2 GD

ATEX / IEC

IP66 - IK10

Accessories:

Description/Function	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Spare Shrouds for Spring Return Push Buttons					
 Green shroud marked "I"	0.1	0.2	DSG	093750	10
Red shroud marked "0"	0.1	0.2	DSR	093751	10
Green shroud marked "start"	0.1	0.2	DSS	–	10
Red shroud marked "A Réarmement"	0.1	0.2	DSA	–	10
Black shroud (unmarked)	0.1	0.2	DSN	093752	10
Blue shroud (unmarked)	0.1	0.2	DSB	–	10
Aluminum Guard Painted Red					
Mushroom head actuator protection			DGD1A	–	1
Stainless Steel Padlocking Devices					
For spring return push button			DPLD1S	096188	1
For rotary actuator, red mushroom head spring return or push-pull			DPLD2S	–	1
Spare Lenses for Pilot Lights					
 Red	0.1	0.2	DPRENS	094086	10
Green	0.1	0.2	DPGLENS	094085	10
White	0.1	0.2	DPWLENS	094087	10
Blue	0.1	0.2	DPBLENS	–	10
Yellow	0.1	0.2	DPYLENS	094089	10
Spare Handle for Switches					
 Non-padlockable handle	0.02	0.2	DSNPH	094000	1
 Padlockable handle 48 x 48 mm	0.06	0.3	DSPH	094001	1
Laminated Plastic Legend Plate with Black Lettering					
Large size 60 x 50 mm			DLP00	093785	1
Small size 45 x 31.2 mm			DLP01	093787	1
Blanking Plug					
 Used to close-up unused openings on cover M22 x 1.5 mm	0.02	0.2	DBPM22	094098	1

Control Stations & Switches: Components for Flameproof Enclosures

D Series: Actuators, Pilot Lights, Contact Blocks, Switches and Accessories

Zone 1 & 2 - 21 & 22

II 2 GD

ATEX / IEC

IP66 - IK10

Ordering Information – Continued:

AC Ammeter 48 x 48 mm:

Connection on Current Transformer

Deflection 90°

Class 1.5

Round Barrel



Description	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Rail Mounted					
1A C.T. 3 x F.L.C.	with 0-1-3 Scale	0.1	0.4	DMA1348R	– 1
1A C.T. 5 x F.L.C.	with 0-1-5 Scale	0.1	0.4	DMA1548R	– 1
1A C.T. 6 x F.L.C.	with 0-1-6 Scale	0.1	0.4	DMA1648R	– 1
Panel Mounted					
5A C.T. 3 x F.L.C.	with 0-1-3 Scale	0.1	0.4	DMA5348R	– 1
5A C.T. 5 x F.L.C.	with 0-1-5 Scale	0.1	0.4	DMA5548R	– 1
5A C.T. 6 x F.L.C.	with 0-1-6 Scale	0.1	0.4	DMA5648R	– 1
Panel Mounted					
1A C.T. 3 x F.L.C.	with 0-1-3 Scale	0.1	0.4	DMA1348P	– 1
1A C.T. 5 x F.L.C.	with 0-1-5 Scale	0.1	0.4	DMA1548P	– 1
1A C.T. 6 x F.L.C.	with 0-1-6 Scale	0.1	0.4	DMA1648P	– 1
Accessories:					
Red Adjustable Index					
			DM48A	–	1

Accessories:

Red Adjustable Index

DM48A – 1

Interchangeable Dials for Above Ammeter:

For 1 A Current Transformer 3 x F.L.C.

Scale	Catalog Number	Old Catalog Number
0 - 5 - 15 A	DA135	098861
0 - 10 - 30 A	DA1310	098862
0 - 15 - 45 A	DA1315	098863
0 - 20 - 60 A	DA1320	098864
0 - 30 - 90 A	DA1330	098865
0 - 40 - 120 A	DA1340	098866
0 - 50 - 150 A	DA1350	098867
0 - 60 - 180 A	DA1360	098868
0 - 75 - 225 A	DA1375	098869
0 - 100 - 300 A	DA13100	098870
0 - 125 - 375 A	DA13125	098871
0 - 150 - 450 A	DA13150	098872
0 - 200 - 600 A	DA13200	098873
0 - 250 - 750 A	DA13250	098874

For 1 A Current Transformer 5 x F.L.C.

Scale	Catalog Number	Old Catalog Number
0 - 5 - 25 A	DA155	098875
0 - 10 - 50 A	DA1510	098876
0 - 15 - 75 A	DA1515	098877
0 - 20 - 100 A	DA1520	098878
0 - 30 - 150 A	DA1530	098879
0 - 40 - 200 A	DA1540	098880
0 - 50 - 250 A	DA1550	098881
0 - 60 - 300 A	DA1560	098882
0 - 75 - 375 A	DA1575	098883
0 - 100 - 500 A	DA15100	098884
0 - 125 - 625 A	DA15125	098885
0 - 150 - 750 A	DA15150	098886
0 - 200 - 1000 A	DA15200	098887
0 - 250 - 1250 A	DA15250	098888

For 1 A Current Transformer 6 x F.L.C.

Scale	Catalog Number	Old Catalog Number
0 - 5 - 30 A	DA165	098889
0 - 10 - 60 A	DA1610	098890
0 - 15 - 90 A	DA1615	098891
0 - 20 - 120 A	DA1620	098892
0 - 30 - 180 A	DA1630	098893
0 - 40 - 240 A	DA1640	098894
0 - 50 - 300 A	DA1650	098895
0 - 60 - 360 A	DA1660	098896
0 - 75 - 450 A	DA1675	098897
0 - 100 - 600 A	DA16100	098898
0 - 125 - 750 A	DA16125	098899
0 - 150 - 900 A	DA16150	098900
0 - 200 - 1200 A	DA16200	098901
0 - 250 - 1500 A	DA16250	098902

For 5 A Current Transformer 3 x F.L.C.

Scale	Catalog Number	Old Catalog Number
0 - 5 - 15 A	DA535	098903
0 - 10 - 30 A	DA5310	098904
0 - 15 - 45 A	DA5315	098905
0 - 20 - 60 A	DA5320	098906
0 - 30 - 90 A	DA5330	098907
0 - 40 - 120 A	DA5340	098908
0 - 50 - 150 A	DA5350	098909
0 - 60 - 180 A	DA5360	098910
0 - 75 - 225 A	DA5375	098911
0 - 100 - 300 A	DA53100	098912
0 - 125 - 375 A	DA53125	098913
0 - 150 - 450 A	DA53150	098914
0 - 200 - 600 A	DA53200	098915
0 - 250 - 750 A	DA53250	098916

For 5 A Current Transformer 5 x F.L.C.

Scale	Number	Catalog Number	Old Catalog
0 - 5 - 25 A		DA555	098917
0 - 10 - 50 A		DA5510	098918
0 - 15 - 75 A		DA5515	098919
0 - 20 - 100 A		DA5520	098920
0 - 30 - 150 A		DA5530	098921
0 - 40 - 200 A		DA5540	098922
0 - 50 - 250 A		DA5550	098923
0 - 60 - 300 A		DA5560	098924
0 - 75 - 375 A		DA5575	098925
0 - 100 - 500 A		DA55100	098926
0 - 125 - 625 A		DA55125	098927
0 - 150 - 750 A		DA55150	098928
0 - 200 - 1000 A		DA55200	098929
0 - 250 - 1250 A		DA55250	098930

For 5 A Current Transformer 6 x F.L.C.

Scale	Number	Catalog Number	Old Catalog
0 - 5 - 30 A		DA565	098931
0 - 10 - 60 A		DA5610	098932
0 - 15 - 90 A		DA5615	098933
0 - 20 - 120 A		DA5620	098934
0 - 30 - 180 A		DA5630	098935
0 - 40 - 240 A		DA5640	098936
0 - 50 - 300 A		DA5650	098937
0 - 60 - 360 A		DA5660	098938
0 - 75 - 450 A		DA5675	098939
0 - 100 - 600 A		DA56100	098940
0 - 125 - 750 A		DA56125	098941
0 - 150 - 900 A		DA56150	098942
0 - 200 - 1200 A		DA56200	098943
0 - 250 - 1500 A		DA56250	098944

Control Stations & Switches: Components for Flameproof Enclosures

D Series: Actuators, Pilot Lights, Contact Blocks, Switches and Accessories

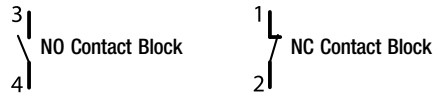
Zone 1 & 2 - 21 & 22

II 2 GD

ATEX / IEC

IP66 - IK10

Technical Data:



Contact Block:	
Insulation Voltage (Ui)	500 V
Switching Capacity	
AC 15	4 A/115 V 4 A/230 V 2 A/500 V
DC 13	3 A/24 V 1.7 A/42 V 1.2 A/60 V 0.3 A/220 V
Terminal connections	0.75 to 2.5 mm ²
Operation life	>5,000,000 Operations



LED Pilot Light:	
Rated Voltage	85-264 Vac, 50/60 Hz
Rating	5-15mA
Max. Power	0.33 W
Operation life	Average 100,000 Hours at +25°C

16 A Selector Switch:

Rated insulation voltage		690 V
Thermal rating		20 A
AC 21		16 A
AC 15		6 A
AC 23	3 x 230 V	4 KW
	3 x 400 V	7.5 KW
	3 x 500 V	5.5 KW
	3 x 690 V	4 KW
AC 3	3 x 230 V	3 KW
	3 x 400 V	4 KW
	3 x 500 V	5.5 KW
	3 x 690 V	3 KW
Terminal connections (flexible/solid)		2.5 mm ² /4 mm ²

16 A Selector Switch:

DS116		
Positions	1-2	
0		
1	X	

DS216			
Positions	1-2	3-4	
0			
1	X	X	

DS316				
Positions	1-2	3-4	5-6	
0				
1	X	X	X	

DS416					
Positions	1-2	3-4	5-6	7-8	
0					
1	X	X	X	X	

DS21601		
Positions	1-2	3-4
1	X	
2		X

DS21602		
Positions	1-2	3-4
1	X	
0		
2		X

DS41601				
Positions	1-2	3-4	5-6	7-8
1	X		X	
2		X		X

DS41602				
Positions	1-2	3-4	5-6	7-8
1	X		X	
0				
2		X		X

X Contact closed

Compliances:

Hazardous Area	Gas	Dust
Certification Type	TCD	
Zones	1-2	21-22
Conforming to ATEX 94/9/CE	0081ⓂII 2 G	0081ⓂII 2 D
Symbol of Protection ATEX	Ex d IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	NA	NA
Surface Temperature	NA	NA
Service Temperature	-40°C to +60°C	
CE Declaration of Conformity	5C213	
ATEX Certificate	LCIE 02 ATEX 0036 U	
IEC Certificate	LCIE Ex 02.026 U	
Other Certifications	GOST	
Ingress Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 61241-0; 61241-1
Product Standards	-
EMC Standards	-
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Control Stations & Switches: Components for Flameproof Enclosures

D Series: Actuators, Pilot Lights, Contact Blocks, Switches and Accessories

Zone 1 & 2 - 21 & 22

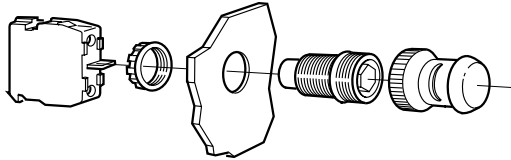
II 2 GD

ATEX / IEC

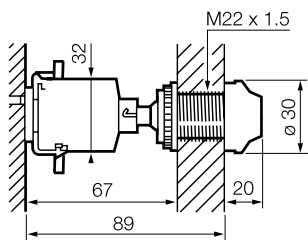
IP66 - IK10

Dimensions (mm):

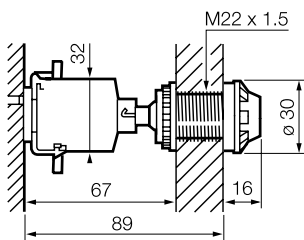
Rail Mounted:



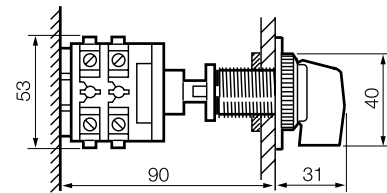
Rail Mounted Push Button



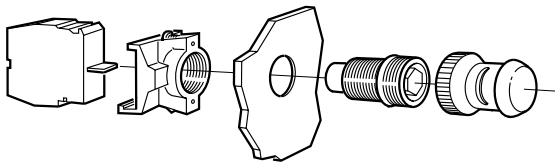
Rail Mounted Pilot Light



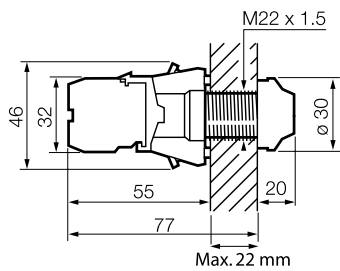
Back Mounted Switch



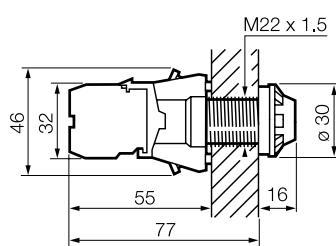
Panel Mounted:



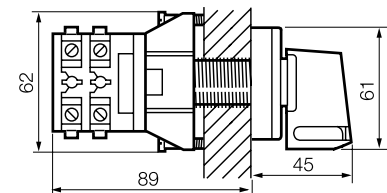
Panel Mounted Push Button



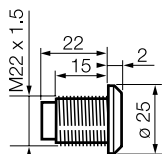
Panel Mounted Pilot Light



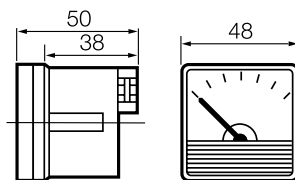
Panel Mounted Switch



Blanking Plug



Ammeter



Control Stations & Switches: Components for Flameproof Enclosures

RSI Series: Intrinsic Safety Relays for Safe Areas

Zone 1 & 2 - 21 & 22

Ⓜ II 2 GD

ATEX / IEC

IP66 - IK10



1-Channel Relay



2-Channel Relay



Intrinsic Safety Terminals

Compliance Data:

ATEX - IEC:

Safe Area / Zone 0	ATEX	II 2 GD	IEC	EC
Ex ia IIC				

Service Temperature:

-10°C to 60°C				
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Control Stations & Switches: Components for Flameproof Enclosures

RSI Series: Intrinsic Safety Relays for Safe Areas

Zone 0 (Safe Area)

⊕ II 2 G / D

Ex ia IIC

Applications:

- Single Channel Relay:
- For installation in a safe area (NIS area) or Exd box.
- 2-Channel Relay:
- For installation in a safe area (NIS area).
- Intrinsic Safety Terminal:
- For installation in a hazardous area (IS area).

Features:

- Single and 2-Channel Relay:
- Provides galvanic isolation of the circuits between the IS area and the NIS area.
 - Mounting on EN 50 022 rail.
 - Input signal (from hazardous area) selected by jumpers:
 - 2-wire NAMUR proximity switch.
 - Volt-free contact (switched current 8.2 V, 8 mA).
 - Direct or reverse repeater selected by jumper.
 - Connection: 2-conductr cable, dielectric strength 500 V, cross-section 2.5 mm², distance between cables: 8 mm.
 - Connection: 2.5 mm² maximum

Single Channel Relay:

- Transmits to the safe (NIS) area one signal received from the hazardous (IS) area.
- Relay can be supplied with 24 - 28 Vdc, 110-140 V, 200 - 240 V.
- Output signal (safe area) - electromagnetic relay, 1 changeover switch:
 - 6 A maximum (at 24 V)
 - Maximum: 5a, 250 V, 10 Hz (switching frequency)

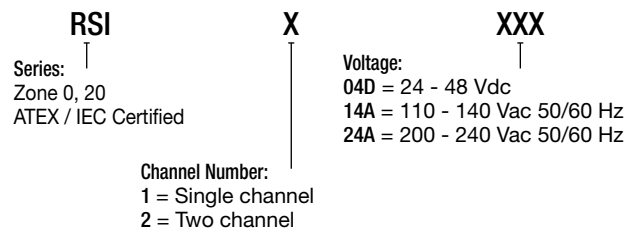
2-Channel Relay:

- Transmits to the safe (NIS) area two signals received from the hazardous (IS) area.
- Relay can be supplied with 24-48 Vdc, 110-140 V, 200-240 V.
- Output signal (safe area) – electromagnetic relay, 2 changeover switches:
 - 6 A maximum (at 24 V)
 - Maximum: 5 A, 250 V, 10 Hz (switching frequency)

Intrinsic Safety Terminal:

- Can be clipped on symmetrical and asymmetrical DIN rail.
- Maximum clamping capacity 4 mm².
- 6 mm pitch.

Catalog Number Logic:



Compliances:

Hazardous Area	Gas	Dust
Certification Type	RDN	
Zones	0	
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 1 G	CE 0081 ⊕ II 1 D
Symbol of Protection ATEX	Ex ia IIC	
Symbol of Protection IEC	-	
T Rating	-	
Surface Temperature	-	
Ambient Temperature	-10°C to +60°C	
CE Declaration of Conformity	50270	
ATEX Certificate	LCIE 02 ATEX 6104X	
IEC Certificate	-	
Other Certifications	SIL 2	
Index Protection (solid and liquid)	-	
Impact Resistance (shock)	-	

Ordering Information:

Relays and Safety Terminals

Description	Catalog Number	Old Catalog Number
Single Channel Relay		
200 - 240 V - 50/60 Hz	RSI124A	096631
110 - 140 V - 50/60 Hz	RSI114A	096632
24 - 48 V - 50/60 Hz	RSI104D	096633
2-Channel Relay		
200 - 240 V - 50/60 Hz	RSI224A	096640
110 - 140 V - 50/60 Hz	RSI214A	096641
24 - 48 V - 50/60 Hz	RSI204D	096642
Intrinsic Safety Terminal		
4 mm ² terminals (set of 10)	TBIS0410	096600

Standards:

Ex Standards	EN / IEC 60079-0; 60079-11; 61241-0; 61241-1
Product Standards	-
EMC Standards	EN / IEC 61326; 61000-6-2
Other Standards	EN / IEC 1010-1

Control Stations & Switches: Components for Flameproof Enclosures

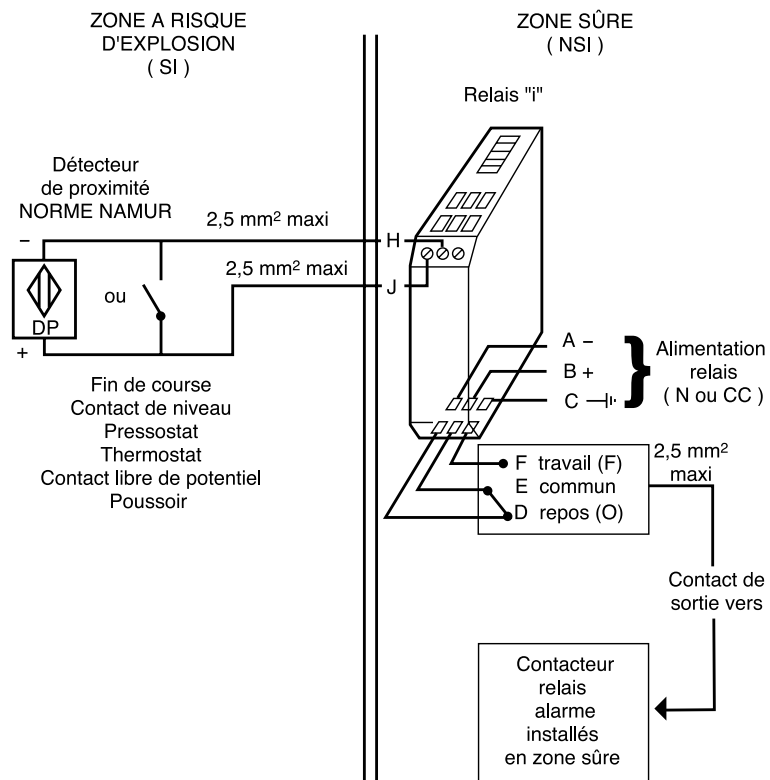
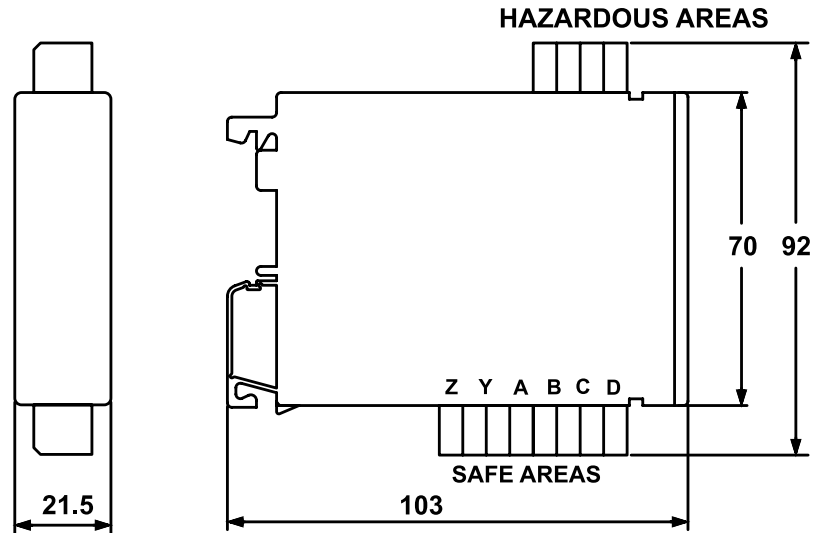
RSI Series: Intrinsic Safety Relays for Safe Areas

Zone 0 (Safe Area)

Ⓜ II 2 G / D

Ex ia IIC

Dimensions (mm):



Control Stations & Switches: Switches, Circuit Breakers and "Break Glass" Call Points

Description	Page
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SWE Series	350-356
16 and 20 A Switches – Increased Safety	350-352
40, 63 and 160 A Switches – Increased Safety	353-356

SWE Series



16 A Version



20 A Version



63 A Version



160 A Version

SWD Series	357-363
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16 to 32 A Switches – Flameproof	357-359
20, 32, 63, 100, 125, 160 and 250 A Isolator Switches – Flameproof	360-363

SWD Series



16 A Version



16 A Version



Isolator Switch

CBU and SWU Series	364-367
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Branch Circuit Breakers and Switches for Increased Safety Enclosures	
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CBU and SWU Series



2-Pole Circuit Breaker with GFI



4-Pole Circuit Breaker



2-Pole Circuit Breaker



4-Pole Switch

CBD Series	368-370
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Circuit Breakers – Flameproof	
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CBD Series



Ex d IIB Version



Ex d IIC Version

FAS Series	371-373
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"Break Glass" Call Points – Increased Safety and Flameproof	
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FAS Series



Ex de IIC Version



Ex d IIC Version

Control Stations & Switches: Switches, Circuit Breakers and "Break Glass" Call Points

SWE Series: 16 and 20 A Switches – Increased Safety



16 A Version - Type 1



16 A Version - Type 2



20 A Version

Compliance Data:

ATEX - IEC:

Zone 1 & 2, 21 & 22	ATEX	II 2 GD	IEC	CE
Ex de IIC	T6	Ex tD A21	T80°C	IP66 - IK09 or IK10

Electrical Data:

Voltage	Amperage			
Up to 690 V	Up to 20 A			

Operating Temperature:

16 A	20 A	
-20°C to +40°C	-20°C to +40°C	



Control Stations & Switches: Switches, Circuit Breakers and "Break Glass" Call Points

SWE Series: 16 and 20 A Switches – Increased Safety

Zone 1 & 2 - 21 & 22

II 2 GD

ATEX / IEC

IP66 - IK09 or IK10

Applications:

- Designed to prevent operation in explosive atmospheres during connect and disconnect operation of lighting and light power loads.
- For use in hazardous areas where ignitable vapors, gases or highly combustible dusts are present.
- For installation in chemical and petrochemical plants, refineries and other process industries.

Features:

- 16 Amp version:
- Two bottom M20 clearance holes.
 - Switch mechanism fixed at the bottom of the box.
 - Termination:
 - Type 1: 2.5 mm²
 - Type 2: 2.5 mm² flexible/4 mm² solid
 - Internal earth:
 - 2 x 2.5 mm² terminals
 - Supplied with:
 - 1 x white self-adhesive laminated plastic label with black lettering (58 x 18 mm)

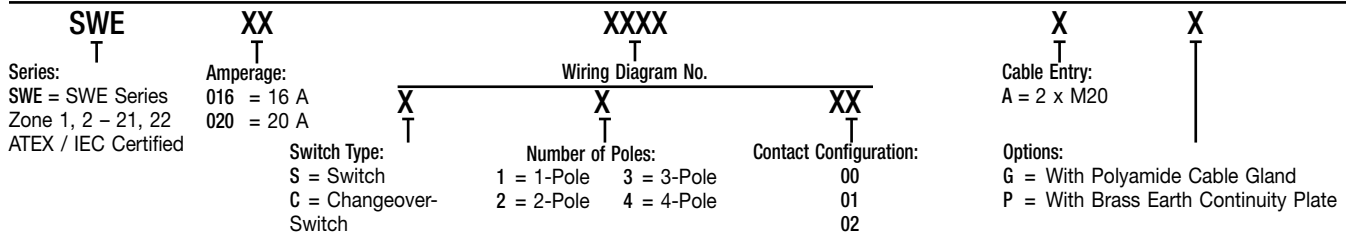
20 Amp version:

- Two M20 threaded entries on the bottom of the box.
- Switch mechanism fixed on the bottom of the box.
- Padlockable handle in position 0 using maximum 4 padlocks (maximum handle dia. 8 mm and minimum 15 mm length).
- Termination:
 - 2.5 mm² flexible / 4 mm² solid
- Internal earth:
 - 2 x 4 mm² terminals
- Supplied with:
 - 1 x yellow self-adhesive laminated plastic label with black lettering (65 x 18 mm)

Standard Material of Fixtures:

- 16 Amp version:
- Polyamide box.
 - A2 stainless steel coarse pitch screws (1 and a half turn).
 - Polyamide cable glands.
 - Nickel plated brass locknuts.
- 20 Amp version:
- Polyester box
 - A2 stainless steel captive screws.
 - Polyamide cable glands.

Catalog Number Logic:



Ordering Information:

16 A Switch - Type 1

Padlockable handle.
Two M20 polyamide cable glands (cable dia. 6.5 to 14.5 mm) on the bottom.

Switch Type	Wiring Diagram No.	Type	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
Changeover switch	C101	1	0.53	2.00	SWE016C101AG	098614
2-pole	S201	1	0.53	2.00	SWE016S201AG	098608

16 A Twist Button - Type 2

Non-padlockable handle.
Two M20 clearance holes on the bottom.

Switch Type	Wiring Diagram No.	Type	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
Changeover switch	C100	2	0.50	2.00	SWE016C100A	098631
2-pole	S200	2	0.50	2.00	SWE016S200A	098632

20 A Switch

Padlockable handle.
Two M20 polyamide cable glands (cable dia. 6.5 to 14.5 mm) on the bottom.

Switch Type	Wiring Diagram No.	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
Changeover switch	C100	1.00	2.00	SWE020C100AG	096250
2-pole	S202	1.00	2.00	SWE020S202AG	096251
3-pole	S301	1.00	2.00	SWE020S301AG	096260
4-pole	S401	1.00	2.00	SWE020S401AG	096261

Switching Arrangement:

16 A Switch

C101	Contacts		
	11-12	23-24	
Positions			
0	X		
1		X	

S201	Contacts		
	13-14	23-24	
Positions			
0			
1	X	X	

16 A Twist Button

C100	Contacts		
	1-2	3-4	
Positions			
0	X		
1		X	

S200	Contacts	
	3-4	3-4
Positions		
0		
1	X	X

20 A Switch

C100	Contacts		
	1-2	3-4	
Positions			
0	X		
1		X	

S202	Contacts		
	1-2	3-4	
Positions			
0			
1	X	X	

S301	Contacts			
	1-2	3-4	5-6	
Positions				
0				
1	X	X	X	

X Closed contact

S401	Contacts				
	1-2	3-4	5-6	7-8	
Positions					
0					
1	X	X	X	X	

Control Stations & Switches: Switches, Circuit Breakers and "Break Glass" Call Points

SWE Series: 16 and 20 A Switches – Increased Safety

Zone 1 & 2 - 21 & 22

⊕ II 2 GD

ATEX / IEC

IP66 - IK09 or IK10

Technical Data:

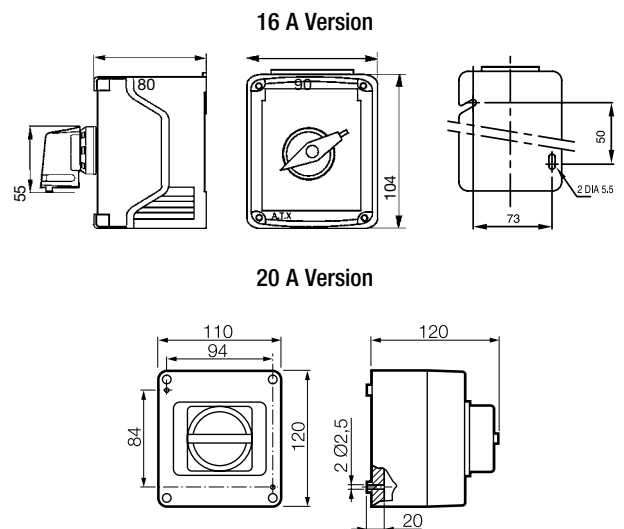
Main Contacts	16 Amps Type 1		16 Amps Type 2		20 Amps	
Rated Insulation Voltage	750 V		500 V		500 V	
Rated Operating Voltage	690 Vac 1 / 110 V DC 1		500 V		500 V	
Rated Operating Current	16 A		16 A		20 A	
Switching capacity:						
AC 1	16 A	690 V	16 A	500 V	-	
AC 12	-		16 A	400 V	-	
AC 14	-		10 A	400 V	-	
AC 15	16 A	415 V	6 A	500 V	-	
AC 21	-		-		16A	500V
AC 23	-		-		16A	400V
AC 3	08 A	500 V	-		-	
AC 3	04 A	690 V	-		-	
DC 1	10 A	24 V	-		-	
DC 1	06 A	60 V	-		-	
DC 1	06 A	110 V (*)	-		-	
DC 13	-		1 A	110 V	-	
DC 13	-		2 A	24 V	-	
Termination (flexible/solid)	2.5 mm ² / 4 mm ²		2.5 mm ²		2.5 mm ² / 4 mm ²	

(*) 2 contacts connected in series

Compliances:

Hazardous Area	Gas	Dust
Certified Type	PCE	
Zones	1-2	21-22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex de IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	T6	-
Surface Temperature	-	T80°C
Ambient Temperature	-20°C to +40°C	
CE Declaration of Conformity	50221	
ATEX Certificate	LCIE 00 ATEX 60472	
IEC Certificate	LCIE Ex 00.017	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10 (Polyester) / IK09 (Polyamide)	

Dimensions (mm):



Standards:

Ex standards	EN / IEC 60079-0; 60079-1; 60079-7; 61241-0; 61241-1
Product standards	EN / IEC 60947-1; 60947-3; 60947-5
EMC standards	EN / IEC 55015; 61547
Other standards	EN / IEC 60529 (IP); 62262 (IK)

Control Stations & Switches: Switches, Circuit Breakers and "Break Glass" Call Points

SWE Series: 40, 63 and 160 A Switches – Increased Safety



40 A / 63 A Version



160 A Version

CONTROL STATIONS & SWITCHES

Compliance Data:

ATEX - IEC:



Zone 1 & 2, 21 & 22	ATEX	II 2 GD	IEC	CE
Ex de IIC	T5 or T4	Ex tD A21	T95°C or T130°C	IP66 - IK10

Electrical Data:

Voltage	Amperage			
Up to 690 V	Up to 160 A			

Operating Temperature:

40 A and 63 A -20°C to +55°C	160 A -30°C to +55°C	
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Control Stations & Switches: Switches, Circuit Breakers and "Break Glass" Call Points

SWE Series: 40, 63 and 160 A Switches – Increased Safety

Zone 1 & 2 - 21 & 22

II 2 GD

ATEX / IECEx

IP66 - IK10

Applications:

- Designed to prevent operation in explosive atmospheres during connect and disconnect operation of power loads.
- For use in hazardous areas where ignitable vapors, gases or highly combustible dusts are present.
- For installation in chemical and petrochemical plants, refineries and other process industries.

Features:

63 Amp version:

- Padlockable handle in position "O" using max. 4 padlocks (max. handle dia. 8 mm and min. 15 mm length).
- 3 or 4-pole switch mechanism with one 'NO' early break auxiliary contact.
- Main contact termination: 35 mm²
- Auxiliary contact termination: 2.5 mm²
- Supplied with:
 - Cable entries:
 - 1 x M32 clearance on top
 - 1 x M32 and 1 x M20 clearance on bottom
- Supplied with:
 - 2 x M32 polyamide cable glands (cable 10 to 25 mm)
 - 1 x M20 blanking plug
 - Yellow laminated plastic label with black lettering (65 x 18 mm)

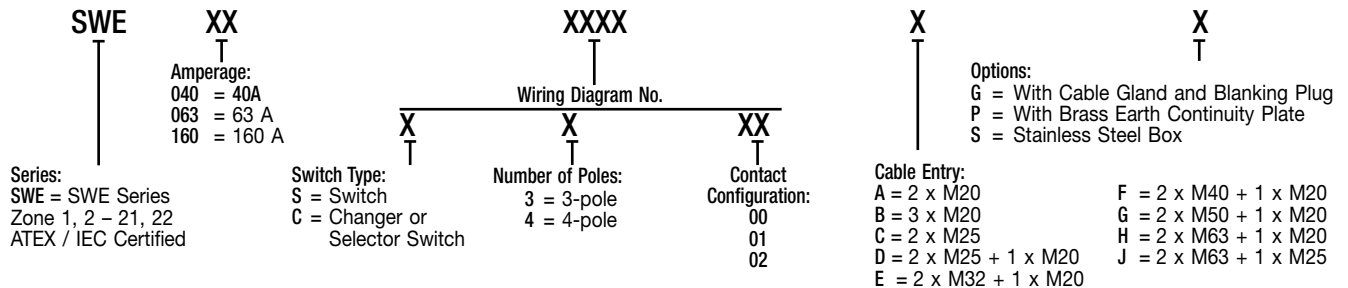
160 Amp version:

- Hinged door.
- Closed with plastic double bar locks (key supplied).
- Supplied with 4 fixing lugs.
- Padlockable handle in position "O".
- 3 or 4-pole switch mechanism with one 'NO' early break auxiliary contact.
- Main contact termination: 120 mm²
- Auxiliary contact termination: 2.5 mm²
- Supplied with:
 - Cable entries:
 - 1 x M63 clearance on top
 - 1 x M63 and 1 x M25 clearance on bottom
- Supplied with:
 - 2 x M63 polyamide cable glands (cable 36 to 44 mm)
 - 1 x M25 blanking plug

Standard Materials:

- Polyester (GRP) box.
- 316L stainless steel box.
- A2 stainless steel captive screws.
- Polyamide cable glands and blanking plugs.
- Nickel plated brass locknut.

Catalog Number Logic:



Ordering Information:

Polyester Box:

63 A Switch – 2 x M32 + 1 x M20

Switch Type	Wiring Diagram No.	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
3-pole switch	S302	8	14.5	SWE063S302EG	096269
4 Pole Switch	S402	8	14.5	SWE063S402EG	096270

160 A Switch – 2 x M63 + 1 x M25

Switch Type	Wiring Diagram No.	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
3-pole switch	S302	16	75	SWE160S302JG	096271
4 Pole Switch	S402	16	75	SWE160S402JG	096272

Stainless Steel Box:

160 A Switch – 2 x M63 + 1 x M25

Switch Type	Wiring Diagram No.	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
4-pole switch	S402	25	75	SWE160S402JS	–

Switching Arrangements:

S302

Positions	Contacts			
	Aux	1	2	3
0				
1	X	X	X	X

S402

Positions	Contacts				
	Aux	1	2	3	4
0					
1	X	X	X	X	X

Control Stations & Switches: Switches, Circuit Breakers and "Break Glass" Call Points

SWE Series: 40, 63 and 160 A Switches – Increased Safety

Zone 1 & 2 - 21 & 22

⊕ II 2 GD

ATEX / IECEx

IP66 - IK10

Technical Data:

Main Contacts	63 Amps		160 Amps	
Rated Insulation Voltage	690 Vac		690 Vac	
Rated Operating Voltage	690 Vac		690 Vac	
Rated Operating Current	63 A		160 A	
Rated Surge Voltage	6 KV		8 KV	
Switching Capacity				
AC 21 A / AC 22 A	63 A	230 V to 690 V	160 A	400 V to 690 V
AC 23 A	15 kW	230 V	80 kW	400 V
	22 kW	400 V	110 kW	500 V
	30 kW	500 V	55 kW	690 V
	18.5 kW	690 V		
AC 3	11 kW	230 V	90 kW	400 V
	18.5 kW	400 V	70 kW	500 V
	22 kW	500 V		
	15 kW	690 V		
DC 21	-		160 A	220 V (*)
DC 22	-		160 A	440 V (*)
			100 A	440 V (*)
DC 23	-		160 A	220 V (*)
			63 A	440 V (*)
Auxiliary Contacts				
Rated Insulation Voltage	400 V		230 V	
Rated Operating Voltage	400 V		230 V	
Rated Operating Current	10 A		10 A	
Switching Capacity:				
AC 15	6 A	230 V	6 A	230 V
	4 A	400 V		
Others				
Termination (flexible/solid)	35 mm ²		120 mm ²	

(*) 2 contacts connected in series per pole

Compliances:

Hazardous Area	Gas	Dust
Certified Type	CAe (Polyester box)	
Zones	1-2	21-22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex de IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	T5 at +40°C T4 at +55°C	-
Surface Temperature	-	T95°C at +40°C T130°C at +55°C
Ambient Temperature	-30°C to +55°C, -20°C to +55°C (40 A & 63 A)	
CE Declaration of Conformity	50235	
ATEX Certificate	LCIE 02 ATEX 6248X	
IECEx Certificate	LCI 04.0016X	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	

Hazardous Area	Gas	Dust
Certified Type	JBe (Stainless steel box)	
Zones	1-2	21-22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex de IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	T5 at +40°C T4 at +55°C	-
Surface Temperature	-	T95°C at +40°C T130°C at +55°C
Ambient Temperature	-30°C to +55°C	
CE Declaration of Conformity	50232	
ATEX Certificate	LCIE 02 ATEX 6118X	
IECEx Certificate	LCIE Ex 02.010X	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	

Standards:

Ex standards	EN / IEC 60079-0; 60079-1; 60079-7; 61241-0; 61241-1
Product standards	EN / IEC 60947-1; 60947-3
EMC standards	EN / IEC 55015; 61547
Other standards	EN / IEC 60529 (IP); 62262 (IK)

Control Stations & Switches: Switches, Circuit Breakers and "Break Glass" Call Points

SWE Series: 40, 63 and 160 A Switches – Increased Safety

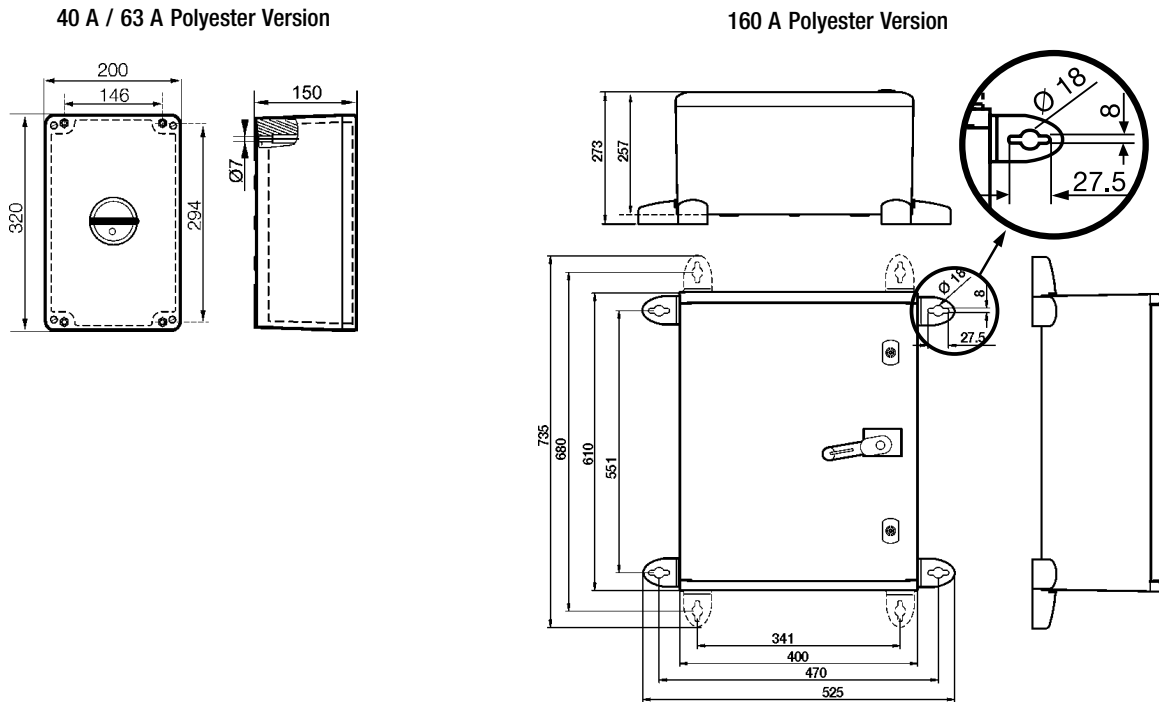
Zone 1 & 2 - 21 & 22

⊕ II 2 GD

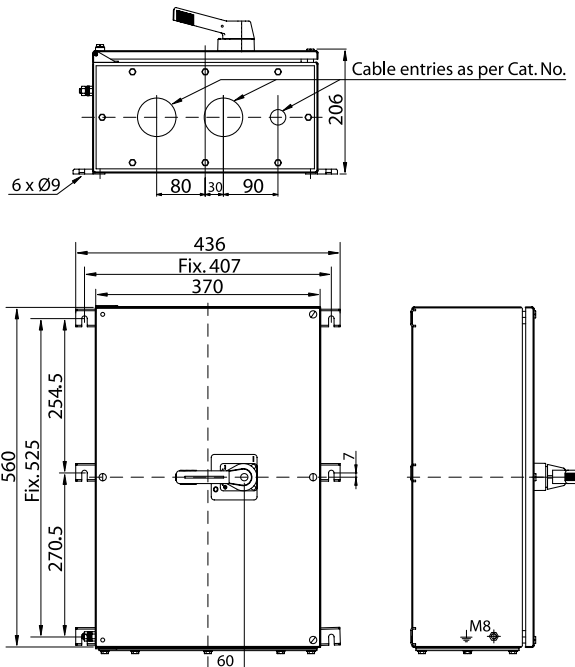
ATEX / IECEx

IP66 - IK10

Dimensions (mm):



160 A Stainless Steel Version



Control Stations & Switches: Switches, Circuit Breakers and "Break Glass" Call Points
 SWD Series: 16 and 32 A Switches – Flameproof



16 A Version



32 A Version

CONTROL STATIONS & SWITCHES

Compliance Data:

ATEX - IEC:



Zone 1 & 2, 21 & 22	ATEX	II 2 GD	IEC	CE
Ex d IIC	T6 or T5	Ex tD A21	T95°C	IP66 – IK10

Electrical Data:

Voltage	Amperage	
Up to 690 V	Up to 32 A	

Operating Temperature:

-40°C to + 55°C

Control Stations & Switches: Switches, Circuit Breakers and "Break Glass" Call Points

SWD Series: 16 and 32 A Switches – Flameproof

Zone 1 & 2 - 21 & 22

Ex II 2 GD

ATEX / IEC

IP66 - IK10

Applications:

- Designed to prevent operation in explosive atmospheres during connect and disconnect operation of lighting and light power loads.
- For use in hazardous areas where ignitable vapors, gases or highly combustible dusts are present.
- For installation in chemical and petrochemical plants, refineries and other process industries.

- Internal earth:
2 x 4 mm² terminals
- External earth:
M5 for 16 Amps
M6 for 32 Amps

Features:

- Two threaded entries (one top and one bottom) M20 or M25.
- Switch mechanism fixed at the bottom of the box.
- Padlockable handle.
- Termination:
16A 4 mm² terminals
32A 6 mm² terminals

Standard Material of Fixtures:

- Gray painted marine grade aluminum alloy box.
- A2 stainless steel captive screws.

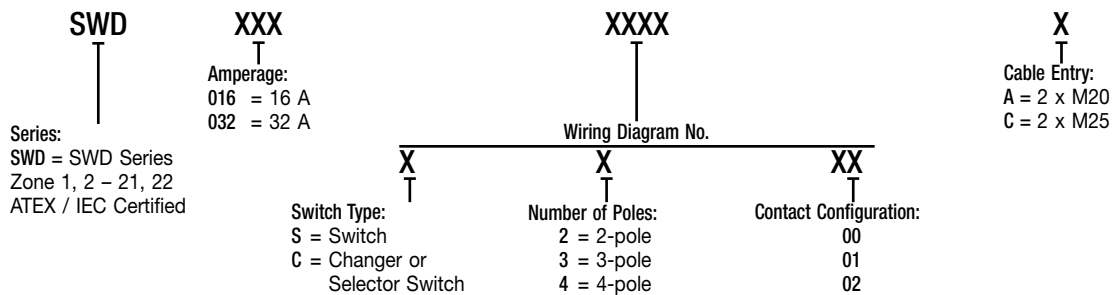


16 A Version



32 A Version

Catalog Number Logic:



Ordering Information:

16 A Switch

Switch Type	Wiring Diagram No.	Entries	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
1-pole changeover	C100	2 x M20 2 x M25	1.1	3.8	SWD016C100A SWD016C100C	- -
2-pole switch	S200	2 x M20 2 x M25	1.1	3.8	SWD016S200A SWD016S200C	093529 093526
3-pole switch	S300	2 x M20 2 x M25	1.1	3.8	SWD016S300A SWD016S300C	093530 093527
4-pole switch	S400	2 x M20 2 x M25	1.1	3.8	SWD016S400A SWD016S400C	093531 093528

32 A Switch

Switch Type	Wiring Diagram No.	Entries	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
2-pole switch	S200	2 x M20 2 x M25	2.7	8	SWD032S200A SWD032S200C	- 093544
3-pole switch	S300	2 x M20 2 x M25	2.7	8	SWD032S300A SWD032S300C	- 093545
4-pole switch	S400	2 x M20 2 x M25	2.7	8	SWD032S400A SWD032S400C	- 093546

Switching Arrangement:

C100 Positions	Contacts	
	1-2	3-4
0	X	
1		X

S200 Positions	Contacts	
	1-2	3-4
0		
1	X	X

S300 Positions	Contacts		
	1-2	3-4	5-6
0			
1	X	X	X

S400 Positions	Contacts			
	1-2	3-4	5-6	7-8
0				
1	X	X	X	X

X Contact closed

Control Stations & Switches: Switches, Circuit Breakers and "Break Glass" Call Points

SWD Series: 16 and 32 A Switches – Flameproof

Zone 1 & 2 - 21 & 22

⊕ II 2 GD

ATEX / IEC

IP66 - IK10

Technical Data:

Main Contacts		16 Amps	32 Amps
Rated insulation voltage (Ui)		690 V	690 V
Thermal rating		20 A	40 A
AC 21 A		16 A	32 A
AC 15		6 A	12 A
AC 23 A	3 x 230 V	4 KW	11 KW
	3 x 400 V	7.5 KW	11 KW
	3 x 500 V	5.5 KW	11 KW
	3 x 690 V	4 KW	11 KW
AC 3 A	3 x 230 V	3 KW	5.5 KW
	3 x 400 V	4 KW	11 KW
	3 x 500 V	5.5 KW	11 KW
	3 x 690 V	3 KW	11 KW
Termination (flexible/solid)		2.5 mm ² /4 mm ²	6 mm ²

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1
Product Standards	EN / IEC 60947-1; 60947-3
EMC Standards	–
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

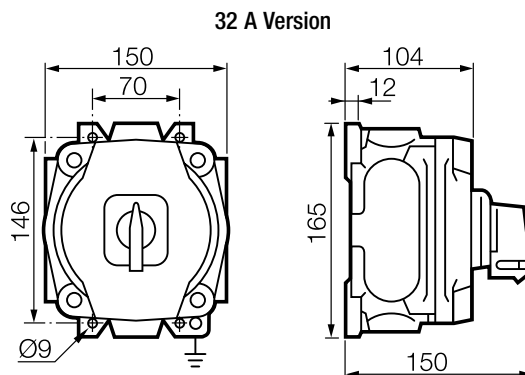
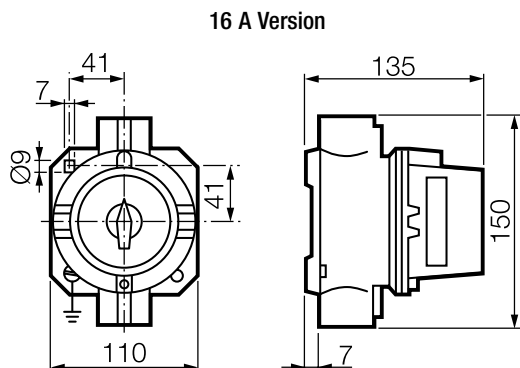
Compliances: 16 A version:

Hazardous Area	Gas	Dust
Certification Type	BR1d (16A)	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081⊕II 2 G	CE 0081⊕II 2 D
Symbol of Protection ATEX	Ex d IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	T6 for Ta = +40°C T5 for Ta = +55°C	–
Surface Temperature	–	T95°C
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50230	
ATEX Certificate	LCIE 02 ATEX 6056	
IEC Certificate	LCIE Ex 02.005	
Other Certifications	GOST	
Ingress Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	

Compliances: 32 A version:

Hazardous Area	Gas	Dust
Certification Type	CF1E (32A)	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081⊕II 2 G	CE 0081⊕II 2 D
Symbol of Protection ATEX	Ex d IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	T6 for Ta ≤ +40°C T5 for +40°C < Ta ≤ +55°C	–
Surface Temperature	–	T95°C
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50257	
ATEX Certificate	LCIE 03 ATEX 6044X	
IEC Certificate	LCIE Ex 03.003X	
Other Certifications	GOST	
Ingress Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	

Dimensions (mm):



Control Stations & Switches: Switches, Circuit Breakers and "Break Glass" Call Points
 SWD Series: 20, 32, 63, 100, 125, 160 and 250 A Isolator Switches – Flameproof



63 A Version

Compliance Data:

ATEX - IEC:



Zone 1 & 2, 21 & 22	ATEX	II 2 GD	IEC	CE
Ex d IIB	T6 to T5	Ex tD A21	T80°C to T95°C	IP66 - IK10

Electrical Data:

Voltage	Amperage			
Up to 690 V	Up to 250 A			

Operating Temperature:

-40°C to + 55°C				
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Control Stations & Switches: Switches, Circuit Breakers and "Break Glass" Call Points

SWD Series: 20, 32, 63, 100, 125, 160 and 250 A Isolator Switches – Flameproof

Zone 1 & 2 - 21 & 22

II 2 GD

ATEX / IEC

IP66 - IK10

Applications:

- Designed to prevent operation in explosive atmospheres during connect and disconnect operation of power loads.
- For use in hazardous areas where ignitable vapors, gases or highly combustible dusts are present.
- For installation in chemical and petrochemical plants, refineries and other process industries.

