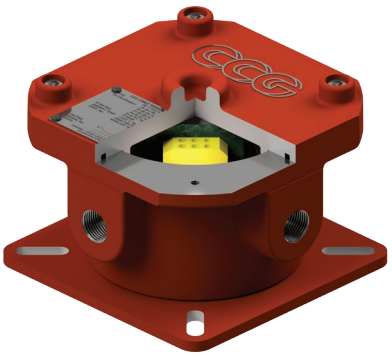
CCG CABLE TERMINATIONS

# FLAMEPROOF-SPG BOX

## Ex db I/IIC, Ex tb IIIC, IP66/68

### for Hazardous Installations



IP68 | Ex | IK10 IMPACT

## Features and Benefits

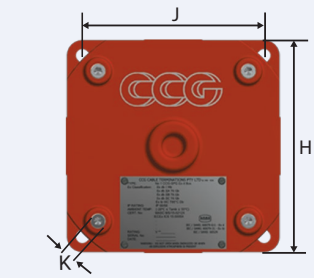
- For Group I mining and Group II surface combination of 4-Way, 20 mm and 25mm entries.
- Dust and waterproof to IP66/68.
- Robust construction.
- High-grade stainless steel captive screws Grade A2-70.
- External Earth Stud.
- Lid spigot for ease of lid positioning.
- Threaded mounting holes.
- Different colour epoxy coatings available.

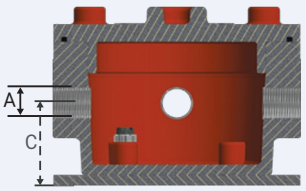
## Technical Data

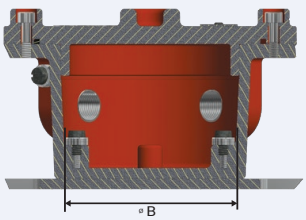
| | |
|---|---|
| Type: | Flameproof-SPG Box |
| Box Material: | High quality cast iron and corrosion protection metallic finish |
| Recommended Gland: | Group II: E1EX, A2EX, Ex Corrosion Guards, Posi Grip and QuickStop-Ex Barrier Glands<br>Group I: FLP, FLP TR, FLP Hose, Armortex, Armortex QuickStop-Ex Barrier and BarrierTex-Ex Glands |
| Optional Accessories: | Ex Certified Terminals, End connectors, Adaptors, Reducers and Base Plate |

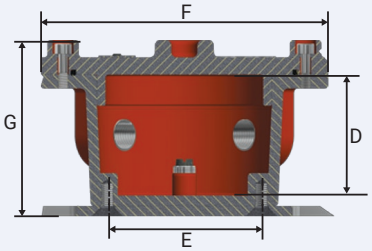
## Standards and Certifications

| | | |
|---|---|---|
| Equipment Protection Levels: | IECEx / SANS: Ex d I/IIC T6 MbGb, Ex tb IIIC T85°C Db<br>ATEX: Ⓔx II 2 GD / II 3 GD,I M2 / II 2 G D, Ex d I/II T6 Mb/Gb, Ex tb IIIC T85°C Db | |
| Ambient Temperature: | -20°C to +55°C | |
| Conformance: | Standard: | Certificate: |
| IECEx | IEC60079 Part 0, 1, 31, IEC 60529 | IECEx MSC 15.0007X and IECEx ICS 15.0005X |
| ATEX | EN60079 Part 0, 1, 31 | CML 15ATEX1065X |
| SANS/IEC | IEC/SANS 60079 Part 0, 1, 31, IEC/SANS 60529 | MASC MS/15-0212X |
| IP 66/68 Protection | IEC 60529 | |
| Corrosion Protection | SANS 7253, EN 60068-2-52, ASTM B117-03<br>ISO 6988:7 | 19866<br>20109RE |
| Marine ABS | IEC/EN 60079 Parts 0, 1, 7, 15, 31 | ABS 20-SG1952738-PDA |




## Conditions for Safe Use - X

- Suitably Ex db certified glands/adaptor/plugs shall be used to maintain the Flameproof (Ex d) / Dust protected (Ex tb), including IP rating characteristics as applicable.
- The nominal current (Max continuous circuit current) per circuit in the junction box is limited by the size of the conductor and the terminal block / connector ratings. The lower of the values in table 1 below and the maximum rated current of the terminal block / connector shall be used.

**TABLE 1**

| Conductor Size | Current Limitation |
|---|---|
| 1.5 mm² | 15 A |
| 2.5 mm² | 17 A |
| 4 mm² | 20 A |
| 6 mm² | 25 A |

**TABLE 2**

MARKING PLATE MARKING POSIBILITIES:-
Ex db I Mb, Ex db IIC T6 Gb
or ONE / MORE OF THE FOLLOWING MARKING

| Ex Classification Marking | Max. Flameproof Gap |
|---|---|
| Ex db I Mb | 0.5 |
| Ex db IIA T6 Gb | 0.4 |
| Ex db IIB T6 Gb | 0.2 |
| Ex db IIC T6 Gb | 0.18 |

| Product Code | Entry Thread 'A' | Internal Dimension 'B' | Dimension 'C' | Inside Height 'D' | Base Plate Screw Dim 'E' | Outer Diameter 'F' | Overall Height 'G' | Base Plate Dimension 'H' | Mounting Centres 'J' | Mounting Hole Dimension 'K' |
|---|---|---|---|---|---|---|---|---|---|---|
| 100811-M20 | M20 | 96.0 | 47.0 | 70.0 | 89.0 | 166.0 | 102.0 | 150.0 | 107.0 | 10.5 |
| 100811-M25 | M25 | 96.0 | 47.0 | 70.0 | 89.0 | 166.0 | 102.0 | 150.0 | 107.0 | 10.5 |

All dimensions are in mm.



