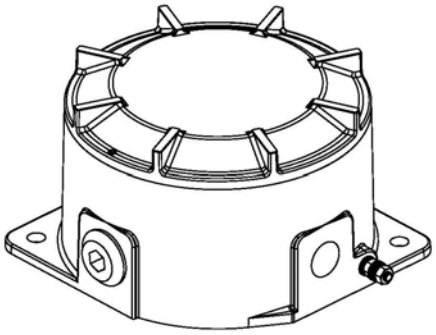
INSTRUCTION MANUAL (ATEX / IECEx)
STExJ2 Flameproof Junction Box
For use in Flammable Gas and Dust Atmospheres



STExJ2

1) Warning

- DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT
- POTENTIAL ELECTROSTATIC CHARGING HAZARD
- ALL ENTRIES M20 X 1.5 - IF TEMPERATURE EXCEEDS 70°C AT ENTRY OR 80°C AT BRANCHING POINT USE SUITABLE RATED CABLE AND CABLE GLANDS

2) Rating & Marking Information

All units have a rating label, which carries the following important information:-

Model No. STExJ2

Max. Voltage: 60Vdc / 260Vac 50/60Hz

Max Power Dissipation: 5W

STExJ2 Codes:

Ex db IIC Gb T6 Ta -50°C to +65°C
Ex db IIC Gb T5 Ta -50°C to +70°C
Ex tb IIIC Db T85°C Ta -50°C to +70°C

Certificate No. DEMKO 16 ATEX 1466X
IECEx ULD 16.0017X

Epsilon x Equipment Group and Category: **II 2G**
II 2D

CE Marking Notified Body No. **0518**

The units can be installed in locations with the following conditions:-

Area Classification Gas:

Zone 1	Explosive gas air mixture likely to occur in normal operation.
Zone 2	Explosive gas air mixture not likely to occur in normal operation, and if it does, it will only exist for a short time.

Gas Groupings:

Group IIA	Propane
Group IIB	Ethylene
Group IIC	Hydrogen and Acetylene

Temperature Classification:

T1	450ºC
T2	300ºC
T3	200ºC
T4	135ºC
T5	100ºC
T6	85º C (up to 65ºC ambient)

Area Classification Dust:

Zone 21	Explosive dust air mixture likely to occur in normal operation.
Zone 22	Explosive dust air mixture not likely to occur in normal operation, and if it does, it will only exist for a short time.

Dust Groupings:

Group IIIA	Combustible Flyings
Group IIIB	Non-conductive Dust
Group IIIC	Conductive Dust

Maximum Surface Temperature for Dust Applications: 85ºC

IP Rating: IP6X to EN/IEC60079-0 and IP66 to EN/IEC60529

Equipment Category: 2G/D

Equipment Protection Level: Gb, Gc, Db, Dc

Ambient Temperature Range: -50°C to +70°C

3) Type Approval Standards

The equipment carries an EC Type Examination Certificate and IECEx Certificate of Conformity, and have been certified to comply with the following standards:

EN60079-0:2012+A11:2013 / IEC60079-0:2011 (Ed 6): Explosive Atmospheres - Equipment. General requirements

EN60079-1:2014 / IEC60079-1:2014 (Ed 7): Explosive Atmospheres - Equipment protection by flameproof enclosures "d"

EN 60079-31:2014 / IEC 60079-31:2013 (Ed 2): Explosive Atmospheres - Equipment dust ignition protection by enclosure "t"

4) Installation Requirements

The junction box must only be installed by suitably qualified personnel in accordance with the latest issues of the relevant standards:

EN60079-14 / IEC60079-14: Explosive atmospheres - Electrical installations design, selection and erection

EN60079-10-1 / IEC60079-10-1: Explosive atmospheres - Classification of areas. Explosive gas atmospheres

EN60079-10-2 / IEC60079-10-2: Explosive atmospheres - Classification of areas. Explosive dust atmospheres

The installation of the units must also be in accordance with any local codes that may apply and should only be carried out by a competent electrical engineer who has the necessary training.

5) Special Conditions of Use

Repair of the flamepath / flameproof joints is not permitted.

The STExJ2 is not intended for directly supporting live parts. All conductors must be suitably insulated and secured against loosening.

The Junction Box may be fitted with terminal blocks or active modules up to a power consumption of 5W. Any module fitted must be secured to the mounting bosses in the base of the junction box and must maintain a minimum gap of 10mm to all walls of the enclosure.

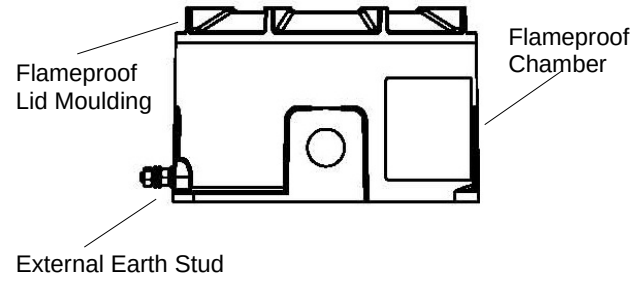
The metallic enclosure has a non-conductive coating. These may generate an ignition-capable level of electrostatic charges under certain extreme conditions. The user should ensure that the equipment is not installed in a location where it may be subjected to external conditions that might cause a build-up of electrostatic charges on non-conducting surfaces.

Additionally, cleaning of the equipment should be done only with a damp cloth.

6) Location and Mounting

The location of the junction boxs should be made with due regard to the area over which the warning signal must be visible. They should only be fixed to services that can carry the weight of the unit.