Features:

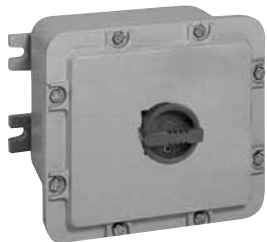
- Padlockable handle in position "O".
- 3 or 4-pole switch mechanism.
- "NO-NC" early break auxiliary contact.
- Main contact termination: Up to 185 mm².
- Auxiliary contact termination: 2.5 mm².
- Cable entries:
Threaded entries two at bottom and one at top – M20 to M63
- Supplied with:
1 x M20 blanking plug
1 x M8 earth stud

Standard Material of Fixtures:

- Gray painted marine grade aluminum alloy box.
- A2 stainless steel captive screws.

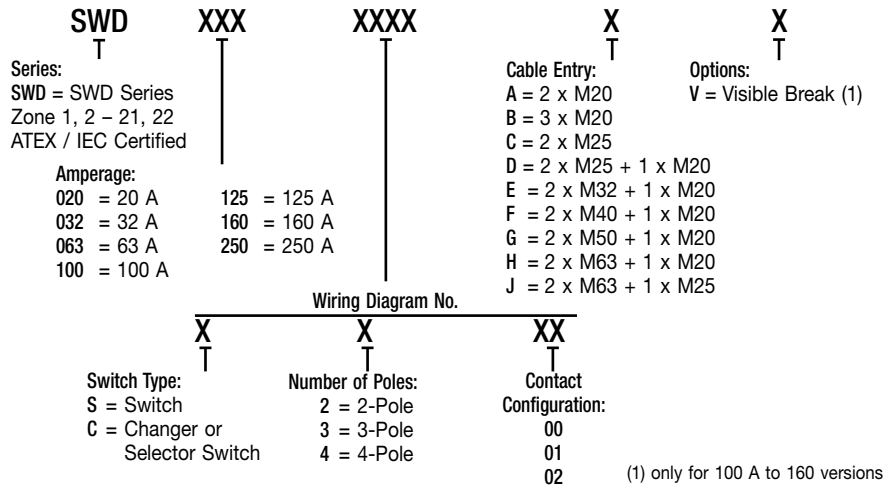
Options:

- Visible break assembly including a window to view power connection (only for 100 A to 160 A versions).



63 A Version

Catalog Number Logic:



Ordering Information:

SWD Flameproof Isolator Switches

Switch Type	Wiring Diagram No.	Certified Type	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number
20 A – 3 x M20 threaded entries (1 Top and 2 Bottom)						
3-pole switch	S300	CF2D	3.8	11	SWD020S300B	093508
4-pole switch	S400	CF2D	3.8	11	SWD020S400B	093509
32 A – Bottom entries: 1 x M25 + 1 x M20 – Top entries: 1 x M25						
3-pole switch	S300	CF2D	3.8	11	SWD032S300D	093510
4-pole switch	S400	CF10B	11	19.6	SWD032S400D	093511
63 A – Bottom entries: 1 x M32 + 1 x M20 – Top entries: 1 x M32						
3-pole switch	S300	CF10B	11	19.6	SWD063S300E	093548
4-pole switch	S400	CF10B	11	19.6	SWD063S400E	093512
100 A – Bottom entries: 1 x M40 + 1 x M20 – Top entries: 1 x M40						
3-pole switch	S300	CF20B	13	24.5	SWD100S300F	093513
4-pole switch	S400	CF20B	13	24.5	SWD100S400F	093514
125 A – Bottom entries: 1 x M50 + 1 x M20 – Top entries: 1 x M50						
3-pole switch	S300	CF20B	13	24.5	SWD125S300G	093515
4-pole switch	S400	CF20B	13	24.5	SWD125S400G	093516
160 A – Bottom entries: 1 x M50 + 1 x M20 – Top entries: 1 x M50						
3-pole switch	S300	CF40B	50.5	235.2	SWD160S300G	093517
4-pole switch	S400	CF40B	50.5	235.2	SWD160S400G	093518
250 A – Bottom entries: 1 x M63 + 1 x M20 – Top entries: 1 x M63						
3-pole switch	S300	CF60B	112	646.6	SWD250S300H	093519
4-pole switch	S400	CF60B	112	646.6	SWD250S400H	093520

Switching Arrangement:

Positions	S300 Contacts		
	1-2	3-4	5-6
0			
1	X	X	X

Positions	S400 Contacts			
	1-2	3-4	5-6	7-8
0				
1	X	X	X	X

Control Stations & Switches: Switches, Circuit Breakers and "Break Glass" Call Points

SWD Series: 20, 32, 63, 100, 125, 160 and 250 A Isolator Switches – Flameproof

Zone 1 & 2 - 21 & 22

Ex II 2 GD

ATEX / IEC

IP66 - IK10

Technical Data:

Main Contacts	25 Amps	32 Amps	63 Amps	100 Amps	125 Amps	160 Amps	250 Amps
Rated Insulation Voltage (Ui)	800 V	800 V	800 V	800 V	800 V	800 V	800 V
Rated Operating Voltage (Ue)	415 V / 500 V / 690 V	415 V / 500 V / 690 V	415 V / 500 V / 690 V	415 V / 500 V / 690 V	415 V / 500 V / 690 V	415 V / 500 V / 690 V	415 V / 500 V / 690 V
Rated Operating Current (Ie)	25 A	32 A / 32 A / 25 A	63 A / 63 A / 40 A	100 A	125 A	160 A / 160 A / 125 A	250 A / 250 A / 200 A
Rated Surge Voltage (Uimp)	8 kV	8 kV	8 kV	8 kV	8 kV	8 kV	8 kV
Short Circuit Resistance	50 kA (with fuse)	50 kA (with fuse)	50 kA (with fuse)	100 kA (with fuse)	63 kA (with fuse)	80 kA (with fuse)	50 kA (with fuse)
Switching Capacity							
AC 21 A	415 V 500 V 690 V	25 A 25 A 25 A	32 A 32 A 32 A	63 A 63 A 63 A	100 A 100 A 100 A	125 A 125 A 125 A	160 A 160 A 200 A
AC 22 A	415 V 500 V 690 V	25 A 25 A 25 A	32 A 32 A 32 A	63 A 63 A 63 A	100 A 100 A 63 A	125 A 125 A 80 A	160 A 125 A 100 A
AC 23 A	230 V 415 V 500 V 690 V	25 A 25 A 25 A 25 A	- 32 A 25 A 25 A	- 63 A 63 A 40 A	- 100 A 80 A 63 A	- 125 A 100 A 80 A	- 125 A 100 A 80 A
AC 23 A Motor Power (kW)	230 V 415 V 500 V 690 V	- 11 kW 11 kW 15 kW	- 15 kW 15 kW 18.5 kW	- 30 kW 30 kW 30 kW	- 45 kW 45 kW 45 kW	- 55 kW 55 kW 75 kW	- 75 kW 75 kW 75 kW
DC 21	- - -	24/48 V - 25 A (1) - -	- - -	- - -	- - -	- 800 V - 125 A (1) 800 V - 125 A (1)	220 V - 250 A (1) 440 V - 200 A (1) 500 V - 200 A (1)
DC 22	- - -	- - -	- - -	- - -	- - -	- - -	220 V - 250 A (1) 440 V - 200 A (1) 500 V - 200 A (1)
DC 23	- - -	- - -	- - -	- - -	- - -	- - -	220 V - 250 A (1) 440 V - 200 A (1) 500 V - 200 A (1)
Termination (Flexible / Solid)	0.75 to 6 mm ² / 10 mm ²	16 mm ² / 16 mm ²	4 to 35 mm ² / 50 mm ²	4 to 50 mm ² / 70 mm ²	4 to 50 mm ² / 70 mm ²	4 to 50 mm ² / 70 mm ²	95 mm ² / 150 mm ²
Auxiliary Contacts							
Rated Operating Voltage (Ue)	230 V / 400 V	250 V	250 V	250 V	250 V	250 V	230 V / 400 V
Rated Operating Current (Ie)	6 A / 4 A	5 A	5 A	5 A	5 A	5 A	4 A / 3 A
Switching Capacity							
AC 15	6 A / 230 V	5 A / 250 V	5 A / 250 V	5 A / 250 V	5 A / 250 V	5 A / 250 V	4 A / 230 V - 3 A / 400 V
DC 14	-	-	-	-	-	-	1 A / 24 V - 0.2 A / 48 V
Termination (Flexible)	2.5 mm ²	2.5 mm ²	2.5 mm ²	2.5 mm ²	2.5 mm ²	2.5 mm ²	2.5 mm ²

(1) Two contacts connected in series.

Compliances:

Hazardous Area	Gas	Dust
Certification Type	CF2D	
Zones	1-2	21-22
Conforming to ATEX 94/9/CE	CE 0081Ex II 2 G	CE 0081Ex II 2 D
Symbol of Protection ATEX	Ex d IIB	Ex tD A21
Symbol of Protection IEC		
T Rating	T6 for Ta ≤ +40°C T5 for +40°C < Ta ≤ +55°C	-
Surface Temperature	-	T95°C
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50254	
ATEX Certificate	LCIE 03 ATEX 6061X	
IEC Certificate	LCIE Ex 03.006X	
Other Certifications	GOST	
Ingress Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	
Internal Volume	≤ 2dm ³	

Compliances:

Hazardous Area	Gas	Dust
Certification Type	CF	
Zones	1-2	21-22
Conforming to ATEX 94/9/CE	CE 0081Ex II 2 G	CE 0081Ex II 2 D
Symbol of Protection ATEX	Ex d IIB	Ex tD A21
Symbol of Protection IEC		
T Rating	T6	-
Surface Temperature	-	T80°C
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50229	
ATEX Certificate	LCIE 02 ATEX 6057X	
IECEx Certificate	IECEx LCI 08.0023X	
Other Certifications	GOST	
Ingress Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	
Internal Volume	> 2dm ³	

*CF10B Ambient T° -20°C to +55°C

Standards:

Ex standards	EN / IEC 60079-0; 60079-1
Product standards	EN / IEC 60947-1; 60947-3
EMC standards	/
Other standards	EN / IEC 60529(IP); 62262(IK)

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ATX Product Catalog

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Control Stations & Switches: Switches, Circuit Breakers and "Break Glass" Call Points

SWD Series: 20, 32, 63, 100, 125, 160 and 250 A Isolator Switches – Flameproof

Zone 1 & 2 - 21 & 22

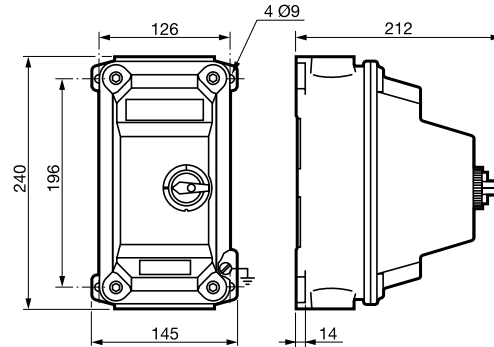
⊕ II 2 GD

ATEX / IEC

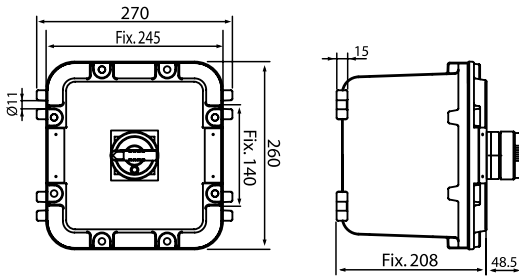
IP66 - IK10

Dimensions (mm):

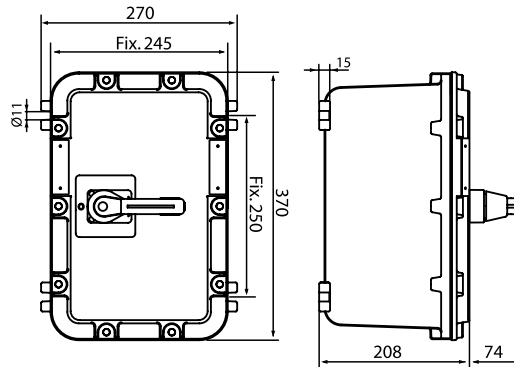
CF2D



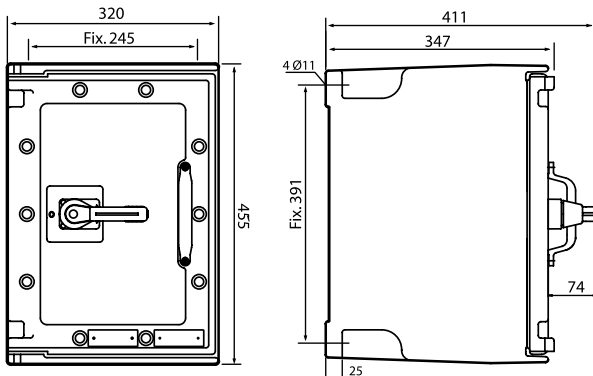
CF10B



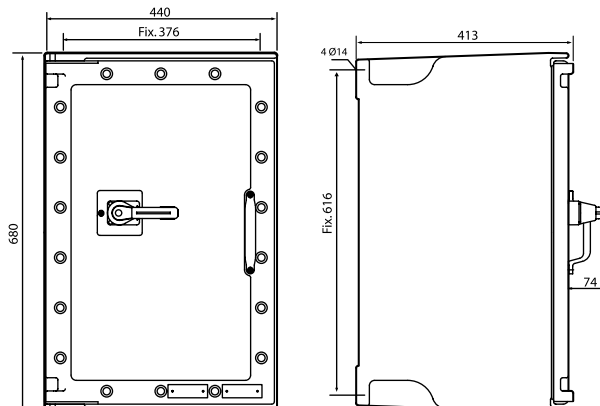
CF20B



CF40B



CF60B



Control Stations & Switches: Switches, Circuit Breakers and "Break Glass" Call Points

CBU and SWU Series: Branch Circuit Breakers and Switches for Increased Safety Enclosures



2-Pole Circuit Breaker with GFI



4-Pole Circuit Breaker



2-Pole Circuit Breaker



4-Pole Switch

Compliance Data:

ATEX - IECEx



Zone 1 & 2	ATEX	II 2 G	IECEx	CE
Ex de IIC				

Technical Data:

Circuit Breaker	Switch	Amperage	Voltage
1 to 4-Poles and 2P + GFI	2 to 4-poles	Up to 63 Amp	Up to 480 Vac and up to 125 Vdc

Service Temperature:

-20°C to + 100°C

Control Stations & Switches: Switches, Circuit Breakers and "Break Glass" Call Points

CBU and SWU Series: Branch Circuit Breakers and Switches for Increased Safety Enclosures

Zone 1 & 2

II 2 GD

ATEX / IECEx

Applications:

- Useful as back-up circuit breaker protection or as main circuit breaker protection for hazardous areas.
- To be fitted inside increased safety Ex e enclosures.

Features:

- Up to 40 A for 2-pole circuit breaker versions.
- Up to 63 A for 2-pole with GFI, 3-pole and 4-pole circuit breaker versions.
- Up to 63 A for switch versions.
- Breaking capacity 10 kA – 400 V according to EN/IEC 60947-2 standard.

- Breaking capacity 6 kA-400 V according to EN/IEC 60898 standard
- Supplied with front rotary control handle padlockable in OFF position.
- Terminal capacity: 1 x 25 mm².
- Mounting in polyester (ECEP series) or in 316L stainless steel (ECES series) enclosures. Can be fixed either on the door or at the back of the enclosure.

Standard Material of Fixture:

- Polyamide housing.

Catalog Number Logic

XXX ↓	X ↓	XX ↓	X ↓	XX ↓	XX ↓
Series: CBU = Circuit Breaker Zone 1 & 2, ATEX / IEC Certified SWU = Switch Zone 1 & 2, ATEX / IEC Certified	Number of Poles: 1 = 1-Pole 2 = 2-Poles 3 = 3-Poles 4 = 4-Poles 9 = 1-Pole + Neutral	Intensity: 01 = 1 A 02 = 2 A 03 = 3 A 04 = 4 A 06 = 6 A 10 = 10 A 16 = 16 A 20 = 20 A 25 = 25 A 32 = 32 A 40 = 40 A 50 = 50 A 63 = 63 A	Curve Type: B = Curve B C = Curve C D = Curve D	GFI: R1 = 30 mA R2 = 300 mA	Options: 5 = 440 Vac 6 = 480 Vac F5 = NO Fault Indication Contact F9 = NC Fault Indication Contact S5 = NO Auxiliary Contact S9 = NC Auxiliary Contact M = 10 kA/15 kA Breaking Capacity

Ordering Information:

Circuit Breakers – CBU Series:

2-Pole Branch Circuit Breaker – 400 Vac – 125 Vdc – Tripping Curve C

	Weight (kg)	Volume dm ³	Certified Type	Catalog Number	Pack
2 x 6 A	1.9	1.1	IT40U	CBU206C	1
2 x 10 A	1.9	1.1	IT40U	CBU210C	1
2 x 16 A	1.9	1.1	IT40U	CBU216C	1
2 x 20 A	1.9	1.1	IT40U	CBU220C	1

2-Pole GFI Branch Circuit Breaker – 400 Vac – 125 Vdc – Tripping Curve C

	Weight (kg)	Volume dm ³	Certified Type	Catalog Number	Pack
2 x 10 A / 30 mA	1.9	3.1	CBU	CBU210CR1	1
2 x 16 A / 30 mA	1.9	3.1	CBU	CBU216CR1	1
2 x 20 A / 30 mA	1.9	3.1	CBU	CBU220CR1	1
2 x 10 A / 300 mA	1.9	3.1	CBU	CBU210CR2	1
2 x 16 A / 300 mA	1.9	3.1	CBU	CBU216CR2	1
2 x 20 A / 300 mA	1.9	3.1	CBU	CBU220CR2	1

Control Stations & Switches: Switches, Circuit Breakers and "Break Glass" Call Points

CBU and SWU Series: Branch Circuit Breakers and Switches for Increased Safety Enclosures

Zone 1 & 2
 Ⓢ II 2 GD
 ATEX / IECEx

Ordering Information – Continued:

Circuit Breakers – CBU Series:
 3-Pole Branch Circuit Breaker – 400 Vac – 125 Vdc – Tripping Curve C

	Weight (kg)	Volume dm ³	Certified Type	Catalog Number	Pack
3 x 10 A	1.9	3.1	CBU	CBU310C	1
3 x 16 A	1.9	3.1	CBU	CBU316C	1
3 x 20 A	1.9	3.1	CBU	CBU320C	1

4-Pole Branch Circuit Breaker – 400 Vac – 125 Vdc – Tripping Curve C

	Weight (kg)	Volume dm ³	Certified Type	Catalog Number	Pack
4 x 10 A	1.9	3.1	CBU	CBU410C	1
4 x 16 A	1.9	3.1	CBU	CBU416C	1
4 x 20 A	1.9	3.1	CBU	CBU420C	1


Switches – SWU Series:

Up to 40 Amps for two pole version
 Up to 63 Amps for three and four pole versions.
 Example: 3-pole 25 A switch – SWU325

Relays and Contactors – RCU Series:

2 and 4-pole versions.
 Rated current: 20 A, 24 A, 40 A and 63 A.
 Rated voltage: Up to 400 V - 50/60 Hz.
 Coil voltage: Up to 230 V - 50/60 Hz.
 Consult factory for further details.

Accessories:

Description	Catalog Number	Pack
 Bracket		
Bracket for door fixing for 2-pole MCB	096650	1

Compliances

Hazardous Area	Gas	
Certified Type	IT40U (2-pole Versions)	CBU (2-pole GFI, 3-pole and 4-pole Versions)
Zones	1-2 Authorized to be used in an approved dustproof enclosure	
Conforming to ATEX 94/9/CE	CE 0081 Ⓢ II 2 G	
Symbol of Protection ATEX	Ex de IIC	
Symbol of Protection IEC		
T Rating	N.A.	
Surface Temperature	N.A.	
Service Temperature	-20°C to +100°C	
CE Declaration of Conformity	5C216	5C244
ATEX Certificate	LCIE 02 ATEX 0035U	LCIE 09 ATEX 3068U
IECEx Certificate	IECEx LCI 04.0033U	IECEx LCI 09.0023L
Other Certifications	GOST	–
Ingress Protection (solid and liquid)	N.A.	
Impact Resistance (shock)	N.A.	

Standards:

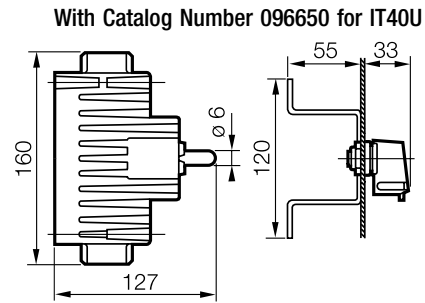
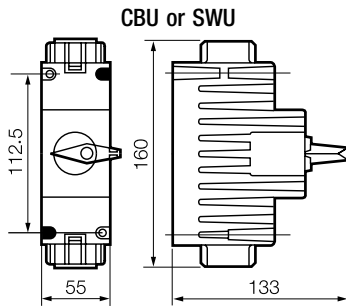
Ex Standards	EN / IEC 60079-0; 60079-1; 60079-7
Product Standards	EN / IEC 60947-1; 60947-2; 60947-3
EMC Standards	–
Other Standards	–

Control Stations & Switches: Switches, Circuit Breakers and "Break Glass" Call Points

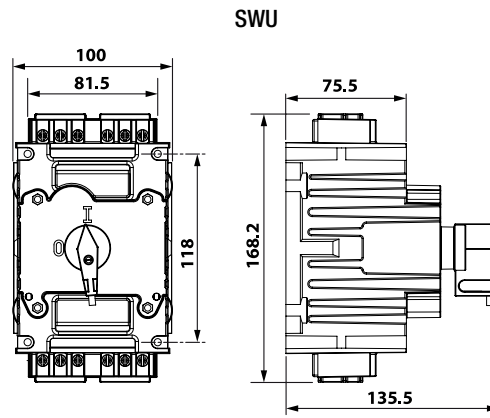
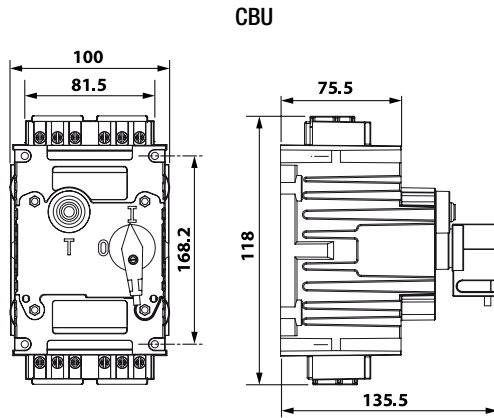
CBU and SWU Series: Circuit Breakers and Switches for Increased Safety Enclosures

Zone 1 & 2
 II 2 GD
 ATEX / IECEx

Dimensions (mm):
 2-Pole Versions



2-Pole with GFI, 3-Pole and 4-Pole Versions



Control Stations & Switches: Switches, Circuit Breakers and "Break Glass" Call Points

CBD Series: Circuit Breakers – Flameproof



Ex d IIB Version



Ex d IIC Version

Compliance Data: ATEX - IEC



Zone 1 & 2, 21 & 22	ATEX	II 2 GD	IEC	CE
Ex d IIB – Ex d IIC	T5 – T3	Ex tD A21	T95°C – T195°C	IP66 – IK10

Operating Temperature

-25°C to +55°C

Control Stations & Switches: Switches, Circuit Breakers and "Break Glass" Call Points

CBD Series: Circuit Breakers – Flameproof

Zone 1 & 2 - 21 & 22

Ex II 2 GD

ATEX / IEC

IP66 - IK10

Applications:

- Circuit breakers are used in areas where hazardous materials are handled or stored.
- These units provide thermal-magnetic protection and residual current devices.
- External ground terminal: M5 for Ex d IIB version.
- Earth crossing terminal M8 for Ex d IIC version.
- 1 x M20 entry on top.
- 2 x M20 entries at bottom with one blanking plug.
- Cable glands to be ordered separately.

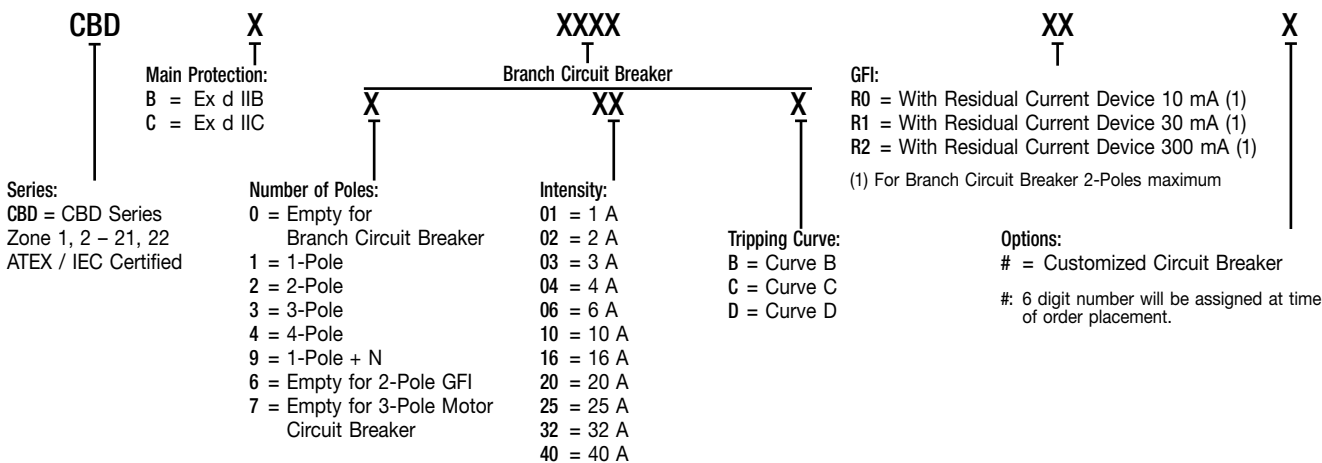
Features:

- Supplied with front rotary control switch handle.
- Padlockable in stop position (3 x dia. 5 mm)
- RCBOs supplied with test push button.
- Yellow laminated plastic legend plate with black lettering.
- Internal earth terminal 2 x 4 mm².

Standard Material of Fixtures:

- Gray painted marine grade aluminum alloy housing (RAL7038).
- Stainless steel cover bolts.

Catalog Number Logic:



Ordering Information:

Enclosure for Housing Branch Circuit Breaker up to 40 A
Ex d IIB T3 for -25°C to +55°C Ambient Temperature:

Type	Description	Weight (Kg.)	Volume (dm ³)	Catalog Number
CF2D	For 40 A maximum 2-pole, 3-pole and 4-pole Branch Circuit Breaker (S200 from ABB) not supplied	4	14	CBDB0
CF2D	For 40 A maximum 2-pole, GFI Branch Circuit Breaker (S200 from ABB) not supplied	4	14	CBDB6
Options: enclosure fitted with GFI Branch Circuit Breaker available as per catalog number logic.				
CF2D	For 32 A maximum 3-pole motor circuit breaker (GV2-P or GV2-L from Schneider Electric) not supplied	4	14	CBDB7

Enclosure for Housing MCB up to 40 A

Ex d IIC T5 for -25°C to +55°C Ambient Temperature:

Type	Description	Weight (Kg.)	Volume (dm ³)	Catalog Number
CF1C	For 40 A maximum 2-pole, 3-pole and 4-pole Branch Circuit Breaker (S200 from ABB) not supplied	4	14	CBDC0
CF1C	For 40 A maximum 2-pole, GFI (S200 from ABB) not supplied	4	14	CBDC6
Options: enclosure fitted with GFI Branch Circuit Breaker available as per catalog number logic.				
CF1C	For 32 A maximum 3-pole motor circuit breaker (GV2-P or GV2-L from Schneider Electric) not supplied	4	14	CBDC7

Control Stations & Switches: Switches, Circuit Breakers and "Break Glass" Call Points

CBD Series: Circuit Breakers – Flameproof

Zone 1 & 2 - 21 & 22

⊕ II 2 GD

ATEX / IEC

IP66 - IK10

Compliances:

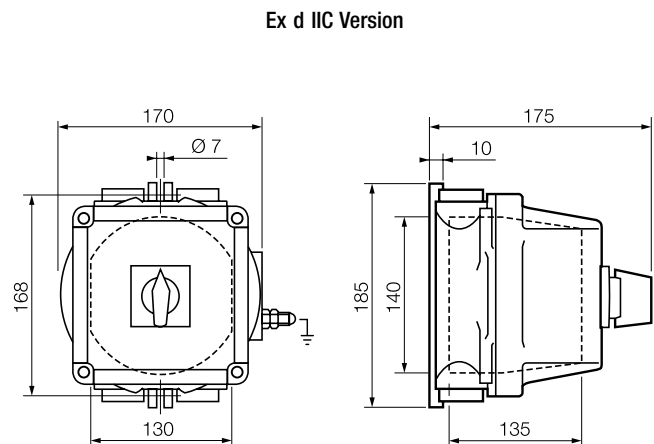
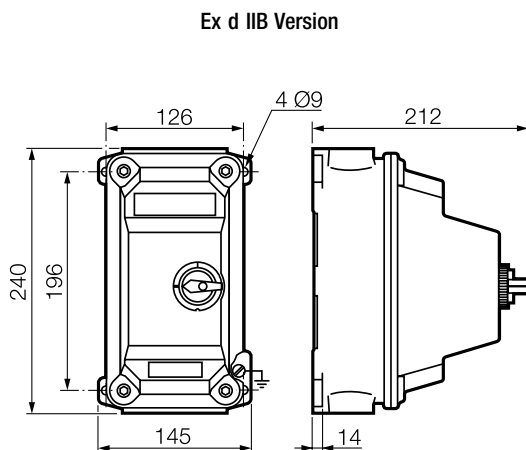
Hazardous Area	Gas	Dust
Certified Type	CF2D	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex d IIB	Ex tD A21
Symbol of Protection IEC		
T Rating	T3	–
Surface Temperature	–	T195°C
Ambient Temperature	–40°C to +55°C	
CE Declaration of Conformity	50254	
ATEX Certificate	LCIE 03 ATEX 6061X	
IEC Certificate	LCIE Ex 03.006X	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	
Internal Volume	≤ 2 dm ³ (2 liters)	

Hazardous Area	Gas	Dust
Certified Type	CF1C	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex d IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	T5	–
Surface Temperature	–	T95°C
Ambient Temperature	–40°C to +55°C	
CE Declaration of Conformity	50257	
ATEX Certificate	LCIE 03 ATEX 6044X	
IEC Certificate	LCIE Ex 03.003X	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	
Internal Volume	≤ 2 dm ³ (2 liters)	

Standards:

Ex standards	EN / IEC 60079-0; 60079-1; 61241-0; 61241-1
Product standards	–
EMC standards	–
Other standards	EN / IEC 60529 (IP); 62262 (IK)

Dimensions (mm):



Control Stations & Switches: Switches, Circuit Breakers and "Break Glass" Call Points

FAS Series: "Break Glass" Call Points – Increased Safety and Flameproof



Ex de IIC Version
(PCe Type)



Ex d IIC Version
(BR1d Type)

CONTROL STATIONS & SWITCHES

Compliance Data:

ATEX - IEC



Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IEC	CE
Ex de IIC (PCe Type) Ex d IIC (BR1 d Type)	T6 to T5	Ex tD A21	T 95°C – T195°C T95°C (BR1d Type)	IP66 – IK10

Operating Temperature

(PCe Type) -55°C to +60°C	(BR1d Type) -40°C to +55°C	
------------------------------	-------------------------------	--

Control Stations & Switches: Switches, Circuit Breakers and "Break Glass" Call Points

FAS Series: "Break Glass" Call Points – Increased Safety and Flameproof

Zone 1 & 2 - 21 & 22

Ex II 2 GD

ATEX / IEC

IP66 - IK10

Applications:

- Located on exit routes, in particular on the floor landings of staircases and at all exits to the open air.
- For use in hazardous areas where ignitable vapors, gases or highly combustible dusts are present.
- For installation in chemical and petrochemical plants, refineries and other process industries.

Features:

Type PCe (increased safety version):

- Hammer and stainless steel chain.
- NO+NC contacts with 2.5 mm² terminals.
- Earth termination: 2 x 4 mm² (internal and external).
- 2 x M20 bottom entries supplied with polyamide cable gland (dia 6.5 to 14.5 mm) and polyamide blanking plug.

Type BR1d (flameproof version):

- Hammer and stainless steel chain.

- NO+NC contacts with 2.5 mm² terminals.
- Earth termination: 2 x 4mm² (internal and external).
- 2 x M20 entries (1 top and 1 bottom) supplied with one aluminum blanking plug.

Materials:

Type PCe

- Red painted aluminium alloy box.
- Red painted steel cover.
- Stainless steel chain.

Type BR1d

- Painted marine grade aluminium alloy box (gray painted body and red painted cover).
- Stainless steel chain.

Options:

- Special options available - consult factory for details.

Catalog Number Logic:

FAS

|

Series

X

|

D = Ex d
E = Ex e

X

|

A = Automatic
M = Manual

Ordering Information:

"Break Glass" Call Points

Description	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
Increased Safety Ex de IIC Version - Type PCe:					
Manual breaking of the circuit after breaking the glass. Momentary NO+NC contacts	1.2	5	FASEM	096224	1
Automatic breaking of the circuit as soon as glass is broken. Momentary NO+NC contacts	1.2	5	FASEA	096225	1
Flameproof Ex d IIC Version - Type BR1d:					
Automatic breaking of the circuit as soon as glass is broken. Momentary NO+NC contacts	1.2	3.8	FASDA	093818*	1

* Please check your cable entry as FASDA is M20 and not M25 as 093818

Control Stations & Switches: Switches, Circuit Breakers and "Break Glass" Call Points

FAS Series: "Break Glass" Call Points – Increased Safety and Flameproof

Zone 1 & 2 - 21 & 22

⊕ II 2 GD

ATEX / IEC

IP66 - IK10

Compliances:

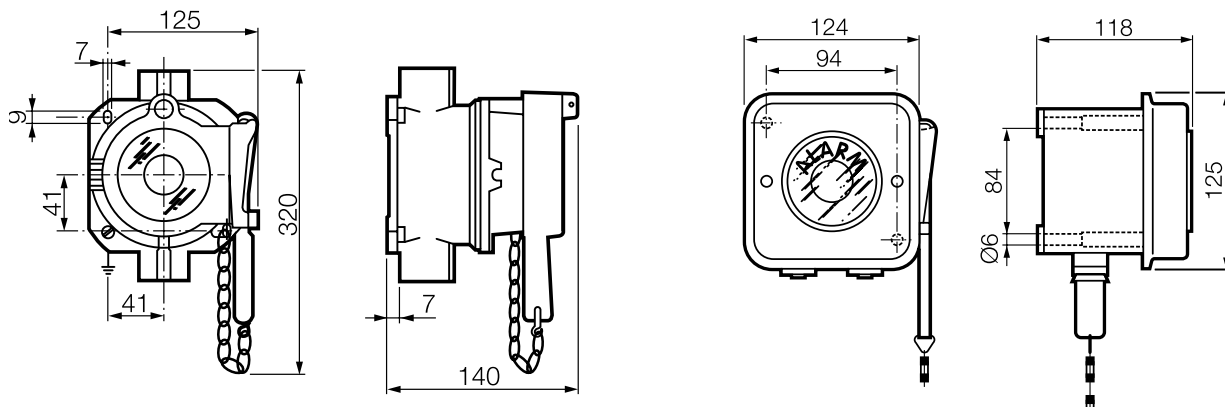
Hazardous Area	Gas	Dust
Certification Type	PCe	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex de IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	T6	–
Surface Temperature	–	T80°C
Ambient Temperature	-55°C to +60°C	
CE Declaration of Conformity	50221	
ATEX Certificate	LCIE 00 ATEX 6047	
IEC Certificate	LCIE Ex 00.017	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	

Hazardous Area	Gas	Dust
Certified Type	BR1d	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex d IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	T6 for Ta = +40°C T5 for Ta = +55°C	–
Surface Temperature	–	T95°C
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50230	
ATEX Certificate	LCIE 02 ATEX 6056	
IEC Certificate	LCIE Ex 02.005	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	
Internal Volume	≤ 2 dm ³ (2 liters)	

Standards:

Ex standards	EN / IEC 60079-0; 60079-1; 60079-7; 61241-0; 61241-1
Product standards	EN / IEC 60947-1; 60947-5-5
EMC standards	–
Other standards	EN / 60529 (IP); 62262 (IK)

Dimensions (mm):

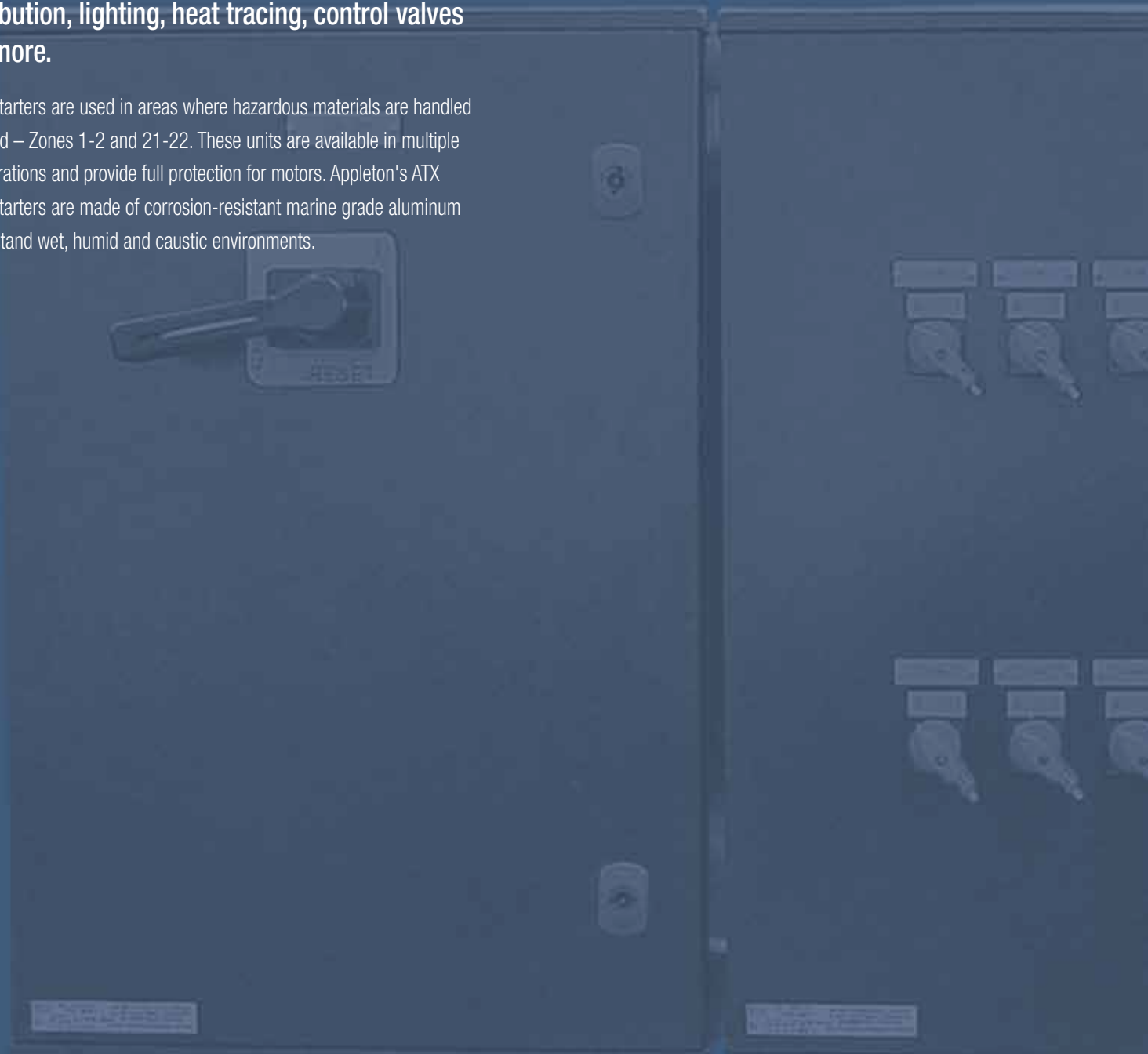


Notes:





PANELBOARDS & MOTOR STARTERS

Appleton's ATX series of Increased Safety distribution panels are available in IP66-rated fiberglass reinforced polyester (FRP) or 316L stainless steel and come in multiple sizes depending on the number of circuits required. Modularity enables coupling together, allowing for additional circuits and the capability to add main circuit protection. They are also available in flameproof aluminum. Distribution panels are ATEX and IEC approved for use in Zones 1-2 and 21-22 and offer multiple solutions for power distribution, lighting, heat tracing, control valves and more.

Motor starters are used in areas where hazardous materials are handled or stored – Zones 1-2 and 21-22. These units are available in multiple configurations and provide full protection for motors. Appleton's ATX motor starters are made of corrosion-resistant marine grade aluminum to withstand wet, humid and caustic environments.



Panelboards & Motor Starters

Description	Page	
MS Series Motor Starters – Flameproof	377-382	MS Series  Ex d Version Ex de Version
DM Series Motor Starters – Flameproof	383-385	DM Series  Ex d IIB Version Ex d IIC Version
DPE Series Distribution Panelboard – Increased Safety	386-390	DPE Series  12 Circuit Version
DPD Series Distribution Panelboard – Flameproof	391-396	DPD Series  JBe10 JBe46

Panelboards & Motor Starters

MS Series: Motor Starters – Flameproof



Ex d Version



Ex de Version

Compliance Data:

ATEX - IECEx:



Zone 1 & 2, 21 & 22	ATEX	II 2 GD	IECEx	CE
Ex d IIB/Ex de IIB	T6	Ex tD A21	T80°C	IP66 – IK10

Type, Power, Voltage:

Type	Power	Rated Voltage	Frequency
Direct On Line (D.O.L.)	0.37 kW to 75 kW	400/415 V	50/60 Hz

Operating Temperature:

-50°C to 55°C (CF 60)
 -40°C to 55°C (CF 20, 40, 50)
 -20°C to 55°C (CF 30)

Panelboards & Motor Starters

MS Series: Motor Starters – Flameproof

Zone 1 & 2 - 21 & 22

Ex II 2 GD

ATEX / IECEx

IP66 - IK10

Applications:

- These motor starters are used in areas where hazardous material are handled or stored. These units provide disconnecting means, under-voltage protection, circuit protection, motor running protection and thermal time delay overload protection.

Features:

- Magnetic circuit breaker protects equipment and personnel and eliminates replacement of fuses.
- Three pole contactor.
- Thermal overload relay with manual reset push button.
- Green pilot light "Running/ON".
- Rated voltage 400/415 V 50/60 Hz AC-3 category.
- Control circuit supplied via a transformer fed between phases.
- Direct entries or indirect entries with Ex e box allows use of cable gland with elastomer seal.
- Type 2 coordinated protection (IEC 60947-4-1) has the following benefits:
 - Safety - limiting the energy delivered to the short circuit ensures the safest applications for personnel, facilities and equipment.
 - Reduced costs - preventing short circuit damage to components minimizes labor and replacement costs.
 - Increased productivity - as component replacement due to short circuits is minimized, so are interruptions to production.
- Direct ammeter for 0.37 kW to 2.2 kW versions.
Ammeter with current transformer for 3 kW to 75 kW versions.

Standard Material of Fixtures:

- Body and cover:
 - Gray painted marine grade aluminum alloy (RAL 7038).
 - Cover bolts: stainless steel.
 - Hinges: stainless steel.
- Ex e box for indirect entries:
 - Gray (RAL 7038) painted aluminum alloy (size 2 & 6) or stainless steel (size 8 & 11).
 - Cover bolts: stainless steel.

Standard Finish:

- Corrosion resistant gray powder coat epoxy.

Options:

- Available up to 300Kw - consult factory.

Catalog Number Logic:

MS	X	XXX	X	X	X	X
T		T		T		
Series: MS = Motor Starters Zone 1 ATEX / IEC Ex Certified		Power: 003 = 0.37 kW 005 = 0.55 kW 007 = 0.75 kW 011 = 1.1 kW 015 = 1.5 kW 022 = 2.2 kW 030 = 3 kW 040 = 4 kW 055 = 5.5 kW 075 = 7.5 kW		Rated Voltage: 4 = 400/415 V 50/60 Hz		Control Circuit Voltage: 2 = 230 V 50/60 Hz via Transformer
		090 = 9 kW 110 = 11 kW 150 = 15 kW 185 = 18.5 kW 220 = 22 kW 300 = 30 kW 370 = 37 kW 450 = 45 kW 550 = 55 kW 750 = 75 kW				Options: A = Ammeter B = Indirect entries with Ex e Box E = Local emergency Stop H = Anti-condensation (Heater, Thermostat, Blue pilot light) S = Selector switch H-OFF-A T = Fault trip signal with yellow pilot light F = Full Options (A,B,E,H,S,T)
	Classification: B = Ex dIIB H = Ex d IIB + H2		Type: D = D.O.L. Direct On Line			

Ordering Information:

Standard Version:

Fitted with magnetic circuit breaker, contactor with overload relay, Start/Stop buttons and green pilot light. (1 x M20 plugged).

Motor Capacity AC-3 to 415 V	Size	Terminals Cross-section (mm ²)	Cable Entries at Bottom	Catalog Number	Weight (kg)	Volume (dm ³)
0.37 kW	1	2.5	2 x M20 + 1 M20	MSB003D42	16	25
0.55 kW	1	2.5	2 x M20 + 1 M20	MSB005D42	16	25
0.75 kW	1	2.5	2 x M20 + 1 M20	MSB007D42	16	25
1.1 kW	1	2.5	2 x M20 + 1 M20	MSB011D42	16	25
1.5 kW	1	2.5	2 x M20 + 1 M20	MSB015D42	16	25
2.2 kW	1	2.5	2 x M20 + 1 M20	MSB022D42	16	25
3 kW	1	2.5	2 x M20 + 1 M20	MSB030D42	16	25
4 kW	1	2.5	2 x M20 + 1 M20	MSB040D42	16	25
5.5 kW	5	4	2 x M25 + 1 M20	MSB055D42	56	126
7.5 kW	5	6	2 x M25 + 1 M20	MSB075D42	56	126
9 kW	5	10	2 x M25 + 1 M20	MSB090D42	56	126
11 kW	5	10	2 x M25 + 1 M20	MSB110D42	56	126
15 kW	5	16	2 x M32 + 1 M20	MSB150D42	56	126
18.5 kW	7	25	2 x M32 + 1 M20	MSB185D42	72	236
22 kW	7	25	2 x M32 + 1 M20	MSB220D42	72	236
30 kW	7	35	2 x M40 + 1 M20	MSB300D42	72	236
37 kW	9	50	2 x M40 + 1 M20	MSB370D42	132	370
45 kW	9	70	2 x M50 + 1 M20	MSB450D42	132	370
55 kW	9	95	2 x M50 + 1 M20	MSB550D42	132	370
75 kW	9	120	2 x M63 + 1 M20	MSB750D42	132	370

Panelboards & Motor Starters

MS Series: Motor Starters – Flameproof

Zone 1 & 2 - 21 & 22

⊕ II 2 GD

ATEX / IECEx

IP66 - IK10

Ordering Information - Continued:

Full Options Version:

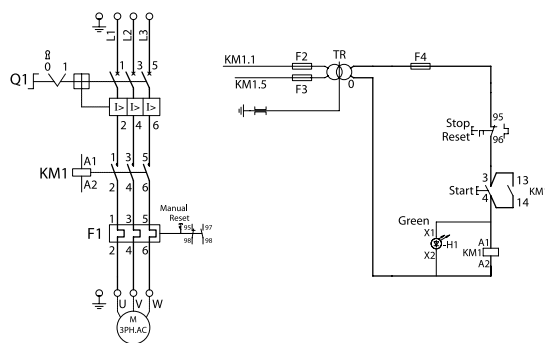
Standard version + HOA selector switch, local emergency stop, fault trip signal, ammeter, anti-condensation and indirect entries. (1 x M20 plugged.)