# FLAMEPROOF-SPG JUNCTION BOX

## Installation, Operation and Maintenance Instructions for Flameproof-SPG Box

**All work to be done by an Ex competent person.**

## Operation / Service of Flameproof-SPG Box

1. Test for gas in operations area.
2. Isolate power at supply source and lock out.
3. Test with a multi meter to ensure that circuit is isolated.
4. Ensure all bolts and glands are tight and secure.
5. Inspect flame proof gap on all flanges, this must not exceeded, see Table 2.
6. Ensure that all earth wires are tight and up to standard.
7. Open flameproof box if no gas is present.

## Maintenance of Flameproof-SPG Box

1. Isolate and lock out equipment for maintenance.
2. Test for gas before opening enclosure.
3. Unscrew bolts.
4. Missing bolts should be replaced with the same type of bolt or screw. Length, type and grade (M6x0.8P x 20 long x grade A2-70).
5. Ensure all cable entries are tight.
6. Inspect all component mountings for tightness with the correct tools.
7. Clean flamepath and inspect flamepath for pit marks and rust. If pit marks are present and cannot be removed, contact the manufacturer.
8. Apply a film of non-hardening non-flammable grease (As per IEC 60079-1 clause 5.1).
9. Close enclosure lid and fasten all M6 bolts to 8.73 N.m max torque.
10. Test flame path with an approved feeler gauge. Flamepath must not exceeded, see Table 2
11. Remove lock and switch electrical power back on.
12. Test enclosure for correct operation and fill in maintenance report.

## Flameproof-SPG Box Instructions

1. Mounting.
   - 1.1. Do not mount to heat generating components where the heat generated can affect the temp class and electrical components.

2. Gland Entries
   - 2.1. Only approved CCG Ex d glands for required gas group allowed.
   - 2.2. Flame proof glands and reducers allowed. (only one reducer per entry).
   - 2.3. Unused gland entries to be plugged with “flame proof certified plugs”.
   - 2.4. For all gland hole size and pitches see flame proof box drawing.
   - 2.5. All glands and blanking plugs must be torqued according to CCG’s specifications.

3. Bolted Covers
   - 3.1. Only CCG supplied M6 x 0.8P x 6H x 20 bolts must be used.
   - 3.2. No washers allowed on bolts.
   - 3.3. Bolts may not differ in length as to those supplied.
   - 3.4. All bolts must be torqued to a maximum torque values of Grade A2-70.

NB – BOLTS FORM PART OF FLAME PROOF CERTIFICATION – INCORRECT THREAD PITCH OR BOLT LENGTH COULD LEAD TO AN EXPLOSION

4. Flameproof Box Flanges
   - 4.1. Flanges must be clean and free from dirt, rust or obstructions.
   - 4.2. Scratched or dented flanges will invalidate the flame path.
   - 4.3. Flanges must be coated with a thin layer of non-hardening non-flammable grease )refer to: IEC 60079-1 Clause 5.1).
   - 4.4. Any other form of coating may not be applied.

FLANGES FORM PART OF FLAME PATH
NB – WHEN THE COVERS ARE BOLTED TO THE FLAMEPROOF BOX THE MAXIMUM GAP ALLOWED MUST NOT BE EXCEEDED, SEE TABLE 2.

5. Modifications or Additions
   - 5.1. No modifications, mechanical or electrical are allowed.
   - 5.2. No welding of external or internal components allowed.

6. Labelling
   - 6.1. The label may not be removed from the flameproof box.

7. Mechanical Repair
   - 7.1. Mechanical repairs are only allowed to be performed in accordance to the certified drawings within tolerances approved by the testing authority.
   - 7.2. The original CCG label must at all times remain on the flameproof box, should it be repaired by other certified flameproof repairers.

8. Electrical Repairs
   - 8.1. Electrical repairs may be performed provided that identical rated components are used.
   - 8.2. Electrical component maintenance and instructions refer, to component manufacturer.

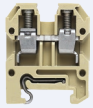
**TABLE 3**

| Box Type | Box Size | Terminal Type and Size | Max Quantity | Rail Size |
|---|---|---|---|---|
| Ex d Box | 1 | 4mm² mini terminal | 8 | 15 |
| Ex d Box | 2 | 4mm² mini terminal | 8 | 15 |

**Voltage Per Terminal Configuration**

| Terminals | Volt | Earth Terminal |
|---|---|---|
| AKZ 4 | 275V | AKE 4 |

TS 15 Mini Rail

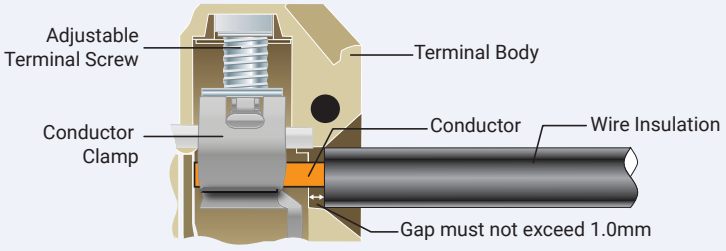


Mini Terminals for conductor sizes 0.5 to 4mm²

Insulated Terminal Connector 0.5mm to 16mm

**FIGURE 1**

The wiring insulation must not extend by more than 1.0mm from the metal face of the terminal as shown below.

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