Capacity AC-3 to 415 V	Size	Cross-section (mm ²)	Cable Entries at Bottom	Catalog Number	Weight (kg)	Volume (dm ³)
0.37 kW	4	2.5	2 x M20 + 1 x M20	MSB003D42F	51	700
0.55 kW	4	2.5	2 x M20 + 1 x M20	MSB005D42F	51	700
0.75 kW	4	2.5	2 x M20 + 1 x M20	MSB007D42F	51	700
1.1 kW	4	2.5	2 x M20 + 1 x M20	MSB011D42F	51	700
1.5 kW	4	2.5	2 x M20 + 1 x M20	MSB015D42F	51	700
2.2 kW	4	2.5	2 x M20 + 1 x M20	MSB022D42F	51	700
3 kW	4	2.5	2 x M20 + 1 x M20	MSB030D42F	51	700
4 kW	4	2.5	2 x M20 + 1 x M20	MSB040D42F	51	700
5.5 kW	6	4	2 x M25 + 1 x M20	MSB055D42F	62	700
7.5 kW	6	6	2 x M25 + 1 x M20	MSB075D42F	62	700
9 kW	6	10	2 x M25 + 1 x M20	MSB090D42F	62	700
11 kW	6	10	2 x M25 + 1 x M20	MSB110D42F	62	700
15 kW	6	16	2 x M32 + 1 x M20	MSB150D42F	62	700
18.5 kW	8	25	2 x M32 + 1 x M20	MSB185D42F	81	700
22 kW	8	25	2 x M32 + 1 x M20	MSB220D42F	81	700
30 kW	8	35	2 x M40 + 1 x M20	MSB300D42F	81	700
37 kW	10	50	2 x M40 + 1 x M20	MSB370D42F	145	700
45 kW	10	70	2 x M50 + 1 x M20	MSB450D42F	145	700
55 kW	10	95	2 x M50 + 1 x M20	MSB550D42F	145	700
75 kW	10	120	2 x M63 + 1 x M20	MSB750D42F	145	700

Compliances:

Hazardous Area	Gas	Dust
Certified Type	CF	
Zones	1-2	21-22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex d IIB	
Symbol of Protection IEC	Ex tD A21	
T Rating	T6	
Surface Temperature	—	
Ambient Temperature	-50°C to 55°C (CF 60) -40°C to 55°C (CF 20, 40, 50) -20°C to 55°C (CF 30)	
CE Declaration of Conformity	50229	
ATEX Certificate	LCIE 02 ATEX 6057X	
IECEx Certificate	IECEx LCI 08.0023X	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	
Internal Volume	> 2 dm ³ (2 liters)	

Wiring Diagram:



Panelboards & Motor Starters

MS Series: Motor Starters – Flameproof

Zone 1 & 2 - 21 & 22

⊕ II 2 GD

ATEX / IECEx

IP66 - IK10

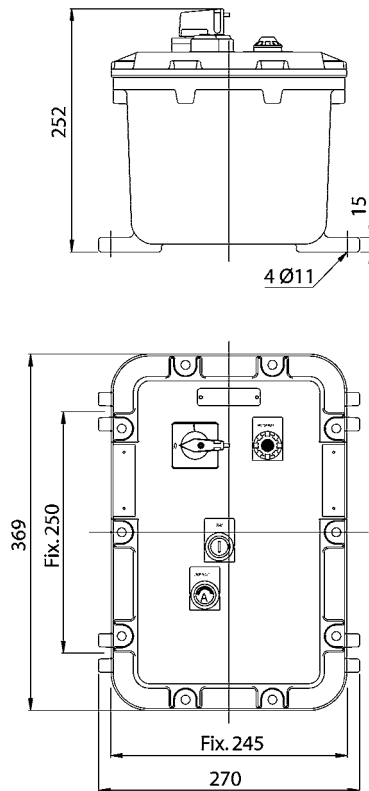
Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 60079-7; 61241-0; 61241-1
Product Standards	/
EMC Standards	/
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

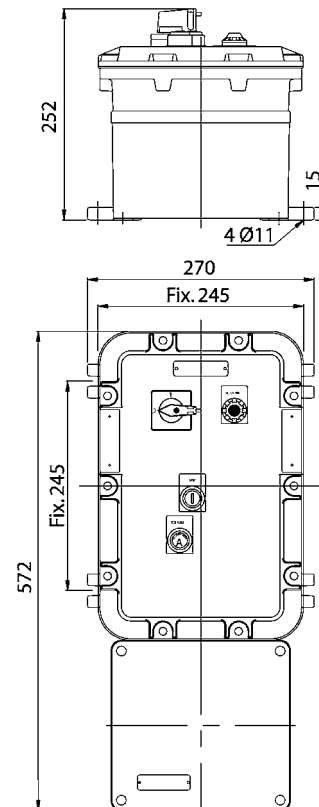
Dimensions (mm):

Flameproof Motor Starters

Enclosure Layout
Size 1: CF20B



Enclosure Layout
Size 2: CF20B + CAe1



Panelboards & Motor Starters

MS Series: Motor Starters – Flameproof

Zone 1 & 2 - 21 & 22

II 2 GD

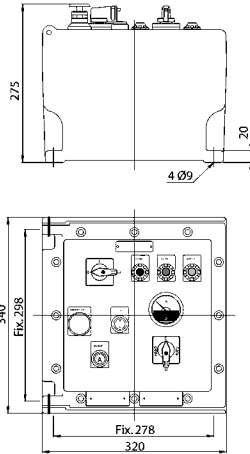
ATEX / IECEx

IP66 - IK10

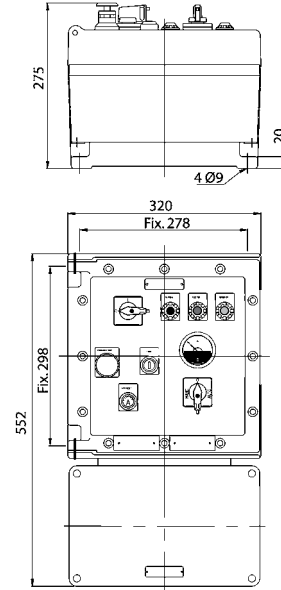
Dimensions (mm) – Continued:

Flameproof Motor Starters

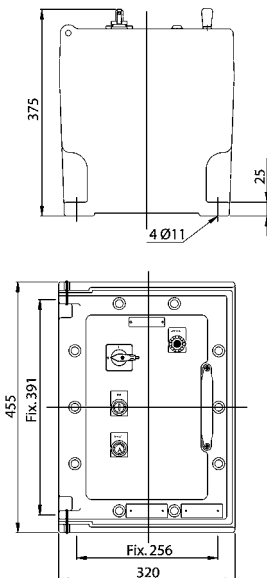
Enclosure Layout
Size 3: CF30B



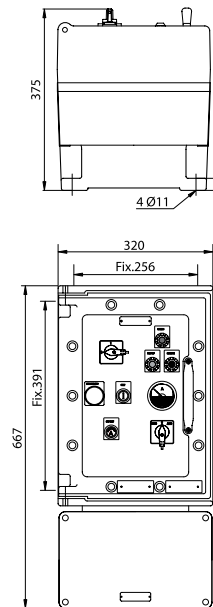
Enclosure Layout
Size 4: CF30B + CAe2



Enclosure Layout
Size 5: CF40B



Enclosure Layout
Size 6: CF40B + CAe2



Panelboards & Motor Starters

MS Series: Motor Starters – Flameproof

Zone 1 & 2 - 21 & 22

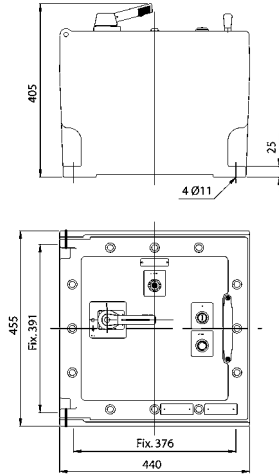
Ⓜ II 2 GD

ATEX / IECEx

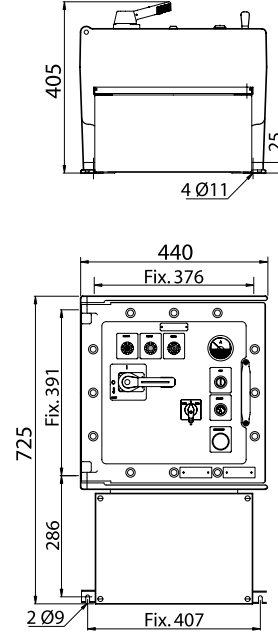
IP66 - IK10

Dimensions (mm) – Continued:

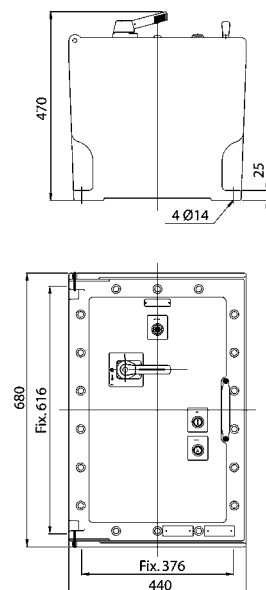
Enclosure Layout
Size 7: CF50B



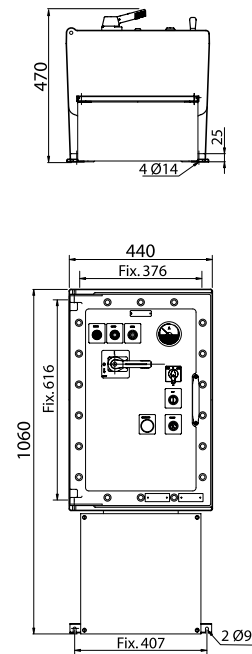
Enclosure Layout
Size 8: CF50B + JBe47



Enclosure Layout
Size 9: CF60B



Enclosure Layout
Size 10: CF60B + JBe55



Panelboards & Motor Starters

DM Series: Motor Starters – Flameproof



Ex d IIB Version



Ex d IIC Version

Compliance Data:

ATEX - IEC:

Zone 1 & 2, 21 & 22	ATEX	II 2 GD	IEC	CE
Ex d IIB – Ex d IIC	T5 – T3	Ex tD A21	T95°C – T195°C	IP66 – IK10

Operating Temperature:

-40°C to +55°C



Panelboards & Motor Starters

DM Series: Motor Starters – Flameproof

Zone 1 & 2 - 21 & 22

II 2 G

ATEX / IEC

IP66 - IK10

Applications:

- Motor starters are used in areas where hazardous materials are handled or stored.
- These units provide disconnecting means and thermal overload protection.

Features:

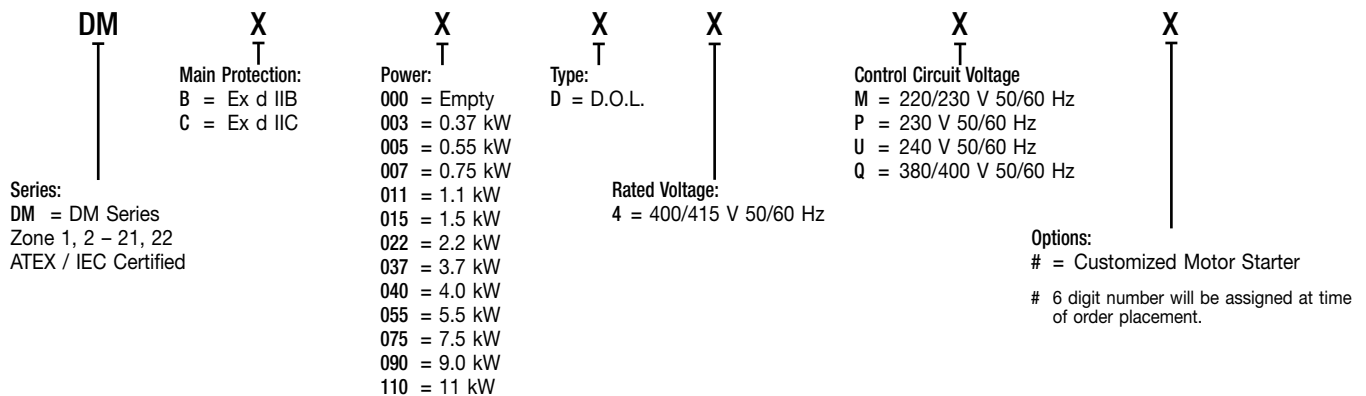
- Three pole contactor.
- Thermal overload relay with stop/reset push button.
- Start push button.
- Rated voltage 400/415 V 50/60 Hz AC-3 category.

- Yellow laminated plastic legend plate with black lettering.
- Internal earth terminal 2 x 4 mm².
- External ground terminal: M5 for Ex d IIB version.
- Earth crossing terminal M8 for Ex d IIC version.
- 1 x M20 entry on top.
- 2 x M20 entries at bottom with one blanking plug.
- Cable glands to be ordered separately.

Standard Material of Fixtures:

- Gray painted marine grade aluminum alloy housing (RAL7038).
- Stainless steel cover bolts.

Catalog Number Logic:



Ordering Information:

Enclosure for Housing Contactor with Overload Relay up to 11 kW
 Ex d IIB T3 for -40°C to +55°C ambient temperature:

Type	Description	Weight (Kg.)	Volume (dm ³)	Catalog Number	Old Catalog Number
CF2D	For 25 A, 11 kW 400/415 V max., contactor and thermal overload relay not supplied (LC1D09 to LC1D25 and LRD – from Schneider Electric)	4	14	DMB000D	093114

Enclosure Fitted and Pre-Wired with Contactor and Thermal Overload Relay

CF2D	For 5.5 kW 400/415 V Motor Coil 230 V Fitted with contactor LC1-D12 P7 and thermal overload relay LRD-16	4.5	14	DMB055D4P	/
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Enclosure for Housing Contactor with Overload Relay up to 5.5 kW
 Ex d IIC T5 for -40°C to +55°C ambient temperature

Type	Description	Weight (Kg.)	Volume (dm ³)	Catalog Number	Old Catalog Number
CF1C	For 12 A, 5.5 kW 400/415 V max. contactor and thermal overload relay not supplied (LC1D09 to LC1D25 and LRD-- from Schneider Electric)	4	14	DMC000D	/

Enclosure Fitted and Pre-Wired with Contactor and Thermal Overload Relay

CF1C	For 5.5 kW 400/415 V Motor Coil 230 V Fitted with contactor LC1-D12 P7 and thermal overload relay LRD-16	4.5	14	DMC055D4P	/
------	--	-----	----	-----------	---

Options: Other power and control voltage available as per catalog number logic

Panelboards & Motor Starters

DM Series: Motor Starters – Flameproof

Zone 1 & 2 - 21 & 22

⊕ II 2 G

ATEX / IEC

IP66 - IK10

Compliances:

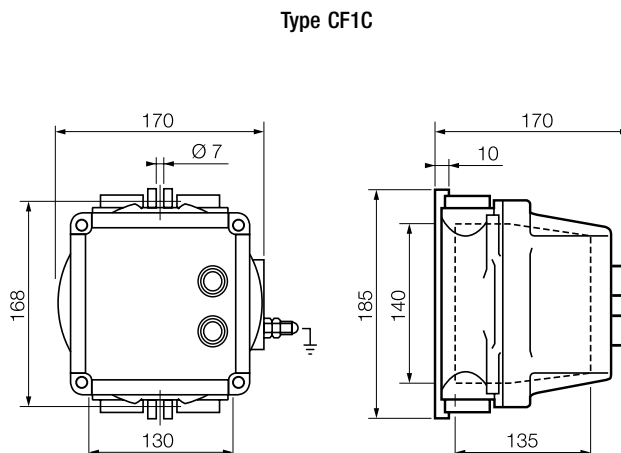
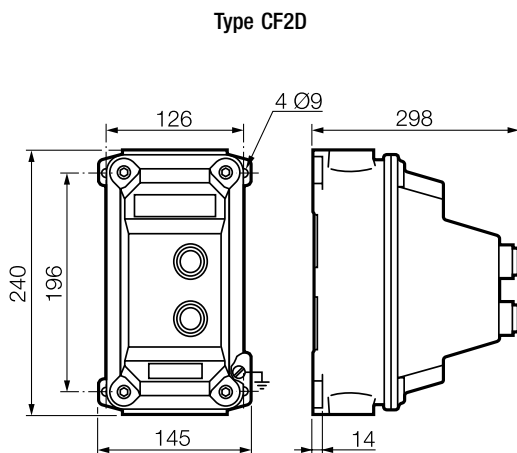
Hazardous Area	Gas	Dust
Certified Type	CF2D	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex d IIB	Ex tD A21
Symbol of Protection IEC		
T Rating	T3	N.A.
Surface Temperature	N.A.	T195°C
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50254	
ATEX Certificate	LCIE 03 ATEX 6061X	
IEC Certificate	LCIE Ex 03.006X	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	
Internal Volume	2 dm ³ (2 liters)	

Hazardous Area	Gas	Dust
Certified Type	CF1C	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081 ⊕ II 2 G	CE 0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex d IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	T5	N.A.
Surface Temperature	N.A.	T95°C
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	50257	
ATEX Certificate	LCIE 03 ATEX 6044X	
IEC Certificate	LCIE Ex 03.003X	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	
Internal Volume	≤ 2 dm ³ (2 liters)	

Standards:

Ex standards	EN / IEC 60079-0; 60079-1; 61241-0; 61241-1
Product standards	/
EMC standards	/
Other standards	EN / IEC 60529 (IP); 62262 (IK)

Dimensions (mm):



Panelboards & Motor Starters

DPE Series: Distribution Panelboard – Increased Safety

Zone 1 & 2 - 21 & 22

Ⓜ II 2 GD

ATEX / IEC

IP66 - IK10



12 Circuit Version

Compliance Data:

ATEX - IECEx:



Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IECEx	CE
Ex de IIC	T6 to T4	Ex tD A21	T80°C to T130°C	IP66 – IK10

Electrical Data:

Voltage	Amperage	Frequency		
Up to 440 V	Up to 160 A	50/60 Hz		

Operating Temperature:

-20°C to +55°C, -40°C to +55° (optional)			
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Panelboards & Motor Starters

DPE Series: Distribution Panelboard – Increased Safety

Zone 1 & 2 - 21 & 22

II 2 GD

ATEX / IECEx

IP66 - IK10

Applications:

- Protection and control of electrical equipment in hazardous areas where ignitable vapors, gases or highly combustible dusts are present.
- These compact units provide a centrally controlled switching system for large quantities of branch circuits for lighting, heat tracing, small motors and similar electrical equipment.
- For installation in chemical and petrochemical plants, refineries and other process industries.

Features:

- Suitable for use in Zone 1 & 2 and Zone 21 & 22.
- Available versions:
 - Branch Circuit Breaker available with B, C or D tripping curve.
 - GFI Branch Circuit Breaker available with B, C or D tripping curve.
 - 1, 2, 3, 4 poles and 1 + N branch circuit breakers
- Breakers operators included as standard and can be padlocked in "OFF" position.
- Copper bus bars as standard.

- 3- or 4-pole main circuit breaker or isolator switch can be padlocked in the "ON" or "OFF" position.
- Completely wired. Easy field termination to terminal blocks.
- M8 Earth crossing terminal.
- 440 Vac maximum.
- 60 Vdc (1-pole) or 125 Vdc (2-pole).
- Yellow laminated plastic label with black lettering.
- Earth continuity brass plate.
- Hinged door.
- Closed with plastic double bar locks (supplied with key).
- Supplied with wall supporting frame.

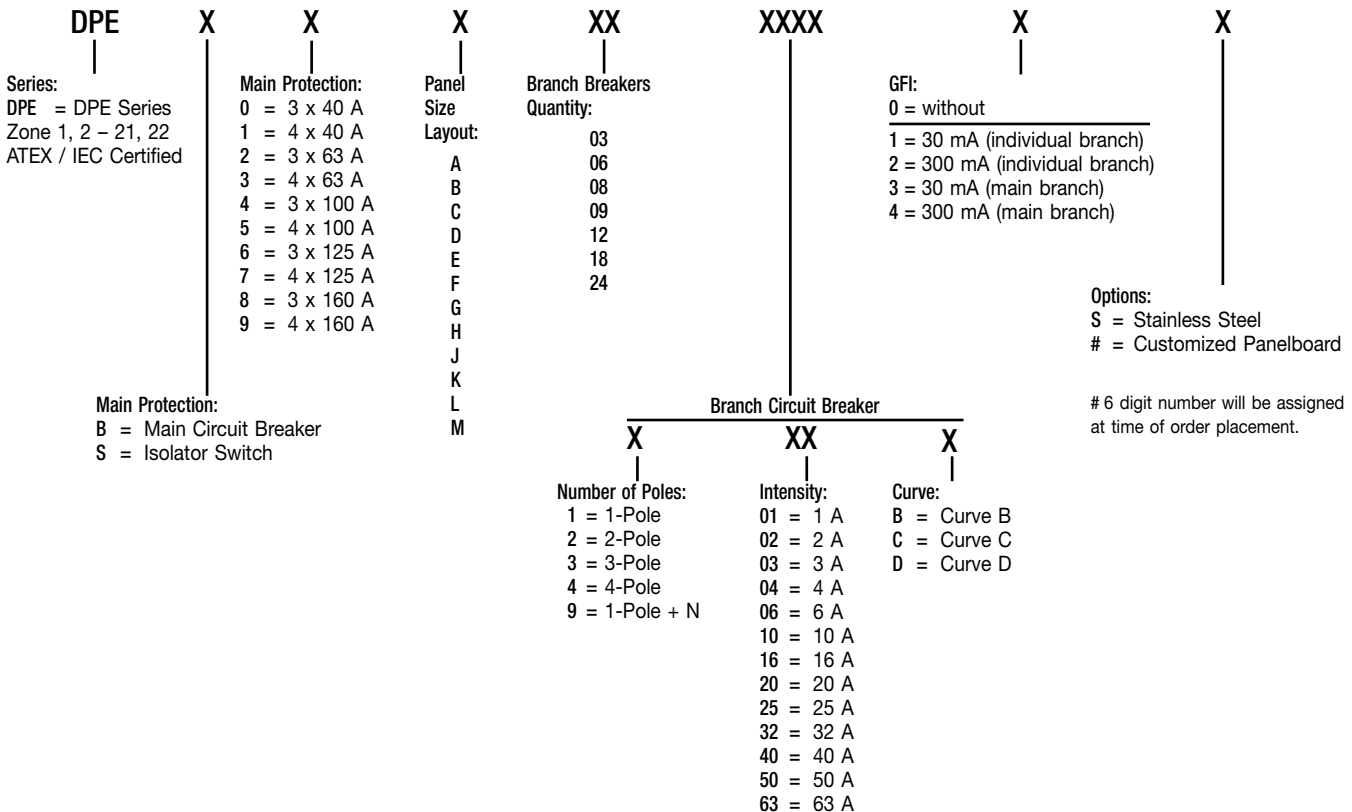
Standard Material of Fixtures:

- Fiberglass reinforced polyester housing.

Options:

- -40°C – consult factory.
- Other rating and tripping curves.
- 316L stainless steel version.
- Other voltages up to 480 V.

Catalog Number Logic:



PANELBOARDS & MOTOR STARTERS

Panelboards & Motor Starters

DPE Series: Distribution Panelboard – Increased Safety

Zone 1 & 2 - 21 & 22

II 2 GD

ATEX / IECEx

IP66 - IK10

Ordering Information:

Distribution Panelboard with Branch Circuit Breakers (for lighting circuits, etc.):

4-pole main switch and 2-pole branch circuit breakers wired on terminals.

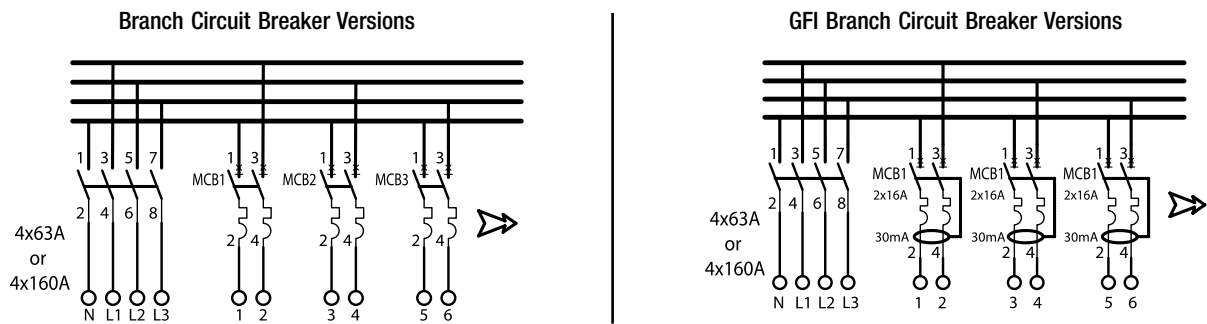
Main Switch	Branch Circuit Breakers 2-pole 16 A		Layout (Panel Size)	Cable Entries	Volume (dm ³)	Weight (kg)	Catalog Number
	Quantity	Tripping Curve					
4 x 63 A	6	C	A	1 x M40, 6 x M20			DPES3A 06216C0
	8	C	B	1 x M40, 8 x M20			DPES3B 08216C0
	12	C	C	1 x M50, 12 x M20			DPES3C 12216C0
4 x 160 A	12	C	D	1 x M50, 12 x M20			DPES9D 12216C0
	18	C	E	1 x M50, 18 x M20			DPES9E 18216C0
	24	C	F	1 x M50, 24 x M20			DPES9F 24216C0

Distribution Panel Board with GFI Branch Circuit Breaker (for heat tracing circuits, etc.):

4-pole main switch and 1-pole + N branch circuit breakers with RCD wired on terminals.

Main Switch	Branch Circuit Breakers 1-pole + N — 16 A/30 mA		Layout (Panel Size)	Cable Entries	Volume (dm ³)	Weight (kg)	Catalog Number
	Quantity	Tripping Curve					
4 x 63 A	6	C	G	1 x M40, 6 x M20			DPES3G 06216C1
	8	C	H	1 x M40, 8 x M20			DPES3H 08216C1
	12	C	J	1 x M50, 12 x M20			DPES3J 12216C1
4 x 160 A	12	C	K	1 x M50, 12 x M20			DPES9K 12216C1
	18	C	L	1 x M50, 18 x M20			DPES9L 18216C1
	24	C	M	1 x M50, 24 x M20			DPES9M 24216C1

Wiring Diagram:



Technical Data:

	INCOMING		OUTGOING
	4 x 63A	4 x 160 A	Up to 16 A
Rated Operating Voltage	380/415 V	380/415 V	220/240 Vac
Rated Operating Current	63 A	160 A	Up to 16 A
Termination (flexible/solid)			
Flexible	2.5 to 35 mm ²	10 to 70 mm ²	0.5 to 4 mm ²
Rigid	2.5 to 50 mm ²	10 to 95 mm ²	1.5 to 6 mm ²

Panelboards & Motor Starters

DPE Series: Distribution Panelboard – Increased Safety

Zone 1 & 2 - 21 & 22

⊕ II 2 GD

ATEX / IECEx

IP66 - IK10

Compliances:

Hazardous Area	Gas	Dust
Certification Type	CAe	
Zones	1-2	21-22
Conforming to ATEX 94/9/CE	CE 0081⊕ II 2 G	CE 0081⊕ II 2 D
Symbol of Protection ATEX	Ex de IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	T6 to T4	N.A.
Surface Temperature	N.A.	T80°C to T130°C
Ambient Temperature	-20°C to +55°C	
CE Declaration of Conformity	50235	
ATEX Certificate	LCIE 02 ATEX 6248X	
IECEx Certificate	IECEx LCI 04.0016X	
Other Certifications	GOST	
Ingress Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	

Standards:

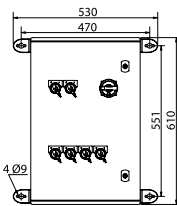
Ex Standards	EN / IEC 60079-0; 60079-1; 60079-7; 61241-0; 61241-1
Product Standards	EN / IEC 60947-1; 60947-2; 60947-3
EMC Standards	/
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Dimensions (mm):

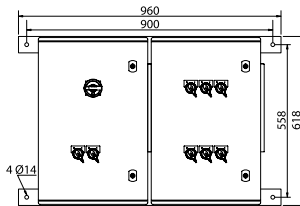
2 Pole Branch Circuit Breaker Versions

* Main Breaker/Isolator Switch: Maximum 63A

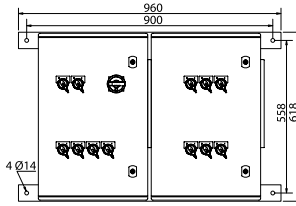
Layout A*:



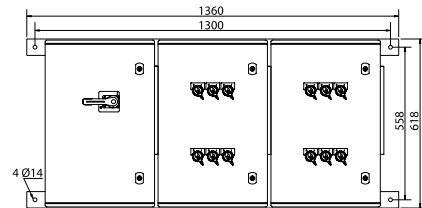
Layout B*:



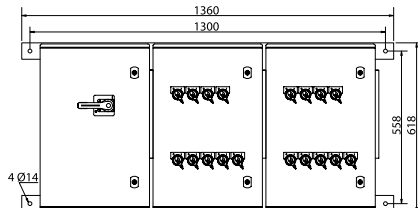
Layout C*:



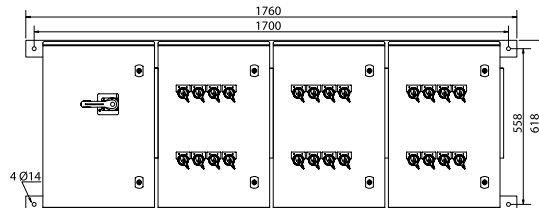
Layout D:



Layout E:



Layout F:



Panelboards & Motor Starters

DPE Series: Distribution Panelboard – Increased Safety

Zone 1 & 2 - 21 & 22

⊕ II 2 GD

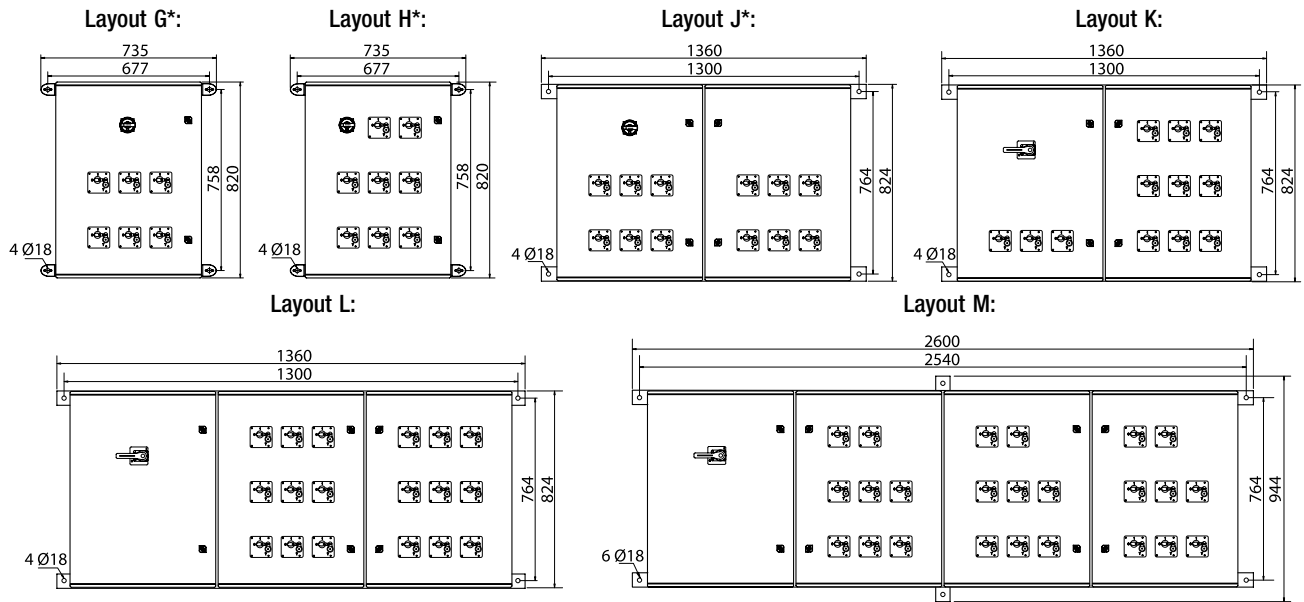
ATEX / IECEx

IP66 - IK10

Dimensions (mm) – Continued:

3 and 4 Poles, 2 Poles GFI Branch Circuit Breaker Versions

* Main Breaker/Isolator Switch: Maximum 63A



North American CEC/NEC Certification: PowerPlex™ Panelboards

Ask your local representative for details or visit the Appleton website at www.appletonelec.com.

Features:

- No external conduit or cable seals required, making installations faster, easier, and less costly.
- Features individual breaker housings to minimize the downtime and costs associated with servicing circuit breakers in hazardous locations.
- Standard breakers are used and the lighter weight panelboard enclosure can be quickly opened in the field for easier servicing.
- Gland plate at the bottom of the enclosure can be easily field punched for cable glands or conduit hubs. Additional gland plates available for sides and top and must be ordered with the panelboard.
- Standard configuration includes internal actuators and a non-window door. Factory installed options include window door or external actuators.
- 3-circuit to 42-circuit panelboard configurations up to 60 Amps per branch breaker. Larger breaker amperages available.
- Branch circuit breakers available in 1, 2 and 3-pole up to 60 amps. 2- or 3-pole main circuit breakers up to 225 amps in a separate enclosure.
- Breakers can be padlocked in either the On or Off position.
- Voltage ranges from 120 to 600 Volts.
- Factory wired. Insulated ground and neutral bars provided.
- External ground lug.
- QC breaker terminal wire range #14-1/0.
- F-Frame breaker terminal wire range #14-4/0.

- Accommodates standard QC Series or F-Frame series circuit breakers each individually contained in its own housing.
- Drain/breather included as standard.
- Rated -25 °C to 40 °C (-40 °C with optional heater).

Standard Materials:

- Enclosure: 316L stainless steel.
- Alternate enclosure: fiberglass reinforced polyester.
- Hardware: stainless steel.

Compliances:

- cCSAus, cURus
- Class I Div. 2 Group B, C, D
- Class I Zone 1 AEx de IIB+H2 T6
- Ex d IIB+H2 T6 U
- Type 4X, IP66



PowerPlex™ Panelboard



PANELBOARDS & MOTOR STARTERS

Panelboards & Motor Starters

DPD Series: Distribution Panelboard – Flameproof



8 Circuit Panelboard



Compliance Data:

ATEX - IECEx:

Zone 1&2 – 21&22	II 2 GD	ATEX	IECEx	CE
Ex d IIB	T6 to T4	Ex tD A21	T80°C to T130°C	IP66 – IK10

Electrical Data:

Voltage	Amperage	Frequency		
Up to 415V	Up to 160A	50/60Hz		

Operating Temperature:

-20°C to +55°C (CF70B)	-40°C to +55°C (CF50B)	-50°C to +55°C (CF60B)		
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PANELBOARDS & MOTOR STARTERS

Panelboards & Motor Starters

DPD Series: Distribution Panelboard – Flameproof

Zone 1 & 2 – 21 & 22

Ex II 2 GD

ATEX / IECEx

IP66 / IK10

Applications:

- Protection and control of electrical equipment in hazardous areas where ignitable vapors, gases or highly combustible dusts are present.
- For installation in chemical and petrochemical plants, refineries and other process industries in Zone 1 & 2 and Zone 21 & 22.
- These compact units provide a centrally controlled switching system
- Lighting panelboards are available in 6, 12, 18 and 24 circuits.
- Heat tracing panelboards are available in 6, 12, 18 and 20 circuits.

Features:

Available versions:

- 3- or 4-Pole isolator switch or main breaker.
 - Branch Circuit Breaker available with B, C or D tripping curve.
 - GFI Branch Circuit Breaker available with B, C or D tripping curves.
- 1, 2, 3, 4 and 1+N poles branch circuit breakers.
- Isolator and breaker handles included as standard, can be padlocked in "OFF" position.
- Copper bus-bar as standard.

- Fully prewired on outgoing terminal block.
- M8 earth-crossing terminal.
- Hinged door.
- 4 fixing lugs.
- Cable glands and plugs to be ordered separately.

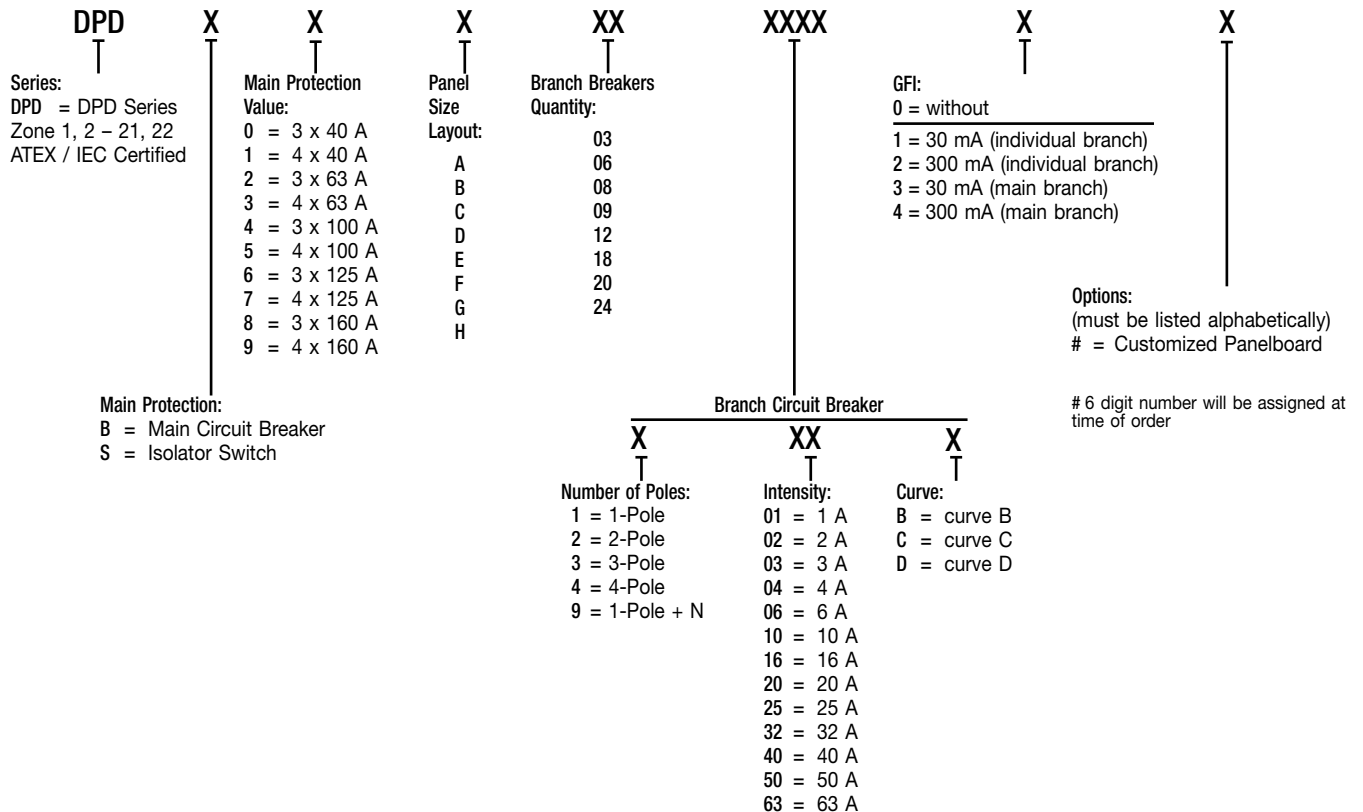
Standard Material of Fixtures:

- Gray marine grade aluminum alloy housing.
- Stainless steel hardware.
- Copper bus-bar.

Options:

- Other rating and tripping curves.
- Other voltage.
- Indirect cable-entries available through Ex e connection enclosure.
- Switch rack assembly.

Catalog Number Logic:



Panelboards & Motor Starters

DPD Series: Distribution Panelboard – Flameproof

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

IP66 / IK10

Ordering Information:

Distribution Panelboard with Branch Circuit Breakers (for Lighting Circuits, etc.):

4-pole main isolator switch and 2-pole Branch Circuit Breakers Tripping Curve C wired on terminals.

Type	Main Switch	Branch Circuit Breakers 2P - Curve C		Layout Panel	Cable Entries	Volume (dm ³)	Weight (kg)	Catalog Number
		Quantity	Rating					
CF50B	4 x 63 A	6	2P 16 A	A	1 x M32 - 6 x M20	100	240	DPDS3 A 06216C0
CF60B	4 x 63 A	12	2P 16 A	B	1 x M32 - 12 x M20	150	378	DPDS3 B 12216C0
CF70B	4 x 125 A	18	2P 16 A	C	1 x M40 - 18 x M20	180	382	DPDS7 C 18216C0
CF70B	4 x 160 A	24	2P 16 A	D	1 x M50 - 24 x M20	180	382	DPDS9 D 24216C0

Distribution Panelboard with GFI Branch Circuit Breakers (for Heat Tracing Circuits, etc.):

4-pole main isolator switch and 1-pole + N branch circuit breakers with GFI Branch Circuit Breakers Tripping Curve C wired on terminals.

Type	Main Switch	Branch Circuit Breakers 1P+N - Curve C		Layout Panel	Cable Entries	Volume (dm ³)	Weight (kg)	Catalog Number
		Quantity	Rating					
CF50B	4 x 63 A	6	16 A/30 mA	E	1 x M32 - 6 x M20	100	240	DPDS3 E 06916C1
CF60B	4 x 63 A	12	16 A/30 mA	F	1 x M32 - 12 x M20	150	378	DPDS3 F 12916C1
CF70B	4 x 125 A	18	16 A/30 mA	G	1 x M40 - 18 x M20	180	382	DPDS7 G 18916C1
CF70B	4 x 160 A	20	16 A/30 mA	H	1 x M50 - 20 x M20	180	382	DPDS9 H 20916C1

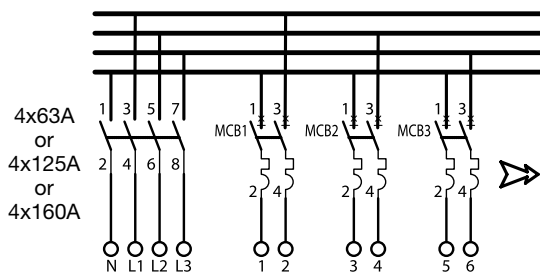
Distribution Panelboard with GFI Branch Circuit Breakers (for Heat Tracing Circuits, etc.):

4-pole main isolator switch and 1-pole + N branch circuit breakers with GFI Branch Circuit Breakers Tripping Curve B wired on terminals.

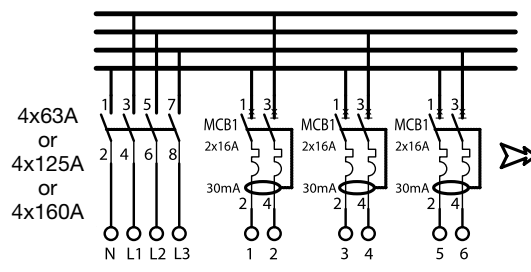
Type	Main Switch	Branch Circuit Breakers 1P+N - Curve B		Layout Panel	Cable Entries	Volume (dm ³)	Weight (kg)	Catalog Number
		Quantity	Rating					
CF50B	4 x 63 A	6	16 A/30 mA	E	1 x M32 - 6 x M20	100	240	DPDS3 E 06916B1
CF60B	4 x 63 A	12	16 A/30 mA	F	1 x M32 - 12 x M20	150	378	DPDS3 F 12916B1
CF70B	4 x 125 A	18	16 A/30 mA	G	1 x M40 - 18 x M20	180	382	DPDS7 G 18916B1
CF70B	4 x 160 A	20	16 A/30 mA	H	1 x M50 - 20 x M20	180	382	DPDS9 H 20916B1

Wiring Diagram:

Branch Circuit Breaker Versions



GFI Branch Circuit Breaker Versions



Panelboards & Motor Starters

DPD Series: Distribution Panelboard – Flameproof

Zone 1 & 2 – 21 & 22

Ⓜ II 2 GD

ATEX / IECEx

IP66 / IK10

Technical Data:

Incoming				GFI Branch Circuit Breaker Outgoing 16 A
Main Contacts	63 Amps	125 Amps	160 Amps	
Rated Insulation Voltage (Ui)	690 V	800 V	800 V	400 Vac 230/400 Vac 16 A / 30 mA 4 kV 10 kA / 400 V IEC 947.2
Rated Operating Voltage (Ue)	415 V / 500 V / 690 V	415 V / 500 V / 690 V	415 V / 500 V / 690 V	
Rated Operating Current (Ie)	63 A / 63 A / 40 A	125 A	160 A / 160 A / 125 A	
Rated Surge Voltage (Uimp)	8 kV	8 kV	8 kV	
Short Circuit Resistance (Icu)	50 kA (with fuse)	63 kA (with fuse)	80 kA (with fuse)	
Switching Capacity AC 21 A	415 V	63 A	125 A	
	500 V	63 A	125 A	
	690 V	63 A	125 A	
AC 22 A	415 V	63 A	125 A	
	500 V	63 A	125 A	
	690 V	40 A	80 A	
AC 23 A	415 V	63 A / 30 kW	125 A / 55 kW	
	500 V	63 A / 30 kW	100 A / 55 kW	
	690 V	40 A / 30 kW	80 A / 75 kW	
Termination (Flexible / Solid)	4 to 35 mm ² / 50 mm ²	4 to 50 mm ² / 70 mm ²	4 to 50 mm ² / 70 mm ²	0.5 to 4 mm ² / 1.5 to 6 mm ²

Compliances:

Hazardous Area	Gas	Dust
Certification Type	CF	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081Ⓜ II 2 G	CE 0081Ⓜ II 2 D
Symbol of Protection ATEX	Ex d IIB	Ex tD A21
Symbol of Protection IEC		
T Rating	T6 to T4	NA
Surface Temperature	NA	T80°C to T130°C
Ambient Temperature	-20°C to +55°C (CF70B) -40°C to +55°C (CF50B) -50°C to +55°C (CF60B)	
CE Declaration of Conformity	50229	
ATEX Certificate	LCIE 02 ATEX 6057X	
IECEx Certificate	IECEx LCI 08.023X	
Other Certifications	GOST	
Ingress Protection (solid and liquid)	IP66	
Impact Resistance (shock)	IK10	
Internal Volume	> 2 dm ³ (2 liters)	

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 61241-0; 61241-1
Product Standards	EN / IEC 60947-1; 60947-2; 60947-3
EMC Standards	/
Other Standards	EN / IEC 60529 (IP); 62262 (IK)

Panelboards & Motor Starters

DPD Series: Distribution Panelboard – Flameproof

Zone 1 & 2 – 21 & 22

II 2 GD

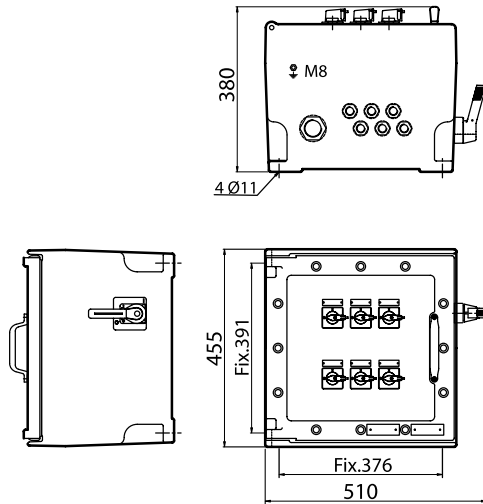
ATEX / IECEx

IP66 / IK10

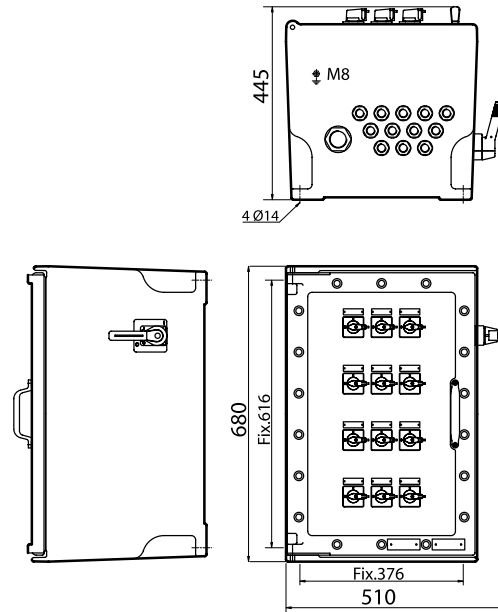
Dimensions (mm):

Branch Circuit Breaker Versions:

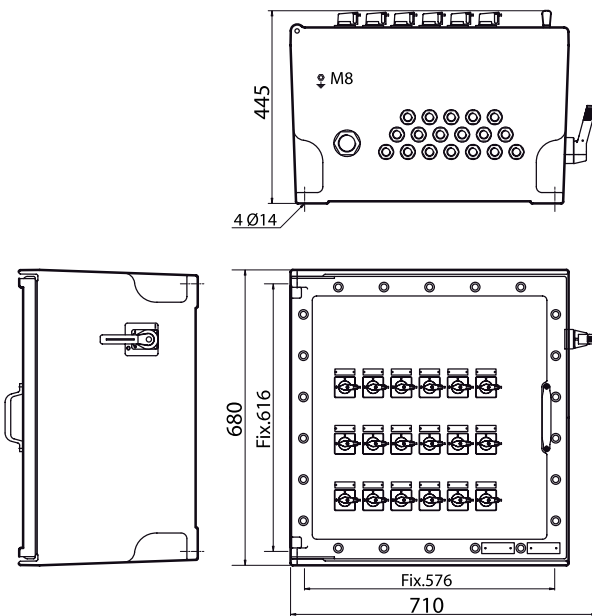
Layout Panel A:



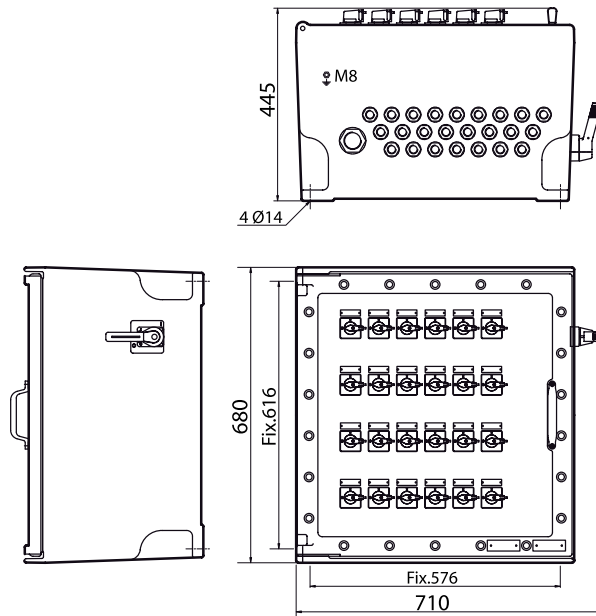
Layout Panel B:



Layout Panel C:



Layout Panel D:



Panelboards & Motor Starters

DPD Series: Distribution Panelboard – Flameproof

Zone 1 & 2 – 21 & 22

Ex II 2 GD

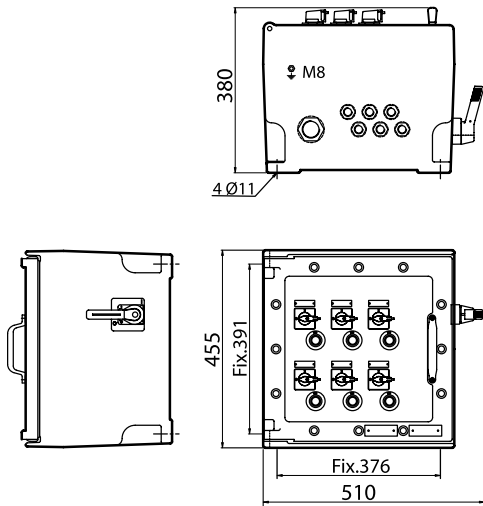
ATEX / IECEx

IP66 / IK10

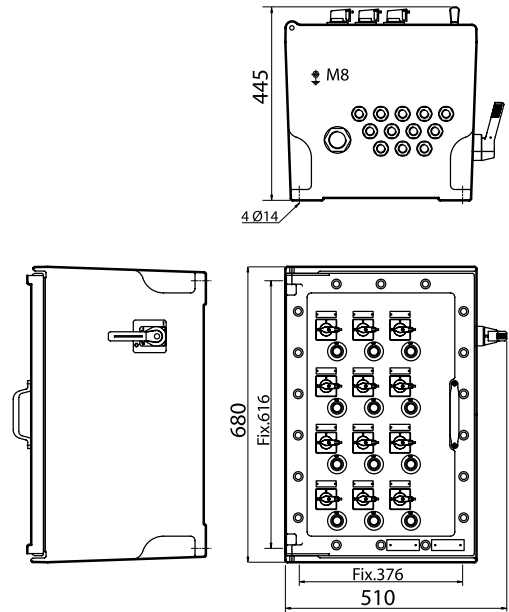
Dimensions (mm) – Continued:

GFI Branch Circuit Breaker Versions:

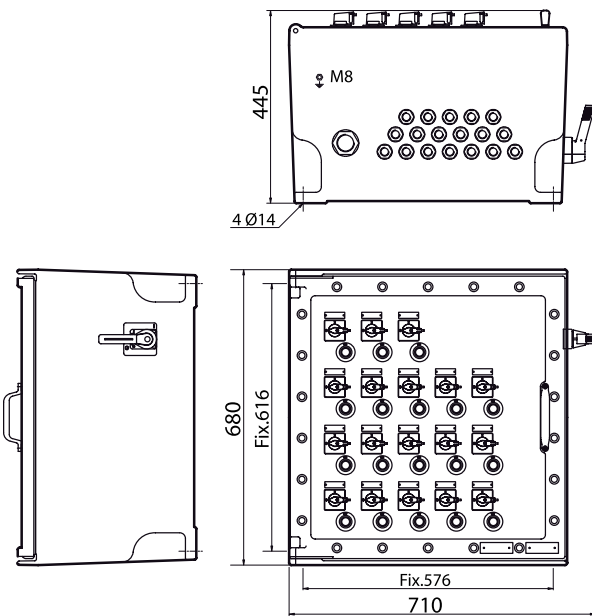
Layout Panel E:



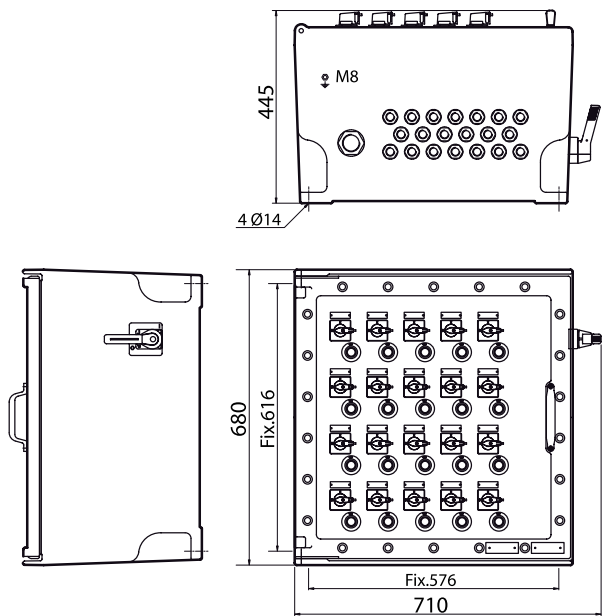
Layout Panel F:



Layout Panel G:



Layout Panel H:



CABLE GLANDS

Appleton's ATX product line includes a wide selection of both **Increased Safety and Flameproof** cable glands for use with **unarmored and armored cable**.

Appleton's ATX cable glands are available in a wide range of materials from polyamide, nickel-plated brass and stainless steel to withstand any environment. Appleton's ATX cable glands are available with metric or NPT threads. Cable glands are certified for increased safety, flameproof, restricted breathing and dust applications.



Cable Glands

Description	Page
Introduction to Cable Glands	399
EEXe Series	400-401
Polyamide Cable Glands for Unarmored Cable – Increased Safety	
A2F, E1FX/E2FX, E1FW/E2FW and T3 Series	402-406
Nickel Plated Brass Cable Glands for Unarmored and Armored Cables with Elastomer Seal – Increased Safety and Flameproof	
PX and PX2K Series	407-409
Nickel Plated Brass Cable Glands for Unarmored and Armored Cables with Compound Barrier Seal – Increased Safety and Flameproof	
757, BVE and 737 Series	410-414
Blanking Plugs, Adaptors and Reducers – Increased Safety and Flameproof	
Accessories for Cable Entries	415-417
Nickel Plated Brass Locknuts	
Brass Earth Tag	
Entry Thread Seals	
316L Stainless Steel Serrated Washers	
PVC Shrouds	
Clamp for Lead Sheath Armored Cable Glands	
DB Series	418-425
Drain and Breather Valves	419
Fire Retardant Seals and IIC Elbows	420-421
IIC Flexible Couplings	422-423
IIB Unions – Flameproof	424-425

EEXe Series



A2F, E1FX/E2FX, E1FW/E2FW and T3 Series



PX and PX2K Series



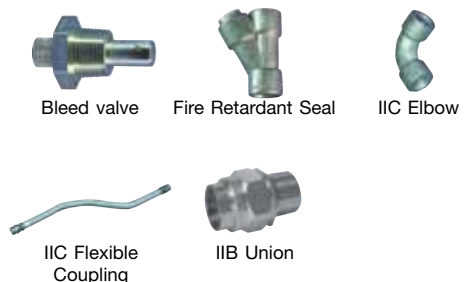
757, BVE and 737 Series



Accessories



DB Series



Cable Glands

Introduction to Cable Glands

Ex d, Ex e & Ex n Cable Gland Selection Chart

Unarmored



Tape
(STA)



Wire
(SWA)



Braid
(SWB)

Unarmored Cables

Cable Definition	Abbreviation	Cable gland with elastomer seal ring		Cable gland with compound seal
Unarmored		A2F		PX

Armored Cables

Cable Definition	Abbreviation	Cable gland with elastomer seal ring		Cable gland with compound seal
Steel Tape Armor	STA	E1FX	T3	PX2K
Steel Wire Braid	SWB	E1FX	T3	PX2K
Single Wire Armor	SWA	E1FW	T3	PX2K

Armored Cables

with Lead Sheath

Cable Definition	Abbreviation	Cable gland with elastomer seal ring		Cable gland with compound seal
Steel Tape Armor	STA, LC	E2FX	T3PB	PX2KPB
Steel Wire Braid	SWB, LC	E2FX	T3PB	PX2KPB
Single Wire Armor	SWA, LC	E2FW	T3PB	PX2KPB

Cable Glands

EEXe Series: Polyamide Cable Glands for Unarmored Cable – Increased Safety



095756
Ex e Certified



095801
Weatherproof IP68
Ex i Certified Application



Entry Thread Seal

Compliance Data:

ATEX - IEC:



Zones 1 & 2, 21 & 22	ATEX	II 2 GD	IEC	CE
Ex e II	Ex tD A21	IP66 / 68		

Operating Temperatures:

-20°C to +55°C

CABLE GLANDS

Cable Glands

EEXe Series: Polyamide Cable Glands for Unarmored Cable – Increased Safety

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IEC

IP66/68

Ex e Certified Applications:

- For unarmored cables certified for enclosures with the following protection modes:
- Ex e increased safety.
- Ex nR restricted breathing.
- D dust environment.
- Hazardous areas (gas and dust).
- Onshore and offshore.

Features:

- Black polyamide body.
- Supplied with two polyamide clamping rings.
- Weatherproof elastomer gasket.
- Supplied with sealing gasket.

Materials:

- Body: Polyamide.
- Weatherproof gasket: thermoplastic elastomer.
- Entry thread seal: neoprene.

Weatherproof IP68 or Ex i

Certified Applications:

- For unarmored cables for intrinsic safety Ex i applications in hazardous areas (Gas and Dust).

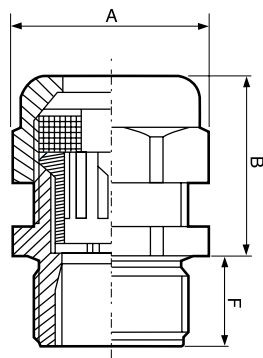
Features:

- Blue polyamide body Ral 5012.
- Supplied with polyamide clamping ring.
- Weatherproof elastomer gasket.
- Supplied with sealing gasket.

Materials:

- Body: polyamide.
- Weatherproof gasket: thermoplastic elastomer.
- Entry thread seal: neoprene.

Dimensions (mm):



Ordering Information:



Ex e Certified

Thread	Cable Capacity (mm)		Dim. Flat A (mm)	Length B (mm)	F (mm)	Weight (Kg)	Volume (dm ³)	Catalog Number	Pack
	Min.	Max.							
M16	3.0	8.5	19.0	24.0	15.0	0.015	0.160	095756	10
M20	6.5	14.5	27.0	30.0	15.0	0.021	0.160	095605	10
M25	8.0	18.5	33.0	33.0	15.0	0.032	0.160	095606	10
M32	10.0	25.0	42.0	43.0	15.0	0.061	0.440	095757	10
M40	24.0	34.0	55.0	47.0	15.0	0.072	0.720	095758	1
M50	28.0	42.0	65.0	49.0	15.0	0.124	0.720	095759	1



Weatherproof IP68

Thread	Cable Capacity (mm)		Dim. Flat A (mm)	Length B (mm)	F (mm)	Weight (Kg)	Volume (dm ³)	Catalog Number	Pack
	Min.	Max.							
M16	2.5	8.0	19.0	27.0	15.0	0.013	0.160	095800	10
M20	5.0	12.0	24.0	30.0	15.0	0.017	0.160	095801	10
M25	7.0	14.0	27.0	35.0	15.0	0.020	0.160	095802	10
M32	14.0	25.0	42.0	42.0	15.0	0.051	0.440	095803	10
M40	18.0	32.0	53.0	52.0	16.0	0.072	0.720	095804	1
M50	24.0	38.5	60.0	55.0	16.0	0.100	0.720	095805	1

Accessories: (Locknut - see accessories section)

Compliances:

Hazardous Area	Gas	Dust
Certification Type	EEXe	
Zones	1-2, 21-22	
Conforming to 94/9/CE ATEX	II 2 GD	
Symbol of Protection ATEX	Ex e II	Ex tD A21
Symbol of Protection IEC		
T Rating	/	
Surface Temperature	N.A.	
Ambient Temperature	-20°C to +55°C	
CE Declaration of Conformity	50233	
ATEX Certificate	LCIE 99 ATEX 6030X	
Index of Protection (solid and liquid)	IP66 (Ex e version), IP68 (Weatherproof version)	

Standards:

Ex Standards	EN / IEC 60079-0; 60079-7; 61241-0; 61241-1
Product Standards	/
Other Standards	ISO 065/I/III (metric thread), EN / IEC 60529

Cable Glands

A2F, E1FX/E2FX, E1FW/E2FW and T3 Series: Nickel Plated Brass Cable Glands for Unarmored and Armored Cables with Elastomer Seal – Increased Safety and Flameproof



A2F Series



E1FX & E2FX Series



E1FW & E2FW Series



T3 Series

Compliance Data:

ATEX – IECEx:

Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IECEx	CE
Ex d IIC or Ex e II or Ex nR II	Ex tD A21	IP 66 / 68 (10m)		

Operating Temperature:

-60°C to +130°C				
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CABLE GLANDS

Cable Glands

A2F Series: Nickel Plated Brass Cable Glands for Unarmored Cables with Elastomer Seal – Increased Safety and Flameproof

Zone 1 & 2 – 21 & 22

Ⓢ II 2 GD

ATEX / IECEx

IP66/68



A2F Series – Applications:

- Cable glands for unarmored cable certified for enclosures with the following protection modes:
 - Ex d flameproof IIB or IIC (as per §10.4.2 of IEC 60079-14) (Refer to Guide for Use of Electrical Products in Hazardous Locations - pages G43 - G46.)
 - Ex e increased safety
 - Ex nR restricted breathing
 - D dust environment
- Hazardous areas (gas and dust)
- Onshore and offshore

Materials:

- Body: nickel plated brass (suffix 5).
- Seal: LSF (Low Smoke Fume) thermoplastic elastomer.

Options:

- 316L stainless steel version: replace last digit 5 with 4.
Example: 25 A2F 075 5 – 25 A2F 075 4.
- Brass version: remove last digit 5.
Example: 25 A2F 075 5 – 25 A2F 075.

Features:

- Elastomer displacement seal for unarmored cable provides a combined flameproof and weatherproof seal on the outer sheath of the cable.

Ordering Information:

Cable Gland Size	Cable Capacity A (mm)		Dim. D (mm)		Length F (mm)	Catalog Numbers						Weight (kg)
	Min.	Max.	Corner	Flat		Metric*		NPT		NPT (other versions)		
2016	3.2	8.7	26.6	24.0	21.0	M20	2016 A2F 5	1/2"	2016 A2F 050 5	3/4"	2016 A2F 075 5	0.07
20S	6.1	11.7	26.6	24.0	21.0	M20	20S A2F 5	1/2"	20S A2F 050 5	3/4"	20S A2F 075 5	0.06
20	6.5	14.0	31.0	27.0	24.0	M20	20 A2F 5	1/2"	20 A2F 050 5	3/4"	20 A2F 075 5	0.06
25	11.1	20.0	39.0	36.0	26.0	M25	25 A2F 5	3/4"	25 A2F 075 5	1"	25 A2F 100 5	0.12
32	17.0	26.3	45.0	41.0	27.0	M32	32 A2F 5	1"	32 A2F 100 5	1-1/4"	32 A2F 125 5	0.13
40	23.5	32.2	53.5	50.0	28.0	M40	40 A2F 5	1-1/4"	40 A2F 125 5	1-1/2"	40 A2F 150 5	0.18
50S	31.0	38.2	61.0	55.0	29.0	M50	50S A2F 5	1-1/2"	50S A2F 150 5	2"	50S A2F 200 5	0.24
50	35.6	44.1	66.0	60.0	30.0	M50	50 A2F 5	2"	50 A2F 200 5	2-1/2"	50 A2F 250 5	0.24
63S	41.5	50.0	77.5	70.0	30.0	M63	63S A2F 5	2"	63S A2F 200 5	2-1/2"	63S A2F 250 5	0.37
63	47.2	56.0	84.0	75.0	30.0	M63	63 A2F 5	2-1/2"	63 A2F 250 5	3"	63 A2F 300 5	0.36
75S	54.0	62.0	87.0	79.0	32.0	M75	75S A2F 5	2-1/2"	75S A2F 250 5	3"	75S A2F 350 5	0.42
75	61.1	68.0	94.0	84.0	32.0	M75	75 A2F 5	3"	75 A2F 300 5	3-1/2"	75 A2F 350 5	0.39
90	66.6	80.0	120.0	108.0	44.0	M90	90 A2F 5	3"	90 A2F 300 5	3-1/2"	90 A2FX 350 5	1.48
100	76.0	91.0	138.0	122.0	48.0	M100	100 A2F 5	4"	100 A2F 400 5	-	-	1.62

*Entry thread seal not supplied, see accessories section.

Accessories: (Locknut, entry thread seal, serrated washer, earth tag and shroud – see accessories section)

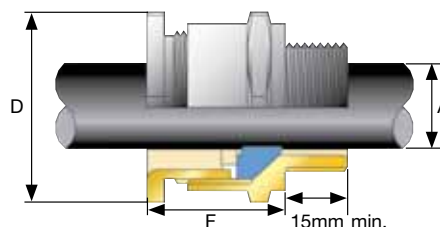
Compliances:

Hazardous Area	Gas	Dust
Certification Type	A2F	
Zones	1-2, 21-22	
Conforming to 94/9/CE ATEX	ⓈII 2 GD	
Symbol of Protection ATEX	Ex d IIC, Ex e II,	Ex tD A21
Symbol of Protection IEC	Ex nR II	
T Rating	-	
Surface Temperature	N.A.	
Ambient Temperature	-60°C to +130°C	
CE Declaration of Conformity	DC07001	
ATEX Certificate	SIRA 06 ATEX 1097X	
IECEx Certificate	IECEx SIR 06.0043X	
Other Certifications	CSA, GOST, Lloyds, DNV, ABS	
Index of Protection (solid and liquid)	IP66 / IP68 (10m)	

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 60079-7; 60079-15; 61241-0; 61241-1
Product Standards	BS 6121, NF E 03 601 (conical thread); ISO 065/I/III (metric thread)

Dimensions (mm):



Cable Glands

E1FX / E2FX Series: Nickel Plated Brass Cable Glands for Armored Cables with Elastomer Seal – Increased Safety and Flameproof

Zone 1 & 2 – 21 & 22

II 2 GD

ATEX / IECEx

IP66



E1FX & E2FX Series – Applications:

- Cable gland for armored cables (braid, tape, tape with lead sheath) certified for enclosures with the following protection modes:
 - Ex d flameproof IIB or IIC (as per §10.4.2 of IEC 60079-14) (Refer to Guide for Use of Electrical Products in Hazardous Locations - Pages G43 - G46.)
 - Ex e increased safety
 - Ex nR restricted breathing
 - D dust environment
- Hazardous areas (gas and dust)
- Onshore and offshore

- A detachable armor cone and AnyWay clamping ring arrangement facilitates remote make off and enables cable to be disconnected from the equipment.
- Inspection of the armor can be carried out while still maintaining the explosion-proof protection mode of the enclosure.

Features:

- Cable gland with elastomer seal for use in hazardous areas with braided and tape armor cable.
- The cable gland allows mechanical cable retention and earth continuity via cable armor termination.

Materials:

- Body: nickel plated brass (suffix 5).
- Seal: LSF (Low Smoke Fume) thermoplastic elastomer.
 - Inner displacement seal and LRS (Load Retention seal) outer seal.

Options:

- Lead sheath version – E2FX series: Replace digit 1 with 2. Example: 32 E1FX 5 – 32 E2FX 5.
- Brass version: remove last digit 5. Example: 25 E1FX 075 5 – 25 E1FX 075.

Ordering Information:

Cable Gland Size	Cable Capacity				Dim. D (mm)		Length F (mm)		Catalog Numbers						Weight (kg)
	Inner A		Outer B		Corner	Flat			Metric*		NPT		NPT (other versions)		
	Min.	Max.	Min.	Max.											
2016	3.1	8.7	6.1	11.5	26.6	24.0	58.5	M20	2016 E1FX 5	1/2"	2016 E1FX 050 5	3/4"	2016 E1FX 075 5	0.16	
20S	6.1	11.7	9.5	15.9	26.6	24.0	58.5	M20	20S E1FX 5	1/2"	20S E1FX 050 5	3/4"	20S E1FX 075 5	0.16	
20	6.5	14.0	12.5	20.9	33.3	30.5	60.5	M20	20 E1FX 5	1/2"	20 E1FX 050 5	3/4"	20 E1FX 075 5	0.21	
25S	11.1	20.0	14.0	22.0	40.5	37.5	67.5	M25	25S E1FX 5	3/4"	25S E1FX 075 5	1"	25S E1FX 100 5	0.32	
25	11.1	20.0	18.2	26.2	40.5	37.5	67.5	M25	25 E1FX 5	3/4"	25 E1FX 075 5	1"	25 E1FX 100 5	0.32	
32	17.0	26.3	23.7	33.9	51.0	46.0	69.5	M32	32 E1FX 5	1"	32 E1FX 100 5	1-1/4"	32 E1FX 125 5	0.45	
40	22.0	32.2	27.9	40.4	61.0	55.0	78.0	M40	40 E1FX 5	1-1/4"	40 E1FX 125 5	1-1/2"	40 E1FX 150 5	0.68	
50S	29.5	38.2	35.2	46.7	66.5	60.0	75.5	M50	50S E1FX 5	1-1/2"	50S E1FX 150 5	2"	50S E1FX 200 5	0.73	
50	35.6	44.1	40.4	53.1	78.6	70.0	80.5	M50	50 E1FX 5	2"	50 E1FX 200 5	2-1/2"	50 E1FX 250 5	0.75	
63S	40.1	50.0	45.6	59.4	83.2	75.0	91.5	M63	63S E1FX 5	2"	63S E1FX 200 5	2-1/2"	63S E1FX 250 5	1.34	
63	47.2	56.0	54.6	65.9	89.0	80.0	92.0	M63	63 E1FX 5	2-1/2"	63 E1FX 250 5	3"	63 E1FX 300 5	1.44	
75S	52.8	62.0	59.0	72.1	101.6	89.0	99.0	M75	75S E1FX 5	2-1/2"	75S E1FX 250 5	3"	75S E1FX 300 5	2.07	
75	59.1	68.0	66.7	78.5	111.1	99.0	102.0	M75	75 E1FX 5	3"	75 E1FX 300 5	3-1/2"	75 E1FX 350 5	2.62	
90	66.6	80.0	76.2	90.4	128.6	114.0	120.0	M90	90 E1FX 5	3"	90 E1FX 300 5	3-1/2"	90 E1FX 350 5	4.17	
100	76.0	91.0	86.1	101.5	138.0	123.0	148.0	M100	100 E1FX 5	4"	100 E1FX 400 5	-	-	4.52	

*Entry thread seal not supplied, see accessories section.

Accessories: (Locknut, entry thread seal, serrated washer, earth tag and shroud – see accessories section)

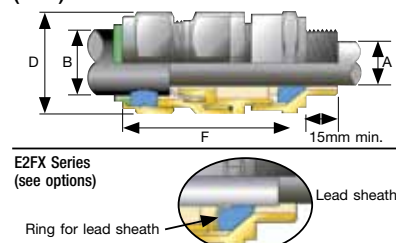
Compliances:

Hazardous Area	Gas	Dust
Certification Type	E1FX/Z - E2FX/Z	
Zones	1-2, 21-22	
Conforming to 94/9/CE ATEX	II 2 GD	
Symbol of Protection ATEX	Ex d IIC, Ex e II,	Ex tD A21
Symbol of Protection IEC	Ex nR II	
T Rating	-	
Surface Temperature	N.A.	
Ambient Temperature	-60°C to +130°C	
CE Declaration of Conformity	DC07001	
ATEX Certificate	SIRA 06 ATEX 1097X	
IECEx Certificate	IECEx SIR 06.0043X	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 60079-7; 60079-15; 61241-0; 61241-1
Product Standards	BS 6121, NF E 03 601 (conical thread); ISO 065/I/III (metric thread)
Other Standards	GOST

Dimensions (mm):



Cable Glands

E1FW / E2FW: Nickel Plated Brass Cable Glands for Armored Cables with Elastomer Seal – Increased Safety and Flameproof

Zone 1 & 2 – 21 & 22

⊕ II 2 GD

ATEX / IECEx

IP66



E1FW & E2FW Series – Applications:

- Cable gland for Single Wire Armored cables (SWA with wire and lead sheath) certified for enclosures with the following protection modes:
 - Ex d flameproof IIB or IIC (as per §10.4.2 of IEC 60079-14) (Refer to Guide for Use of Electrical Products in Hazardous Locations - Pages G43 - G46).
 - Ex e increased safety.
 - Ex nR restricted breathing.
 - D dust environment.
- Hazardous areas (gas and dust).
- Onshore and offshore.

Features:

- Cable gland with elastomer seal for use in hazardous areas with Single Wire Armor (SWA) cable.
- The cable gland allows mechanical cable retention and

earth continuity via cable armor termination.

- A detachable armor cone and AnyWay clamping ring arrangement facilitates remote make off and enables cable to be disconnected from the equipment.
- Inspection of the armor can be carried out while still maintaining the protection mode of the enclosure.

Materials:

- Body: nickel plated brass (suffix 5).
- Seal: LSF (Low Smoke Fume) thermoplastic elastomer.
 - Inner displacement seal and LRS (Load Retention seal) outer seal.

Options:

- Lead sheath version – E2FW series: Replace digit 1 with 2. Example: 32 E1FW 5 – 32 E2FW 5.
- Brass version: remove last digit 5. Example: 25 E1FW 075 5 – 25 E1FW 075.

Ordering Information:

Cable Gland Size	Cable Capacity				Dim. D (mm)		Length F (mm)	Catalog Numbers						Weight (kg)
	Inner A		Outer B		Corner	Flat		Metric*		NPT		NPT (other versions)		
	Min.	Max.	Min.	Max.										
2016	3.1	8.7	6.1	11.5	26.6	24.0	58.5	M20	2016 E1FW 5	1/2"	2016 E1FW 050 5	3/4"	2016 E1FW 075 5	0.16
20S	6.1	11.7	9.5	15.9	26.6	24.0	58.5	M20	20S E1FW 5	1/2"	20S E1FW 050 5	3/4"	20S E1FW 075 5	0.16
20	6.5	14.0	12.5	20.9	33.3	30.5	60.5	M20	20 E1FW 5	1/2"	20 E1FW 050 5	3/4"	20 E1FW 075 5	0.20
25S	11.1	20.0	14.0	22.0	40.5	37.5	67.5	M25	25S E1FW 5	3/4"	25S E1FW 075 5	1"	25S E1FW 100 5	0.32
25	11.1	20.0	18.2	26.2	40.5	37.5	67.5	M25	25 E1FW 5	3/4"	25 E1FW 075 5	1"	25 E1FW 100 5	0.32
32	17.0	26.3	23.7	33.9	51.0	46.0	69.5	M32	32 E1FW 5	1"	32 E1FW 100 5	1-1/4"	32 E1FW 125 5	0.45
40	22.0	32.2	27.9	40.4	61.0	55.0	78.0	M40	40 E1FW 5	1-1/4"	40 E1FW 125 5	1-1/2"	40 E1FW 150 5	0.67
50S	29.5	38.2	35.2	46.7	66.5	60.0	75.5	M50	50S E1FW 5	1-1/2"	50S E1FW 150 5	2"	50S E1FW 200 5	0.73
50	35.6	44.1	40.4	53.1	78.6	70.0	80.5	M50	50 E1FW 5	2"	50 E1FW 200 5	2-1/2"	50 E1FW 250 5	0.75
63S	40.1	50.0	45.6	59.4	83.2	75.0	91.5	M63	63S E1FW 5	2"	63S E1FW 200 5	2-1/2"	63S E1FW 250 5	1.34
63	47.2	56.0	54.6	65.9	89.0	80.0	92.0	M63	63 E1FW 5	2-1/2"	63 E1FW 250 5	3"	63 E1FW 300 5	1.44
75S	52.8	62.0	59.0	72.1	101.6	89.0	99.0	M75	75S E1FW 5	2-1/2"	75S E1FW 250 5	3"	75S E1FW 300 5	2.07
75	59.1	68.0	66.7	78.5	111.1	99.0	102.0	M75	75 E1FW 5	3"	75 E1FW 300 5	3-1/2"	75 E1FW 350 5	2.62
90	66.6	80.0	76.2	90.4	128.6	114.0	120.0	M90	90 E1FW 5	3"	90 E1FW 300 5	3-1/2"	90 E1FW 350 5	4.17
100	76.0	91.0	86.1	101.5	138.0	123.0	148.0	M100	100 E1FW 5	4"	100 E1FW 400 5	-	-	4.52

*Entry thread seal not supplied, see accessories section.

Accessories: (Locknut, entry thread seal, serrated washer, earth tag and shroud - see accessories section)

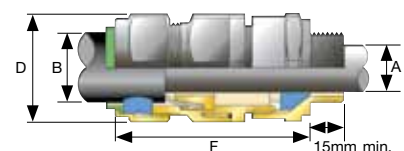
Compliances:

Hazardous Area	Gas	Dust
Certification Type	E1FW/Z - E2FW/Z	
Zones	1-2, 21-22	
Conforming to 94/9/CE ATEX	⊕ II 2 GD	
Symbol of Protection ATEX	Ex d IIC, Ex e II,	Ex tD A21
Symbol of Protection IEC	Ex nR II	
T Rating	-	
Surface Temperature	N.A.	
Ambient Temperature	-60°C to +130°C	
CE Declaration of Conformity	DC07001	
ATEX Certificate	SIRA 06 ATEX 1097X	
IECEx Certificate	IECEx SIR 06.0043X	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66	

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 60079-7; 60079-15; 61241-0; 61241-1
Product Standards	BS 6121, NF E 03 601 (conical thread); ISO 065/I/III (metric thread)
Other Standards	GOST

Dimensions (mm):



E2FW Series (see options)



Cable Glands

T3 Series: Nickel Plated Brass Cable Glands for Armored Cables with Elastomer Seal – Increased Safety and Flameproof

Zone 1 & 2 – 21 & 22

Ⓢ II 2 GD

ATEX / IECEx

IP66 / 68 (10 m)



T3 Series – Applications:

- Cable gland for all types of armored cable certified for enclosures with the following protection modes:
 - Ex d flameproof IIB or IIC (as per §10.4.2 of IEC 60079-14) (Refer to Guide for Use of Electrical Products in Hazardous Locations - Pages G43 - G46.).
 - Ex e increased safety.
 - Ex nR restricted breathing.
 - D dust environment.
- Hazardous areas (gas and dust).
- Onshore and offshore.

- A reversible armor cone and AnyWay universal clamping ring arrangement allows the cable to be easily disconnected from equipment.
- The cable gland is IP66 / 68 and complies with deluge protection tests.
- Inspection of the armor can be carried out while still maintaining the protection mode of the enclosure.

Features:

- Cable gland with elastomer seal for use in hazardous areas with all types of armored cable.
- This product utilizes a unique Compensating Displacement Seal (CDS) system which provides full compatibility with restricted breathing equipment.
- The CDS system is designed to alleviate any pressure on soft bedded cables.
- The cable gland allows mechanical cable retention and earth continuity via armor termination.

Materials:

- Body: nickel plated brass (suffix 5).
- Seal: LSF (Low Smoke Fume) thermoplastic elastomer.
 - Inner CDS system and LRS (Load Retention Seal) outer seal.

Options:

- 316L stainless steel version: replace last digit 5 with 4.
Example: 25 T3 075 5 – 25 T3 075 4.
- Lead sheath version: replace T3 with T3PB.
Example: 25 T3 075 5 – 25 T3PB 075 5.
- Brass version: remove last digit 5.
Example: 25 T3 075 5 – 25 T3 075.

Ordering Information:

Cable Gland Size	Cable Capacity				Dim. D (mm)		Length F (mm)	Catalog Numbers						Weight (kg)
	Inner A Min.	Inner A Max.	Outer B Min.	Outer B Max.	Corner	Flat		Metric*		NPT		NPT (other versions)		
2016	3.1	8.7	6.1	11.5	26.6	24.0	65.0	M20	2016 T3 5	1/2"	2016 T3 050 5	3/4"	2016 T3 075 5	0.17
20S	6.1	11.7	9.5	15.9	26.6	24.0	64.0	M20	20S T3 5	1/2"	20S T3 050 5	3/4"	20S T3 075 5	0.17
20	6.5	14.0	12.5	20.9	33.3	30.5	63.0	M20	20 T3 5	1/2"	20 T3 050 5	3/4"	20 T3 075 5	0.26
25S	11.1	20.0	14.0	22.0	40.5	37.5	74.0	M25	25S T3 5	3/4"	25S T3 075 5	1"	25S T3 100 5	0.38
25	11.1	20.0	18.2	26.2	40.5	37.5	76.0	M25	25 T3 5	3/4"	25 T3 075 5	1"	25 T3 100 5	0.38
32	17.0	26.3	23.7	33.9	51.0	46.0	80.0	M32	32 T3 5	1"	32 T3 100 5	1-1/4"	32 T3 125 5	0.56
40	22.0	32.2	27.9	40.4	61.0	55.0	75.0	M40	40 T3 5	1-1/4"	40 T3 125 5	1-1/2"	40 T3 150 5	0.85
50S	29.5	38.2	35.2	46.7	66.5	60.0	93.0	M50	50S T3 5	1-1/2"	50S T3 150 5	2"	50S T3 200 5	1.05
50	35.6	44.1	40.4	53.1	78.6	70.0	100.0	M50	50 T3 5	2"	50 T3 200 5	2-1/2"	50 T3 250 5	1.52
63S	40.1	50.0	45.6	59.4	83.2	75.0	95.0	M63	63S T3 5	2"	63S T3 200 5	2-1/2"	63S T3 250 5	1.75
63	47.2	56.0	54.6	65.9	89.0	80.0	98.0	M63	63 T3 5	2-1/2"	63 T3 250 5	3"	63 T3 300 5	1.68
75S	52.8	62.0	59.0	72.1	101.6	89.0	105.0	M75	75S T3 5	2-1/2"	75S T3 250 5	3"	75S T3 300 5	2.34
75	59.1	68.0	66.7	78.5	111.1	99.0	112.0	M75	75 T3 5	3"	75 T3 300 5	3-1/2"	75 T3 350 5	3.20
90	66.6	80.0	76.2	90.4	128.6	114.0	132.0	M90	90 T3 5	3"	90 T3 300 5	3-1/2"	90 T3 350 5	5.10
100	76.0	91.0	86.1	101.5	138.0	123.0	160.0	M100	100 T3 5	4"	100 T3 400 5	-	-	6.30

*Entry thread seal not supplied, see accessories section.

Accessories: (Locknut, entry thread seal, serrated washer, earth tag and shroud - see accessories section)

Compliances:

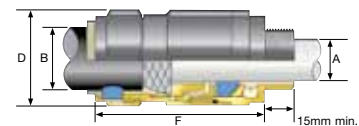
Hazardous Area	Gas	Dust
Certification Type	T3CDS	
Zones	1-2, 21-22	
Conforming to 94/9/CE ATEX	Ⓢ II 2 GD	
Symbol of Protection ATEX	Ex d IIC, Ex e II,	Ex tD A21
Symbol of Protection IEC	Ex nR II	
T Rating	-	
Surface Temperature	N.A.	
Ambient Temperature	-60°C to +130°C	
CE Declaration of Conformity	DC07001	
ATEX Certificate	SIRA 06 ATEX 1283X	
IECEx Certificate	IECEx SIR 07.005X	
Other Certifications	CSA, UL, GOST, Lloyds, DNV, ABS	
Index of Protection (solid and liquid)	IP66/68 (10m)	

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 60079-7; 60079-15; 61241-0; 61241-1
Product Standards	BS 6121, NF E 03 601 (conical thread); ISO 065/I/III (metric thread)
Other Standards	GOST, UL, CSA

Dimensions (mm):

T3 Series



Cable Glands

PX and PX2K Series: Nickel Plated Brass Cable Glands for Unarmored and Armored Cables with Compound Barrier Seal – Increased Safety and Flameproof



PX Series



PX2K Series

Compliance Data:

ATEX – IECEx:



Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IECEx	CE
Ex d IIC or Ex e II or Ex nR II	Ex tD A21	IP 66/68 (10m)		

Operating Temperature:

-60°C to +100°C				
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CABLE GLANDS

Cable Glands

PX Series: Nickel Plated Brass Cable Glands for Unarmored Cables with Compound Barrier Seal – Increased Safety and Flameproof

Zone 1 & 2 – 21 & 22

Ex II 2 GD

ATEX / IECEx

IP66/68 (10 m)



PX (PXSS2K) Series – Applications:

- Cable gland for unarmored cables certified for enclosures with the following protection modes:
 - Ex d flameproof IIB or IIC (as per §10.4.2 of IEC 60079-14) (Refer to Guide for Use of Electrical Products in Hazardous Locations - Pages G43 - G46.).
 - Ex e increased safety.
 - Ex nR restricted breathing.
 - D dust environment.
- Hazardous areas (gas and dust).
- Onshore and offshore.

Features:

- Cable gland with compound barrier seal for use in hazardous areas with all types of unarmored cables.
- The cable gland provides mechanical cable retention.

- A combined detachable spacer and compound tube allows the cable to be easily disconnected from the equipment.
- The cable gland is IP66 / 68 and complies with deluge protection tests.
- Epoxy resin supplied with the cable gland.

Materials:

- Body: nickel plated brass (suffix 5).
- Epoxy resin barrier compound.
- Seal: LSF (Low Smoke Fume) thermoplastic elastomer displacement outer seal.

Options:

- 316L stainless steel version: replace last digit 5 with 4.
Example: 25 PX 075 5 – 25 PX 075 4.
- Brass version: remove last digit 5.
Example: 25 PX 075 5 – 25 PX 075.

Ordering Information:

Cable Gland Size	Resin A		Cable (mm) Outer B		Dim. D (mm)		Length F (mm)	Catalog Numbers						Weight (kg)
	Ø (mm)	(1)	Min.	Max.	Corner	Flat		Metric*		NPT		NPT (other versions)		
20S/16	12.6	15	3.0	8.7	26.6	24.0	58.5	M20	2016 PX 5	1/2"	2016 PX 050 5	3/4"	2016 PX 075 5	0.15
20S	12.6	15	6.1	11.7	26.6	24.0	58.5	M20	20S PX 5	1/2"	20S PX 050 5	3/4"	20S PX 075 5	0.15
20	12.6	15	6.5	14.0	33.3	30.5	60.5	M20	20 PX 5	1/2"	20 PX 050 5	3/4"	20 PX 075 5	0.15
25	17.5	29	11.1	20.0	40.5	37.5	67.5	M25	25 PX 5	3/4"	25 PX 075 5	1"	25 PX 100 5	0.27
32	23.6	51	17.0	26.3	51.0	46.0	69.5	M32	32 PX 5	1"	32 PX 100 5	1-1/4"	32 PX 125 5	0.29
40	30.0	80	22.0	32.1	61.0	55.0	78.0	M40	40 PX 5	1-1/4"	40 PX 125 5	1-1/2"	40 PX 150 5	0.40
50S	36.6	122	29.5	38.2	66.5	60.0	75.5	M50	50S PX 5	1-1/2"	50S PX 150 5	2"	50S PX 200 5	0.49
50	41.0	149	35.6	44.1	78.6	70.0	80.5	M50	50 PX 5	2"	50 PX 200 5	2-1/2"	50 PX 250 5	0.51
63S	47.9	205	40.1	50.1	83.2	75.0	91.5	M63	63S PX 5	2"	63S PX 200 5	2-1/2"	63S PX 250 5	0.60
63	53.7	259	47.2	56.0	89.0	80.0	92.0	M63	63 PX 5	2-1/2"	63 PX 250 5	3"	63 PX 300 5	0.62
75S	59.8	230	52.8	62.0	101.6	89.0	99.0	M75	75S PX 5	2-1/2"	75S PX 250 5	3"	75S PX 300 5	1.05
75	64.3	364	59.1	68.0	111.1	99.0	102.0	M75	75 PX 5	3"	75 PX 300 5	3-1/2"	75 PX 350 5	1.15

*Entry thread seal not supplied, see accessories section.

(1) Number of cores (Max.)

Accessories: (Locknut, entry thread seal, serrated washer, earth tag and shroud - see accessories section)

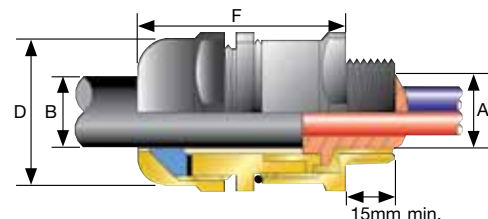
Compliances:

Hazardous Area	Gas	Dust
Certification Type	PXSS2K	
Zones	1-2, 21-22	
Conforming to 94/9/CE ATEX	Ex II 2 GD	
Symbol of Protection ATEX	Ex d IIC, Ex e II,	Ex tD A21
Symbol of Protection IEC	Ex nR II	
T Rating	-	
Surface Temperature	N.A.	
Ambient Temperature	-60°C to +100°C	
CE Declaration of Conformity	DC07001	
ATEX Certificate	SIRA 06 ATEX 1097X	
IECEx Certificate	IECEx SIR 06.0044X	
Other Certifications	CSA, UL, GOST, Lloyds, DNV, ABS	
Index of Protection (solid and liquid)	IP66 / IP68 (10 m)	

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 60079-7; 60079-15; 61241-0; 61241-1
Product Standards	BS 6121, NF E 03 601 (conical thread); ISO 065/I/III (metric thread)
Other Standards	GOST, UL, CSA

Dimensions (mm):



Cable Glands

PX2K Series: Nickel Plated Brass Cable Glands for All Types of Armored Cables

(Braids, Tape and Wire with Lead Sheath Version) with Compound Barrier Seal – Increased Safety and Flameproof

Zone 1 & 2 – 21 & 22

⊕ II 2 GD

ATEX / IECEx

IP66/68 (10 m)



PX2K Series – Applications:

- Cable gland for all types of armored cables (braid, tape, wire and lead sheath version) certified for enclosures with the following protection modes:
 - Ex d flameproof IIB or IIC (as per §10.4.2 of IEC 60079-14) (Refer to Guide for Use of Electrical Products in Hazardous Locations - Pages G43 - G46).
 - Ex e increased safety.
 - Ex nR restricted breathing.
 - D dust environment.
- Hazardous areas (gas and dust).
- Onshore and offshore.

Features:

- Cable gland with compound barrier seal for use in hazardous areas with all types of armored cables (braid, tape and wire).
- The cable gland provides mechanical cable retention and earth continuity via cable armor termination.
- A combined detachable armor cone and compound tube, together with AnyWay universal clamping ring arrangement

allows the cable to be easily disconnected from the equipment.

- The cable gland is IP66 / 68 and complies with deluge protection tests.
- The cable gland is supplied with epoxy resin and two detachable armor cones.

Materials:

- Body: nickel plated brass (suffix 5).
- Epoxy resin barrier compound.
- Seal: LSF (Low Smoke Fume) thermoplastic elastomer displacement outer seal.

Options:

- 316L stainless steel version: replace last digit 5 with 4.
Example: 25 PX2K 075 5 – 25 PX2K 075 4.
- Lead sheath version: Replace PX2K with PX2KPB. Example: 25 PX2K 075 5 – 25 PX2KPB 075 5.
- Brass version: remove last digit 5.
Example: 25 PX2K 075 5 – 25 PX2K 075.

Ordering Information:

Cable Gland Size	Resin A		Cable (mm) Outer B		Dim. D (mm) Corner		Length F (mm)	Catalog Numbers						Weight (kg)
	Ø (mm)	(1)	Min.	Max.	Flat	Metric*		NPT		NPT (other versions)				
2016	12.6	15	6.1	11.5	26.6	24.0	58.5	M20	2016 PX2K 5	1/2"	2016 PX2K 050 5	3/4"	2016 PX2K 075 5	0.20
20S	12.6	15	9.5	15.9	26.6	24.0	58.5	M20	20S PX2K 5	1/2"	20S PX2K 050 5	3/4"	20S PX2K 075 5	0.20
20	12.6	15	12.5	20.9	33.3	30.5	60.5	M20	20 PX2K 5	1/2"	20 PX2K 050 5	3/4"	20 PX2K 075 5	0.23
25S	17.5	29	14.0	22.0	40.5	37.5	67.5	M25	25S PX2K 5	3/4"	25S PX2K 075 5	1"	25S PX2K 100 5	0.33
25	17.5	29	18.2	26.2	40.5	37.5	67.5	M25	25 PX2K 5	3/4"	25 PX2K 075 5	1"	25 PX2K 100 5	0.33
32	23.6	51	23.7	33.9	51.0	46.0	69.5	M32	32 PX2K 5	1"	32 PX2K 100 5	1-1/4"	32 PX2K 125 5	0.51
40	30.0	80	27.9	40.4	61.0	55.0	78.0	M40	40 PX2K 5	1-1/4"	40 PX2K 125 5	1-1/2"	40 PX2K 150 5	0.72
50S	36.6	122	35.2	46.7	66.5	60.0	75.5	M50	50S PX2K 5	1-1/2"	50S PX2K 150 5	2"	50S PX2K 200 5	0.82
50	41.0	149	40.4	53.1	78.6	70.0	80.5	M50	50 PX2K 5	2"	50 PX2K 200 5	2-1/2"	50 PX2K 250 5	0.86
63S	47.9	205	45.6	59.4	83.2	75.0	91.5	M63	63S PX2K 5	2"	63S PX2K 200 5	2-1/2"	63S PX2K 250 5	1.45
63	53.7	259	54.6	65.9	89.0	80.0	92.0	M63	63 PX2K 5	2-1/2"	63 PX2K 250 5	3"	63 PX2K 300 5	1.60
75S	59.8	320	59.0	72.1	101.6	89.0	99.0	M75	75S PX2K 5	2-1/2"	75S PX2K 250 5	3"	75S PX2K 300 5	2.30
75	64.3	364	66.7	78.5	111.1	99.0	102.0	M75	75 PX2K 5	3"	75 PX2K 300 5	3-1/2"	75 PX2K 350 5	3.05
90	75.3	500	76.2	90.4	128.6	114.0	120.0	M90	90 PX2K 5	3"	90 PX2K 300 5	3-1/2"	90 PX2K 350 5	5.00

*Entry thread seal not supplied, see accessories section.

(1) Number of cores (Max.)

Accessories: (Locknut, entry thread seal, serrated washer, earth tag and shroud - see accessories section)

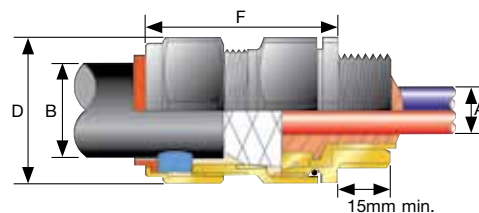
Compliances:

Hazardous Area	Gas	Dust
Certification Type	PX2K	
Zones	1-2, 21-22	
Conforming to 94/9/CE ATEX	⊕ II 2 GD	
Symbol of Protection ATEX	Ex d IIC, Ex e II,	Ex tD A21
Symbol of Protection IEC	Ex nR II	
T Rating	-	
Surface Temperature	N.A.	
Ambient Temperature	-60°C to +100°C	
CE Declaration of Conformity	DC07001	
ATEX Certificate	SIRA 06 ATEX 1097X	
IECEx Certificate	IECEx SIR 06.0044X	
Other Certifications	GOST, Lloyds, DNV, ABS	
Index of Protection (solid and liquid)	IP66 / IP68 (10 m)	

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 60079-7; 60079-15; 61241-0; 61241-1
Product Standards	BS 6121, NF E 03 601 (conical thread); ISO 065/I/III (metric thread)
Other Standards	GOST

Dimensions (mm):



Cable Glands

757, BVE and 737 Series: Blanking Plugs, Adaptors and Reducers – Increased Safety and Flameproof



757 Series
Blanking Plugs



737 Series
Adaptors and Reducers



BVE Series Plastic Blanking
Plugs & Sealing Washers



Compliance Data:

757 Series Blanking Plugs:

Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IECEx	CE
Ex d IIC or Ex e II or Ex nR II	Ex tD A21	IP 66/68 (10 m)		

BVE Series Blanking Plugs:

Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IEC	CE
Ex e II	Ex tD A21	IP 66		

737 Series Adaptors and Reducers:

Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IECEx	CE
Ex d IIC or Ex e II or Ex nR II	Ex tD A21	IP 66/68 (10 m)		

Operating Temperature:

-60°C to +100°C (757 Series Blanking Plugs and 737 Series Adaptors and Reducers)

-40°C to +55°C (BVE Series Blanking Plugs)

CABLE GLANDS

Cable Glands

757, BVE and 737 Series: Blanking Plugs, Adaptors and Reducers – Increased Safety and Flameproof

Zone 1 & 2 – 21 & 22

⊕ II 2 GD

ATEX / IECEx

IP66/68 (with entry thread seal or O-ring supplied separately)

757 Series Blanking Plugs

Applications:

- A comprehensive range of blanking plugs designed to close any unused entries in electrical equipment. Care should be taken to ensure that a suitable entry thread sealing washer is also selected and installed, where applicable, to ensure that an effective seal is made at the entry, thereby maintaining the integrity of the enclosures or equipments IP rating.

Features:

- Catering to hazardous area applications, the range of products covers a number of different design types which are supplied in both metal and plastic (Exe only).
- Triple certification Ex d/Ex e/Ex nR.

Materials:

- Nickel plated brass.

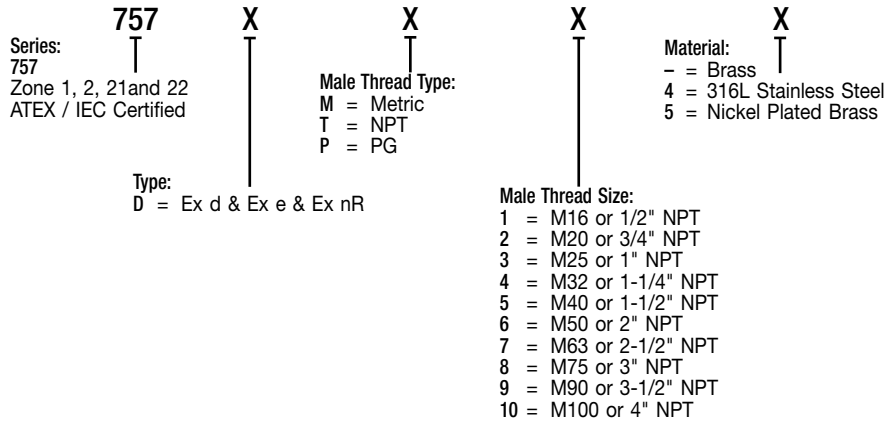
Options:

- Brass version: remove last digit 5.
- 316L stainless steel version: replace last digit 5 with 4.
- Plastic (see BVE series).



757 Series Blanking Plugs

Catalog Number Logic:



Ordering Information:

Dimensions (mm)			Catalog Numbers (Nickel Plated Brass)			Weight (Kg)	
Flats A	Corners B	C	Metric*		NPT		
24.0	26.0	5.0	M16 x 1.5	757DM15	1/2"	757DT15	0.05
24.0	26.0	5.0	M20 x 1.5	757DM25	3/4"	757DT25	0.07
30.0	33.0	5.0	M25 x 1.5	757DM35	1"	757DT35	0.10
36.0	40.0	5.0	M32 x 1.5	757DM45	1-1/4"	757DT45	0.16
46.0	51.0	6.0	M40 x 1.5	757DM55	1-1/2"	757DT55	0.32
55.0	61.0	6.0	M50 x 1.5	757DM65	2"	757DT65	0.42
70.0	78.0	6.0	M63 x 1.5	757DM75	2-1/2"	757DT75	0.63
80.0	89.0	6.0	M75 x 1.5	757DM85	3"	757DT85	0.98
95.0	106.0	6.0	M90 x 2	757DM95	3-1/2"	757DT95	1.35
110.0	123.0	6.0	M100 x 2	757DM105	4"	757DT105	1.60

* IP68 with entry thread seal or o-ring not supplied (See accessories section)

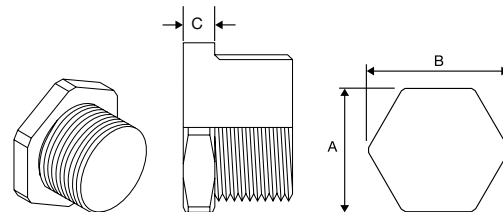
Compliances:

Hazardous Area	Gas	Dust
Certification Type	757	
Zones	1-2	21-22
Conforming to ATEX 94/9/CE	0518⊕II 2 G	0518⊕II 2 D
Symbol of Protection ATEX	Ex d IIC Ex e II	Ex tD A21
Symbol of Protection IEC	Ex nR II	
T rating	NA	
Surface Temperature	NA	
Ambient Temperature	-60°C to +100°C	
CE Declaration of Conformity	DC07001	
ATEX Certificate	SIRA 01 ATEX 1284U	
IEC Certificate	IECEX SIR 07.0056X	
Other Certifications	GOST, UL, CSA	
Index of Protection (solid and liquid)	IP66 or IP68 with seal	

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 60079-7; 61241-0; 61241-1
Product Standards	-
Other Standards	EN / IEC 60529 (IP); EN 62262 (IK)

Dimensions (mm):



Thread Table:

	Metric	NPT	PG
1	M16	1/2"	PG9
2	M20	3/4"	PG11
3	M25	1"	PG13.5
4	M32	1-1/4"	PG16
5	M40	1-1/2"	PG21
6	M50	2"	PG29
7	M63	2-1/2"	PG36
8	M75	3"	PG42
9	M90	3-1/2"	PG48
10	M100	4"	-

Cable Glands

757, BVE and 737 Series: Blanking Plugs, Adaptors and Reducers – Increased Safety and Flameproof

Zone 1 & 2 – 21 & 22

⊕ II 2 GD

ATEX / IECEx

IP66

BVE Series Blanking Plugs

Applications:

- A comprehensive range of plastic blanking plugs designed to close any unused entries in electrical equipment.
- Entry thread sealing washer supplied.

Features:

- Catering to hazardous areas, the range covers all metric threads from M16 to M50.
- Certification Ex e.

Materials:

- Plastic.



BVE Series Plastic Blanking Plugs & Sealing Washer

Ordering Information:

Dimensions (mm) B	Metric	Weight (Kg)	Volume	Catalog Number
–	M16	0.1	0.03	095485
12	M20	0.1	0.03	095714
12	M25	0.1	0.03	095715
12	M32	0.1	0.03	095486
12	M40	0.1	0.07	095487
–	M50	0.2	0.07	095488

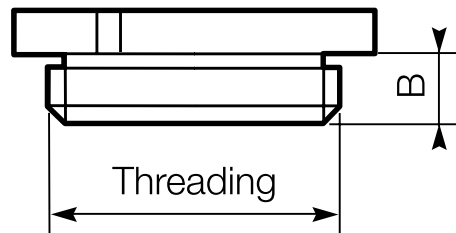
Compliances:

Hazardous Area	Gas	Dust
Certification Type	BVe	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	0081 ⊕ II 2 G	0081 ⊕ II 2 D
Symbol of Protection ATEX	Ex e II	Ex tD A21
Symbol of Protection IEC		
Ambient Temperature	-40°C to +55°C	
CE Declaration of Conformity	5C218	
ATEX Certificate	LCIE 03 ATEX 0011U	
IEC Certificate	LCIE Ex 03.005U	
Index of Protection (solid and liquid)	IP66	

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 60079-7; 61241-0; 61241-1
Product Standards	/

Dimensions (mm):



Cable Glands

757, BVE and 737 Series: Blanking Plugs, Adaptors and Reducers – Increased Safety and Flameproof

Zone 1 & 2 – 21 & 22

⊕ II 2 GD

ATEX / IECEx

IP66/68 (with entry thread seal or O-ring supplied separately)

737 Series Adaptors & Reducers Applications:

- A wide range of thread conversion adaptors and reducers for hazardous area applications. Used to connect cable entry devices and equipment having dissimilar threads.
- Care should be taken to ensure that a suitable sealing gasket is also selected and installed, where applicable, to ensure that an effective seal is made at the entry, thereby maintaining the integrity of the enclosure or equipment IP rating.

Features:

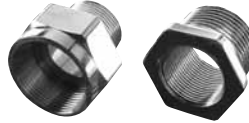
- Triple Certification Ex d/Ex e/Ex nR.

Materials:

- Nickel plated brass.

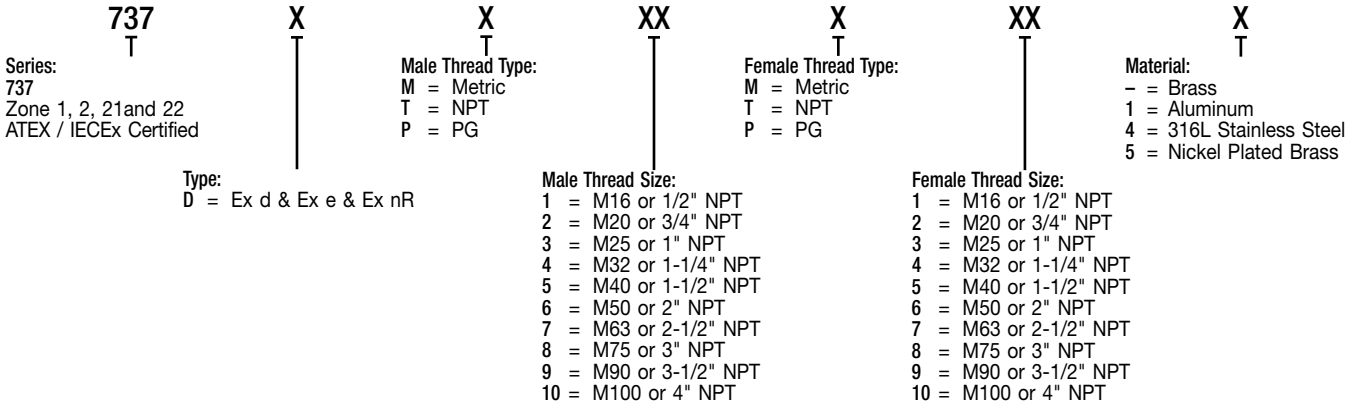
Options:

- Aluminum: replace last digit 5 with 1.
- Brass version: remove last digit 5.
- 316L stainless steel version: replace last digit 5 with 4.



737 Series Adaptors and Reducers

Catalog Number Logic:



Ordering Information:

Male Thread	Female Tapping																		
	M16*	M20*	M25*	M32*	M40*	M50*	M63*	M75*	1/2" NPT	3/4" NPT	1" NPT	1-1/4" NPT	1-1/2" NPT	2" NPT	2-1/2" NPT	3" NPT	3-1/2" NPT	4" NPT	
Sizes																			
M16*																			
M20*																			
M25*																			
M32*																			
M40*																			
M50*																			
M63*																			
M75*																			
1/2" NPT																			
3/4" NPT																			
1" NPT																			
1-1/4" NPT																			
1-1/2" NPT																			
2" NPT																			
2-1/2" NPT																			
3" NPT																			
3-1/2" NPT																			
4" NPT																			

Ex d/Ex e reducer
 Ex d/Ex e adaptor
 Non-certified adaptor

Thread Table:

	Metric*	NPT	PG
1	M16	1/2"	PG9
2	M20	3/4"	PG11
3	M25	1"	PG13.5
4	M32	1-1/4"	PG16
5	M40	1-1/2"	PG21
6	M50	2"	PG29
7	M63	2-1/2"	PG36
8	M75	3"	PG42
9	M90	3-1/2"	PG48
10	M100	4"	-

* IP68 with entry thread seal or O-ring (not supplied)
(See accessories section)

Cable Glands

757, BVE and 737 Series: Blanking Plugs, Adaptors and Reducers – Increased Safety and Flameproof

Zone 1 & 2 – 21 & 22

Ex II 2 GD

ATEX / IECEx

IP66/68 (with entry thread seal or O-ring supplied separately)

Reducers (Nickel Plated Brass)

Male Thread	Female Thread	Catalog Number
M20	M16	737DM2M15
M25	M16	737DM3M15
M25	M20	737DM3M25
M32	M20	737DM4M25
M32	M25	737DM4M35
M40	M25	737DM5M35
M40	M32	737DM5M45
M50	M32	737DM6M45
M50	M40	737DM6M55
M63	M40	737DM7M55
M63	M50	737DM7M65
M75	M50	737DM8M65
M75	M63	737DM8M75
3/4"	1/2"	737DT2T15
1"	1/2"	737DT3T15
1"	3/4"	737DT3T25
1-1/4"	3/4"	737DT4T25
1-1/4"	1"	737DT4T35
1-1/2"	1"	737DT5T35
1-1/2"	1-1/4"	737DT5T45
2"	1-1/4"	737DT6T45
2"	1-1/2"	737DT6T55
2-1/2"	1-1/2"	737DT7T55
2-1/2"	2"	737DT7T65
3"	2"	737DT8T65
3"	2-1/2"	737DT8T75
3-1/2"	2-1/2"	737DT9T75
3-1/2"	3"	737DT9T85
4"	3"	737DT10T85
4"	3-1/2"	737DT10T95

Adaptors (Nickel Plated Brass)

Male Thread	Female Thread	Catalog Number
M16	M20	737DM1M25
M20	M25	737DM2M35
M25	M32	737DM3M45
M32	M40	737DM4M55
M40	M50	737DM5M65
M50	M63	737DM6M75
M63	M75	737DM7M85
M75	M90	737DM8M95
M90	M100	737DM9M105
M16	1/2"	737DM1T15
M20	1/2"	737DM2T15
M20	3/4"	737DM2T25
M25	3/4"	737DM3T25
M25	1"	737DM3T35
M32	1"	737DM4T35
M32	1-1/4"	737DM4T45
M40	1-1/4"	737DM5T45
M40	1-1/2"	737DM5T55
M50	1-1/2"	737DM6T55
M50	2"	737DM6T65
M63	2"	737DM7T65
M63	2-1/2"	737DM7T75
M75	2-1/2"	737DM8T75
M75	3"	737DM8T85
1/2"	M20	737DT1M25
3/4"	M20	737DT2M25
3/4"	M25	737DT2M35
1"	M25	737DT3M35
1"	M32	737DT3M45
1-1/4"	M32	737DT4M45
1-1/4"	M40	737DT4M55
1-1/2"	M40	737DT5M55
1-1/2"	M50	737DT5M65
2"	M50	737DT6M65
2"	M63	737DT6M75
2-1/2"	M63	737DT7M75
2-1/2"	M75	737DT7M85
3"	M75	737DT8M85

Compliances:

Hazardous Area	Gas	Dust
Certification Type	737	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	0518 Ex d IIC	0518 Ex tD A21
Symbol of Protection ATEX	Ex d IIC	
Symbol of Protection IECEx	Ex e II	Ex tD A21
T Rating	N.A.	
Surface Temperature	N.A.	
Ambient Temperature	-60°C to +100°C	
CE Declaration of Conformity	DC07001	
ATEX Certificate	SIRA 01 ATEX 1284U	
IECEx Certificate	IECEx SIR 07.0052X	
Other Certifications	GOST, UL, CSA	
Index of Protection (solid and liquid)	IP66 or IP68 with seal	
Impact Resistance (shock)	–	

Standards:

Ex Standards	EN / IEC 60079-0; 60079-1; 60079-7; 61241-0; 61241-1
Product Standards	–
Other Standards	GOST, UL and CSA

Cable Glands

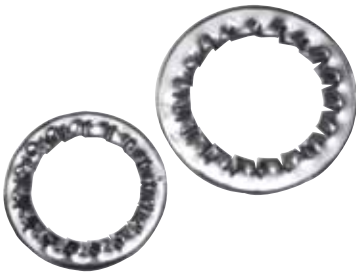
Accessories for Cable Entries



Nickel Plated
Brass Locknuts



Brass
Earth Tag



316L Stainless Steel
Serrated Washers



Entry Thread Seals



Clamp for Lead Sheath
Armored Cable Glands



PVC Shrouds

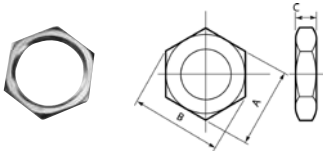


Cable Glands

Accessories for Cable Entries

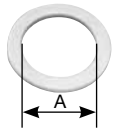
Accessories:

Nickel Plated Brass Locknuts

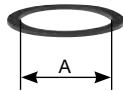


Thread	A	Dimensions (mm)		C	Weight (Kg)	Catalog Number	Pack
		B					
M16 x 1.5	19	21		3	0.004	0957 07	10
M20 x 1.5	24	26.5		3.5	0.006	0957 01	10
M25 x 1.5	33	36.5		3.5	0.010	0957 02	10
M32 x 1.5	42	46.5		4.5	0.010	0957 03	10
M40 x 1.5	55	60		4.5	0.023	0957 08	5
M50 x 1.5	65	70.1		5.5	0.028	0957 09	5
M63 x 1.5	70	77		6	0.073	0957 10	5
M75 x 1.5	85	93.5		8	0.112	0957 11	1
M90 x 2	100	110		10	0.171	0957 12	1
M100 x 2	110	121		12	0.252	0957 13	1

Entry Thread Seal



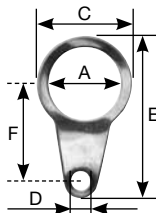
White Nylon (ETS2)



Black Neoprene (ETS)

Thread	A	Weight (Kg)	Nylon Catalog Number	Weight (Kg)	Neoprene Catalog Number	Pack
M16		0.0006	16ETS2	0.0001	16ETS	10
M20		0.0010	20ETS2	0.0002	20ETS	10
M25		0.0018	25ETS2	0.0004	25ETS	10
M32		0.0020	32ETS2	0.0005	32ETS	10
M40		0.0034	40ETS2	0.0008	40ETS	5
M50		0.0036	50ETS2	0.0009	50ETS	5
M63		0.0040	63ETS2	—	—	5
M75		0.0060	75ETS2	—	—	1
M90		0.0120	90ETS2	—	—	1
M100		0.0350	100ETS2	—	—	1

Brass Earth Tag



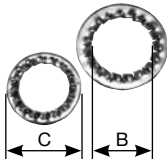
Thread	A	C	Dimensions (mm)		F	Weight (Kg)	Catalog Number	Pack
			D	E				
M16	25.4	M6	49.3	30.2	0.008	16ET	5	
M20	27.1	M6	53.4	33.1	0.008	20ET	5	
M25	35.1	M6	59.4	35.6	0.010	25ET	5	
M32	45.2	M12	77.0	43.1	0.018	32ET	5	
M40	53.7	M13	88.7	45.4	0.024	40ET	1	
M50	65.2	M13	111.1	58.1	0.036	50ET	1	
M63	82.6	M13	128.6	66.8	0.048	63ET	1	
M75	95.4	M13	141.1	73.0	0.052	75ET	1	
M90	114.2	M13	161.0	85.0	0.062	90ET	1	
M100	126.0	M13	194.0	118.0	0.106	100ET	1	

Cable Glands

Accessories for Cable Entries

Accessories – Continued:

	Thread	Dimensions (mm)		Weight (Kg)	Catalog Number
		B	C		
316L Stainless Steel Serrated Washers	M16	19	25.4	0.006	16SW4
	M20	24	32.0	0.006	20SW4
	M25	33	40.0	0.008	25SW4
	M32	42	44.0	0.008	32SW4
	M40	55	59.0	0.022	40SW4
	M50	65	80.0	0.024	50SW4
	M63	70	100.0	0.060	63SW4
	M75	85	112.0	0.085	75SW4
	M90	100	120.0	0.110	90SW4
	M100	110	150.0	0.160	100SW4



	Cable Gland Size	Catalog Number
	Lead Star Clamp for E2FX and E2FW Cable Glands Lead Sheath Continuity	2016
20S		20SLSW
20		20LSW
25S & 25		25LSW
32		32LSW
40		40LSW
50S		50SLSW
50		50LSW
63S		63SLSW
63		63LSW
75S		75SLSW
75		75LSW
90		90LSW
100	100LSW	



	Cable Gland Sizes	E1FW – E2FW	A2F	PX	PX2K
		E1FX – E2FX T3			
Black PVC Shrouds	20/16	PVC02	PVC02	PVC02	PVC06
	20S	PVC04	PVC04	PVC04	PVC06
	20	PVC06	PVC05	PVC05	PVC06
	25S	PVC09	N.A.	N.A.	N.A.
	25	PVC09	PVC09	PVC09	PVC09
	32	PVC11	PVC10	PVC10	PVC11
	40	PVC15	PVC13	PVC13	PVC15
	50S	PVC18	PVC14	PVC15	PVC18
	50	PVC21	PVC17	PVC18	PVC21
	63S	PVC23	PVC20	PVC21	PVC23
	63	PVC25	PVC22	PVC23	PVC25
	75S	PVC28	PVC24	PVC24	PVC28
	75	PVC30	PVC26	PVC26	PVC30
	90	PVC32	PVC31	PVC31	PVC32
	100	150-50HST	150-50HST	N.A.	N.A.



Cable Glands

DB Series: Drain, Breather Valves and Unions



093498
Bleed Valve



093486
Combination Drain
and Breather

Compliance Data:

ATEX

Zone 1 & 2 – 21 & 22	ATEX	II 2 GD		
Ex e II	IP 66			

CEC – NEC

Class 1	Zone 1	NEMA 4X		
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Operating Temperature:

-50°C to + 85°C				



CABLE GLANDS

Cable Glands

DB Series: Drain and Breather Valves

Zone 1 & 2 – 21 & 22

⊕ II 2 GD Ex e II

IP66

Applications

Flameproof Bleed Valve:

- Used to drain condensation from inside enclosures and boxes.

Increased Safety Breather Drain:

- Ensures that the condensation is evacuated from the lower section of the enclosures and limits the "pumping" effect in the upper section.

Standard Materials

- Bleed valve: Nickel plated brass.
- Breather/Drain: Polyamide, brass or stainless steel.

Catalog Number Logic:

DB
↓
Series:
DB = DB Series
Zone 1, 2, 21 and 22
ATEX

X
↓
Rating:
D = Ex d
E = Ex e

XX
↓
Size:
20 = M20

XX
↓
Material:
P = Polyamide
B = Brass
S = Stainless Steel
NB = Nickel plated brass

Ordering Information:



Flameproof Bleed Valve

Metric Thread	Material	Weight (Kg)	Volume (dm3)	Catalog Number	Old Catalog Number	Pack
M20	Nickel plated brass	0.1	0.6	DBD20NB	093498	1

To be used only with our range of flameproof enclosure. The ATEX certification is included in our Exd enclosure's certification.



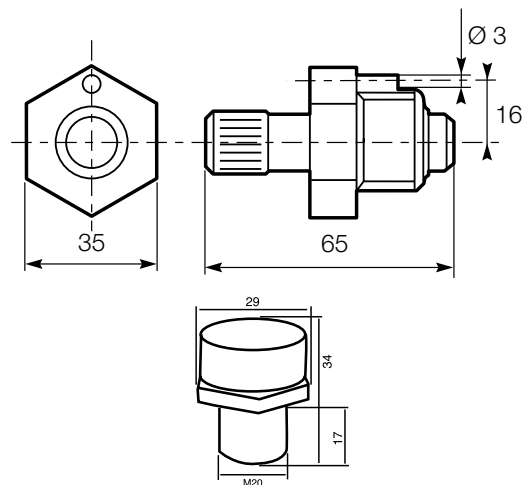
Increased Safety Combination Drain and Breather

Metric Thread	Material	Weight (Kg)	Volume (dm3)	Catalog Number	Old Catalog Number	Pack
M20	Polyamide	0.2	0.6	DBE20P	093486	1
M20	Brass	0.2	0.6	DBE20B	093487	1
M20	Stainless steel	0.2	0.6	DBE20S	093488	1

Compliances:

Hazardous Area	Gas	Dust
Certification Type	DP - E	
Zones	1-2	21-22
Conforming to ATEX	0518⊕II 2 G	0518⊕II 2 D
Symbol of Protection ATEX	Ex e II	-
Service Temperature	-50°C to + 85°C	
Declaration of Conformity	5C225	
ATEX Certificate	SIRA 99 ATEX 3050U	
Other Certifications	GOST - CSA	
Index of Protection	IP66 - NEMA 4X	
Impact Resistance (shock)	-	

Dimensions



Cable Glands

DB Series: Fire Retardant Seal and IIC Elbows



500147
3/4" Fire Retardant Seal



500054
Female/Female Elbow

Compliance Data:

ATEX



Zone 1 & 2 - 21 & 22	ATEX	II 2 GD		
Ex d IIC	Ex tD A21	1P66/67		

Operating Temperature

-20°C to +80°C (For Fire Retardant Unions)	-55°C to +150°C (For Elbows)	
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CABLE GLANDS

Cable Glands

DB Series: Fire Retardant Seal and IIC Elbows

Zone 1 & 2 - 21 & 22

Ex II 2 GD

Ex d IIC

Applications: Fire Retardant Seal

- Used to prevent passage of gasses, vapors or flames from one portion of a conduit system to another.

Standard Materials

- Aluminum

Applications: IIC Elbows

- Used to connect two lengths of conduits.

Standard Materials

- Aluminum.

Aluminum Fire-Retardant Seal

Female/Female



500147

Tapered Thread (NPT)	Dimensions				Weight (Kg)	Volume (dm ³)	Catalog Number	Pack
	A	B	B1	R				
1/2"	77	57	-	43	0.13	2.3	500146	1
3/4"	87	67	-	50	0.19	3.2	500147	1
1"	105	83	-	62	0.32	3.2	500148	1
1-1/4"	130	84	-	56	0.6	3.2	500149	1
1-1/2"	130	84	-	56	0.6	4	500150	1
2"	140	95	-	63	0.65	7.6	500151	1
2-1/2"	175	113	-	74	1.26	7.6	500152	1
3"	190	-	135	92	1.33	7.6	500153	1

Fire Retardant Resin

Description	Weight (Kg)	Volume (dm ³)	Catalog Number	Pack
1 Kg pot + 250 g of catalyst	1.5	3.2	500154	1
Fire retardant fiber (1 Kg bog)	8	500155	1	

Aluminum Elbows

Female/Female



500054

Tapered Thread (NPT)	Dimensions				Weight (Kg)	Volume (dm ³)	Catalog Number	Pack
	A	B	B1	R				
1/2"	73	57	-		0.125	0.12	500054	1
3/4"	73	67	-		0.1	0.12	500055	1
1"	92	83	-		0.2	0.23	500056	1
1-1/4"	115	84	-		0.4	0.5	500057	1
1-1/2"	115	84	-		0.6	0.5	500058	1
3"	185	95	-		0.5	2	500059	1

Fire Retardant Unions

Compliances:

Hazardous Area	Gas	Dust
Certification Type	EYS	
Zones	1-2	21-22
Conforming to ATEX	0722 Ex II 2 G	0722 Ex II 2 D
Symbol of Protection ATEX	Ex d IIC	Ex ID A21
Service Temperature	-20°C to + 80°C	
Declaration of Conformity	50268	
ATEX Certificate	CESI 03 ATEX 085	
Other Certifications	-	
Index of Protection	IP66	
Impact Resistance (shock)	-	

Standards:

Ex Standards	EN 60079-0; 60079-1; 61241-0; 61241-1
Product Standards	-
EMC Standards	-
Other Standards	EN 60529 (IP)

IIC Elbows

Compliances:

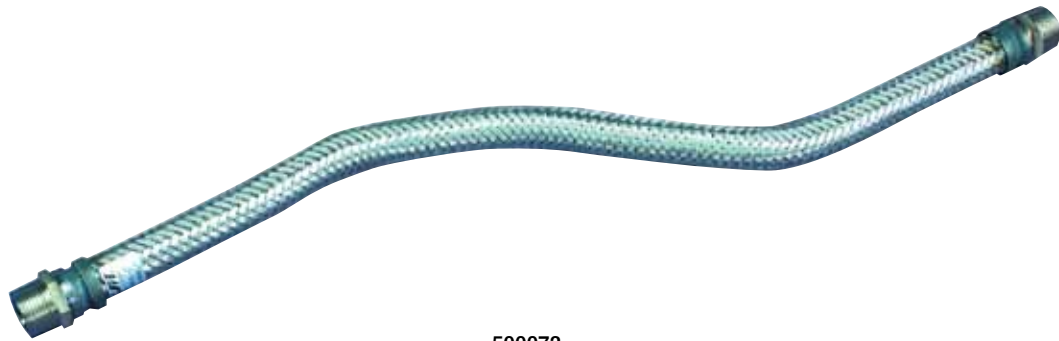
Hazardous Area	Gas	Dust
Certification Type	ELF	
Zones	1-2	21-22
Conforming to ATEX	0722 Ex II 2 G	0722 Ex II 2 D
Symbol of Protection ATEX	Ex d IIC	Ex ID A21
Service Temperature	-55°C to + 150°C	
Declaration of Conformity	5C223	
ATEX Certificate	CESI 01 ATEX 104U	
Other Certifications	-	
Index of Protection	IP66/67	
Impact Resistance (shock)	-	

Standards:

Ex Standards	EN 60079-1; 60079-1; 61241-0; 61241-1
Product Standards	-
EMC Standards	-
Other Standards	EN 60529 (IP)

Cable Glands

DB Series: IIC Flexible Couplings



500073
Male/Male Flexible Coupling

Compliance Data:

ATEX:



Zone 1 & 2 - 21 & 22	ATEX	II 2 GD		
Ex d IIC	Ex tD A21	IP66/67		

Operating Temperature:

-20 C to + 150 C				

CABLE GLANDS

Cable Glands

DB Series: IIC Flexible Couplings

Zone 1 & 2 - 21 & 22

⊕ II 2 GD Ex d IIC

IP 66/67

Applications

- Used in areas where vibration and/or movement are a problem.
- Also used in place of rigid conduit in difficult-bend situations.

Standard Materials

- Stainless steel

Ordering Information:

Flexible Couplings - Male/Male

To be used with fire-retardant seals or unions.



500073

Tapered Thread (NPT)	Length (mm)	Weight (Kg)	Volume (dm ³)	Catalog Number	Pack
1/2"	100	0.65	1	500060	1
1/2"	170	0.7	1.75	500061	1
1/2"	250	0.7	2.5	500106	1
1/2"	300	0.75	3	500062	1
1/2"	400	0.8	4	500063	1
1/2"	500	0.85	5	500064	1
1/2"	600	0.9	6	500065	1
1/2"	700	0.95	7	500066	1
1/2"	800	1	8	500067	1
1/2"	900	1.05	9	500068	1
1/2"	1000	1.1	10	500069	1
3/4"	300	0.75	3	500070	1
3/4"	400	0.8	1	500071	1
3/4"	500	0.85	5	500072	1
3/4"	600	0.9	6	500073	1
3/4"	700	0.95	7	500074	1
3/4"	800	1	8	500075	1
3/4"	900	1.05	9	500076	1
3/4"	1000	1.1	10	500077	1
1"	300	0.75	3	500078	1
1"	400	0.8	1	500079	1
1"	500	0.85	5	500080	1
1"	600	0.9	6	500081	1
1"	700	0.95	7	500082	1
1"	800	1	8	500083	1
1"	900	1.05	9	500084	1
1"	1000	1.1	3	500085	1
1-1/4"	300	0.75	3	500086	1
1-1/4"	400	0.8	3	500087	1
1-1/4"	500	0.85	5	500088	1
1-1/4"	600	0.9	6	500089	1
1-1/4"	700	0.95	7	500090	1
1-1/4"	800	1	8	500091	1
1-1/4"	900	1.05	9	500092	1
1-1/4"	1000	1.1	10	500093	1
1-1/2"	300	0.75	3	500094	1
1-1/2"	400	0.8	1	500095	1
1-1/2"	500	0.85	5	500096	1
1-1/2"	600	0.9	6	500097	1
1-1/2"	700	0.95	7	500098	1

Compliances:

Hazardous Area	Gas	Dust
Certification Type	SPH	
Zones	1-2	21-22
Conforming to ATEX	0722 Ex⊕II 2 G	0722⊕II 2 D
Symbol of Protection ATEX	Ex d IIC	Ex tD A21
Service Temperature	-20°C to + 150°C	
Declaration of Conformity	5C226	
ATEX Certificate	CESI.00 ATEX 048U	
Other Certifications	-	
Index of Protection	IP66/67	
Impact Resistance (shock)	-	

Standards:

Ex Standards	EN 60079-0; 60079-1; 61241-0; 61241-1
Product Standards	EN ISO 10807
EMC Standards	-
Other Standards	EN 60529 (IP)

Cable Glands

DB Series: IIB Unions – Flameproof



500044
Male/Female Zinc Plated



500049
Female/Female Zinc Plated

Compliance Data:



ATEX

Zone 1 & 2 - 21 & 22	ATEX	II 2 GD		
Ex d IIB	Ex tD A21	IP 66/67		

Operating Temperature

-20°C to +60°C				

CABLE GLANDS

Cable Glands

DB Series: IIB Unions – Flameproof

Zone 1 & 2 - 21 & 22

II 2 GD Ex d IIB

IP 66/67

Applications

- To be used with a fire retardant seal fitted directly at the entry to the flameproof housing. Enables connection via rigid or flexible union.

Standard Materials

- Nickel plated steel.

Ordering Information:

Nickel Plated Steel Unions

Male/Female

3-piece flameproof union.



500044

Tapered Thread (NPT)	Weight (Kg)	Volume (dm³)	Catalog Number	Pack
1/2"	0.17	0.12	500044	1
3/4"	0.19	0.12	500045	1
1"	0.3	0.23	500046	1
1-1/4"	0.8	0.5	500047	1
1-1/2"	1	0.5	500048	1



500049

Female/Female

Tapered Thread (NPT)	Weight (Kg)	Volume (dm³)	Catalog Number	Pack
1/2"	0.15	0.12	500049	1
3/4"	0.15	0.12	500050	1
1"	0.23	0.23	500051	1
1-1/4"	0.7	0.5	500052	1
1-1/2"	0.37	0.5	500053	1
3"	0.9	2	500158	1

Compliances:

Hazardous Area	Gas	Dust
Certification Type	BMF - BFF	
Zones	1-2	21-22
Conforming to ATEX	0722 ExⓂII 2 G	0722ⓂII 2 D
Symbol of Protection ATEX	Ex d IIB	Ex tD A21
Service Temperature	-20°C to + 60°C	
Declaration of Conformity	5C232	
ATEX Certificate	CESI 99 ATEX 034U	
Other Certifications	-	
Index of Protection	IP66/67	
Impact Resistance (shock)	-	

Standards:

Ex Standards	EN 60079-0; 60079-1; 61241-0; 61241-1
Product Standards	-
EMC Standards	-
Other Standards	EN 60529 (IP)

Notes:

HAZARDOUS LOCATIONS GUIDE



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OPTIMIZE PRODUCTIVITY OF HAZARDOUS LOCATIONS WITH HIGHLY ENGINEERED ELECTRICAL PRODUCTS.

For over 80 years, Appleton's ATX line of electrical products has been the international choice for hazardous and industrial locations. This comprehensive product line is specifically engineered to the strict requirements these locations demand for safe and efficient operations. Our full range of cable glands is no exception, delivering confidence to electrical connections throughout your facility.

BETTER UNDERSTANDING LEADS TO BETTER CHOICE

Appleton developed the Guide to better inform all persons involved in explosionproof selection, such as designers, procurement departments, engineers, site managers, risk or maintenance managers, authorized bodies controlling the security on site, distributors' sales forces, etc...

APPLETON'S ADVICE FOR INSTALLING ELECTRICAL EQUIPMENT IN AREAS WITH EXPLOSION RISKS

Process for installing electrical equipment in areas with explosion risks.

The manager of the installation is solely responsible for :

- 1- Determine hazardous areas.
- 2- Defining Zone boundaries - volumes.
- 3- If necessary, delimiting Zones.
- 4- Knowing the characteristics of flammable substances present on the site.
- 5- Defining the temperature class and the explosion group of the equipment.
- 6- Choosing equipment depending on :
 - the temperature class and the explosion group,
 - environmental constraints specific to the site - corrosion, exposure to UV, mechanical strength
 - protection indexes.
- 7- Installing equipment.
- 8- Commissioning.
- 9- Checking the installation.

Electrical energy plays an important role in your daily life whether you are involved in studying, designing or implementing installations.

This energy can become a danger to daily life. This can occur when energy is used in any industry or warehouse which stores, processes and manufactures products such as : hydrocarbons, gases, paints, varnishes, glues, resins, perfumes, cleaning products, rubber, textiles, plastics, powders, grains, dusts from various origins... There is thus a high explosion risk with serious consequences for personnel, equipment and the environment. We talk about an atmosphere with an explosion hazard.

WHAT CONDITIONS WILL CREATE AN EXPLOSION ?

Three elements are required :

- 1- Oxygen in the air.
- 2- An inflammable substance, mixed with air. This substance can be :
 - gas (methane, acetylene),
 - liquid (petrol, solvent),
 - solid (sulphur, wood dust, sugar dust, grains dust...).
- 3- An ignition source :
 - with sufficient energy, an electrical arc or a spark,
 - and/or a rise in temperature.

WHAT IS AN EXPLOSIVE ATMOSPHERE ?

An explosive atmosphere results from a mixture of inflammable substances in the form of gas, vapors, mist or dust with air in such proportions that excessive temperature, an electrical arc, spark or any other energy ignition source produces an explosion.

WHAT IS A POTENTIALLY EXPLOSIVE ATMOSPHERE ?

An atmosphere is defined as potentially explosive when its usual composition is not explosive, but due to unforeseen circumstances, it can vary to such an extent that it becomes explosive (the danger exists as a potential state). Foreseeable circumstances are as follows :

- various stages of a manufacturing process,
- incidents or accidents (rupture of a pipe-line, leak, supply loss),
- meteorological conditions (high ambient temperature, air movements).

WHAT IS MINIMUM IGNITION ENERGY ?

The minimum quantity of energy which must be introduced locally (in the form of a flame, spark, shock, friction, etc) to cause ignition of an explosive atmosphere. The majority of industrial ignition sources contain much higher energy levels than this minimum ignition energy, which is always low (from tens of microjoules for gas and vapors to hundreds of millijoules for dusts).

WHAT IS THE SELF-IGNITION TEMPERATURE ?

The self-ignition temperature or spontaneous ignition temperature is the minimum temperature at which an explosive atmosphere can spontaneously ignite. The energy required to start a flame can be changed to thermal form by an increase in the temperature of the mixture.

WHAT IS THE EXPLOSIVE LIMIT OF AN INFLAMMABLE PRODUCT ?

The ignition of a product depends on its concentration in the air. It can be produced within a range between two limits :

- 1- lower explosive limit (LEL) of a gas, vapor or dust in the air is the minimum concentration above which the mixture could ignite.
- 2- upper explosive limit (UEL) of a gas, vapor or dust is the maximum concentration under which the mixture could ignite.

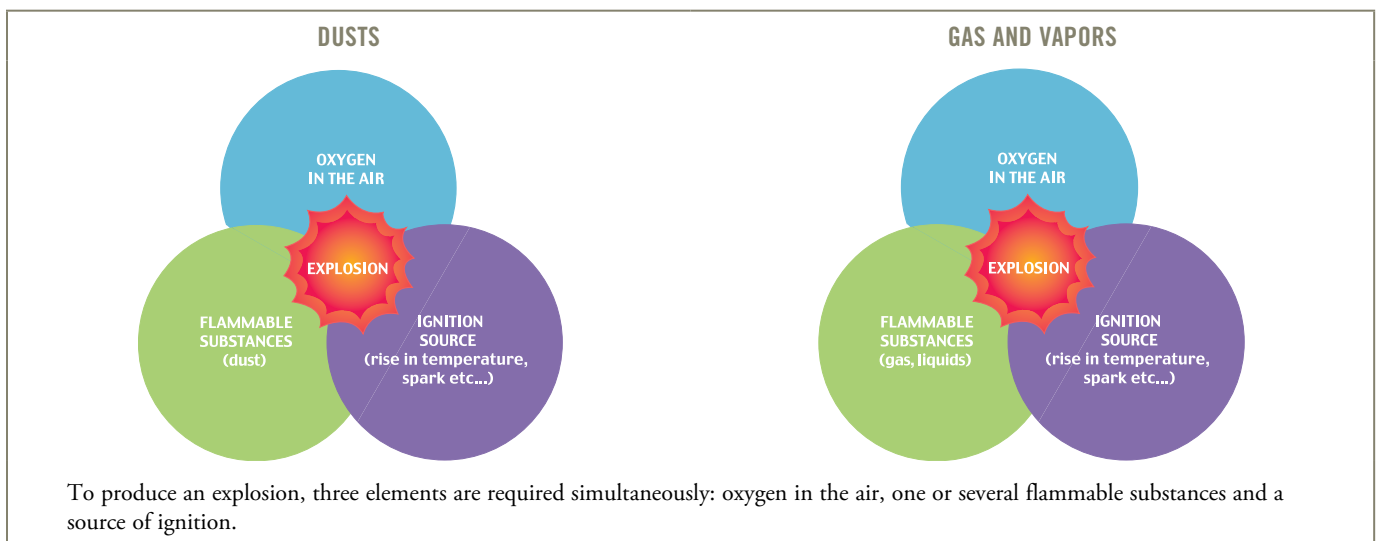
WHAT IS THE FLASH POINT OF A LIQUID ?

The flash point is the minimum temperature at which an inflammable liquid emits sufficient vapors to reach the LEL in the gaseous phase in equilibrium with the explosive atmosphere.

WHAT TYPES OF SUBSTANCES, GASES, LIQUIDS OR VAPORS CAN PRODUCE AN EXPLOSION ? IN GENERAL, THESE ARE :

- heating gas,
- hydrocarbons,
- glue and adhesive solvents,
- varnishes and resins,
- manufacturing additives for pharmaceutical products, artificial dyes, aromas and perfumes,
- manufacturing agents for the following materials : plastics, rubbers, man-made textiles and chemical cleaning products,
- products used in the treatment and manufacturing of alcohols and derivatives...

> *Gas and Vapor Classification : see pages G:24-25.*



HAZARDOUS ATMOSPHERES

WHAT TYPES OF DUSTS CAN PRODUCE AN EXPLOSION ?

Organic and metallic products which create powder and dust form can also in certain conditions become active agents of an explosion.

These are powders and dust of :

- magnesium,
- aluminium,
- sulphur,
- cellulose,
- corn starch,
- epoxy resins,
- polystyrenes,
- dust of plastic,
- coal,
- wood,
- medick,
- sugar (icing sugar),
- corn (flour)...

> *Dust classification* : See pages G:28-29.



OFFSHORE SITE
(APPLETON LIGHTING FIXTURES ON TOTAL GIRASSOL PLATFORM)

WHERE MAY EXPLOSIVE ATMOSPHERE FORM ?

Any location where these products are made, stored, and processed may contain a potentially explosive atmosphere.

> *Substances that may form explosive atmospheres* : see pages G:21-23.

WHO KNOWS ?

Local authority who delivers operating permits, "bodies" such as firemen, inspectors from insurance companies are normally aware of the risks of explosion.

CHARACTERISTICS OF FLAMMABLE GAS/VAPORS EXAMPLES

GAS/VAPOR	BOILING TEMPERATURE	FLASH POINT	SELF-IGNITION TEMPERATURE	LEL-UEL (% OF THE MIXTURE WITH AIR)
Benzene	80 °C	-11 °C	498 °C	1,3 - 7,9 %
Ammonia - 33 °C	- 33 °C	gaz	650	15 - 28 %
Methane - 162 °C	- 162 °C	gaz	535	5 - 15 %
Butane	2 °C	gaz	287 °C	1,8 - 8,4 %
Pentane	36 °C	<- 40 °C	260 °C	1,5 - 7,8 %
Octane	126 °C	13 °C	260 °C	1 - 6,5 %

CHARACTERISTICS OF FLAMMABLE DUSTS EXAMPLES

DUSTS	SIZE OF PARTICLES	SELF-IGNITION TEMPERATURE	MINIMAL CONCENTRATION (g/μ3)
Acetylsalicylic acid	400μ	550 °C	60
Ascorbic acid	39μ	490 °C	60
Paracetamol	120μ	—	30
Extract of rosemary	30μ	380 °C	30
Powder of Valerian	78μ	—	100

Following informations are given just as an example to explain the French rules on those subjects : please identify in your country the equivalent and remember, if there is no rule, that gas, vapor and dust have no nationality : the way to explode or protect yourselves are the same everywhere.

Using the description for installations classified for protection of the environment in France, in accordance with the decree of May 20, 1953, modified on December 28, 1999.

Non-exhaustive list extracted from the typical orders for which installations requiring a declaration should satisfy the provisions of the ministerial order of March 31, 1980.

Decree relating to electrical installations in establishments regulated under the legislation governing installations classified as likely to present a risk of explosion.

Many countries produce similar documents.

PREMISES OR LOCATION
Alcohols (production by distillation)
Batteries (charging workshops)
Acetylene (storage or use of)
Acetylene (manufacture of)
Use or storage of toxic substances or preparation
Acids (use or storage of)
Steeping lighters (deposits of)
Flammable amines, storage
Workshops for repair and servicing of motor vehicles
Wood or similar combustible materials (workshops where these are worked on)
Wood, paper, cardboard or similar combustible materials (deposits of)
Candles or other wax objects, etc. (moulding of)
Grinding, crushing, etc., of vegetable substances and all organic products
Polymer processing
Easily flammable solids
Charcoal (deposits or warehouses of)
Heating (processes)
Shoes or leather/skin products (manufacture of)
Oxidising substances (manufacture, use, storage of)
Detergent (manufacture of products)
Fibres of vegetable or animal origin, artificial or synthetic fibres (processing of)
Fruit or vegetables (ripening, degreening, whitening, disinfestation rooms)
Gasometers and compressed gas tanks
Liquefied fuel gases (filling stations, or distribution of)
Tar, pitch, resins, etc. (mixture or hot processing of)
Coal, coke, etc (warehouses and deposits of)
Vegetable oils (extraction of)
Gaseous hydrogen (storage, use of)
Flammable liquids (storage and manufactured tank of)
Flammable liquids (installations for blending, processing or use of)
Flammable liquids (filling or distribution stations)
Leather goods (workshops)
Plastics, plastomers or elastomers (manufacture of)
Ammonium nitrate (deposits of)
Blended ammonium nitrate (deposits of)
Processing of vegetable fibres
Liquid oxygen (deposits of)
Covered car parks
Organic peroxides (use, manufacture, storage of)
Refrigeration or compression (installations)
Sugar factories, sugar refineries, malt houses
Silos and storage installations for cereals, grain, food products or any organic products releasing flammable dust
Textile dyeing and printing
Fabrics, knitted articles, tulle, guipure lace, etc (manufacturing workshops)
Varnishes, paints, primers, glues, rendering (application, baking, drying of)

MAIN STANDARDS THROUGHOUT THE WORLD

The worldwide electrotechnical standard for electrical equipment for explosive atmospheres is covered by two major "standards" :

- 1- IEC/ATEX/CENELEC (common standard following agreement in 1991 on procedures for developing standards)
IEC : International Electrotechnical Commission
ATEX : ATmospheres EXplosibles
CENELEC : European Committee of Electrotechnical Standards
- 2- NEC, CEC (products approved by UL, FM, CSA...)
NEC : National Electrical Code
CEC : Canadian Electrical Code

Products which conform to IEC/ATEX/CENELEC or NEC standards have identical protection, even though they are designed differently to meet specific installation regulations.

IEC can be considered as the "international standard" accepted in nearly every country.

Since 1996, NEC, Article 505, uses the IEC names of gas groups, equipment temperature classes and area definitions.

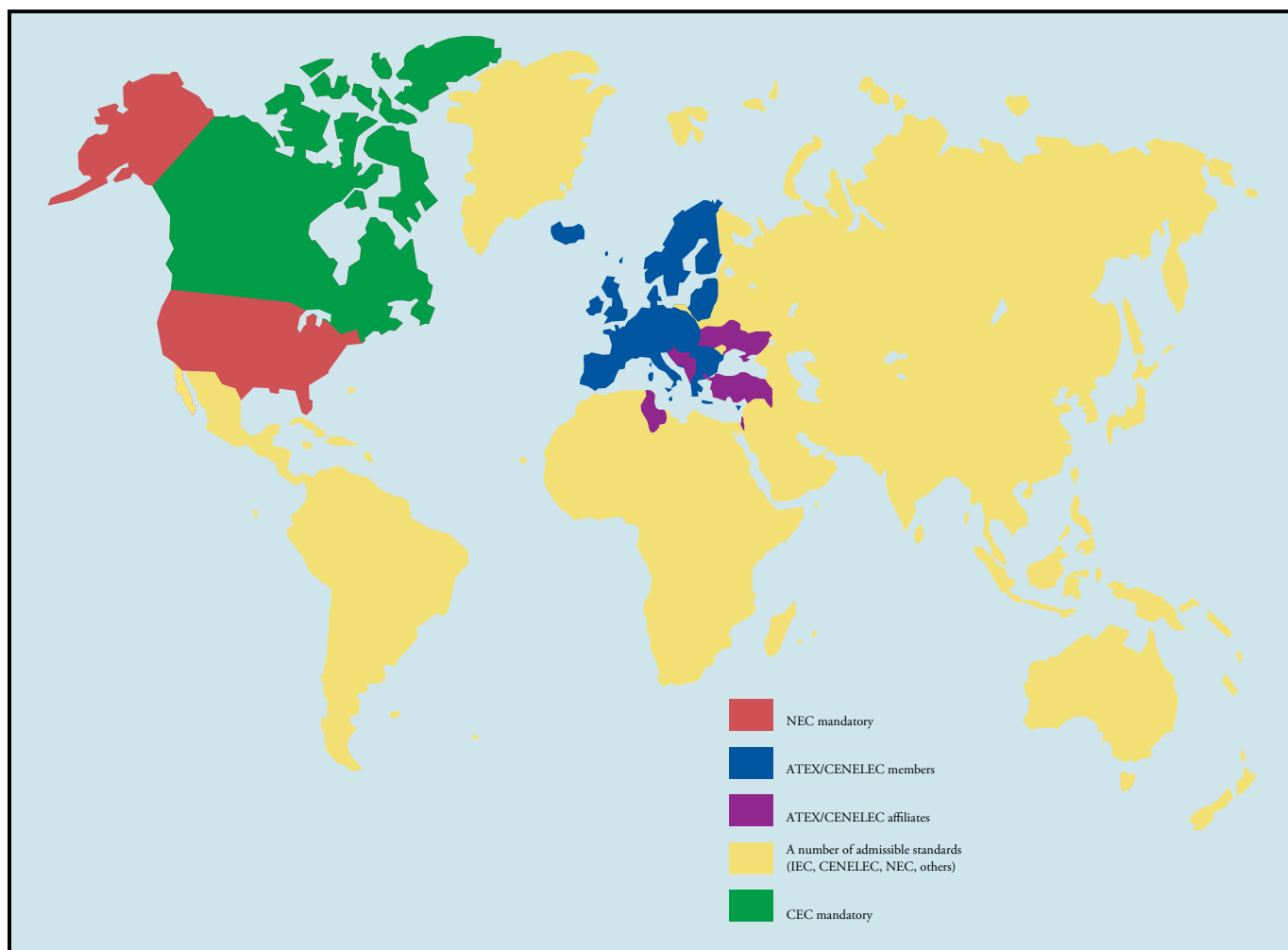
> To obtain more detailed information, contact the national laboratories : LCIE, INERIS , PTB, DEMKO, CSA, UL, KEMA, DNV, LOM.....

IECEX

The aim of the IECEX Scheme is to facilitate international trade in electrical equipment intended for use in explosive atmospheres (Ex equipment) by eliminating the need for multiple national certification while preserving an appropriate level of safety.

The IEC Ex Scheme provides the means for manufacturers of EX equipment to obtain certificates of conformity that will be accepted at national level in all participating countries. A certificate of conformity may be obtained from any certification body accepted in the Scheme. The certificate will attest that the equipment design conforms to the relevant IEC standards and that the product is manufactured under a quality plan assessed by an Accepted Certification Body. Manufacturers holding certificates of conformity may affix the IECEX Mark of Conformity to equipment that they have verified as complying with the certified design.

An application for a country to participate in the IECEX Scheme is made on a standard by standard basis by the candidate Member Body of the IECEX Scheme for that country. The application is made to the Secretary of the Ex Management Committee. There are currently 17 Accepted Certification Bodies (ACBs) in 22 countries participating in the IECEX Scheme.



INTERNATIONAL ELECTROTECHNICAL COMMISSION

(www.iec.ch)

The IEC (International Electrotechnical Commission), created in 1904 in Geneva (Switzerland) establish the IEC regulations.

In 1947, with the creation of the International Standards Organization (ISO) by the United Nations, the IEC became responsible for the organization of the electrical division, while still remaining independent.

The IEC has defined three categories of hazardous Zones (see page G:11):

- Zone 0 : the explosive atmosphere is continuously present.
- Zone 1 : the explosive atmosphere is often present.
- Zone 2 : the explosive atmosphere may accidentally be present.

GAS AND VAPOR CLASSIFICATION

GROUP		GAS OR VAPOR
IEC	NEC (NORTH AMERICA)	
II C	A	Acetylene
II C	B	Hydrogen
II B	C	Ethylene
II B	C	Ethyl ether
II B	C	Cyclopropane
II B	C	Butadiene 1-3
II A	D	Propane
II A	D	Ethane
II A	D	Butane
II A	D	Benzène
II A	D	Pentane
II A	D	Heptane
II A	D	Acetone
II A	D	Methyl Ethyl
II A	D	Methyl Alcohol
II A	D	Ethyl Alcohol

EQUIPMENT TYPES IEC, EN, UL CORRESPONDENCES

EQUIPMENT	IEC	CENELEC	UL (NEC)
Fixed luminaires for general use	<ul style="list-style-type: none"> • IEC 60079-0 • IEC 60079-1 and/or 60079-7 • IEC 60598-1 	<ul style="list-style-type: none"> • EN 60079-0 • EN 60079-1 and/or 60079-7 • EN 60598-1 	• UL 844
Portable equipment			• UL 844
Floodlights and lamps			• UL 781
Luminaires with fluorescent lamps			• UL 844
Luminaires with incandescent lamps			• UL 1570
Power outlets	<ul style="list-style-type: none"> • IEC 60079-0 • IEC 60079-1 and/or 60079-7 • IEC 60309-1 (IEC 60309-2) 	<ul style="list-style-type: none"> • EN 60079-0 • EN 60079-1 and/or 60079-7 • EN 60309-1 (EN 60309-2) 	<ul style="list-style-type: none"> • UL 1010 • UL 1682
Switches	<ul style="list-style-type: none"> • IEC 60079-0 • IEC 60079-1 and/or 60079-7 • IEC 60947-1 • IEC 60947-3 	<ul style="list-style-type: none"> • EN 60079-0 • EN 60079-1 and/or 60079-7 • EN 60947-1 • EN 60947-3 	<ul style="list-style-type: none"> • UL 508 • UL 98 • UL 1087 • UL 894

GAS AND VAPOR CLASSIFICATION

Gases are divided into four groups by the CEC and the NEC (with some additional gases).

The IEC also defines different groups of gases and vapors.

The IEC and North American groups are viewed as fundamentally the same, apart from the fact that there are three groups in the IEC and four for the NEC (see table below).

TEMPERATURE CLASSIFICATION

IEC defined a temperature classification for materials used in hazardous areas.

Following this, CEC and NEC have also been modified to include a temperature classification.

(see table below).

TEMPERATURE CLASSIFICATION

TEMPERATURES IN °C	CLASSIFICATION	
	IEC	NEC (NORTH AMERICA)
450	T1	T1
300	T2	T2
280	T2	T2A
260	T2	T2B
230	T2	T2C
215	T2	T2D
200	T3	T3
180	T3	T3A
165	T3	T3B
160	T3	T3C
135	T4	T4
120	T4	T4A
100	T5	T5
85	T6	T6

Group 1 - underground working mine

Group 2 - surface industry

IEC/CENELEC/NEC COMPARISON

INFLAMMABLE MATERIAL	IEC/CENELEC				NEC		
	PROTECTION	ZONE	GROUP	SUBDIVISION	CLASS	DIVISION	GROUP
GASES AND VAPORS							
Acetylene	d - e	1,2	II	C	I	1 - 2	A
Hydrogen	d - e	1,2	II	C	I	1 - 2	B
Propylene Oxide Ethyl oxide Butadiene	d - e	1,2	II	B	I	1 - 2	B
Cyclopropane Ethyl Ether Ethylene	d - e	1,2	II	B	I	1 - 2	C
Acetone Benzene Butane Propane Hexane Paint Solvents Natural Gas	d - e	1,2	II	A	I	1 - 2	D

INFLAMMABLE MATERIAL	IEC/CENELEC		NEC		
	PROTECTION	ZONE	CLASS	DIVISION	GROUP
COMBUSTIBLE DUSTS					
Magnesium Aluminium or metallic dusts with $R \leq 105 \text{ Ohms} \times \text{cm}$	IEC / CENELEC / NEC Comparison		II	1	E
Coal	D/DIP	21-22	II	1	F
Floor Non metallic dusts with $R > 105 \text{ Ohms} \times \text{cm}$	D/DIP	21-22	II	2	G
FIBERS AND FLYINGS					
Rayon Cotton Linen Wood Hemp Flax bast Tow Coconut fiber Oakum	IEC / CENELEC / NEC Comparison		III	1 - 2(1)	

(1) Division 1 : manufacturing location
Division 2 : storage location

TWO EUROPEAN DIRECTIVES

On July 1, 2003, two important European directives concerning electrical equipment for potentially explosive atmospheres, introducing part of the new approach, came into force :

- Directive 94/9 CE concerns more specifically manufacturers who are obliged to offer their customers ATEX products from June 30, 2003 onwards.
- Directive 99/92 CE concerns all users (specifiers, investors, contractors, OEMs or distributors) of equipment for potentially explosive atmospheres.

Both of these result from articles 100 A and 118 A of the Treaty of Rome (1957).

1- DIRECTIVE 94/9 EC

Directive 94/9 EC defines the minimum requirements aimed at improving protection, in terms of health and safety, for workers likely to be exposed to risks of potentially explosive atmospheres.

It also defines the equipment capable of ensuring the desired safety and the resources to be employed in selecting, installing, using and maintaining this equipment.

This specifies safety requirements for both electrical and non-electrical equipment, designed for use in hazardous locations as a result of the presence of gas or dust.

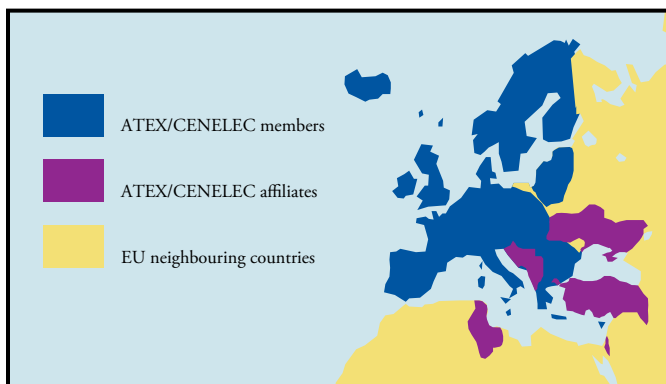
As of July 1, 2003, all electrical equipment for potentially explosive atmospheres sold within the European area must have ATEX certification, as a result, they must bear the standard ATEX marking on the product certification plate, in accordance with the new European classification of products.

2- DIRECTIVE 99/92 EC

From July 1, 2003, it is mandatory to comply with the minimum safety regulations described in the directives which need to be followed routinely in hazardous locations.

The obligations on the employer or site manager are mainly :

- risks of explosion analysis; identification, assessment and record keeping (article 8),
- classification of hazardous areas (or Zones),
- training of workers,
- validation of the conformity of the installation,
- procedure for maintenance of the installation,
- procedure in case of Alert and Evaluation.



ATEX EQUIPMENT CLASSIFICATION

Directive 94/9 CE defines a new of hazardous Zones, with a distinction between gas (G) or dust (D) atmospheres. As a result, it introduces the existence of Zones 20, 21 and 22 corresponding to dust environments and the concept of categories 1, 2 and 3 for equipment.

ATEX PRODUCT MARKING

As of July 1, 2003, all electrical equipment for potentially explosive atmospheres sold within the European area must have "ATEX" certification and, as a result, bear the standard ATEX marking on the product nameplate, in accordance with the new European product classification.

ATEX CLASSIFICATION


ZONES	0	20	1	21	2	22
TYPE OF ATMOSPHERE	G	D	G	D	G	D
Potentially explosive atmosphere	Continuous presence		Intermittent presence		Occasional presence	
Equipment category	1		2		3	




CHARACTERISTICS OF PRODUCT MARKINGS (FOR EXAMPLE, FLUORESCENT CAT. NO FEB236BUSN)

ENVIRONMENT	GAS	DUST
Marking	CE 0081 II2G	CE 0081 II2D
ATEX/IEC marking	Ex de IIC	Ex tD A 21 T 75 °C
Temperature class	T4 or T5	
EC type-examination certificate	LCIE 07 ATEX 6017	
IEC certificate	IECEX LCI 04.0017	
Ambient temperature	-40°C ≤ Ta ≤ 55 °C	
Protection index	IP66/67 / IK10	

EXAMPLES OF MARKING

LABEL FOR "e" FLUORESCENT LAMP CAT. NO. FEB236BUSN

 Appleton ® A.T.X. ®	Type FLe	FEB236BUSN
Amiens - FRANCE	LCIE 07 ATEX 6017	(091655) - (096555)
CE 0081 II 2 GD	Ex de IIC T4 - Ex tD A21 IP66/67	-40°C ≤ Ta ≤ +55°C
	IECEX LCI 04.0017 imax=0.65A	T = 75 °C

E.O.L Approved	110 / 254V +/-10% 0-50-60Hz G13/Fa6		T5 (-40°C ≤ Ta ≤ +40°C)
  IK10	AVERTISSEMENT - WARNING APRES MISE HORS TENSION, ATTENDRE 60 MINUTES AVANT L'OUVERTURE (Uniquement pour Zone poussière) AFTER DE-ENERGIZING, WAIT 60 MINUTES BEFORE OPENING (only for dust areas)		

WHAT IS SAID IN OFFICIAL TEXTS ?

The IEC international regulation (standard IEC/EN 60079/10) makes a distinction between the following hazardous Zones :

- Zone 0,
- Zone 1,
- Zone 2.

THREE TYPES OF ZONE

Since July 1, 2003, with the new Directives ATEX, there are three types of Zone :

- Zone 0 - 20,
- Zone 1 - 21,
- Zone 2 - 22.

ZONE 0 - 20

Zone in which an explosive mixture of gas, vapor or dust is continuously present (the gaseous phase inside a receptacle or a closed-off chamber constitutes a Zone "0").

ZONE 1 - 21

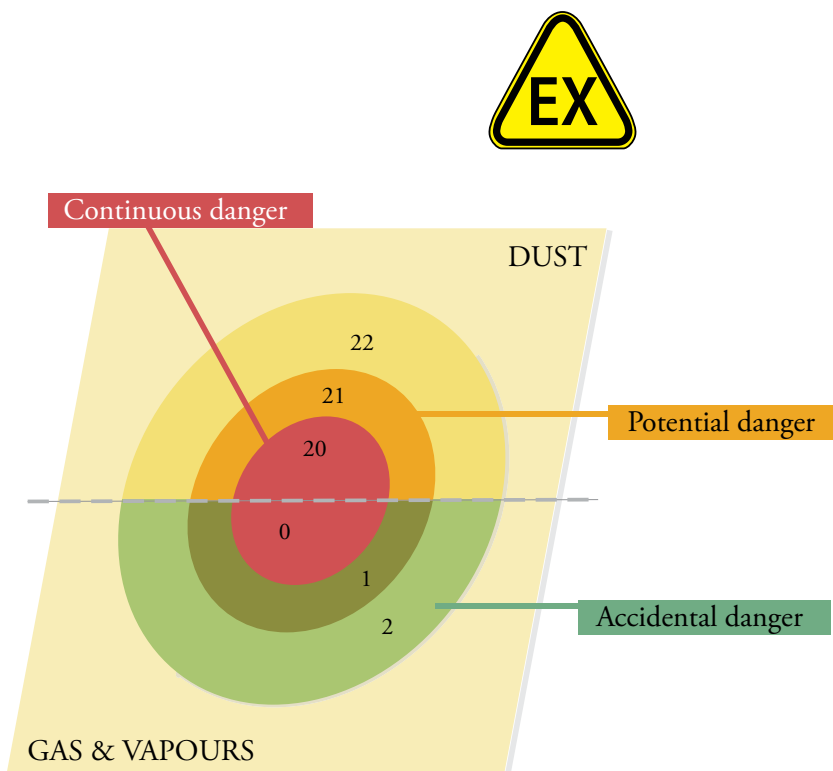
Zone in which an explosive mixture of gas, vapor or dust is likely to occur during normal operation.

ZONE 2 - 22

Zone in which an explosive mixture is not likely to occur in normal operation, and if it occurs will only exist for a short time (leaks or negligent use).

FRONTIERS BETWEEN ZONES

These Zones are geographic, but the frontiers between them are never precisely determined, because a Zone can move for several reasons : product warm-up, faulty ventilation of the room, climate variations, handling mistake, air movement.

THE THREE TYPES OF ZONE

DEFINING HAZARDOUS AREAS FOR GAS AND VAPORS

HOW TO DETERMINE THE ZONES ?

The plant manager or his employees, controlled by external accredited advisers, are the only people authorized to determine hazardous areas in a location where gas and vapor are present.

To determine these Zones, 4 essential questions have to be solved.

1- WHAT IS THE EMISSION LEVEL OF MY RELEASE SOURCE ?

These are the emission points of inflammable substances into the atmosphere.

Three levels of release source can be distinguished :

1- CONTINUOUS EMISSION LEVEL.

The release source is the surface of an inflammable liquid :

- In an enclosed receptacle,
- In an open receptacle,
- Inside enclosed manufacturing or mixing equipment.

2- FIRST LEVEL EMISSION.

Release during normal operation. The main release sources are the following :

- Open manufacturing or mixing equipment,
- Vents on enclosed receptacles,
- Hydraulic guard venting holes,
- Extremities of articulated loading arms for tankers and containers,
- Apparatus loading bungs and emptying valves,
- Sampling and venting valves,
- Pump and compressor gaskets, where leaks persist (example: cable gland operating leaks),
- Non-watertight switches and conduits.

2- SECOND LEVEL EMISSION.

Release during abnormal operation. The main release sources are the following :

- Flanges, connections, vents and pipe joints,
- Glass inspection holes or level indicators,
- Gaskets in pumps or compressors, designed to prevent leaks,
- Fragile apparatus such as glass, ceramic, graphite, etc...,
- Breathing holes in pressure reduction valve membranes,
- Retaining sumps.

2- WHAT TYPE OF OPENING DO I HAVE ?

All openings (doors, windows, ventilation outlets, etc) between two geographical locations should be considered as possible release sources.

The release level depends on the following :

- The type of Zone of the adjoining geographical area,
- The frequency and duration of opening,
- The pressure difference between the geographical areas,
- The effectiveness of the gaskets or joints.

There are 4 types of opening :

1- TYPE A OPENINGS.

- Open passages : conduits, piping through walls, ceilings and floors,
- Fixed ventilation outlets installed in rooms and buildings, opened frequently or for long periods.

2- TYPE B OPENINGS.

- Normally closed (example : automatic closing), rarely open, and difficult to adjust.

3- TYPE C OPENINGS.

- Type B openings, with watertightness in addition to that, equipped with independent automatic closing,
- Two type B opening in series.

4- TYPE D OPENINGS.

- Can only be opened using a special device or in an emergency,
- Completely weatherproof openings,
- Combination of a type B and a type C opening, in series (joined together).

3- WHAT IS THE VENTILATION AVAILABILITY ?

The efficiency of ventilation in dispersing or maintaining the explosive atmosphere depends on its quality and level, as well as its design. An artificial ventilation system is therefore :

VERY GOOD

- Operates almost continuously and therefore backed up.

GOOD

- Operated while the site is operating.

POOR

- Does not operate continuously or during normal site operation, it operates without any interruption for long periods.

4- WHAT LEVEL IS THE VENTILATION ?

Evaluation of the ventilation level requires a knowledge of the maximum gas or vapor release rate at the release source, either by controlled tests, by calculation, or by established hypotheses. There are three levels of ventilation :

HIGH

- Ventilation reduces the concentration at the release source and reduces it to a level below the LEL value (lower explosive limit).

AVERAGE

- Ventilation controls the concentration, leading to a stable situation.

WEAK

- Ventilation cannot control the concentration during release and/or cannot prevent the explosive atmosphere continuing after release is over.

APPLETON ADVICE FOR DESIGNING A VENTILATION SYSTEM

Here are the important points to remember for designing a ventilation system * :

- Air for ventilation should be taken from a non hazardous area.
- Artificial ventilation should be controlled and monitored.
- As gases and vapors often have different densities to that of

air, they have a tendency to accumulate where air movement is likely to be reduced.

- Obstacles can reduce the movement of air. Therefore the « topography » of geographical locations should be taken into account (inside and/or outside).

* See standards IEC 60079-10.

DOWNSTREAM EFFECT ON THE DEGREE OF RELEASE OF THE OPENING

PROBABLE ZONES IN UPSTREAM OF THE OPENING	TYPES OF OPENINGS			
	A	B	C	D
Zone 0	Continuous	(Continuous) First	Second	No release
Zone 1	First	(First) Second	(Second) No release	No release
Zone 2	Second	(Second) No release	No release	No release

Note : for the release emission levels between parenthesis, it is advised to consider the opening frequency of the doors when at the design stage.

Continuous emission release usually leads to classification as Zone 0	First level emission release usually leads to classification as Zone 1	Second level emission usually leads to classification as Zone 2
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SUMMARY TABLE FOR GAS AND VAPORS

The table below corresponds to IEC standard 60079-10 which can determine the type of Zone according to three criteria : the release emission level, the ventilation level and the ventilation availability.

RELEASE EMISSION LEVEL	VENTILATION LEVEL						
	WEAK	AVERAGE			HIGH		
	VENTILATION AVAILABILITY						
	GOOD OR VERY GOOD	POOR	POOR GOOD	VERY GOOD	POOR	GOOD	VERY GOOD
CONTINUOUS	Zone 0	Zone 0	Zone 0	Zone 0	Zone 1	Zone 2	Zone 0 (NE)*
		Zone 1	Zone 2				Non-hazardous
FIRST	Zone 0	Zone 1	Zone 1	Zone 1	Zone 2	Zone 2	Zone 1 (NE)*
		Zone 1	Zone 2				Non-hazardous
SECOND	Zone 0	Zone 2	Zone 2	Zone 2	Zone 2	Non-hazardous	Zone 2 (NE)*
							Zone 1



Zones in which "e" increased safety (page G:38) or flameproof "d" (page G:36) material can be installed.
* NE = negligible extent

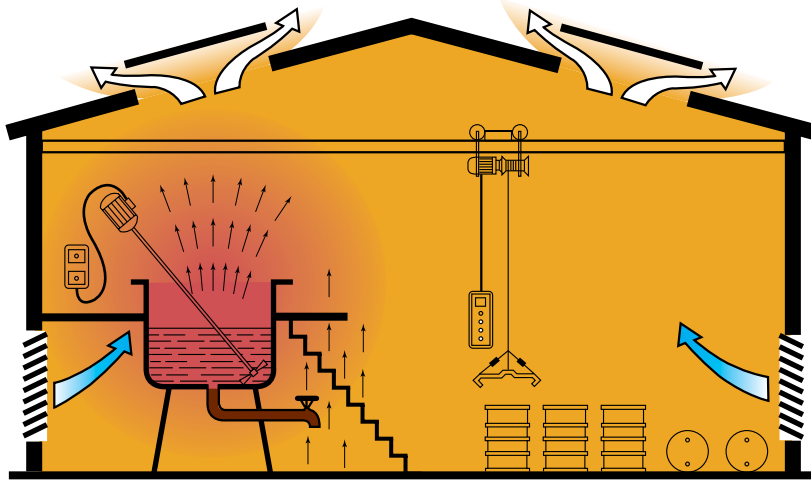
APPLETON ADVICE FOR INSTALLING ELECTRICAL EQUIPMENT IN AREAS WITH EXPLOSION RISKS

Process for installing electrical equipment in areas with explosion risks.

The manager of the installation is solely responsible for :

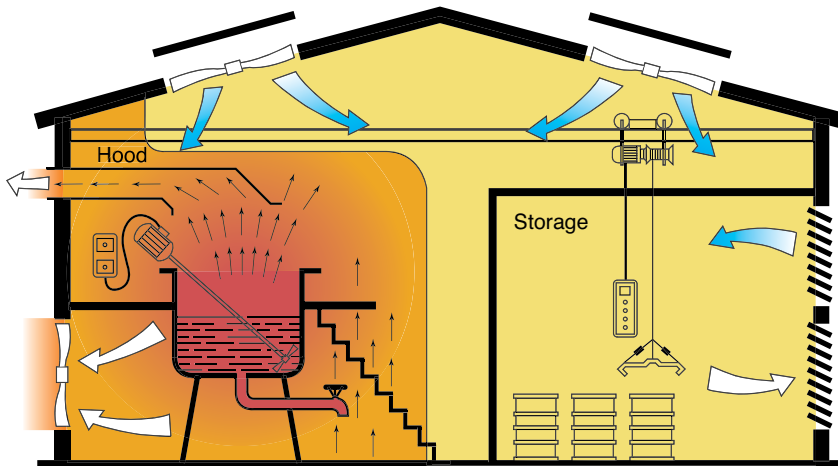
- 1- Determine hazardous areas.
- 2- Defining Zone boundaries - volumes.
- 3- If necessary, delimiting Zones.
- 4- Knowing the characteristics of flammable substances present on the site.
- 5- Defining the temperature class and the explosion group of the equipment.
- 6- Choosing equipment depending on :
 - the temperature class and the explosion group,
 - environmental constraints specific to the site - corrosion, exposure to UV, mechanical strength,
 - protection indexes.
- 7- Installing equipment.
- 8- Commissioning.
- 9- Checking the installation.

MODIFICATIONS OF ZONES RELATED TO APPROPRIATE EQUIPMENT



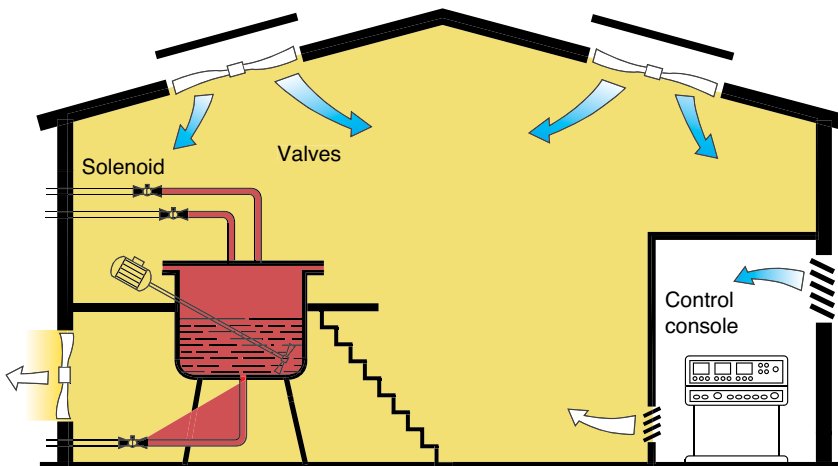
EXAMPLE 1

- The mixing tank is in the open air.
- The room is not ventilated mechanically.
- The products are always present in the workshop.
- All operations are manual.



EXAMPLE 2

- A hood has been fitted above the tank.
- The room is ventilated.
- The products in stock are separated from the rest of the workshop.
- Part of the work is manual.



EXAMPLE 3

- The tank is closed off.
- The room is ventilated mechanically.
- The products are stored outside.
- All operations are controlled via a console outside the Zone.
 - The only risk that remains is when tank is opened for inspection or maintenance.

ZONE 0

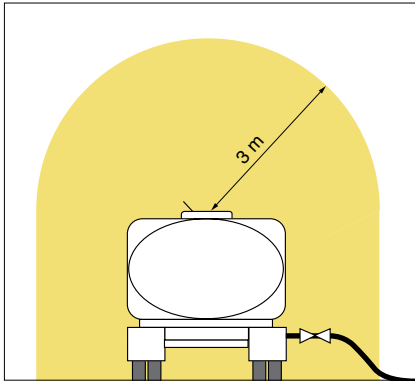
ZONE 1

ZONE 2

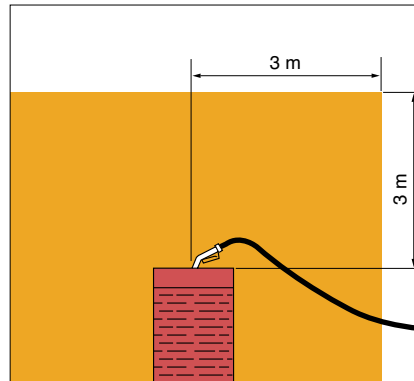
NON-HAZARDOUS ZONE

Definition of Zones : see page G13.

TYPICAL GUIDE FOR LIQUID HYDROCARBON STORAGE



TANKER TRUCK UNLOADING STATION.



MOBILE TANK FILLING DEVICE

COMPULSORY PROTECTION MEASURES

The risk of explosion must be safe guarded by the concurrent use of specific protection measures :

- Internal overpressure in the room,
- Continuous dilution,
- Intake at the source.

The latter two measures are only possible when the maximum discharge flow is known accurately.

Measures must be taken to compensate for a possible failure in the particular measures used :

- Light and/or sound alarm,
- Measures necessary to repair and restart the protection device as quickly as possible,
- Automatic power off device controlled by :
 - A tester that checks that overpressure, dilution or ventilation devices are working correctly,
 - Or an atmosphere tester (fixed explosion meter with continuous operation) that switches power off at a control threshold set to 25% of the LEL (lower explosive limit) if no personnel are present and 10% of the LEL if there are personnel present.

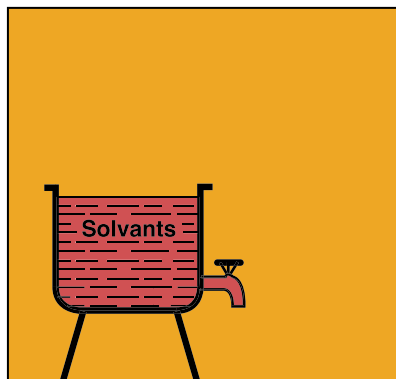
APPLETON ADVICE

The additional measures are difficult and expensive, so that Zone 1 equipment is frequently used over entire sites.

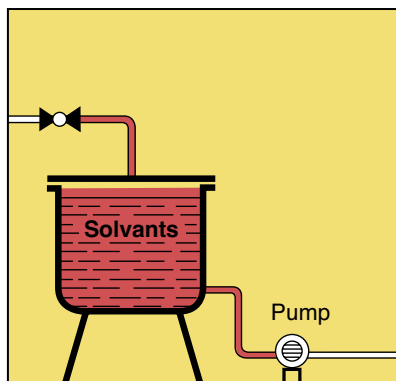
This equipment covers explosion risks at all times, regardless of uncontrollable environmental variations.

This position was adapted by some significant oil companies.

BEFORE PROTECTION



AFTER PROTECTION



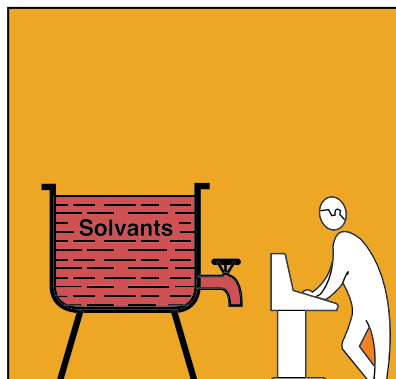
THE WORKSHOP CLASSIFIED AS ZONE 1 BECOMES ZONE 2 BY INSTALLING A CLOSED CIRCUIT PROCESS : USING A CLOSED TANK SUPPLYING REAGENTS AND EMPTYING THE FINISHED PRODUCT VIA PIPING.

PROTECTION BY CLOSED CIRCUIT OPERATION

When this method can be used it is the safest way to limit risks. The explosive atmosphere is confined to the interior of one or several storage receptacles.

The electrical equipment can easily be installed outside.

BEFORE PROTECTION



AFTER PROTECTION



THE CONTROL STATION OF A WORKSHOP CLASSIFIED AS ZONE 1 CAN BE DERATED TO ZONE 2 BY INSTALLING AN OVER-PRESSURE CUBICLE.

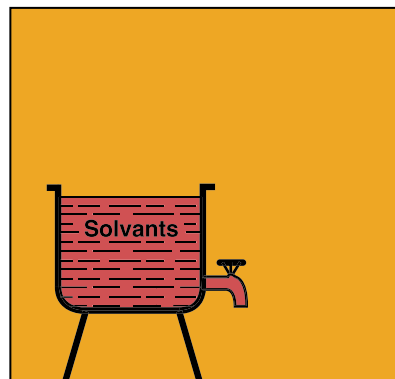
PROTECTION BY OVER-PRESSURE

The entry of inflammable gases or vapors into an enclosure containing ordinary electrical equipment or any other ignition source, is prevented by maintaining, in this enclosure, a gas pressure (usually air) higher than the pressure outside (e.g. in the control room).

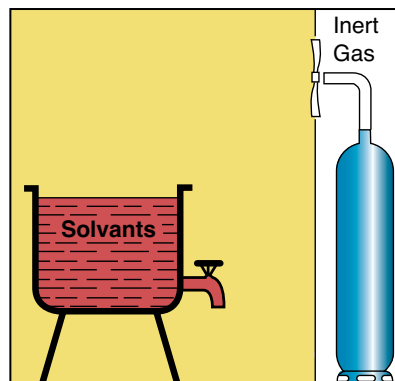
Over-pressure may be static after the initial sweep, the apertures in the enclosure are closed and the air flow provides simple counteraction to natural leaks.

Over-pressure may also be of a dynamic nature : an air-flow is deliberately created across apertures of a chosen cross-section.

BEFORE PROTECTION



AFTER PROTECTION



THE WORKSHOP BECOMES ZONE 2 BY INTRODUCING AN INERT GAS WHICH PREVENTS THE FORMATION OF AN EXPLOSIVE ATMOSPHERE.

PROTECTION BY INERT GAS

By adding an inert gas, the oxygen content of the air in an enclosure is reduced to such a weak value that the atmosphere would no longer be explosive, whatever the concentration of inflammable gases and vapors.

The inert gas generally used is nitrogen, but carbon dioxide is used on some occasions.

ZONE 0

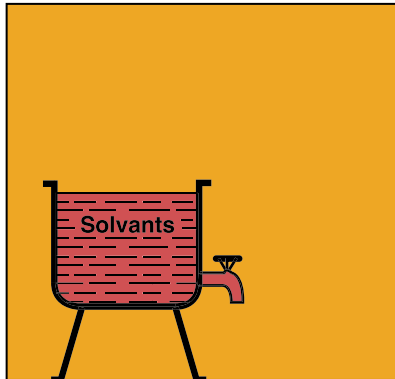
ZONE 1

ZONE 2

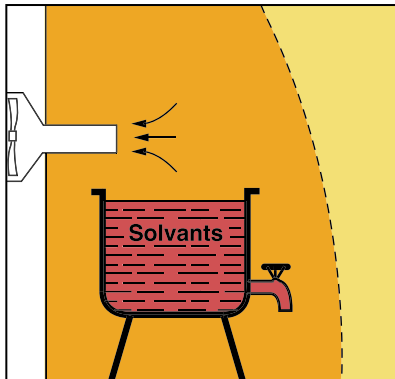
NON-HAZARDOUS ZONE

Definition of Zones : see page G:11.

BEFORE PROTECTION



AFTER PROTECTION



A ZONE 1 CLASSIFIED WORKSHOP BECOMES ZONE 1 (IN PART) AND ZONE 2 (FOR THE REMAINDER) BY INSTALLING A SUCTION DEVICE AT SOURCE.

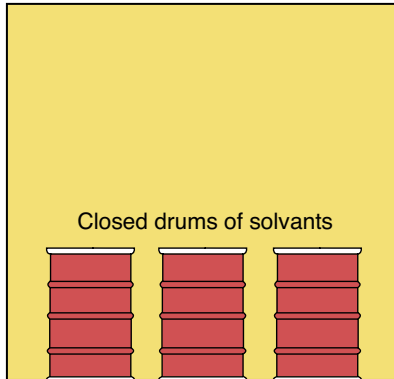
PROTECTION BY SUCTION AT SOURCE

The creation of a localized depression by means of ducting diverts the inflammable gases and vapors to a Zone carrying no risk of explosion when in operation.

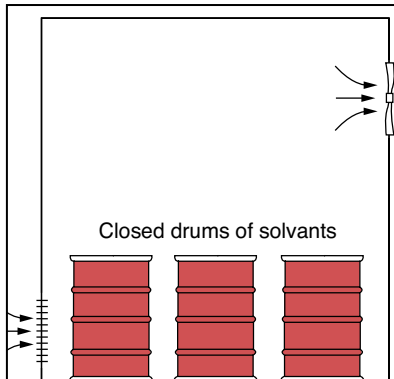
This type of protection is essentially used in workshops where there are few discharge points.

Inside the suction Zone safety type electrical equipment should be used.

BEFORE PROTECTION



AFTER PROTECTION



A ZONE 2 CLASSIFIED WAREHOUSE CAN BECOME A NON HAZARDOUS ZONE BY INSTALLING A VERY GOOD QUALITY GENERAL FORCED VENTILATION SYSTEM.

PROTECTION BY GENERAL SUCTION

The inflammable gas and vapor content is maintained at a level below that of the lower explosive limit in a large Zone by a general suction device.

This type of protection is very delicate to operate because hazardous concentrations of inflammable gases and vapors generally remain at their point of discharge and in dead Zones.

PROTECTION BY UNDER-PRESSURE

The diffusion of inflammable gases or vapors outside an enclosure is prevented by the maintenance therein of a pressure lower than that of the surrounding Zone.

The surrounding Zone, which is not hazardous, can also contain without risk conventional electrical equipment or any other inflammable sources.

PROTECTION BY CONTINUOUS DILUTION

The inflammable gas and vapor content is reduced to a value below that of the lower explosive limit(1) by adding a protective gas which is continuously fed into the required Zone. The protective gas is, in general, air.

** Switch-off threshold set at 25% of the LEL, if personnel are absent and at 10% if personnel are present.*

APPLETON ADVICE

What should be done in order to prevent if possible failure in one of the types of protection ?

These types of protection use equipment that is often very complex (inerting, over-pressure, suction devices, etc), which could malfunction. If a malfunction occurs, the room reverts to its initial classification.

It is therefore necessary, for each device, to define additional safety measures to be taken, to guarantee, in the event of failure, the safety of workers.

For example : the disruption of energy sources (such as electricity, water, inert gas, etc) can cause a failure in the mode of protection. It is therefore necessary to study the room from the start, to provide for built-in backup energy circuits to ensure total safety.

CRITERIA OF SELECTION OF EQUIPMENT

The criteria of selection are the following :

- Gas and vapors classification,
- Protection indexes,
- Protection modes,
- Industrial environment (corrosion).

The table below indicate the equipment groups which can be used depending on the gas and vapor subdivision.

WHICH EQUIPMENT GROUP SHOULD BE CHOSEN ?

This table indicates the equipment groups which can be used depending on the gas and vapor classification (*see page G:19*).

A distinction is made between two groups of electrical equipment :

GROUP I

- Electrical equipment intended for underground work in mines with explosive atmospheres.

GROUP II

- Electrical equipment designed for surface industry.

ELECTRICAL EQUIPMENT WHICH CAN BE USED

GAS/VAPOR SUBDIVISION	EQUIPMENT GROUPS WHICH CAN BE USED		
	INCREASED SAFETY "e"	FLAMEPROOF "d"	ASSOCIATED PROTECTION MODES "d" + "e"
A	II	IIA - IIB - IIC	IIA - IIB - IIC
B	II	IIB - IIC	IIB - IIC
C	II	IIC	IIC

WHICH TEMPERATURE GROUP SHOULD BE CHOSEN ?

According to the spontaneous ignition temperature of the gases, this table indicates the temperature class of the equipment which can be used (*see page G:20-23*).

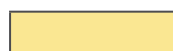
- The temperature class of the equipment must always be lower than the spontaneous ignition temperature of the gases.
- Equipment must never be used in an atmosphere capable of ignition at the temperature indicated on the marking (temperature class).

TEMPERATURE CLASS OF THE EQUIPMENT

SPONTANEOUS IGNITION TEMPERATURE OF THE GASES (T°)	TEMPERATURE CLASS OF THE EQUIPMENT					
	T6 (85°)	T5 (100°)	T4 (135°)	T3 (200°)	T2 (300°)	T1 (450°)
85° ≤ T° ≤ 100 °C						
100° < T° ≤ 135 °C						
135° < T° ≤ 200 °C						
200° < T° ≤ 300 °C						
300° < T° ≤ 450 °C						
450 °C < T°						



Danger : explosion



Equipment which can be used.

Acetaldehyde spontaneous ignition temperature 175 °C ← → Class of equipment which can be used : T4, T5 or T6.

GAS SUBSTANCES LIKELY TO FORM EXPLOSIVE ATMOSPHERES

It is important to be familiar with inflammability characteristics of substances that could form explosive atmospheres - this includes the flash point and self-ignition temperature in °C for gases, self-ignition temperature in layers or in clouds for dust. Furthermore, the practical safety guide published by the CNPP contains lists of all data sheets for dangerous products.

The table opposite indicates the flash points, the self-ignition temperatures and the inflammability limits in the air of the usual gas and vapors.

Gas and vapor inflammability characteristics (limits of concentration, flash points, inflammation temperatures) differ depending on the method used to determine them. Therefore, slightly different values (flash points, inflammability limits) or significantly different values (inflammation temperatures) may be found in other sources.

Flash points were determined in a closed dish, unless mentioned otherwise (open dish "O.D.").

SUBSTANCES	FLASH POINT	SELF-IGNITION TEMPERATURE IN °C	INFLAMMABILITY LIMITS BY VOLUME % MIXED WITH AIR	
			LOWER	UPPER
1 - Bromobutane	18	265	0,6(at 111 °C)	5,8(at 155 °C)
1 - Bromopentane	32	-	-	-
1 - Butanol	29	343	1,4	11,2
1 - Butene	gaz	380	1,6	10
1,1,1-Trichloroethane	diff. infl.	537	7,5	12,5
1,1-Dichloroethane	-6	-	5,6	-
1,1-Dichloroethylene	-28	565	6,5	15,5
1,1-Diethoxyethane	-21	230	1,6	10,4
1,1-Dimethylhydrazine	-15	249	2	95
1,2,3-Propanetriol	199	370	-	-
1,2,4-Trichlorobenzene	105	571	2,5(at 150 °C)	6,6(at 150 °C)
1,2,4-Trimethylbenzene	44	500	0,9	6,4
1,2-Diaminopropane	33 O.D.	416	-	-
1,2-Dichlorobenzene	66	645	2,2	9,2
1,2-Dichloroethane	13	410	6,2	16
1,2-Dichloroethylene	2	460	5,6	12,8
1,2-Dichloropropane	15	555	3,4	14,5
1,2-Propanediol	98	370	2,6	12,5
1,3 - Benzenediol	127	608	1,4(at 200 °C)	-
1,3 - Butadiene	gaz	420	2	12
1,3,5-Trioxan	45 O.D.	414	3,6	29
1,3-Diaminopropane	24 O.D.	-	-	-
1,3-Dioxolanne	1 O.D.	-	-	-
1,4 - Benzenediol	165	515	-	-
1,4-Dichlorobenzene	65	-	-	-
1,4-Dioxanne	12	180	2	22
175 °C and 275 °C	> 70	254	0,58	4,45
185 °C and 330 °C	> 70	259	0,52	4,09
1-Chloro-1,2,2-trifluoroethylene	gaz	-	8,4	16
1-Chloro-2 methylpropane	< 21	-	2	8,8
1-Chloro-2,3-epoxypropane	31 O.D.	411	3,8	21
1-Chloro-4 nitrobenzene	127	-	-	-
1-Chlorobutane	-9	240	1,8	10,1
1-Chloropentane	12,8 O.D.	260	1,6	8,6
1-Chloropropane	<- 18	520	2,6	11,1
1-Chloropropene	<- 6	-	4,5	16
1-Hexene	<- 7	253	-	-
1-Naphtylamine	157	-	-	-
1-Nitropropane	36	420	2,2	-
1-Octene	21 O.D.	230	-	-
1-one	84	460	0,8	3,8
1-Pentanol	32	300	1,2	10 (at 100 °C)
1-Pentene	- 18 O.D.	275	1,5	8,7
1-Phenylethanone	77	570	-	-
1-Propanol	15	370	2,1	13,5
2 - Aminoethanol	85	410	-	-
2 - Butanone	-9	404	1,4(at 93 °C)	11,4(at 93 °C)
2 - Butene	gaz	320	1,7	9
2 - Butene-1-ol	27	349	4,2	35,3
2,2',2"-Nitrilotriethanol	196	-	-	-
2,2,4-Trimethylpentane	-12	415	1,1	6
2,2,5-Trimethylhexane	13 O.D.	-	-	-
2,2-Dimethylbutane	-47	405	1,2	7

APPLETON ADVICE

Following informations are given just as an example to explain the French rules on those subjects : please identify in your country the equivalent and remember, if there is no rule, that gas, vapor and dust have no nationality: the way to explode or protect yourselves are the same everywhere.

GAS SUBSTANCES LIKELY TO FORM EXPLOSIVE ATMOSPHERES

SUBSTANCES	FLASH POINT	SELF-IGNITION TEMPERATURE IN °C	INFLAMMABILITY LIMITS BY VOLUME % MIXED WITH AIR	
			LOWER	UPPER
2,2-Dimethylpropane	gaz	450	1,4	7,5
2,2'-Iminodiethanol	172 O.D.	660	-	-
2,3-Dimethylbutane	-29	405	1,2	7
2,3-Dimethylhexane	7 O.D.	435	-	-
2,3-Dimethylpentane	< -7	335	1,1	6,7
2,4-Toluylene diisocyanate	127	-	0,9	9,5
2,4,4-Trimethyl-1-pentene	-5	390	0,8	4,8
2,4,4-Trimethyl-2-pentene	2 O.D.	305	-	-
2,4,6-Trimethyl-1,3,5-trioxanne	35	235	1,3	-
2,4-Dimethylhexane	10 O.D.	-	-	-
2,4-Dimethylpentane	-12	-	-	-
2,4-Pentanedione	33	340	-	-
2,5-heptadiée-4-one	85 O.D.	-	-	-
2,5-Hexanedione	78	499	-	-
2,6-Dimethyl-4-heptanol	74	-	0,8(at 100 °C)	6,1(at 100 °C)
2,6-Dimethyl-4-heptanone	49	396	0,8(at 93 °C)	7,1(at 93 °C)
210 °C and 365 °C	> 70	263	0,45	3,71
2-Chloro-1,1-dimethoxyethane	43	232	-	-
2-Chloro-1,3-butadiene	-20	-	4	20
2-Chloro-2-butene	-19	-	2,3	9,3
2-Chloroethanol	60	425	4,9	15,9
2-Chlorophenol	64	-	-	-
2-Chloropropane	-32	590	2,8	10,7
2-Ethoxyethanol	43	235	1,7(at 93 °C)	15,6(at 93 °C)
2-éthoxyéthyle acetate	47	380	1,7	-
2-Furaldehyde	60	315	2,1	19,3
2-Hexanone	25	423	-	8
2-hydroxybenzoïc acid	157	540	1,1(at 200 °C)	-
2-Methyl-1,3-butadiene	-54	395	1,5	8,9
2-Methyl-1-pentanal	20 O.D.	-	-	-
2-Methylacrylaldehyde	1 O.D.	-	-	-
2-Methylbutane	<- 51	420	1,4	7,6
2-Methylfuranne	-30	-	-	-
2-Methylhexane	<- 18	-	1	6
2-Methylpentane	<- 29	264	1	7
2-Methylpropanal	-18	196	1,6	10,6
2-Methylpropene	gaz	465	1,8	9,6
2-Methylpyridine	38 O.D.	535	-	-
2-Naphtol	152	-	-	-
2-Nitropropane	24	428	2,6	11
2-Octanone	52	-	-	-
2-Pentanone	7	452	1,5	8,2
2-Phenylpropene	58	489	0,7	11
2-Propanol	11	395	2	12
2-Propene-1-ol	21	375	2,5	18
2-Propenylamine	-29	370	2,2	22
3 - Bromo - 1 - propène	-1	295	4	7,3
3 - Butene-2-one	-7	491	2,1	15,6
3,6-Diazaoctane-1,8-diamine	135	335	-	-
3-Azapentane-1,5-diamine	98	358	2	6,7
3-Chloropropene	-32	485	2,9	11,1
3-Hexanone	35 O.D.	-	-1	-8
3-Methyl-1-butene	<- 7	365	1,5	9,1

SUBSTANCES	FLASH POINT	SELF-IGNITION TEMPERATURE IN °C	INFLAMMABILITY LIMITS BY VOLUME % MIXED WITH AIR	
			LOWER	UPPER
3-Pentanone	12	450	1,6	-
4-Heptanone	49	-	-	-
4-Hydroxy-4-methyl-2-pentanone	64	600	1,8	6,9
4-Methyl-1,3-pentadiene	-34	-	-	-
4-Methyl-2-pentanol	41	-	1	5,5
4-Methyl-2-pentanone	16	448	1,2(at 93 °C)	8(at 93 °C)
4-Methylpyridine	56 O.D.	-	-	-
4-Nitrotoluene	106	-	-	-
Acetaldehyde	-37	175	4	60
Acetanilide	169 O.D.	530	-	-
Acétic acid	39	463	4	20
Acetic anhydride	49	315	2,7	10,3
Acetone	-20	465	2,6	13
Acetonitrile	2	520	3	16
Acetylene chloride	4	390	-	-
Acetylene	gaz	300	2,5	81
Acrolein	-26	220	2,8	31
Acrylic acid	49 O.D.	438	2,4	8
Acrylonitrile	0 O.D.	480	3	17
Adipic acid	196	420	-	-
Allyl and vinyl oxide	< 20 O.D.	-	-	-
Ammonia	gaz	650 (*)	15	28
Aniline	70	615	1,3	11
Anthracene	121	540	0,6	-
Anthraquinone	185	-	-	-
a-Pinene	32	255	-	-
Benzaldehyde	63	190	-	-
Benzene	-11	498	1,3	7,9
Benzoic acid	121	570	-	-
Benzoyl chloride	72	-	-	-
Benzyl acetate	90	460	-	-
Benzyl chloride	67	585	1,1	-
Biphenyl	112	540	0,6(at 111 °C)	5,8(at 155 °C)
Bis (2-hydroxyethyl) oxide	123	224	-	-
Bromobenzene	51	565	-	-
Bromomethane	diffic. inflam.	510	6,7	11
Butane	gaz	287	1,8	8,4
Butyl and vinyl oxide	- 9 O.D.	255	-	-
Burylamine	-12	310	1,7	9,8
Butylbenzene	71 O.D.	410	0,8	5,8
Butyraldehyde	-22	218	1,9	12,5
Butyric acid	72	443	2	10
Camphor (oil)	47	-	-	-
Carbon disulphide	-30	90	1,3	50
Carbon oxide	gaz	605	12,5	74
Carbon oxysulphide	gaz	-	12	29
Castor (Oil)	229	445	-	-
Chlorobenzene	28	593	1,3	9,6
Chlorodinitrobenzene	194	-	2	22
Chloroethane	-50	515	3,8	15,4
Chloromethane	gaz (- 50)	630	8,1	17,4
Crotonaldehyde	12	230	2,1	15,5
Crotonic acid	87 O.D.	396	-	-

Classified on first letter

GAS SUBSTANCES LIKELY TO FORM EXPLOSIVE ATMOSPHERES

SUBSTANCES	FLASH POINT	SELF-IGNITION TEMPERATURE IN °C	INFLAMMABILITY LIMITS BY VOLUME % MIXED WITH AIR	
			LOWER	UPPER
Cumene	36	424	0,9	6,5
Cyanogene	gaz	-	6,6	32
Cyclohexane	-20	245	1,3	8
Cyclohexanol	67	300	-	-
Cyclohexanone	43	420	1,1(at100 °C)	9,4
Cyclohexene	< -7	244	-	-
Cyclohexyl acetate	57	330	-	-
Cyclohexylamine	31	290	-	-
Cyclopentane	< -7	361	1,5	-
Cyclopentanone	26	-	-	-
Cyclopropane	gaz	495	2,4	10,4
Decahydronaphtalene	57	250	0,7(at100 °C)	4,9(at100 °C)
Deuterium	gaz	-	5	75
Di (2-ethylhexyl) phtalate	215 O.D.	390	0,3(at 245 °C)	-
Diallyl oxide	-7 O.D.	-	-	-
Dibutyl oxide	25	194	1,5	7,6
Dibutyl phtalate	157	400	0,5(at 235 °C)	-
Dibutyl Sebacate	178 O.D.	365	0,4(at 243 °C)	-
Dichlorine oxide	gaz	-	23,5	100
Dichloromethane	diffic. inflam.	556	13	22
Diesel Fuel	70-120	250-280	0,6	-
Diethyl oxide	-45	160	1,9	3
Diethyl phtalate	163 O.D.	-	-	-
Diethylacetaldehyde	21 O.D.	-	1,2	7,7
Diethylamine	-23	310	1,8	10,1
Diethylcyclohexane	48	240	0,8(at 60 °C)	6(at110 °C)
Diisopropylbenzene	76 O.D.	445	0,9	5,6
Dimethoxymethane	-32 O.D.	235	2,2	13,8
Dimethyl phtalate	146	490	0,9(at 180 °C)	-
Dimethyl sulphide	<- 18	205	2,2	19,7
Dimethylamine	gaz	400	2,8	14,4
Dimethylsulfoxyde	95 O.D.	215	2,6	42
Dimthyl oxide	gaz	350	3,4	27
Dipentyl oxide	57	170	-	-
Diphenyl oxide	112	615	0,8	1,5
Diphenylamine	152	630	-	-
Diphenylmethane	130	485	-	-
Dipropyl oxide	21	188	1,3	7
Dipropylamine	17 O.D.	299	-	-
Disopropyl oxide	-28	440	1,4	7,9
Disulphur Dichloride	118	230	-	-
Divinyl oxide	<- 30	360	1,7	27
Divinylbenzene	76 O.D.	-	1,1	6,2
Dodecane	73	203	0,6	-
Ethane	gaz	472	3	12,5
Ethanethiol	<- 18	295	2,8	18
Ethanol	12	363	3,3	19
Ethyl acetate	-4	425	2	11,5
Ethyl acrylate	9	372	1,4	14
Ethyl and Methyl oxide	-37	190	2	10,1
Ethyl and propenyl oxide	<- 7 O.D.	-	-	-
Ethyl and Vinyl oxide	<- 46	200	1,7	28
Ethyl butyrate	24	460	-	-

SUBSTANCES	FLASH POINT	SELF-IGNITION TEMPERATURE IN °C	INFLAMMABILITY LIMITS BY VOLUME % MIXED WITH AIR	
			LOWER	UPPER
Ethyl formate	-20	455	2,8	16
Ethyl lactate	46	400	1,5(at 100 °C)	-
Ethyl nitrite	-35	90(dÉcomp.)	4	50
Ethyl propionate	12	440	1,9	11
Ethylamine	<- 18	380	3,5	14
Ethylbenzene	15	430	1	6,7
Ethylcyclobutane	<- 16	210	1,2	7,7
Ethylcyclohexane	35	238	0,9	6,6
Ethylcyclopentane	< 21	260	1,1	6,7
Ethylene	gaz	450	2,7	36
Ethylene oxide	-17,8 O.D.	425	3	100
Ethyleneglycol	111	398	3,2	28
Formaldehyde	gaz	424	7	73
Formamide	154 O.D.	-	-	-
Formic acid	46,5	480	14,3	34
Fuels distilling between :				
Furane	< 0	-	2,3	14,3
Furfurylic alcohol	65	490	1,8	16,3
Hexanoic acid	101	380	-	-
Hydrazine	38	23-270(*)	2,9	100
Hydrogen	gaz	500	4	75
Hydrogen cyanide	-17	535	6	41
Hydrogen sulphide	gaz	260	4	44
Isobutane	gaz	460	1,8	9,8
Isobutanol	27	415	1,7(at 51 °C)	10,6(at 94 °C)
Isobutyl acetate	17	420	1,3	10,5
Isobutylamine	-9	375	-	-
Isobutylbenzene	55	425	0,8	6
Isopentanol	42	345	1,2	9(at 100 °C)
Isopentyl acetate	25	360	1 (at 100 °C)	7,5
Isopropyl acetate	2	460	1,8	8
Isopropyl and vinyl oxide	-32	270	-	-
Isopropyl formate	-6	485	-	-
Isopropylamine	-37 O.D.	400	-	-
Jet engine fuel JP1 (TRO)	38	255	0,67	4,96
Jet engine fuel JP3 (TR3)	-20	251	0,9	6,15
Jet engine fuel JP4 (TR4)	-20	249	0,8	5,63
Jet engine fuel JP5 (TR5)	58	246	0,6	4,53
Kerosene (lamp oil)	43-72	210	0,7	5
Limonene	45	235	0,7(at 150 °C)	6,1(at150 °C)
Linseed (oil)	220	340	-	-
Lubricating oil	150-225	260-370	-	-
Maleic anhydride	102	475	1,4	7,1
Mesityl oxide	30	344	1,4	7,2
Methane	gaz	535	5	15
Methanol	11	385	6,7	36
Methoxybenzene	52 O.D.	475	-	-
Methyl acetate	-10	454	3,1	16
Methyl acrylate	-3	468	2,8	25
Methyl formate	-19	449	4,5	23
Methyl lactate	49	385	2,2(at 100 °C)	-
Methyl metacrylate	10 O.D.	-	1,7	8,2
Methyl propionate	-2	465	2,5	13

GAS SUBSTANCES LIKELY TO FORM EXPLOSIVE ATMOSPHERES

SUBSTANCES	FLASH POINT	SELF-IGNITION TEMPERATURE IN °C	INFLAMMABILITY LIMITS BY VOLUME % MIXED WITH AIR	
			LOWER	UPPER
Methylamine	gaz	430	4,9	20,7
Methylcyclohexane	-4	250	1,2	6,7
Methylcyclopentadiene	48	445	1,3(at 100 °C)	7,6(at 100 °C)
Methylcyclopentane	<- 7	258	1	8,3
Methyldichlorosilane	-9	316	6	55
Methylhydrazine	-8	194	2,5	92
Metyl butyrate	13	-	-	-
Mixed with water (10% alcohol)	49	-	-	-
Mixed with water (20% alcohol)	36	-	-	-
Mixed with water (30% alcohol)	29	-	-	-
Mixed with water (40% alcohol)	26	-	-	-
Mixed with water (5% alcohol)	62	-	-	-
Mixed with water (50% alcohol)	24	-	-	-
Mixed with water (60% alcohol)	22	-	-	-
Mixed with water (70% alcohol)	21	-	-	-
Mixed with water (80% alcohol)	20	-	-	-
Mixed with water (95% alcohol)	17	-	-	-
m-or p-Cresol	86	555	1,1(at 150 °C)	-
Morpholine	37 O.D.	290	1,4	11,2
m-Xylene	27	525	1,1	7
N,N-Diethylaniline	85	630	-	-
N,N-Dimethylaniline	62	370	-	-
N,N-Dimethylformamide	57	445	2,2(at 100 °C)	15,2
Naphtalene	78	525	0,9	5,9
n-butyl acetate	22	420	1,7	7,6
N-butyle formate	17	320	1,7	8,2
n-Decane	46	205	0,8	5,4
n-Heptane	-5	204	1,05	6,7
n-Hexane	-22	223	1,2	7,4
Nicotine	-	240	0,7	4
Nitrobenzene	87	480	1,8(at 93 °C)	-
Nitroethane	27	414	3,4	-
Nitromethane	35	415	7,3	-
Nonane	31	205	0,8	2,9
n-pentyl acetate	16	360	1,1	7,5
n-propyl acetate	13	450	1,7(at 100 °C)	8
N-propyl formate	-3	455	-	-
N-propyl nitrate	20	175	2	100
o-Cresol	81	595	1,4(at 149 °C)	-
Octane	13	206	1	6,5
Octyl acetate	71	268	0,7	8
Olive (oil)	225	340	-	-
o-Toluidine	85	480	-	-
o-Xylene	32	460	1	7
Paraformaldehyde	70	300	7	73
Peanut oil	282	445	-	-
Pentaboron			0,4	-
Pentane	<- 40	260	1,5	7,8
Pentanol	12 O.D.	222	-	-
Pentylamine	-1	-	2,2	22
Petrol (octane number 100)	-38	456	1,4	7,4
Petrol (octane number 115 at 145)	-46	440	1,2	7,1
Petrol (octane number 50 at 60)	-43	280	1,4	7,6

SUBSTANCES	FLASH POINT	SELF-IGNITION TEMPERATURE IN °C	INFLAMMABILITY LIMITS BY VOLUME % MIXED WITH AIR	
			LOWER	UPPER
Petrol A	< 0	230-240	1	6,5
Petrol B	< 0	245	1	6,5
Petrol C	< 0	230-260	1	6,5
Petrol E	< 0	230-260	1	6,5
Petrol F	< 0	230-260	1	6,5
Petrol G (ether petrol)	< 0	245	1	6,5
Petrol H	< 0	230-260	1	6,5
Phenol	79	715	1,8	-
Phenylhydrazine	88	-	-	-
Phosphoru trihydride	gaz	100	2	-
Phtalic anhydride	151	570	1,7	10,5
Pinane	-	273	0,7(at 160 °C)	7,2(at 160 °C)
Piperidine	16	-	-	-
p-Isopropyltoluene	47	435	0,7(at 100 °C)	5,6
Propane	gaz	450	2,2	10
Propanol	-30	205	2,6	17
Propene	gaz	455	2	11,1
Propionic acid	52	465	2,9	12,1
Propionic anhydride	63	285	1,3	9,5
Propionyl chloride	12	-	-	-
Propylamine	-37	315	2	10,4
Propylbenzene	30	450	0,8	6
Propylene oxide	-37	449	2,3	37
p-Xylene	27	525	1,1	7
Pyridine	20	480	1,8	12,4
Silane	gaz			
Soya (Oil)	280	440	-	-
Stéaric acid	196	395	-	-
Styrene	31	490	1,1	7
Tartric acid	210 O.D.	425	-	-
Tetradecane	100	200	0,5	-
Tetrahydrofuranne	-14	320	2	11,8
Tetrahydronaphtalene	71	380	0,8(at 100 °C)	5(at 150 °C)
Tetrahydropyranne	-20	-	-	-
Tetramethylpentane	< 21	430	0,8	4,9
Toluene	4	480	1,2	7,1
Tributyl Phosphate	146 O.D.	-	-	-
Tributylamine	86 O.D.	-	-	-
Trichloroethylene	diff. infl.	410	8(at 25 °C)	10,5(at 25 °C)
Triethylamine	- 7 O.D.	249	1,2	8
Triethyleneglycol	176 O.D.	370	0,9	9,2
Trimethylamine	gaz	190	2	11,6
Tri-o-tolyl phosphate	225	385	-	-
Triphenylbenzene	132 O.D.	-	-	-
Triphenyl phosphate	220	-	-	-
Tripropylamine	40	-	-	-
Turpentine	35	250	0,8	-
Vinyl acetate	-8	402	2,6	13,4
Vinyl butyrate	20 O.D.	-	1,4	8,8
Vinyl chloride	gaz	470	3,6	33
Vinyl propionate	1 O.D.	-	-	-
White-spirit	30-65	230-260	1,1	6,5

GAS AND VAPOR CLASSIFICATION ACCORDING TO IEC/CENELEC

EN/IEC 60079-12 STANDARDS

These gases or vapors are classified in three subdivisions : A, B and C, depending on their experimental safety gap (IEMS) and their minimum inflammation current (CMI).

SUBDIVISION A			SUBDIVISION B
HYDROCARBONS	COMPOUNDS CONTAINING OXYGEN	COMPOUNDS CONTAINING HALOGENS	HYDROCARBONS
ALKANES :	ACIDS :	COMPOUNDS WITH NO OXYGEN :	Allylene (Propyn)
Butane	Acetic acid	Bromoethane	Butadiene
Cyclobutane	ALCOHOLS ET PHENOLS :	Bromobutane	Cyclopropane
Cycloheptane	Butanol	Chlorobenzene	Ethylene
Cyclohexane	Cresol	Chlorobutane	COMPOUNDS CONTAINING NITROGEN :
Cyclopentane	Cyclohexanol	Chloroethane	Hydrocyanidric acid
Decahydronaphtalene (decaline)	Diacetone-alcohol	Chlorethylene (Vinyl chloride)	Acrylonitrile
Decane	Ethanol	Chloromethane	COMPOUNDS CONTAINING OXYGEN :
Ethane	Heptanol	Chloropropane	Acrolein
Ethylcyclobutane	Hexanol	Allyl chloride	Ethyl acrylate
Ethylcyclohexane	Methanol	Benzyl chloride	Methyl acrylate
Ethylcyclopentane	Methylcyclohexanol	Methylene chloride	Tetrahydrofurfuryl alcohol
Heptane	Monanol	Dichlorobenzene	Crotonaldehyde
Hexane	Octanol	Dichloroethane	Dioxalan
Methane	Pentanol	Dichloroethylene	Dioxan
Methylcyclobutane	Phenol	Dichloropropane	Epoxy-propane
Methylcyclohexane	Propanol	Benzyl trifluoride	Butyl ether of hydroxyacetic acid
Methylcyclopentane	ALDEHYDES :	COMPOUNDS CONTAINING OXYGEN :	Butyl ether
Nonane	Acetic Aldehyde	Chloroethanol	Ethylic ether
Octane	Metaldehyde	Acetyl chloride	Ethyl méthyl ether
Pentane	KETONES :	COMPOUNDS CONTAINING SULPHURS :	Méthylic ether
Propane	Acetone	Ethyl mercaptan	Furane
ALKANES :	Amyl-methyl-ketone	Propyl-mercaptan	Ethylene oxide (epoxyethane)
Propene (propylene)	Butyl-methyl-ketone	Tetrahydrothiophene	Tétrahydrofuran
Aromatic	Cyclohexanone	Thiophene	Trioxane
HYDROCARBONS :	Ethyl-methyl-ketone	COMPOUNDS CONTAINING SULPHURS :	Mixtures
Methylstyrene	2,4 - Pentanedione (acetylacetone)	Ammonia	Gas from a coke furnace
Styrene	Propyl-methyl-ketone	Acetonitrile	COMPOUNDS CONTAINING HAOGENS :
Benzenic	ESTERS :	Nitroethane	Propane, 1 chloro, 2,3 epoxy (épichlorhydrin)
HYDROCARBONS :	Methyl acetate	Nitromethane	Tétrafluorethylene
Benzene	Ethyl acetate	AMINES :	
Cumene	Propyl actate	Amphetamine	
Cymene	Butyl acetate	Aniline	SUBDIVISION C
...thylbenzene	Amyl acetate	Butylamine	Acetylene
Naphtalene	Vinyl acetate	Cyclohexylamine	Carbon disulphide
Toluene	Ethyl Acetylacetate	Diaminoethane	Hydrogen
Trimethylbenzene	Methyl formate	Diethylamine	Ethyl nitrate
Xylene	Ethyl formate	Diethylaminoethanol	
MIXTURES OF HYDROCARBONS :	Ethyl methacrylate	Dimethylamine	
Benzol for cars	Methyl methacrylate	Dimethylaniline	
Gas-oil	OXIDES (INCLUDED ETHERS) :	Methylamine	
Kerosene	Dipropyl ether	Mono-ethanolamine	
Fuel oil	Carbon monoxide (2)	Propylamine	
Industrial methane (1)		Pyridine	
Oil naphta		Toluidine	
Petroleum naphta		Triethylamine	
Petroleum (included petroleum spirits)		Trimethylamine	
Dry cleaning solvents			
Turpentine			

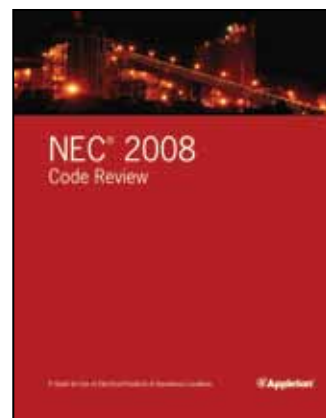
STANDARD NEC 500

ACCORDING TO NEC 500	
CLASS I	CLASS II
GROUP A	GROUP E, F, G
Acetylene	Combustible Dusts
GROUP B	
Butadiene	CLASS III
Hydrogen	Fibers and Flyings
Ethylene oxyde	
Propylene oxyde	
GROUP C	
Acetaldehyde	
Cyclopropane	
Diethyl ether	
Ethylene	
Dimethyl hydrazine	
GROUP D	
Acetane ethyl	
Butyl acetate	
Vinyl acetate	
Isobutyl acetate	
Acetone	
Acrylonitrile	
Amyl alcohol	
Butylalcohol	
Tertiary butyl alcohol	
Butyl-2 alcohol	
Ethyl alcohol	
Isoamyl alcohol	
Isobutyl alcohol	
Isopropyl alcohol	
Propyl alcohol	
Benzene	
Butane	
Ethylene Chloride	
Vinyl chloride	
Petrol	
Ethane	
Ammonia gas	
Heptane	
Hexane	
Isoprene	
Methane	
Methanol	
Methylisobutyl ketone	
Petroleum naphtha	
Octane	
Pentane	
Propane	
Propylene	
Styrene	
Toluene	
Xylene	

Appleton is our premium line of industrial electrical products under EGS Electrical Group, a division of Emerson Industrial Automation.

Every three years the National Fire Protection Association (NFPA) updates the standards in the National Electrical Code. The NEC covers installation of electrical products in the United States and their applications.

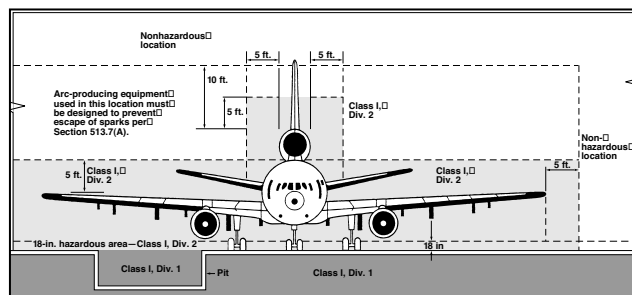
Appleton published the "Appleton NEC 2008 Code Review" in English, which, in line with the ATX Guide on IEC and CENELEC standards, aims to provide a better understanding of North American standards (National Electric Code).



"NEC 2008 CODE REVIEW" BY APPLETON ELECTRIC, LLC

This detailed technical reference covers the use of electrical products and the changes made in the NEC covering the hazardous location Articles applicable to Appleton products. All the information required to study and set up electrical installations in an industrial context is contained in this document, including hazardous areas and their classifications, with strict adherence to NEC 2008 standards with useful explanations helping you select the right material for each application.

The NEC 2008 Code Review is considered a reference worldwide, and is available on request. For more information, contact your local representative or visit the website at www.appletonelec.com.



EXTRACTS FROM APPLETON GUIDE

PRACTICAL EXAMPLES IN DUST ENVIRONMENTS

EXTRACT FROM THE "SILO GUIDE" *

From 30th July 1985, a specific heading has been devoted to silos for storing cereals, grain, food products or any organic product which releases flammable dust :

IN SILO OR STORAGE INSTALLATION

- If the storage volume is more than 15,000 m³, requirement of authorization (previous classes 1 and 2) in 3 Km radius area where notification of the hazard is mandatory.
- If the total storage volume is more than 5,000 m³, but no more than 15,000 m³, requirement of declaration (previous class 3).

UNDER AN INFLATABLE STRUCTURE OR IN A TENT

- If the total volume of the inflatable structure or the tent is more than 100,000 m³: requirement of authorization (old classes 1 and 2), display radius 3 km.
- If the total volume of the inflatable structure or the tent is more than 10,000 m³ but no more than 100,000 m³: requirement of declaration (previous class 3).

THE FOLLOWING PROCEDURE SHOULD BE OBSERVED :

- The end-user draws up the inventory of fixed machines involved in the operation of installations with an indication of the power rating for each one. He systematically identifies those which perform:
 - Operations directly related to product storage (conveyors, elevators, etc)
 - Work on products (grinding, cleaning, sieving, etc)
 - Packaging of products (weighing, bagging, pulverizing, etc)
 - Ventilation of storage cubicles and bins in addition to suction of dust-filled gases for purification prior to discharge and suction of dust-free gases prior to discharge into the atmosphere.

On the basis of this inventory, the combined power ratings at b) and c), wherever they are located within the facilities, should then be taken into account.

HAZARDOUS ZONES IN SILOS

The Guide provides a useful insight into the determination of hazardous locations in atmospheres containing potentially explosive dust.

ZONE 20

- Location where a potentially explosive atmosphere in the form of a cloud of combustible dust is continuously present in the air for long periods or on frequent occasions.

ZONE 21

- Location where a potentially explosive atmosphere in the form of a cloud of combustible dust may occur occasionally during normal operation.

ZONE 22

- Location where a potentially explosive atmosphere in the form of a cloud of combustible dust is not likely to occur during normal operation or, if it does occur, only lasts for a short time.

ZONE CLASSIFICATION

ELECTRICAL INSTALLATIONS	ZONE CLASSIFICATION
Filters - Pipes for dust-filled air	20
Elevators	20 or 21
Grain dispenser onto conveyor belt (alongside the spout) (the efficiency of suction is critical here)	21 or 22
Chain conveyor system: where the grain is discharged only	21
Chain conveyor system: in the conveyor body	22
Cleaner-separator and similar appliances	20 or 21
Receiving tank: in the tank, above the grille behind the grain chute (if it is a confined space)	22
Closed cubicles during filling (due to possible deposits of dust)	21 or 22
Bottom of boxes or cubicles during drainage by ventilation. The other parts of the silo should not be classified as Zones at risk of explosion. For example: open areas during filling, conveyor belts (except during grain feed). Top of silo: tops of open cubicles, gangways, unconfined external receiving tanks."	21 or 22

Depending on its location in the silos, the appropriate electrical equipment should be classified Zone 20, 21 or 22.

APPLETON ADVICE

Following informations are given just as an example to explain the French rules on those subjects : please identify in your country the equivalent and remember, if there is no rule, that gas, vapor and dust have no nationality: the way to explode or protect yourselves are the same everywhere.

* Guide produced in France by the members of the FFCAT technical commission and various authorities (Apave, Véritas, INRS, Groupama, CRAM, etc), summarizing standards EN 50281-1-1 and 2.

These tables define the types of product required in premises where potentially explosive dust is present.

APPLETON'S RECOMMENDATION

It is essential to select ATEX-certified equipment for Zones 21 and 22 to prevent any likelihood of risks of explosion in premises where potentially explosive dust is present.

TYPES OF PRODUCT ACCORDING TO ZONES

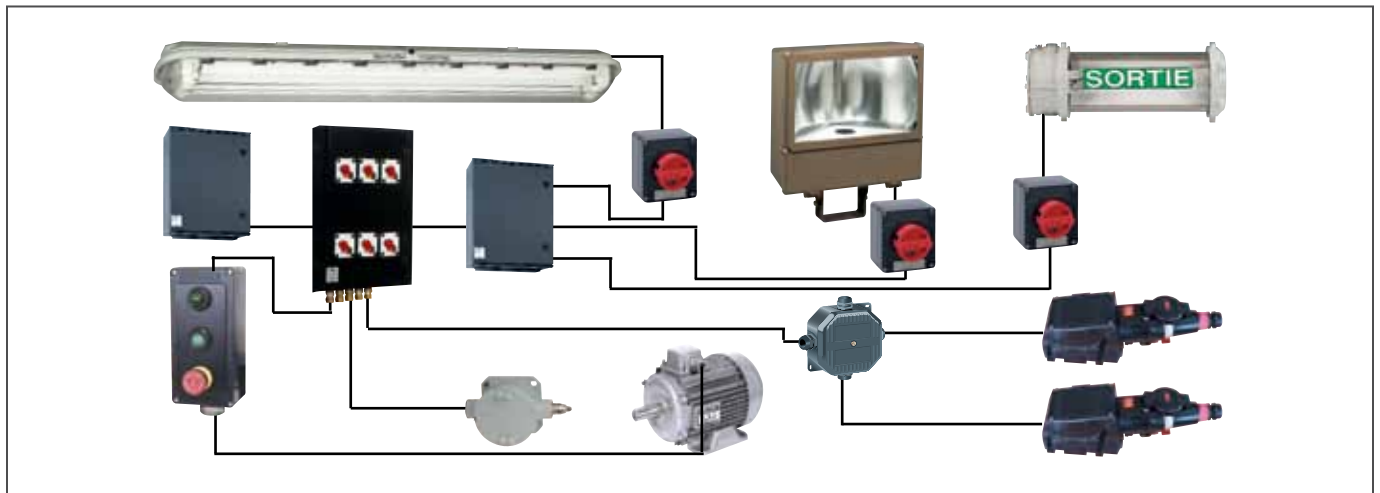
TYPE OF ZONE	ZONE 20	ZONE 21 OR ZONE 22 WITH CONDUCTING DUST (3)	ZONE 22
Group (surface- mounted appliance)	II	II	II
Product categories 1,2,3 dust D for dust	1D (4)	2D (4)	3D (4)
Identification in accordance with Directive 94/9/EC	II 1 D	II 2 D	II 3 D
CE marking	CE xxx	CE xxx	CE xxx
Protection index	IP 6x	IP 6x	IP 5x
Surface temperature (1) (2)	to be checked according to product or dust		

SELF-IGNITION TEMPERATURES

DUST	SELF-IGNITION TEMPERATURE °C		MINIMUM EXPLOSION CONCENTRATION (CLOUD) (G/M3)	MAXIMUM PRESSURE BUILD-UP SPEEDS (BAR/S)
	LAYER	CLOUD		
Peanuts (husks)	380	400	45	560
Cocoa	240	510	75	85
Unprocessed cotton	520	–	190	30
Cork	210	460	35	500
Malt	250	400	55	300
Rice	450	510	85	50
Soya (flour)	340	550	60	55

- (1) Note for France : Value given by the Silo Guide cereal producers: + 125 °C.
- (2) For all dust products, refer to the INRS tables: Manual due to be reprinted. 1st half of 2004.
- (3) Conductive dust = $R \leq 103 \Omega m$.
- (4) with non-conductive dust

APPLETON : A COMPLETE RANGE FOR ZONES 21 & 22



DUST WHICH MAY CAUSE POTENTIALLY EXPLOSIVE ATMOSPHERES

Following informations are given just as an example to explain the French rules on those subjects : please identify in your country the equivalent information.

DUST	SELF-IGNITION TEMPERATURE °C		MINIMUM IGNITION ENERGY (CLOUDS) (MJ)	MINIMUM EXPLOSION CONCENTRATION (CLOUDS) (G/M3)
	LAYER	CLOUD		
AGRICULTURAL DUST				
Cellulose	270	480	80	55
Cocoa	240	510	100	75
Cork	210	460	35	35
Corn starch	-	380	30	40
Dextrin	390	410	40	40
Flour/wheat	440	440	60	50
Malt	250	400	35	55
Milk powder	200	490	50	50
Peanuts (husks)	210	460	50	45
Rice	450	510	100	85
Soya (flour)	340	550	100	60
Starch (wheat)	380	400	25	25
Sugar	400	370	30	45
Unprocessed cotton	520	-	100	190
Wheat (bulk)	220	500	60	65
Wood/pine (sawdust)	260	470	40	35
METALLIC DUST				
Aluminium flakes (*)	400 to 900	600 to 700	10 to 100	40 to 60
Aluminium powder (*)	490 to 700	550 to 800	15 to 160	40 to 140
Antimony	330	415	1 900	420
Cadmium	250	570	4 000	-
Copper	-	900	-	-
Electrolytic chromium	400	580	40	230
Ferro-silicon (88% Si)	-	860	400	425
Ferro-titanium	400	370	80	140
Ground aluminium (*)	460 to 900	550 to 700	50 to 120	45 to 120
Ground magnesium	430	560	40	30
Iron pentacarbonyl	310	320	20	105
Iron reduced with hydrogen	290	320	80	120
Magnesium-aluminium (Dow metal)	480	430	80	20
Manganese	240	460	305	125
Pulverised lead	270	710	-	-
Silicon	950	780	96	160
Thorium	280	270	5	75
Thorium (hydride)	20	260	3	80
Tin	430	630	80	190
Titanium	510	330	25	45
Titanium (hydride)	540	480	60	70
Uranium	100	20	45	60
Uranium (hydride)	20	20	5	60
Vanadium	490	500	60	220
Zinc	540	690	960	460
Zirconium	300	350	120	45
Zirconium (hydride)	270	350	60	85
CHEMICALS				
1,4-benzenediamine	430	380	15	20
2,2'-Azobis (isobutyronitrile)	350	430	25	15
2,6-Di-tert-butyl-4-cresol	-	470	20	20
Acetylsalicylic acid (aspirin)	melts	660	25	50
Adipic acid	-	550	60	35
Benzoic acid	melts	620	20	30
Biphenyl	-	630	20	15
Bisphenol A	-	570	15	20
Diallyl phthalate	-	480	20	30
Dicumyl peroxide	180	560	30	45
Dimethyl isophthalate	-	580	15	25
Fumaric acid	-	520	35	85
Hexamethylenetetramine	-	410	10	15
Hydroxyethylcellulose	-	410	40	25
Mannitol	-	460	40	65
Pentaerythritol	-	450	10	30
Phenyl-β-naphthylamine	-	680	25	25
Phthalic anhydride	-	650	15	15
Soap	500	640	120	83
Sulphur	220	190	15	35
Terephthalic acid	-	680	20	50
Vitamin B1 nitrate	-	360	60	35
Vitamin C (ascorbic acid)	280	460	60	70
Zinc stearate	melts	510	10	20

DUST	SELF-IGNITION TEMPERATURE °C		MINIMUM IGNITION ENERGY (CLOUDS) (MJ)	MINIMUM EXPLOSION CONCENTRATION (CLOUDS) (G/M3)
	LAYER	CLOUD		
CARBONATED MATERIALS				
Asphalt	550	510	40	35
Bituminous coal	180	610	30	50
Charcoal	180	530	20	140
Coal (anthracite)	-	730	100	65
Reference coal (Pittsburgh)	170	610	60	55
Tar	-	630	25	45
Carbon black	900	no ignition	-	-
Graphite	580		-	-
Lignite	200	450	30	30
Smoke black	-	730	-	-
PLASTICS, RUBBERS				
Polycarbonate	-	710	25	25
Polyvinyl butyral	-	390	10	20
Polyvinyl chloride	400	660	flame on hot surface	
A.B.S. (Acrylonitrile Butadiene Styrene)	-	480	20	25
Carboxymethylcellulose	310	460	140	60
Cellulose acetate	-	420	15	40
Rubber containing chlorine	290	940	flame on hot surface	
Ethylcellulose	350	370	10	25
Ground polystyrene	-	560	40	15
Methylcellulose	340	360	-	30
Methyl polymethacrylate	-	480	20	30
Nylon (hexamethylene polyadipamide)	430	500	20	30
Poly-2-propylene-1-ol	-	510	20	35
Poly-2-propylene-1-ol + glass fiber	-	540	1 600	345
Polyacrylonitrile	460	500	20	25
Polyester (styrene-glass fibre)	360	440	50	45
Polyethylene	380	450	30	20
Polyformaldehyde	-	440	20	35
Polypropylene	-	420	30	20
Polystyrene (latex)	500	500	15	20
Shellac	-	390	10	15
Styrene-acrylonitrile copolymer	-	500	30	35
Styrene-butadiene copolymer	-	440	35	25
Styrene maleic anhydride copolymer	490	470	20	30
Synthetic rubber (33% sulphur)	-	320	30	30
Unprocessed rubber	-	350	50	25
Vinyl polyacetate	-	550	160	40
Vinyl polyacetochloride	-	690	no ignition	flame on hot surface
Coumarin-indene resin	-	550	10	15
Flameproof polyurethane foam	390	550	15	25
Formic melamine-aldehyde resin	-	810	320	85
Formic phenol-aldehyde resin	-	580	15	25
Ground alkyl resin	270	500	120	155
Ground formic urea-aldehyde resin	-	460	80	85
Non-flameproof polyurethane foam	440	510	20	30
Petroleum resin (blown asphalt)	500	510	25	25
Phenol-2-furaldehyde resin	-	530	10	25
Pure epoxy resin	-	540	15	20
Sodium resinate	220	350	60	40
Viscose (rayon)	250	520	240	55

RULES FOR TEMPERATURE LIMITATION

- a) Cloud of dust
 Temperature limitation due to the presence of a cloud of dust.
 The maximum surface temperature of the equipment must not exceed two-thirds of the ignition temperature, in degrees Celsius, of the dust/air mixture under consideration :
 $T^{\circ}\text{max} = 2/3 T_{ci}$.
 - T_{ci} being the ignition temperature of a cloud of dust.

- b) Layer of dust
 Temperature limiting due to the presence of a layer of dust of less than 5 mm :
 $T^{\circ}\text{max} = 5 \text{ mm} - 75 \text{ K}$.
 - 5 mm being the ignition temperature of a layer of dust no more than 5 mm thick.
 - 75 K being the safety factor equal to + 75 °C.

- c) If the layer is more than 5 mm thick, the maximum permissible surface temperature should be reduced.

DUST IGNITION CHARACTERISTICS

	AVERAGE PARTICLE SIZE µm	CLOUD OF DUST		5 MM LAYER OF DUST		MAXIMUM SURFACE TEMPERATURE °C
		SELF-IGNITION TEMPERATURE °C (T1)	MAXIMUM SURFACE TEMPERATURE °C OF THE EQUIPMENT (2/3 OF T1)	SELF-IGNITION TEMPERATURE °C (T2)	MAXIMUM SURFACE TEMPERATURE °C OF THE EQUIPMENT (T2-75 °C)	
Unprocessed cotton	< 75	–	–	+ 520	+ 445	–
Rice	< 75	+ 510	+ 340	+ 450	+ 375	+ 340
Wheat flour	< 75	+ 440	+ 293	+ 440	+ 365	+ 293
Dextrin	< 75	+ 410	+ 273	+ 390	+ 315	+ 273
Starch (wheat)	< 75	+ 400	+ 267	+ 380	+ 305	+ 267
Soya (flour)	< 75	+ 550	+ 367	+ 340	+ 265	+ 265
Corn starch	< 75	+ 380	+ 253	–	–	–
Sugar	< 75	+ 370	+ 247	+ 400	+ 325	+ 247
Cellulose	< 75	+ 480	+ 320	+ 270	+ 195	+ 195
Wood/pine (sawdust)	< 75	+ 470	+ 313	+ 260	+ 185	+ 185
Malt (Barley)	< 75	+ 400	+ 267	+ 250	+ 175	+ 175
Cocoa	< 75	+ 510	+ 340	+ 240	+ 165	+ 165
Wheat (bulk)	< 75	+ 500	+ 333	+ 220	+ 145	+ 145
Cork	< 75	+ 460	+ 307	+ 210	+ 135	+ 135
Peanuts (husks)	< 75	+ 460	+ 307	+ 210	+ 135	+ 135
Milk powder	< 75	+ 490	+ 327	+ 200	+ 125	+ 125

Important: the characteristics may vary according to the humidity and the grading size of the sample under consideration. The optimum values must therefore be taken into account when calculating the maximum surface temperature.

APPLETON ADVICE

Following informations are given just as an example to explain the French rules on those subjects : please identify in your country the equivalent and remember, if there is no rule, that gas, vapor and dust have no nationality: the way to explode or protect yourselves are the same everywhere.

SELECTING EQUIPMENT IN DUST ENVIRONMENT

The various regulations have taken account of a certain number of dusts, most commonly found in clouds or layers. The tables on these two pages can be used to determine, for each type of site, the type of dust likely to be present and their self-ignition temperatures. This will enable you to determine the equipment classification to be used.

TABLE OF FOOD PROCESSING DUST

FIELD OF APPLICATION OF PREMISES	SELF-IGNITION TEMPERATURE °C	DUST																
		L	STARCH	PEANUTS	WHEAT	WOOD/PINE (SAWDUST)	COCOA	UNPROCESSED COTTON	CELLULOSE	DEXTRIN	WHEAT FLOUR	CORN STARCH	MILK POWDER	COK	MALT	RICE	SOYA (FLOUR)	SUGAR
		380	210	220	260	240	520	270	390	440	-	200	210	250	450	340	400	
Heading 2160: Silos and Installations for storage of cereals, grain, food products or any organic products, etc	125	L	X	X	X		X				X	X	X			X	X	
Heading 2225: Sugar factories, sugar refinery, malt house	175	L												X				X
Heading 2410: Wood or similar material	185	L				X												
Heading 2271: Manufacture of dextrin	315	L							X									
Heading 2311: Processing of vegetable fibres, etc	195	C						X	X									
Heading 2226: Starch mill	305	C	X									X						

"L" = layer

"C" = cloud

Highest temperature of the installation including the equipment (according to the calculation on page G:29).

If any of the elements are not present in the installation, use the most restrictive that is actually present.

TABLE OF DUST FOUND IN THE PHARMACEUTICAL INDUSTRY

DUST	PARTICLE SIZE	SELF-IGNITION TEMPERATURE	MINIMUM CONCENTRATION (g/μ3)
Acetylsalicylic acid	400μ	550 °C	60
Ascorbic acid	39μ	490 °C	60
Paracetamol	120μ	-	30
Extract of rosemary	30μ	380 °C	30
Valerian powder	78μ	-	100

Tests conducted in a laboratory are used to assess the risks of explosion of products used in the pharmaceutical industry.

PRODUCT SELECTION CRITERIA ACCORDING TO THE TYPE OF DUST

DUST	SELF-IGNITION TEMPERATURE °C OF DUST IN A LAYER	MAX. SURFACE TEMPERATURE °C = T-75°	SELF-IGNITION TEMPERATURE °C OF DUST IN A CLOUD	MAX. SURFACE TEMPERATURE °C = 2/3 T°
Starch (Wheat)	+ 380	+ 305	+ 400	+ 267
Wheat (bulk)	+ 220	+ 145	+ 500	+ 333
Wood/Pine (sawdust)	+ 260	+ 185	+ 470	+ 313
Cellulose	+ 270	+ 195	+ 480	+ 320
Flour/wheat	+ 440	+ 365	+ 440	+ 293
Corn starch	–	+ 125	+ 380	+ 253
Milk powder	+ 200	+ 125	+ 490	+ 327
Sugar	+ 400	+ 325	+ 370	+ 247

Important: for dust, the temperature is clearly indicated according to the type of dust and whether it is in clouds or layers.

PROTECTION INDEX

PROTECTION AGAINST ELECTRIC SHOCKS

This relates to the risk of so-called indirect contact as a result of a fault in the insulation between the active parts and the earth of the load.

The EN/IEC 61140 standard defines the following four classes :

CLASS 0

- Single functional insulation, no possibility of connecting metal earths to a protective conductor (this kind of equipment is prohibited even in non hazardous Zones).

CLASS 1

- Single functional insulation, obligatory presence of an ear thing terminal for the earths.

CLASS 2

- Double insulation or reinforced insulation identified by two concentric squares (international symbol) □

CLASS 3

- Equipment supplied at a voltage not exceeding the limits of extra low voltage (ELV) and not having any internal or external circuits operating at a voltage above these limits.

Moreover, article 15 of the EN/IEC 60079-0 standard stipulates, for all equipment for explosive atmospheres, at least one connection element for the protective conductor or the conductor for the equipotential earth connection.







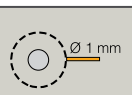

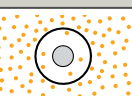

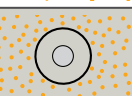



NB : classes 2 and 3 do not provide any additional protection with regard to the risk of explosion.

ELECTRICAL CLASSES

CLASS	PROTECTION
Class 0	Insulation by construction without connection to earth
Class 1	Double insulation without connection to earth
Class 2	Adapted to extra low voltage (< 50V)

The electrical class defines the protection of people against indirect electrical contacts

PROTECTION INDEXES FOR ELECTRICAL ENCLOSURES IN ACCORDANCE WITH EN/IEC 60529 STANDARDS

1ST FIGURE: PROTECTION AGAINST SOLID BODIES			2ND FIGURE: PROTECTION AGAINST LIQUIDS		
IP	TESTS		IP	TESTS	
0		No protection	0		No protection
1		Protected against solid bodies larger than 50 mm (e.g. accidental contact with the hand)	1		Protected against vertically-falling drops of water (condensation)
2		Protected against solid bodies larger than 12.5 mm (e.g. finger of the hand)	2		Protected against drops of water falling at up to 15° from the vertical
3		Protected against solid bodies larger than 2.5 mm (tools, wires)	3		Protected against drops of rainwater at up to 60° from the vertical
4		Protection against solid bodies larger than 1mm (fine tools, small wires)	4		Protected against projections of water from all directions
5		Protected against dust (no harmful deposit)	5		Protected against jets of water from all directions
6		Completely protected	6		Completely protected against jets of water of similar force to heavy seas
			7		Protected against the effects of temporary immersion
			8		Protected against effects of prolonged immersion under specified conditions

IP LETTER	DESCRIPTION
H	High voltage apparatus
M	Motion during water test
S	Stationary during water test
W	Weather conditions

PROTECTION AGAINST MECHANICAL SHOCKS

The table below gives the impact (in joules) for Group II equipment. It is an extract from the EN/IEC 60079-0 standard.

N.B. : When an item of electrical equipment is subjected to tests corresponding to a low risk of mechanical danger, it must be marked with the symbol « X » in accordance with article 26.4.2 and 29.2i.

The indication « X » placed at the end of the certificate number can also indicate particular conditions of use.

ATX products are designed and certified to resist to high mechanical shock.

GROUP II EQUIPMENT RISK OF MECHANICAL DANGER	SHOCK ENERGY (IN JOULES)	
	HIGH	LOW
1. Grids, protective covers, protective caps for fans, cable entries	7	4
2. Plastic enclosures	7	4
3. Lightweight alloy or cast-iron enclosures	7	4
4. Enclosures of a material other than with walls 3 mm thick - less than 3 mm for Group I - less than 1 mm for Group II	7	4
5. Translucent parts without protective device	4	2
6. Translucent parts with grid (tests to be carried out without the grid)	2	1

IK TABLE

IK CODE	IK 00	IK 01	IK 02	IK 03	IK 04	IK 05	IK 06	IK 07	IK 08	IK 09	IK 10
Shock energy (in joules)	0	0.15	0.20	0.35	0.50	0.70	1	2	5	10	20

By way of comparison : protection against mechanical shocks in accordance with article 4.2 of EN/IEC 62262.

EMC - ELECTROMAGNETIC COMPATIBILITY

With respect to EMC (Electromagnetic compatibility), equipment must comply with the EMC Directive 89/336 EC, modified by directives 92/3, 93/68 and 93/97 EC, which stipulate 2 main requirements :

1- EMISSION

The appliance must not emit interference or disturbance likely to affect other equipment.

2- IMMUNITY

The appliance must be resistant to the effects of surrounding electrical equipment (for example, starting of motors or pumps, variable speed drives, etc.).

DIRECTIVES 89/336, 92/31, 93/68 AND 93/97 CE

EMISSION
IN ACCORDANCE WITH NF EN 50081-2
EMISSION TESTS
EN/IEC 55015
Insertion loss (C)
Conducted interference (C)
Radiated interference (R)

IMMUNITY
IN ACCORDANCE WITH NF EN 50082-2
IMMUNITY TESTS
EN/IEC 61547
EN/IEC 61000-4-2 Electromagnetic discharges (C)
EN/IEC 61000-4-3 Immunity to radiated fields (R)
EN/IEC 61000-4-8 Power frequency magnetic fields (C)
EN/IEC 61000-4-4 Fast transient/burst (C)
EN/IEC 61000-4-6 Induced conducted interference (C)
EN/IEC 61000-4-5 Lighting surges (C)
EN/IEC 61000-4-11 Voltage dips and interruptions (C)

(C) ==> *Conduction*

(R) ==> *Radiated*

There are several protection modes recognized by the IEC.

ZONE	IDENTIFICATION LETTERS	EN/IEC STANDARDS	PROTECTION METHODS
GAS AND VAPORS			
Zone 0	ia	60079-11	Intrinsically safe
	ma	60079-18	Encapsulated
	op Is	60079-28	Intrinsically safe optical radiation
Zone 1	d	60079-1	Flameproof
	e	60079-7	Increased safety
	ib	60079-11	Intrinsically safe
	mb	60079-18	Encapsulated
	o	60079-6	Immersed in oil
	p	60079-2	Internal over-pressure
	q	60079-5	Filled with powder
Zone 2	ic	60079-11	Intrinsically safe
	mc	60079-18	Encapsulated
	nA	60079-15	Non sparking equipment
	nC	60079-15	Equipment glittering sparks but contacts protected by enclosure other than nR, nL or nZ
	nL	60079-15	Equipment with limited energy
	nR	60079-15	Enclosure with restricted breathing
	nZ	60079-15	Enclosure with simple internal over-pressure
DUSTS			
Zone 21	iD	61241-11	Intrinsically safe
	mD	61241-11	Encapsulated
	pD	61241-4	Over pressurization
	lD	61241-1	Protection by enclosure

DEFINITION

A flameproof enclosure must be able to fulfil three criteria :

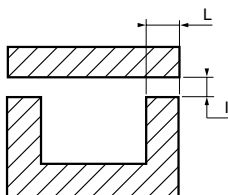
- Contain an internal explosion without permanent distortion.
- Guarantee that the explosion cannot be transmitted to the surrounding atmosphere.
- Exhibit a temperature at all points on the surface which is lower than the spontaneous ignition temperature of the surrounding gases or vapors.

EXPLOSION GROUP OF A FLAMEPROOF ENCLOSURE

Experimental studies of explosions has shown that there are values for the flange width (L) and for the gap (i) which make it impossible for an explosion to spread outside an enclosure which is not perfectly tight.

These values are directly linked to the explosive capacity of the atmosphere in question, and are classed in 4 groups :

I, II A, II B or II C (see « Marking »).



- For example, the value of the gap « i » for a flange 12.5 mm long and for a volume < 100 cm³, dependent on the explosion group, is as follows :
 - I : ≤ 0.4 mm (flanged path)
 - II A : ≤ 0.3 mm (flanged path)
 - II B : ≤ 0.2 mm (flanged path)
 - II C : ≤ 0.15 mm (spigot path)

All the values for the gap « i » as a function of the seal « L » are given in the EN/IEC 60079-1 standard.

TEMPERATURE CLASS

The flameproof enclosure must not exhibit temperatures on its external surface which are capable of becoming sources of spontaneous ignition. Equipment is therefore classified according to their maximum external temperature. There are six temperature classes : T1, T2, T3, T4, T5, T6 (see « Marking »).

MARKING

The marking of flameproof « d » must bear the information stipulated by the 94/9 CE ATEX Directive for Europe and IEC 60079-0 for the rest of the world.

TEMPERATURE CLASS	MAXIMUM SURFACE TEMPERATURE °C (MST)
T1	450
T2	300
T3	200
T4	135
T5	100
T6	85

CABLE ENTRIES

It is necessary to lubricate the thread and to ensure that at least 5 threads are engaged for metric thread and at least 3.5 threads are engaged for NPT threads.

Holes which are not used for cable entries must be blanked using the appropriate blanking plugs.



II2G Ex d IIB T6	
II	Surface industry.
2	Category 2 corresponding to Zone 1.
G	Gas.
Ex	Equipment designed to operate in an explosive atmosphere. (Products certified ATEX are marked EEx and marked Ex for the products certified IEC).
d	This letter designates the mode of protection by flameproof enclosure. The construction of this enclosure must be such that it withstands the pressure of a possible internal explosion and prevents it from spreading to the exterior. It is characterized in particular by the dimensions of its seals and gaps.
II	This is the electrical equipment group according to its destination. There are two groups : <ul style="list-style-type: none"> • Group I Electrical equipment intended for underground work in mines with explosive atmospheres. • Group II Electrical equipment intended for surface work.
B	Subdivision of gases (see page G:24) taken into account for the dimensions of flamepath.
T6	It is the temperature class of the equipment. It indicates the maximum surface temperature during operation (while respecting a safety margin in the event of an accident involving the air-conditioning or ventilation). <ul style="list-style-type: none"> • There are six temperature classes (see chart left).

CONNECTION TERMINALS

The certificate of conformity does not stipulate the type of terminals to be used in a flameproof enclosure. Only the connection precautions given in the technical data sheets need to be followed.

LIGHTING

In lighting equipment use only lamps of the type and power specified for that equipment.



Extract from article 4 in the December 20, 1988 order, modified by the January 10, 1992 order (Interval between inspections is fixed at one year in rooms and work positions at which there are risks of degradation fire or explosion, etc...)



LUBRICATION OF FLAMEPATH

The equipment is supplied with the joint flanges lubricated. When the equipment is installed, the path must be lubricated to keep them in good condition. Use a non-hardening, anti-corrosive grease.

- For the flange and spigot path on boxes and enclosures : multi-purpose grease, for use at temperatures - 30 to + 130 °C, such as Antar multi-purpose, ELF multi, ELF epexelf, Loctite GR 125.
- For the flange and spigot path on the luminaires : silicone paste, for use at temperatures - 40 to + 200 °C, such as RhÛne-Poulenc Rhodorsil 408 etc.
- For threaded path : graphitic mineral grease, for use at temperatures - 30 to + 150 °C, such as : Loctite GR 135, Molydal M 03.

RECOMMENDATIONS FOR ASSEMBLY

In order to successfully retain the flameproof character of the equipment :

- Care must be taken before starting up to ensure that all the screws for closing the covers and cable entries are firmly tightened.
- Modification of the original predrilled holes is prohibited.

MAINTENANCE

APPLETON ADVICE

- Always read the installation and user's instructions provided with the equipment before starting installation work.
- Always use Appleton original spare parts for repair work, in order to keep the equipment in good working condition and to maintain the protection mode.
- For a good maintenance, keep the technical data sheets and the EC declarations of conformity.

DEFINITION

Method of protection applicable to electrical equipment such as light fittings, sockets, switches, etc, which consists of preventing the occurrence of any accidental ignition.

The construction principles for increased safety « e » equipment are as follows :

- Use of high-quality insulation materials
- Specially dimensioned air line leakage distance and creepage distance
- Electrical connection which cannot become loose
- Minimum IP54 weatherproof protection of the enclosure
- Respect of the temperature classes
- Conformity of cable entries
- Labelling.

USE

All increased safety « e » equipment is designed such that it does not cause arcs or excessive temperatures capable of likely to ignite an explosive atmosphere. It is therefore suitable for all gas groups (A, B and C). These groups do not appear on the equipment labelling.

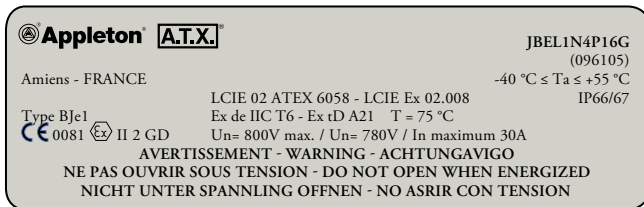
TEMPERATURE CLASS

For increased safety « e » equipment, the temperature to be taken into account is that of the hottest point of the equipment as a whole, and not the external temperature.

There are six temperatures classes: T1, T2, T3, T4, T5, T6 (see « Marking »).

MARKING

The marking of increased safety « e » equipment must bear information stipulated by the 94/9 CE ATEX Directive for Europe and IEC 60079-0 for the rest of the world.



TEMPERATURE CLASS	MAXIMUM SURFACE TEMPERATURE (MST)
T1	450 °C
T2	300 °C
T3	200 °C
T4	135 °C
T5	100 °C
T6	85 °C

CABLE ENTRIES

These are created by screwing the cable gland directly onto the enclosure or, for untapped holes, by fixing with a locknut. Holes which are not used for cable entries must be blanked using the appropriate blanking plugs.



CABLE ENTRY BY SCREWING DIRECTLY ONTO ENCLOSURE.

II 2G Ex e II T6	
II	Surface industry.
2	Category 2 corresponding to Zone 1.
G	Gas.
Ex	Equipment designed to operate in an explosive atmosphere. (Products certified ATEX are marked EEx and marked Ex for the products certified IEC).
e	This letter refers to the increased safety protection mode.
II	This is the electrical equipment group according to its destination. There are two groups : <ul style="list-style-type: none"> • Group I Electrical equipment intended for underground work in mines with explosive atmospheres. • Group II Electrical equipment intended for surface work.
T6	It is the temperature class of the equipment. It indicates the maximum surface temperature during operation (while respecting a safety margin in the event of an accident involving the air-conditioning or ventilation). <ul style="list-style-type: none"> • There are six temperature classes (see chart left).

WEATHERPROOF SEAL

The equipment has a protection index of at least IP 54 ; it is therefore important to ensure that the weatherproof seal is in good condition when the product is installed.

Defective seals must be systematically replaced.



WEATHERPROOF SEAL

CONNECTION TERMINALS

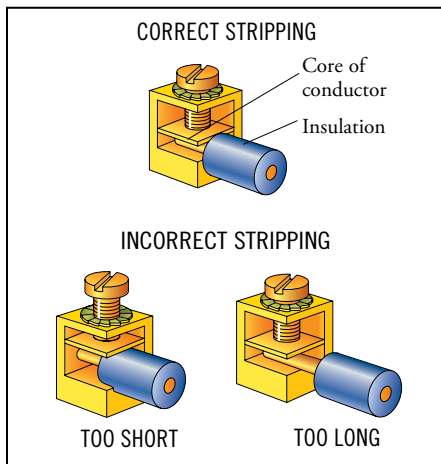
Each certificate of conformity indicates the type of terminals to be used in each type of junction box.

The connection must be performed according to current regulations and any additional instructions in the product documentation, such as :

- Maximum current density,
- Maximum connection capacity.

STRIPPING AND CONNECTION

The conductors should only be stripped back to the edge of the metal part of the terminal connection, to ensure correct insulation.



PRODUCTS MARKED « de »

Certain appliances such as power sockets, switches, etc, whose design creates arcs and sparks in normal operation, cannot be produced with protection mode « e » only.

Protection modes therefore have to be combined. « d » and « e » technologies are the most commonly used.

- 1) The part where the electric arc is produced is enclosed in a small flameproof chamber.
- 2) The connection terminals are « e » increased safety.
- 3) The assembly is mounted in an « e » increased safety enclosure and has a certificate of conformity with CENELEC standards.
- 4) Appliances marked « de » demonstrate the subdivision of gases (A, B, or C) which is linked to the « d » part of the equipment.

APPLETON ADVICE

- Always read the installation and user's instructions provided with the equipment before starting installation work.
- Always use Appleton original spare parts for repair work, in order to keep the equipment in good working condition and to maintain the protection mode.
- For a good maintenance, keep the technical data sheets and the EC declarations of conformity.

INDUSTRIAL ENVIRONMENT

REQUIREMENTS IN STANDARDS

Standard A 91-011 defines three different types of atmospheric environments :

TROPICAL ENVIRONMENT

- An environment corresponding, as the definition suggests, to the most severe conditions of heat and humidity - regions known as « tropical » and « equatorial ».

This environment concerns products to be dispatched all over the world. This environment implies the strongest protection against corrosion currently in use for a metallic finish.



SALINE MIST CORROSION TEST IN OUR LABORATORIES.

INDUSTRIAL ENVIRONMENT

- An environment corresponding to factory and related atmospheres but without these atmospheres having a particular character requiring special protection, the main increase in corrosion arising from a substantial sulphur content in the atmosphere.

MARINE ENVIRONMENT

- An environment corresponding to atmospheres on the coast or at sea, excluding actual attack by sea water, the main increase in corrosion arising from the continuous presence of high relative humidity and of a certain content of sea salt in the air.

TREATMENT AT SOURCE TO WITHSTAND THE 3 ATMOSPHERIC ENVIRONMENTS

In order to ensure the most efficient corrosion resistant treatment possible, Appleton has chosen to carry out on all products in this catalogue a treatment that satisfies all three atmospheric environments :

- 672 hours saline mist test in accordance with IEC 60068-2-11, Ka test.

The test corresponds to a period of 4 weeks at a saline concentration of 5 %.

In addition to the saline mist test the products undergo climatic tests defined by the IEC 60068-2-30 standard, that is 5 climatic cycles of 24 hour from 25 °C to 55 °C with a relative humidity of 50 to 95 %.

COMPOSITION OF MATERIALS USED IN THE CONSTRUCTION OF ENCLOSURES

All ATX plastic enclosures (polyester, polycarbonate, polyamid), used in the construction of enclosures are conform to the article 7 of the EN/IEC 60079-0 standard.

All main alloys are conform to the AFNOR french codification.



CORROSION ON A NON-TREATED PRODUCT.



PRODUCT TREATED AGAINST CORROSION.

APPLETON ADVICE

Care should be taken to ensure that the materials chosen for the equipment are compatible with your industrial environment.

Example : polyester in the presence of benzene.

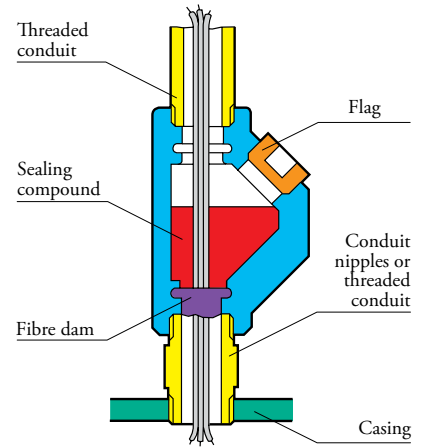
PREDOMINANT IN : UNITED STATES, CANADA, PART OF SOUTH AMERICA, MIDDLE EAST, FAR EAST



CONDUCTORS PLACED IN A RIGID THREADED CONDUIT : CONNECTION VIA A FIRE BARRIER.

This installation method is widely used by specifiers, investors and installers in the USA and Canada, as well as part of South America and the Middle and Far East, where the National Electrical Code NEC is used.

Special seals are required, known as fire barrier connections which are filled with an appropriate « compound ».

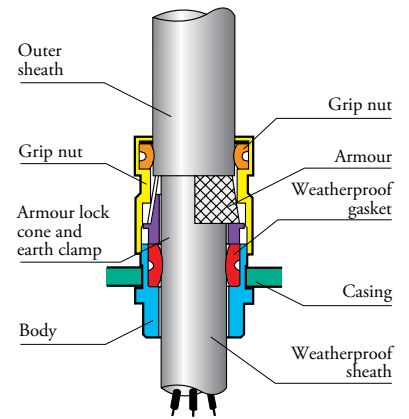


PREDOMINANT IN : UNITED KINGDOM, COMMONWEALTH COUNTRIES, SPAIN AND OFFSHORE APPLICATIONS



ARMOURED BRAID, WIRE OR STEEL TAPE CABLE : CONNECTION VIA CABLE GLAND EARTH CONTINUITY.

This installation method is widely used by specifiers, investors and installers in the United Kingdom and Commonwealth countries where the « British influence » and wiring practice is used.



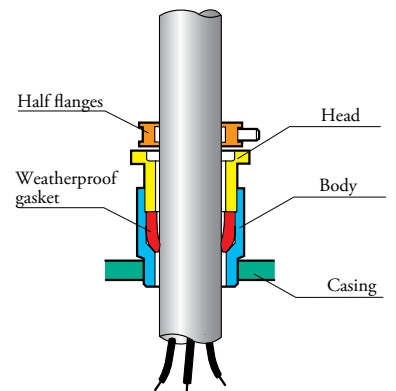
PREDOMINANT IN : FRANCE, GERMANY, ITALY, EASTERN EUROPE COUNTRIES, PART OF AFRICA, MIDDLE EAST, FAR EAST



NON ARMOURED CABLE : CONNECTION VIA CABLE GLAND.

This installation method is used when there is little risk of mechanical damage and earth continuity is not compulsory.

Design engineers, investors and contractors mainly used this due to its flexibility.



SELECTING CABLES

SELECTION OF CABLES INTENDED FOR USE IN HAZARDOUS AREAS

Cables come in a wide variety of shapes and sizes and new designs, e.g. those with optical fibres, are regularly being introduced.

The issue of correctly sealing these cables as they enter hazardous area electrical equipment is a worldwide problem, and not confined purely to local conditions in any one particular place.

Although there are no IEC construction standards for the cables intended for use in flammable atmospheres, according to IEC 60079-14, 10.4.2(b), if a cable gland with an elastomeric flameproof sealing ring is to be used, when connecting cables to Ex d equipment enclosures, the cable should be :

- i. Substantially compact and circular (i.e. especially the part of the cable entering the enclosure),
- ii. Have an extruded bedding (without any gaps),
- iii. Have fillers, if any are used, which are Non-Hygroscopic.

Effectively, the cable should be physically assessed, taking into account the protection method and configuration of the equipment, to verify its suitability, before any cable gland with an elastomeric sealing ring can be selected.

ITS USE

External or internal. In normal service, a cable exhibits a rise in temperature on the surface which must be taken into account in Zones where there is a risk of explosion. This rise in temperature stems from a Joule effect of the current passing through the cable. In normal use, the maximum permissible current must therefore be limited to 85 % of the permissible intensity for the Zones without explosion risks (required in NF C 15-100 standard, IEC 60364).

ITS METHOD OF INSTALLATION

Overhead, underground, in cable ducts or guttering.

In fixed installation (rigid cable), for mobile equipment (flexible cable).





ITS CHARACTERISTICS

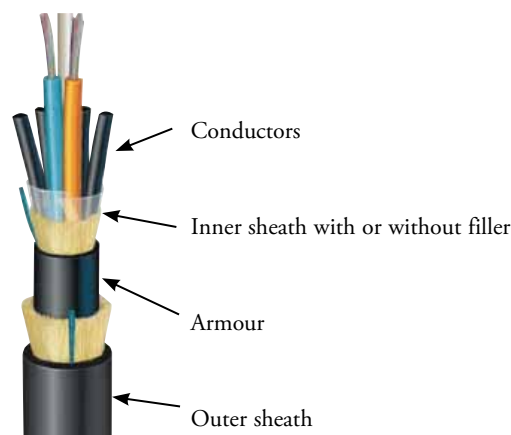
The use of category C1 and CR1 is even recommended :

- Flexible cables, series H07 RNF.
- Non-armoured rigid cables, series U 1000 RO 2V.
- Rigid armoured cables, series U1000 RGP FV.

All these cables can be used for voltages up to 1000 V, except flexible cables whose operating voltage is limited to 750 V.

TYPICAL IEC CABLE TYPES

ARMoured			UNARMoured
Steel tape armoured (STA)	Wire braided armoured (SWB)	Single wire armoured (SWA)	Normal unarmoured
			



AN EXPLANATION OF CABLE GLAND TYPES AND INSTRUCTIONS FOR PROPER SELECTION

EQUIPMENT SELECTION PROCESS

Generally, electrical safety is ensured by the implementation of one of two considerations, i.e. that electrical apparatus be located where reasonably practicable outside hazardous areas, and that electrical apparatus be designed, installed and maintained in accordance with measures recommended for the area in which the apparatus is located.

The selection of equipment for use in hazardous areas will depend upon a number of variable factors including but not limited to the Zone of Use, the Hazard Category, the Gas Group or Combustible Dust data, the rating of equipment for the operating conditions, the Temperature Classification requirement of the equipment (determined by the T Rating of the flammable mixture), any construction material considerations including reliability against chemical attack, the Ingress Protection Rating required, the protection against possible damage from vibration, reduction in the risk of thermite sparking, the possibility of static charge formation, and perhaps several other factors related to the electrical characteristics of the installation.

In order to ensure that the preferred type of equipment is used on a plant or project, the responsible engineers may prefer to specify the apparatus by make and model or generic type. Bearing in mind that the most progressive and forward thinking manufacturers are continuously developing their products the task of specification must also be a continuous process.

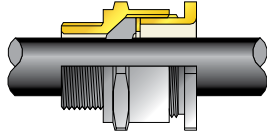
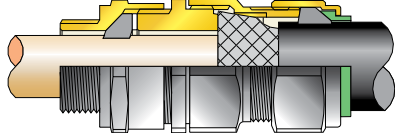
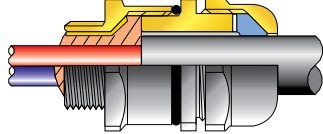
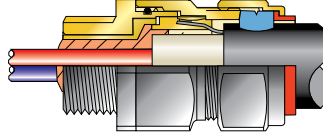
Here are a few of the basic factors which may affect specification of electrical equipment for hazardous areas :

- Clear definition of the acceptable form(s) of certification,
- Acceptable Certification Standards,
- Acceptable Gas Groups,
- Zone of Use requirement,
- Form of Protection preferred,
- Temperature Classification,
- Any environmental conditions,
- Any particular material requirements,
- Minimum Ingress Protection,
- Additional Deluge Test Certification, if required,
- Additional Marine approvals, if required,
- Minimum and Maximum Ambient Temperature rating.

Prior to selection being finalised and equipment being earmarked for purchase the relevant engineering personnel should review the availability of the preferred or specified equipment, verifying that it has the necessary hazardous area certification to meet the conditions prevailing. This review of certification should cover any special conditions for safe use that may be included in the certification documents to avoid subsequent non-conformities arising when the equipment is ready to be installed, commissioned, operated, inspected or maintained.

CABLE GLANDS FOR HAZARDOUS AREAS

Under EN/IEC Standards (EN/IEC 60079-0 & EN/IEC 60079-1) three main types of cable glands exist for hazardous area applications, for either armoured or non-armoured cables.

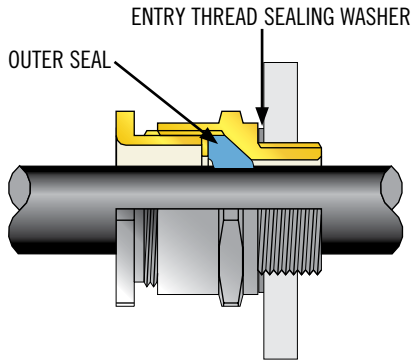
FORM OF EQUIPMENT PROTECTION/CABLE TYPE	NON-ARMOURED CABLES	ARMOURED CABLES
Increased Safety – Ex e (EN/IEC 60079-7) Flameproof – Ex d (EN/IEC 60079-1) Zone 2 – Ex n (EN/IEC 60079-15)		
Flameproof Compound Barrier – Ex d (EN/IEC 60079-1)		

When it comes to Zone 2 equipment form of protection Type « n », the picture is not so clear as it may first appear. As there are special requirements which apply to the sealing of cables entering form of protection type « nR » (Restricted Breathing Enclosure) apparatus, it should not automatically be assumed that cable glands with Ex d or Ex e certification can be used.

IEC PROTECTION CONCEPTS Ex d, Ex e, Ex n — CABLE GLAND FOR CABLES ENTERING Ex e APPARATUS

THE MINIMUM REQUIREMENTS FOR Ex e CABLE GLANDS

- Impact Strength – 7 Joules,
- I.P. Rating – IP54 Gas / Vapor – IP6X Dust,
- Sealing Washer at Cable Entry Interface is Recommended,
- Single (Outer) Seal as a Minimum,
- Trend is to Use Double (Inner/Outer) Seal.

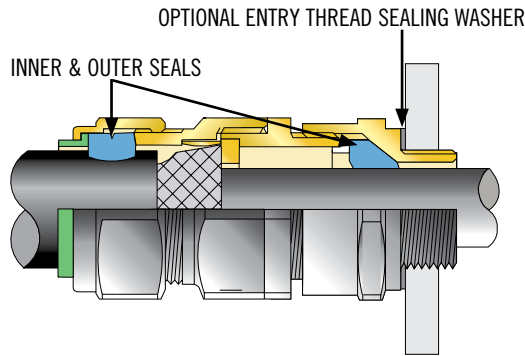


Note : Whilst the minimum Ingress Protection rating is said required to achieve Ex e certification under EN/IEC 60079-7 is IP54, it should be considered that the cable gland is required to maintain the integrity of the equipment enclosure which is invariably higher.

It can also be noted that EN/IEC 60079-14, section 11.3 states that threaded cable entry devices connected into threaded cable entry plates or enclosures of 6 mm or greater thickness need no additional sealing between the cable entry device and the entry plate or enclosure, providing the axis of the cable entry device is perpendicular to the external surface of the cable entry plate or enclosure.

However we recommend the use of an ATX Entry Thread Sealing Washer, which when installed at the cable entry interface, between the equipment enclosure and the cable entry device offers I.P. protection in excess of IP66. These components have been independently 3rd party tested in Ingress Protection tests to EN/IEC 60529.

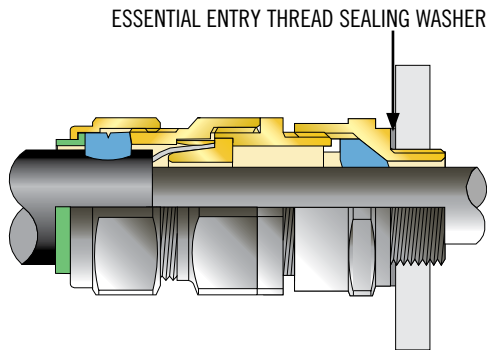
CABLE GLAND FOR ARMoured CABLES ENTERING Ex d APPARATUS



THE MINIMUM REQUIREMENTS FOR Ex d CABLE GLANDS

- Screwed Entry Threads Must Maintain Flameproof Path,
- Minimum 5 Full Thread Engagement With Mating Equipment,
- Inner Seal Must be Flameproof & Gas Tight,
- Trend Has Been to Use Dual Certified Ex d / Ex e,
- Limitations Of Safe Use Usually Exist,
- Users Must Also Carefully Follow EN/IEC 60079-14.

CABLE GLAND FOR ARMoured CABLES ENTERING Ex n APPARATUS



THE MINIMUM REQUIREMENTS FOR Ex n CABLE GLANDS

- Cable Gland / Equipment Interface Seal is Essential,
- Restricted Breathing Enclosure Features Must be Maintained – Apparatus Maker Responsibility,
- Special Test Under EN/IEC 60079-15 Applies For Ex nR Apparatus & Cable Entry,
- Some Flameproof Cable Glands Do Not Comply,
- Inner Seal Must be Air Tight in Two Directions.

AN EXPLANATION OF CABLE GLAND TYPES AND INSTRUCTIONS FOR PROPER SELECTION

SELECTION PROCESS FOR HAZARDOUS AREA CABLE GLANDS ACCORDING TO IEC

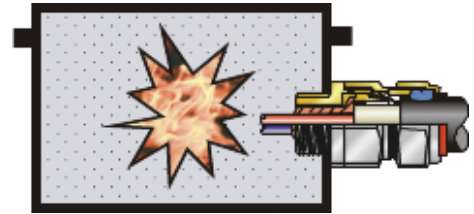
SELECTION OF CABLE GLANDS FOR FLAMEPROOF TYPE d ENCLOSURES TO EN/IEC 60079-14

Concerning the subject of cable glands to maintain integrity of type of protection Flameproof Enclosures “d” using direct cable entry into the flameproof enclosures, special selection criterions have to be considered as defined in Section 10 of EN/IEC Standard EN/IEC 60079-14 “Electrical apparatus for explosive gas atmospheres Part 14: Electrical installations in hazardous areas (Other than mines)”.

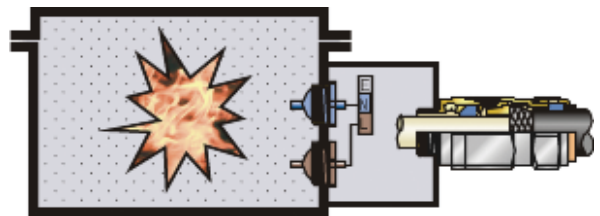
In order to achieve compliance with the prevailing Installation Code of Practice and in particular EN/IEC 60079-14, it is necessary to evaluate the function of the equipment, the cable gland, and the cable, and in order to satisfy the conditions of the applicable standards compatibility of all three with each other must be verified. Section 10 of EN/IEC 60079-14 “Additional requirements for type of protection “d” - Flameproof enclosures” for the selection of cable glands is required to be followed, and this sets out some specific rules to ensure integrity and safe operation of the installed equipment.

CABLE ENTRIES INTO EX d ENCLOSURES

Two situations can be considered, direct cable entry and indirect cable entry:



DIRECT CABLE ENTRY – EX d



INDIRECT CABLE ENTRY – EX de



INDIRECT CABLE ENTRIES INTO EX d ENCLOSURES

In the case of indirect cable entry, this may be achieved by a separate terminal chamber, where the cable entries can be found and only the (looping) cable conductors are terminated in the terminal block, where no source of ignition exists in this terminal chamber. The terminal chamber may offer Ex d or Ex e form of protection, and is separated from the main enclosure, with the internal wiring passing through line barriers or bushings before connecting to the equipment side of the terminal block. The termination and wiring of the incoming field cables would thereby not normally require the adoption of compound sealing cable glands in this case, unless there is a risk of gas migration through the interstices of the cable and the transmission of gas to the opposite end of the cable needs to be prevented. An example of this type of equipment configuration is shown in the photograph to the left.

INSTALLATION METHOD FOR CABLE GLANDS

SELECTION PROCESS – ACCORDING TO EN/IEC 60079-14

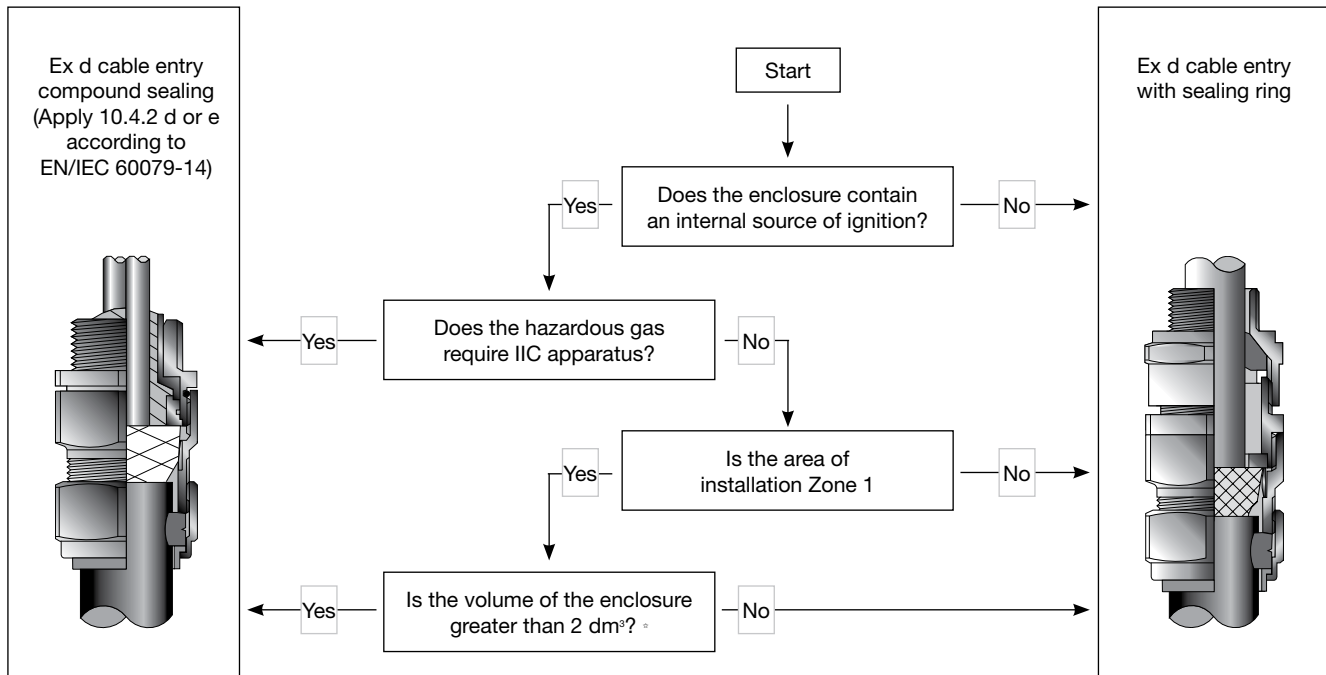
The following flow chart can only be followed as part of the EN/IEC selection process after physical evaluation of the cable 10.4.2 Selection

THE CABLE ENTRY SYSTEM SHALL COMPLY WITH THE FOLLOWING:

- Cable entry device in compliance with EN/IEC 60079-1 “Construction and verification test of flameproof enclosures of electrical apparatus” and particular type of cable intended for use with that device,
- thermoplastic, thermosetting or elastomeric cable which is substantially compact and circular, has extruded bedding and fillers, if any, are non-hygroscopic, may utilize flameproof cable entry devices, incorporating a sealing ring selected in accordance with below selection guide.

SELECTION GUIDE

Selection of cable entry for Ex d flameproof enclosure according to electrical installations EN/IEC 60079-14.



On condition the cable gland is not certified as part of the equipment but tested and certified as a separate component and the used cable is substantially compact and circular the selection chart above taken from section 10 of EN/IEC 60079-1 can be used.

1- GENERAL REQUIREMENTS

Electrical installations must comply with the requirements concerning installations in both non hazardous and hazardous locations :

- NF C15-100, with condition BE3, for France, (B 512-2-20),
- CEI 60364, internationally.

2- EQUIPMENT SELECTION (EXCEPT CABLE ENTRIES)

- Equipment for use in Zone 0 :
 - ia Intrinsic safety.
- Equipment for use in Zone 1 :
 - d protection mode,
 - p protection mode,
 - q protection mode,
 - o protection mode,
 - e protection mode,
 - i protection mode,
 - m protection mode.
- Equipment for use in Zone 2 :
 - Equipment with specific protection mode (EN/IEC 60079-15) (see page G:35).

3. SELECTION AS A FUNCTION OF THE EQUIPMENT GROUP

- Protection modes e, m, o, p and q are marked "Group II" and may be used in all subgroups A, B, C.
- Protection modes d and i are marked "Group IIA, IIB or IIC" and must not be used in subgroups higher than marked. IIB must not be used in IIC but can be used in IIA.

4- EXTERNAL INFLUENCES

- The material must be selected and installed so that it is protected against external, chemical, mechanical, thermal and electrical influences, vibrations, humidity, etc., which are likely to counteract the protection modes provided.

5- PROTECTION AGAINST DANGEROUS SPARKS

Limitation of earth fault currents. It is difficult to cover all systems, but the following methods represent general cases.

These systems can be used in Zones 1 and 2 up to 1 000 V- /1 500 V... (DBT Directive 73/23/CEE modified by Directive 93/68/CEE).

SCHEME TYPE TN

- The earthing system must be connected to the source of energy directly earthed by protective conductors (PE*), which have to be earthed near each energy transformer.
- The source of energy directly earthed and the neutral conductor are the same.
- Any permanent phase to earth fault current becomes a short circuit current.

SCHEME TN. C

- The neutral conductor (PE*) and the protective conductor are the same.

SCHEME TN. S

- The neutral conductor (PE*) and the protective conductor are separate.
- In dangerous area the scheme TN. S must be used.
- Whenever there is a transition from TN. C to TN. S (non-hazardous Zone to a hazardous Zone), the PE conductor must be connected to the equipotential connection system in the non-hazardous location.

SCHEME TYPE TT

A system having one point of the source of energy directly earthed, the exposed conductive parts of the installation being connected to earth electrodes, electrically independent of the earth electrodes of the source.

The intensity of the phase to earth fault current is less than the intensity of the short circuit current, but may be sufficient to cause dangerous voltages.

- It must be protected by a residual current device if it is used in Zone 1 hazardous locations.

SCHEME TYPE IT

- The source of the supply is either connected to earth through a deliberately introduced earthing impedance or is isolated from earth. Exposed conductive parts of the installation are connected directly to earth at the consumer end of the installation.
- Current resulting from a single phase to earth fault has a sufficient low intensity so that it is impossible to develop a dangerous contact voltage.
- Monitoring device must be provided in hazardous Zones to indicate the first fault.

6- EQUALIZATION OF POTENTIALS

- In TN, TT and IT schemes, all exposed conductive parts and all extraneous metallic parts must be connected to the equipotential connection system.
- The connection system may comprise protective conductors, metal pipes in metal cable ducts and metallic structural elements, but must not include the neutral conductor.
- It must be impossible for connections to come loose by themselves.

7- CABLES

- Cables and accessories should be installed such that they are not exposed to mechanical damage and corrosive or chemical influences, for example due to solvents, and the effects of heat.
- When this type of exposure is inevitable, protective measures must be taken to install or to select appropriate cables. For example, in France, the risk of mechanical damage can be minimized by using reinforced cables with shielding inside a seamless aluminium conduit, or cables with a mineral insulation casing or a semi-rigid metal casing.
- When cable or conduit systems are subject to vibrations, they must be designed to resist these vibrations without damage.
- It is also important to take precautions to avoid damage to materials making up the insulation or casings of PVC cables installed in Zones in which temperatures may drop below -5 °C.

8- CABLE JOINTING

- Whenever possible, complete cable lengths shall be installed in hazardous locations. Where this is impossible, a cable joint must be made to the mechanical, electrical or chemical constraints ; it must also be enclosed in an enclosure in which the protection mode is appropriate for the Zone.

* Protective Earth

9- WIRING SYSTEMS FOR ZONES 1 AND 2

CABLE FOR EQUIPMENT INSTALLED IN FIXED POSITION

- Cables with thermoplastic sheaths, or thermosetting sheaths, or elastomer sheaths or metallic sheaths with mineral insulation may be used.

CABLE FOR PORTABLE AND REMOVABLE MATERIAL

- Portable and removable equipment must be equipped with cables with a high strength polychloroprene or equivalent synthetic elastomer casing, cables with high strength rubber casings, or cables with an equally robust construction.
- Conductors must have a minimum cross-sectional area of 1.0 mm².
- If the cable includes a flexible metal shield or reinforcement, this cable must not be used as the only protective earth conductor.

FLEXIBLE CABLES

Flexible cables must be selected from the following cable types :

- Flexible cables with an ordinary tough rubber sheath,
- Flexible cables with an ordinary polychloroprene sheath,
- Flexible cables with a high strength rubber sheath,
- Cables with a high strength polychloroprene sheath,
- Insulated plastic cables with a construction as robust as flexible cables with high strength rubber sheath.

USE OF CABLES

The surface temperature of a cable increases during normal service, and an allowance should be made for this increase in Zones with a risk of explosion. This temperature increase is due to the Joule effect caused by the passage of currents.

Therefore during normal conditions, the maximum allowable current should be limited to 85% of the acceptable intensity for Zones in which there is no explosion risk :

The December 19, 1988 French ministerial order taken in application of the November 14, 1988 decree, imposes the use of category C2 cables according to NEC 32070 for Zones with risks of explosion. These cables do not propagate flames when taken separately and ignited. It is even recommended that category C1 and CR1 cables are used :

- Flexible cables, series H07 RNF,
- Rigid non-reinforced cables, series U 1000 R0 2V,
- Reinforced rigid cables, series U 1000 RGP FV.

All these cables may be used at a voltage of up to 1000 V, except for the flexible cables that may not be used at more than 750 V.

CONDUIT SYSTEMS (TUBES)

- Conduit must be equipped with a fire break if used less than 450 mm from any enclosure containing a source of ignition during normal operation.
- The thickness of the filling material in the fire break must be at least equal to the inside diameter of the conduit, but never less than 16 mm.
- Cables with one or more insulated conductors without a casing may be used in conduit.

However when the conduit contains at least three cables, the cross-section of these cables shall not exceed 40% of the inside cross-section of the conduit.

10- ADDITIONAL REQUIREMENTS ABOUT PROTECTION MODE

« d » EXPLOSIONPROOF ENCLOSURES

SOLID OBSTACLES

When installing equipment, make sure that the flamepath exit is placed at a distance exceeding the distance defined below from any solid object that does not form part of the equipment, such as steel reinforcement, walls, protection devices against the weather, installation supports, tubes or other electrical equipment, unless the equipment has actually been tested at smaller distances.

GAS-VAPOR SUB-GROUP	MINIMUM DISTANCE (MM)
IIA	10
IIB	30
IIC	40

COMMENTS

- Enclosures in the CF type range are certified with smaller distances.

PROTECTION OF FLAMEPATH SURFACES

- Flamepaths must be protected against corrosion.
- The flame flange must be protected against water penetration.
- The use of sealing materials are only accepted when specified in equipment specification documents.
- Flamepaths must not be treated by substances that harden during use.
- The protection indexes given for the products are guaranteed when greases specified in our Guide (*page G:37*) are used.

CONDUIT SYSTEMS

- Conduits must be chosen from the following options :
 - a) Threaded high strength, drawn or continuous welded steel conduit according to IEC 60614-2-1 or
 - b) Metal or composite flexible conduit, for example metal conduit with a plastic or elastomer sheath, for which the mechanical strength is classified as "high" or "very high" according to IEC standard 60614-2-5.
- A minimum of five threads must be provided on the conduit so that the five threads can be engaged between the conduits and the explosion proof enclosure or between the conduits and the connector (5 threads engaged for metric threaded, 3.5 threads engaged for NPT).
- Fire breaks must be provided for distances defined by the EN/IEC 60079-14 standard.
- A single fire break is sufficient for coupling of two « d » enclosures, using conduit.

11. ADDITIONAL REQUIREMENTS FOR INCREASED SAFETY**PROTECTION MODE « e »**

- The degree of protection of enclosures containing active bare parts shall at least be equal to IP54.

CABLE ENTRIES

- Cable entries shall also respect « e » protection mode and must incorporate an appropriate sealing element in order to obtain a minimum degree of protection at least equal to IP54 at the enclosure connection.

NOTES :

- 1) In order to satisfy the IP54 requirement, it is sometimes necessary to seal the cable entry and the enclosure, for example using a seal.
- 2) cable entries screwed onto 6 mm thick, or thicker, enclosures do not require any additional seal between the cable entry and the enclosure, provided that the cable entry is perpendicular to the drilled surface.

CONDUCTOR ENDS

- Some terminals such as split type terminals, can accommodate several conductors.
- When several conductors are connected to the same terminal, care must be taken that each conductor is correctly attached.
- Unless authorized by the documentation supplied with the equipment, two conductors with different diameters must not be connected to the same terminal, unless they have firstly been fixed by means of a single compression sleeve.

COMMENTS

- The insulation of each conductor must be maintained as far as the terminal metal, to prevent the risk of short circuits between adjacent conductors in each terminal block.

NOTE :

- When a single collar clamping screw is used with a single conductor, the conductor should be wound in a "U" around the screw.

COMBINATION OF TERMINALS AND CONDUCTORS IN CONNECTION BOXES AND JUNCTION BOXES

- Make sure that heat dissipated in the enclosure cannot increase temperatures above the required temperature class for the equipment.

This can be done by :

- a) following the instructions in the drilling Guide (www.egsatx.com) about the number of allowable terminals, as a function of the size of the conductors and the maximum intensity, or
- b) checking that the calculated dissipated power is less than the maximum rated dissipated power. In this case, refer to our curves and the instructions in the drilling guide.

CHOOSE APPLETON'S ATX BRAND

Choosing Appleton means :

- Total conformity with the standards.
- Anti-corrosion treatment and climatic protection for each product.
- Increased protection against mechanical shocks.
- A technical sheet with each item of equipment.
- Equipment with a high level of fire resistance.

TOTAL CONFORMITY WITH THE STANDARDS

Appleton electrical equipment for explosive atmospheres is designed and manufactured in the strictest conformity with IEC and CENELEC standards.

ANTI-CORROSION TREATMENT AND CLIMATIC PROTECTION FOR EACH PRODUCT

When the manager of a hazardous area project has to determine in advance the anti-corrosion treatment and climatic protection of the products he is specifying, he is often faced with a difficult decision.

Appleton has tried to reduce this problem to a minimum.

INCREASED PROTECTION AGAINST MECHANICAL SHOCKS

Items of « e » and « d » equipment are classed and constructed for « increased risk of mechanical danger » (*see page G:33*). They can therefore be installed in all work and development sites without any additional precautions.

A TECHNICAL SHEET AND AN EC DECLARATION OF CONFORMITY FOR EACH ITEM OF EQUIPMENT.

All currently sold equipment is supplied with technical data explaining assembly and giving instructions for operation, precautions for operation and a copy of the EC Declaration of Conformity. The EC Declaration of Conformity guarantees the conformity of the product linked to the samples tested or presented by the Notified body.

EQUIPMENT WITH A HIGH LEVEL OF FIRE RESISTANCE

As well as meeting the requirements of EN/IEC 60079-0-7, Appleton equipment has a level of fire resistance defined by the EN/IEC 60695-2 standard. It is resistant to incandescent wire from 650 °C to 960 °C.

ENDURANCE

The durability of products depends on their suitability for repeated operation. Appleton tests its products within temperature ranges that can vary from - 40 °C to + 60 °C, whereas specific standards only impose these checks at an ambient temperature of - 20 °C to + 40 °C.

AGEING

Most products on the market are now made of plastic. Therefore, the long term behavior of these materials should be checked.

Most of their degradation is caused by heat generated by operation, the temperature being equal to the ambient temperature plus temperature rises caused by electrical parameters for each product.

Depending on the equipment type, our test rooms can check the reliability of products by means of accelerated tests that combine voltages up to 270V and temperatures up to + 180 °C.

Plastic enclosures exposed to sunlight are artificially aged by exposure to UV radiation for 1000 hours with a xenon lamp, according to ISO international standard ISO 4892-2.

PROTECTION INDEX

In their scope, all product standards require that a protection index (protection of equipment against penetration of liquid and solid bodies) should be defined, selected from a classification system - EN/IEC 60529.

Therefore, all electrical equipment enclosures are provided with a protection index IP which defines the correspondence between the place of installation and the protection offered by products.

PHOTOMETRY

The Appleton photometry laboratory is unique in France and is one of the most modern in Europe. Equipment is tested in it at all stages of its design.

This is how better lighting performances are achieved. Tests are carried out according to standard NF C 71-120 (recommended methods for photometry of lamps and for light fittings).



RIGOROUS CHECKS ARE PERFORMED AT EACH STAGE OF THE MANUFACTURE OF ATX EQUIPMENT. HERE, AN INDIVIDUAL OVER-PRESSURE TEST ON A FLAMEPROOF « d » ENCLOSURE IS BEING PERFORMED ON THE PRODUCTION LINE.



CLIMATIC TESTS -50 °C UP TO + 200 °C.
WITH 0 UP TO 100 % OF RELATIVE HUMIDITY.



IP X6 TEST



PHOTOMETRY ROOM.

PHOTOMETRY

WHAT ARE PHOTOMETRIC UNITS AND QUANTITIES ?

LUMINOUS FLUX : SYMBOL F

The amount of light emitted in one second by a luminous source.

- Unit : lumen (lm).
- (See luminous flux charts page G53).

LUMINOUS INTENSITY : SYMBOL I

The quantity of luminous flux propagated in a given direction.

- Unit : Candela (cd). Values on photometric curves are given in candela.

ILLUMINANCE : SYMBOL E

The quantity of light falling on a unit area.

- Unit : lux (lx) = 1 lm/m².

LUMINANCE : SYMBOL L

The value characterizing the luminous aspect of an area lit by a lighting source or device, in a given direction.

- Unit : Candela per square metre (cd/m²).

EFFICIENCY :

It is the ratio of light emitted by a luminaire to light emitted by a lamp.

LUMINOUS EFFICIENCY :

Qualifies the efficacy of a luminous source. It is a quotient of flux propagated over the power consumed.

- Unit : lumen per Watt (lm/W).

COLOR RETENTION INDEX : SYMBOL CRI

The degree to which the colored aspect of an object lit by a given light source corresponds to the aspect under a controlled luminous source. The CRI is a number between 0 and 100 (on this scale, 50 it is a mediocre color retention level, while 80/90 is a good retention level).

- Unit : Ra.

COLOR TEMPERATURE :

Complex idea of cold and hot light, linked to the chromatic properties of light and to vision of the human eye.

- Unit : Kelvin (K).
- Example : 2700 K for hot-light incandescent lamps, 8000 K for metal halide discharge lamps (a colder type of light).

WHAT IS A DEPRECIATION CORRECTION FACTOR ?

In order to compensate for the decrease in the luminous flux, due to the ageing of the lamps and to the accumulation of dust in the area. The level of lighting (E) should be increased by multiplying it by the depreciation coefficient (d).

Example of a value for d :

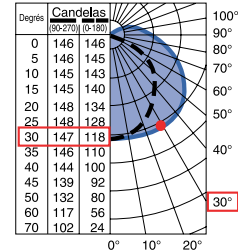
- Dust accumulation :
 - Low 1,25
 - Medium 1,35
 - High 1,50

WHAT IS A PHOTOMETRIC CURVE ?

The photometric curve shows the luminous intensity distribution of a lighting device. Values are given in candelas (cd).

In order to make a comparison between the different types of lighting devices, this curve is drawn for a 1000 lumen flux.

- Example : for a point placed at 30° from the luminaire's vertical axis, the luminous intensity is 147 cd in the lamps transverse direction and 118 cd in the lamps longitudinal direction.
- Note : the curve « integrates » the efficiency, it is therefore not necessary to make corrections after having read the intensity. However, it is necessary to multiply it by the coefficient to obtain the actual flux of the chosen source.



POLAR PHOTOMETRIC CURVE, FOR A LIGHTING FIXTURE WITH WIDE BEAM

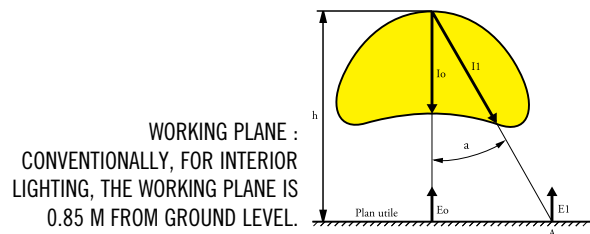
RELATIONSHIP BETWEEN LUMINOUS INTENSITY AND LUMINANCE

In order to determine the luminance at a given point - A , the following formula can be used :

$$E = \frac{I \times \cos^2 \alpha}{h^2}$$

luminous intensity (cd) opening angle in relation to the vertical axis of the luminaire

luminance (Lux) height between the luminaire and the working plane (m)



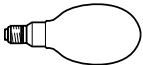

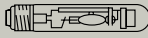


REFLECTANCE FACTOR ACCORDING TO COLOR VARIATION (1)

80 %	70 %	50 %	30 %	10 %

(1) THE SURFACE REFLECTION FACTOR IS THE RELATIONSHIP BETWEEN REFLECTED LIGHT AND INSTANT LIGHT

SELECTION TABLE FOR ATX LUMINAIRES DEPENDING ON LAMP TYPE

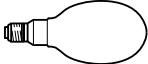



LIGHT SOURCES		APPLETON LUMINAIRES					
DESCRIPTION	CHARACTERISTICS	CAP	POWER (W)	FLUX (LM)	DESCRIPTION	CERTIFIED TYPE	
 Incandescent lamps	<ul style="list-style-type: none"> Life time : 1,000 hours Luminous efficiency : between 11 and 19 lm/W 	E 27	40	415	Emergency lighting « d »	FLd - BRI40	
			60	715	Tank inspection vessel light « d »	HRCd	
				780	Oval bulkhead lamp « d »	HBOd	
					Bulkhead « dust »	HBP	
			75	950	Handlamp « d »	BLd	
				1055	Tank inspection vessel light « d »	HRCd	
			100 *	1350	Bulkhead « dust »	HBP	
					Oval bulkhead lamp « d »	HBOd	
				1470	Tank inspection vessel lights « d »	HRCd	
					Round bulkhead lamp « d »	HBRd	
			150 *	2160	Bulkhead « dust »	HBP	
					Wellglass luminaire « dust »	Ln	
					Round bulkhead lamp « e »	HBe150	
Round bulkhead lamp « Zone 2 »	HBn150						
200 *	3100	Bulkhead « dust »	HBP				
		Wellglass luminaire « dust »	Ln				
300 *	???	Wellglass luminaire « d »	LTd				
		Wellglass luminaire « d »	LTd				
E 40	500 *	8400	Wellglass luminaire « d »	LTd			
 Tubular Halogen lamps	<ul style="list-style-type: none"> Life time : 2,000 hours Luminous efficiency : between 17 and 20,5 lm/W 	G 14	20	—	Tank inspection vessel lights « d »	HRC 20WH	
		BA 15 d	50	—	Tank inspection vessel lights « d »	HRC50	
		Pk22S	70	—	—	Portable floodlight « d »	PJ70
				—	—	Floodlight « d »	PJd
		E27	71	7000	Wellglass luminaire « Zone 2 »	Ln	
				2500	Wellglass luminaire « d »	LTd	
		E40	500	10250	Floodlight « d »	PJd	
80000	Floodlight « d »			PJd			
 Egg-shaped Mixed discharge lamps	<ul style="list-style-type: none"> Life time : 6,000 hours Luminous efficiency : between 11 and 16 lm/W Re-ignition time : 5 min Color temperature : 3,500 to 3,800 K CRI : 50 to 60 Operating position : 30° (E27 cap), 45° (E40 cap) 	E 27	100	1100	Round bulkhead lamp « e »	HBC150	
					Round bulkhead lamp « e »	HBC150	
					Round bulkhead lamp « Zone 2 »	HBn150	
					Bulkhead « dust »	HBP	
		160	3150	Round bulkhead lamp « d »	HBRd		
				Wellglass luminaire « d »	LTd		
E 40	250	5300	Wellglass luminaire « d »	LTd			
 Egg-shaped Mercury vapor discharge lamps  Tubular	<ul style="list-style-type: none"> Life time : 16,000 to 24,000 hours Luminous efficiency : between 50 to 56 lm/W Min. ignition temperature : - 25° C Re-ignition time : 10 min Color temperature : 3,000 to 4,000 K CRI : 40 to 46 Operates in all positions 	E 27	80 Egg-shaped	3700	Round bulkhead lamp « Zone 2 »	HBn150	
					125 Tubular	5700	Wellglass luminaire « Zone 2 »
			125 Egg-shaped	6700	Wellglass luminaire « Zone 2 »	Ln	
					Wellglass luminaire « d »	LTd	
		E 40	250 Egg-shaped	14200	Round bulkhead lamp « d »	HBRd	
					Floodlight « d »	PJd	
					Lantern « d »	LTd	
			250	14200	Floodlight « dust »	PJP	
					Floodlight « Zone 2 »	PJn	
					Wellglass luminaire « Zone 2 »	Ln	
					33200	Wellglass luminaire « Zone 2 »	Ln
400 Tubular	24200	Floodlight	PJd				
400		Wellglass luminaire « Zone 2 »	Ln				
		Floodlight « Zone 2 »	PJn				

Lamp data : Osram, Philips, GE Sylvania, Eye.

◆ Ignitor built into lamp

* After September 1, 2009, incandescent lamps over 100 watts will no longer be available in the European Union according to the Directive EUP 2005 32/EC.

SELECTION TABLE FOR ATX LUMINAIRES DEPENDING ON LAMP TYPE


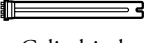
LIGHT SOURCES		APPLETON LUMINAIRES				
DESCRIPTION	CHARACTERISTICS	CAP	POWER (W)	FLUX (LM)	DESCRIPTION	CERTIFIED TYPE
 <p>Egg-shaped</p> <p>HP sodium discharge lamps</p>  <p>Tubular</p>	<ul style="list-style-type: none"> • Life time : 12,000 to 24,000 hours • Luminous efficiency : between 65 to 140 lm/W • Min. ignition temperature : - 25° C • Re-ignition time : 1 to 10 min • Color temperature : 2,000 to 2,200 K • Operates in all positions 	E 27	70 Egg-shaped	5800	Cylindrical fluorescent luminaire « d »	FLd
			70* Egg-shaped	5800	Round bulkhead lamp « d »	HBRd
			70 Tubular	6500	Wellglass luminaire « d »	LTd
					Floodlight « Zone 2 »	PJn
					Floodlight « dust »	PJP
					Wellglass luminaire « Zone 2 »	Ln
		E 40	100 Tubular	10000	Floodlight « Zone 2 »	PJn
			150 Egg-shaped	15500	Wellglass luminaire « d »	LTd
					Wellglass luminaire	LTd
					Floodlight	PJd
			150 Tubular	15500 - 17200	Floodlight « Zone 2 »	PJn
					Floodlight « dust »	PJP
					Floodlight « d »	PJd
					Wellglass luminaire « Zone 2 »	Ln
			250 Egg-shaped	30000	Floodlight « Zone 2 »	PJn
					Floodlight « dust »	PJP
					Wellglass luminaire « Zone 2 »	Ln
			250 Tubular	33000	Floodlight « Zone 2 »	PJn
Floodlight « d »	PJd					
Floodlight « dust »	PJP					
400 Egg-shaped	48000	Wellglass luminaire « d »	LTd			
	54000	Floodlight « Zone 2 »	PJn			
400 Tubular	55500	Floodlight « dust »	PJP			
		Wellglass luminaire « Zone 2 »	Ln			
		Wellglass luminaire « d »	LTd			
600 Tubular	90000	Floodlight « Zone 2 »	PJn			
1000 Egg-shaped	120000	Floodlight « d »	PJd			
1000 Tubular	130000	Floodlight « dust »	PJP			
 <p>Egg-shaped</p> <p>Metal halide discharge lamps (halogen lamps)</p>  <p>Tubular</p>	<ul style="list-style-type: none"> • Life time : 2,000 to 6,000 hours • Luminous efficiency : between 68 and 78 lm/W • Min. ignition temperature : - 25° C • Re-ignition time : 15 min • Color temperature 4,000 to 4,500 K • CRI : 65 to 70 • Operating position : all position restriction may apply based on wattage and/or brand of lamp 	E 40	150 Egg-shaped	14200	Wellglass luminaire « Zone 2 »	Ln
					Floodlight « Zone 2 »	PJn
					Floodlight « d »	PJd
			150 Tubular	14500	Wellglass luminaire « Zone 2 »	Ln
					Floodlight « Zone 2 »	PJn
					Floodlight « d »	PJd
		250 Egg-shaped & Tubular	24500	Floodlight « Zone 2 »	PJn	
				Floodlight « dust »	PJP	
		400 Egg-shaped	34000	Wellglass luminaire « Zone 2 »	Ln	
			35000	Floodlight « d »	PJd	
		400 Tubular	35000	Floodlight « Zone 2 »	PJn	
				Floodlight « d »	PJd	
Wellglass luminaire « d »	LTd					
1000 Tubular	130000	Wellglass luminaire « Zone 2 »	Ln			
			Floodlight « Zone 2 »	PJn		

Lamp data : Osram, Philips, GE Sylvania, Eye.

◆ Ignitor built into lamp

* After September 1, 2009, incandescent lamps over 100 watts will no longer be available in the European Union according to the Directive EUP 2005 32/EC.

SELECTION TABLE FOR ATX LUMINAIRES DEPENDING ON LAMP TYPE

LIGHT SOURCES		APPLETON LUMINAIRES							
DESCRIPTION	CHARACTERISTICS	CAP	LENGTH (MM)	POWER (W)	FLUX (LM)	DESCRIPTION	CERTIFIED TYPE		
 Compact fluorescent lamps with integral power supply	<ul style="list-style-type: none"> Life time : 8,000 hours Luminous efficiency : between 40 and 65 lm/W Color temperature : 2 700 K CRI : 85 	E 27	137	7	320	Oval bulkhead lamps « d »	HBOd		
				11	600				
				8	800	Round bulkhead lamps « d »	HBRd		
				15		Round bulkhead lamps « d »	HBRd		
			18	900	Wellglass luminaire « d »	LTd			
			178	23	1500	Emergency lighting « d »	FLd		
						Round bulkhead lamps « d »	HBRd		
Wellglass luminaire « d »	AB14								
 Cylindrical compact fluorescent lamps	<ul style="list-style-type: none"> Life time : 6,000 to 9,000 hours Luminous efficiency : between 41 and 87 lm/W Color temperature : 2 700 K CRI : 85 Operates in all positions (PLL), Mazda (Eureka L) and others 	2 G 11	217	18	1200	Cylindrical fluorescent luminaires « d »	FLd		
			417	36	2900	Cylindrical fluorescent luminaires « d »	FLd		
			568	80	6000	Fluorescent luminaires « Zone 2 »	FLn		
 Tubular fluorescent lamps	<ul style="list-style-type: none"> Lamps 26 mm dia. Life time : 6,000 to 9,000 hours Luminous efficiency : between 64 and 83 lm/W Color temperature : 4,000 K CRI : 62 Power supply : conventional or electronic ballast Operates in all positions 	G 13 26 mm dia.	590	18	1150 to 1400	Bi-pin fluorescent and recessed luminaires « e »	FLe - Re		
						Cylindrical fluorescent luminaires « d »	FLd		
						Bi-pin self-contained fluorescent and recessed luminaires « e »	FLe - Re		
						Fluorescent luminaires« Zone 2 »	FLn - EFn		
			1200	36	3000 to 3400	Bi-pin fluorescent and recessed luminaires « e »	FLe - Re		
						Cylindrical fluorescent luminaires « d »	FLd		
						Bi-pin self-contained fluorescent and recessed luminaires « e »	FLe - Re		
						Fluorescent luminaires« Zone 2 »	FLn - EFn		
			1500	58	3600 to 5400	Bi-pin fluorescent and recessed luminaires « e »	FLe - Re		
						Cylindrical fluorescent luminaires « d »	FLd		
			<ul style="list-style-type: none"> Luminous efficiency 26 mm dia. : between 81 & 96 lm/W 38 mm dia. : between 50 & 74 lm/W Color temperature : 4 200 K CRI : 85 Instant start 	Fa6 26 mm dia.	590	18	1450	Mono-pin fluorescent luminaires	FLe
					1200	36	3450	Mono-pin fluorescent luminaires	FLe
	1500	58			5400	Mono-pin fluorescent luminaires	FLe		
Fa6 38 mm dia.	590	20		1000	Mono-pin fluorescent luminaires	FLe			
	1200	40		2500	Mono-pin fluorescent luminaires	FLe			
1500	65	4800	Mono-pin fluorescent luminaires	FLe					

Lamp data : Osram, Philips, GE Sylvania, Eye.

◆ Ignitor built into lamp

* After September 1, 2009, incandescent lamps over 100 watts will no longer be available in the European Union according to the Directive EUP 2005 32/EC.

INSPECTION AND SERVICE

ELECTRICAL INSTALLATIONS IN EXPLOSIVE GAS ATMOSPHERES IN ACCORDANCE WITH STANDARD EN 60079-17

Standard EN/IEC 60079-17 stipulates strict provisions concerning the maintenance of electrical installations in hazardous Zones:

- An initial inspection before they are commissioned.
- Regular inspections in time.
- Continuous supervision.

FREQUENCY OF INSPECTION

The time interval between inspections should be set taking into account likely deterioration due to corrosion, the presence of chemicals or solvents, the accumulation of dirt or dust, the risk of water penetration, exposure to abnormal ambient temperatures or vibrations, whether the electrical equipment is removable or portable, but in any case this interval must not be more than 12 months.

DEGREE OF INSPECTION

- Visual inspection: faults directly visible such as missing buttons.
- Close inspection: visual inspection and in addition detection faults.

Close inspection does not normally require the enclosure to be opened, nor the equipment switched off.

- Detailed inspection: such as loose connections, detected after opening the enclosure.

EQUIPMENT Ex « d », Ex « e » AND Ex « n »

	Ex "d"	Ex "e"	Ex "n"
EQUIPMENT			
Equipment is appropriate to the Zone category	•	•	•
Correct group equipment	•	•	•
Correct equipment temperature class	•	•	•
Correct identification of equipment circuit	•	•	•
Identification of equipment circuit available	•	•	•
Enclosure, glass parts, gaskets and/or sealing equipment satisfactory	•	•	•
No unauthorized modification	•	•	
Bolts, cable entry devices (direct and indirect) and protection elements of correct type, complete and tightened	•	•	•
Flat sealing surfaces clean, undamaged and any gaskets satisfactory	•		
Gaps in flat gaskets conforming to maximum authorised values	•		
Rated characteristics, type and position of lamps correct	•	•	•
Electrical connections tight		•	•
State of enclosure gaskets satisfactory		•	•
INSTALLATION			
Appropriate type of cable	•	•	•
No apparent cable damage	•	•	•
Satisfactory closing of bays, trunking and/or conduits	•	•	•
Stop boxes and cable boxes filled correctly	•		
Integrity of conduit systems and interface with mixed systems maintained	•	•	•
Connections to earth satisfactory, plus any additional connections satisfactory. Example: connections tight and conductors with large enough cross-section	•	•	•
Automatic electrical protection devices correctly set (automatic reset not allowed in Zone 1)	•	•	•
Special conditions of use (if appropriate) complied with	•	•	•
Cable ends not in use correctly protected	•	•	•
ENVIRONMENT			
Equipment adequately protected against corrosion, inclement weather, vibrations and other harmful factors	•	•	•
No abnormal accumulation of dirt and/or dust	•	•	•

CABLE ENTRIES

INCREASED SAFETY « e » ENCLOSURES

Cable entries are created by screwing the cable gland directly onto the enclosure, or for clearance holes, securing with a locknut.

Holes which are not used for cable entries must be blanked using the appropriate blanking plugs.



FLAMEPROOF « d » ENCLOSURE

Cable entries are created by screwing the cable gland directly onto the enclosure. The thread must be greased and the gland screwed-in to ensure that at least 5 threads are engaged for metric threaded and 3.5 threads engaged for NPT.



Unused entries must be plugged using the appropriate certified blanking plug.

SEALS

INCREASED SAFETY « e » ENCLOSURES

The equipment has a protection index of at least IP 54. It is therefore important to ensure that the weatherproof seal is in good condition when the product is installed. Defective seals must be systematically replaced.



FLAMEPROOF « d » ENCLOSURE

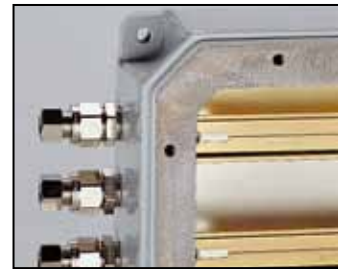
This equipment is supplied with the flamepath greased. Once the equipment is installed, the flamepath must be greased to keep them in good condition.

Use a non-hardening anti-corrosive multi-purpose grease.

Do not allow silicon-based products to come into contact with the threads, as they may stick.

- Do not modify any original entry or add entries as this is prohibited and will forfeit certification of the product.

TERMINAL CONNECTIONS



INCREASED SAFETY « e » ENCLOSURES

Each approval certificate indicates the type of terminals to be used in each type of junction box.

The connection must be performed according to current regulations and any additional stipulations on the certificate, such as :

- Maximum current intensity
- Maximum capacity
- Tightening torque



FLAMEPROOF « d » ENCLOSURE

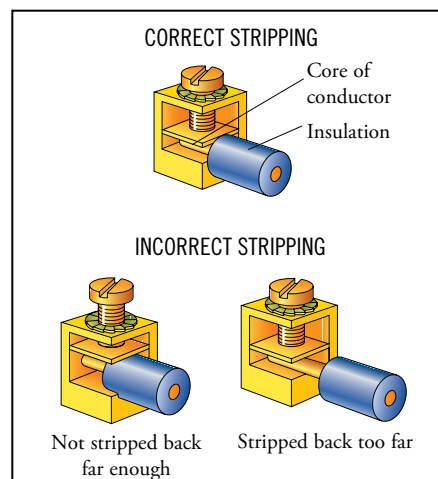
The approval certificate does not stipulate the type of terminal to be used, it only states that the connection precautions given in the technical sheet should be followed.

STRIPPING AND CONNECTIONS

The conductors should only be stripped back to the edge of the metal part of the terminal connection, to ensure correct isolation.

MAINTENANCE

Extract from article in the October 10, 2000 order. (Interval between inspections is fixed at one year.)



ROOM SIZE (IN METRES)

Length

Width

Height

LUMINAIRES MOUNTING HEIGHT (IN METRES)

Height

WORKING PLANE HEIGHT (IN METRES)

Height

SURFACE REFLECTANCE FACTOR (SEE G:52)

Ceiling

Walls

Ground

LIGHTING LEVEL REQUIRED (SEE G:52)

Lux number

COLOR RETENTION INDEX- CRI (SEE G:52)

Index digit

DEPRECIATION CORRECTION FACTOR (SEE G:52)

Low

Medium

High

PERSONAL DETAILS

Company :

Name and surname :

Address :

City : Postal Code :

Country : Phone :

Fax : e-Mail :

LIGHTING DEVICE TYPE (INDICATE «e» OR «d») OR ATX CAT. NO.

Bi-pin fluorescent luminaire «e»

Mono-pin fluorescent luminaire «e»

Fluorescent luminaire «d»

Compact Fluorescent luminaire «d»

Incandescent wellglass luminaire

HP sodium wellglass luminaire

HP mercury vapor wellglass luminaire

Mixed wellglass luminaire

Halogen floodlight

HP mercury vapor floodlight

HP sodium floodlight

Metal halide floodlight

WORKING AREA DESCRIPTION (SHORT DESCRIPTION)

GAS GROUP

Temperature class

Other characteristics



Appleton is our premium line of industrial electrical products under EGS Electrical Group, a division of Emerson Industrial Automation.

Emerson Industrial Automation brings integrated manufacturing solutions to diverse industries worldwide. Our comprehensive product line, extensive experience, world-class engineering and global presence enable us to implement solutions that give our customers the competitive edge.

For over 150 years, our electrical product brands have been providing a rich tradition of long-term, practical, high quality solutions with applications ranging from the construction and safe operation of petrochemical and process plants to providing quality power that precisely controls automotive robotic production.

Engineers, distributors, contractors, electricians and site maintenance professionals around the world trust Emerson Industrial Automation brands to make electrical installations safer, more productive and more reliable.

EGS is organized into three focused businesses that provide distributors and end-users expert knowledge and excellent service.

Electrical Construction Materials

This group manufactures a broad range of electrical products including conduit and cable fittings, plugs and receptacles, enclosures and controls, conduit bodies, and industrial lighting. Whether the application is hazardous location, industrial, or commercial, the ECM group has the products to meet your needs.

Power Quality Solutions

This group offers the broadest power quality line including UPS, power conditioners, voltage regulators, shielded transformers, surge suppression devices and power supplies.

Heating Cable Systems

This group offers a broad range of electrical heating cable products for residential, commercial, and industrial applications.

Electrical Construction Materials

 **Appleton**

OZGEDNEY

Power Quality Solutions

SOLAHD

Heating Cable Systems

EASYHEAT

NELSON

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