The STEx junction boxes should be securely bolted to a flat surface using 9.0mm diameter bolt holes in the base of the unit. See figure 1.



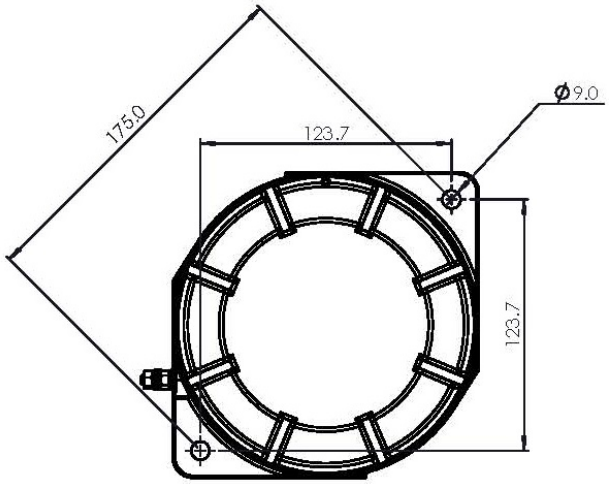


Fig. 1: Fixing Location for B2 Junction box

7) Access to the Flameproof Enclosure

Warning – High voltage may be present, risk of electric shock. DO NOT open when energised, disconnect power before opening.

Warning – Hot surfaces. External surfaces and internal components may be hot after operation, take care when handling the equipment.

In order to connect cabling in the junction box it is necessary to remove the flameproof cover to gain access to the flameproof chamber. To access the Ex d chamber, loosen the M4 grub screw on the junction box cover. Open the enclosure by turning the junction box cover counterclockwise and remove the cover taking extreme care not to damage the flameproof threads in the process (see figure 2).

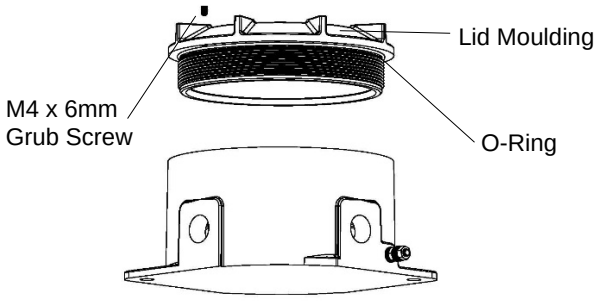


Fig. 2: Accessing the Explosion proof Enclosure

On completion of the installation, the flameproof threaded joints should be inspected to ensure that they are clean and that they have not been damaged during installation. Flameproof threaded joints are not permitted to be repaired. Also check that the 'O' ring seal is in place. When replacing the flameproof cover ensure the thread is engaged correctly. Fully tighten the cover all the way, ensure no gap is visible between the cover and base of the junction box enclosure. Tighten the M4 grub screw.

8) Electrical Ratings

Model No.	Max. Input Voltage	Max. Power Dissipation
STExJ2	60Vdc / 260Vac 50/60Hz	5W

9) Selection of Cable, Cable Glands, Blanking Elements & Adapters

When selecting the cable size, consideration must be given to the input current that each unit draws (see table above), the number of junction boxs on the line and the length of the cable runs. The cable size selected must have the necessary capacity to provide the input current to all of the junction boxs connected to the line.

For ambient temperatures over +40ºC the cable entry temperature may exceed +70ºC and therefore suitable heat resisting cables and cable glands must be used as per table below

STExJ2:

Ambient Temp.	45ºC	50ºC	55ºC	60ºC	65ºC	70ºC
Min. Rating of cables and cable glands	70ºC	75ºC	80ºC	85ºC	90ºC	95ºC

The cable entries have an M20 x 1.5 – 6H entry thread. If the installation is made using cable glands, only suitably rated and ATEX / IECEx certified cable glands must be used. They must be suitable for the type of cable being used and also meet the requirements of the current installation standards EN 60079-14 / IEC60079-14.

Any unused cable entries must be closed with suitably rated and ATEX / IECEx certified blanking plugs.

If the installation is made using conduit, openings must have a sealing fitting connected as close as practical to the wall of the enclosure, but in no case more than the size of the conduit or 50mm, whichever is the lesser.

If a high IP (Ingress Protection) rating is required then a suitable sealing washer must be fitted under the cable glands or blanking plugs. A minimum ingress protection rating of IP6X must be maintained for installations in explosive dust atmospheres.

For combustible dust applications, the cable entry device and blanking elements shall be in type of explosion protection and shall have an IP 6X rating.

The STEx Junction box Range can be supplied with the following types of adapters:

M20 to ½" NPT
M20 to ¾" NPT
M20 to M25

It is important to note that stopping plugs cannot be fitted onto adapters, only directly onto the M20 entries.

Any other adapters used must be suitably rated and ATEX / IECEx certified adapters.

10) Earthing

Junction box units must be connected to an earth according to EN/IEC 60079/14. The units are provided with internal and external earth terminals which are both located on the terminal chamber section of the unit

Internal earthing connections should be made to the Internal Earth terminal in the base of the housing using a ring crimp terminal to secure the earth conductor under the earth clamp. The earth conductor should be at least equal in size and rating to the incoming power conductors.

External earthing connections should be made to the M5 earth stud, using a ring crimp terminal to secure the earth conductor to the earth stud. The external earth conductor should be at least 4mm² in size.

11) Cable Connections

Terminal Block Version (STExJ2T01)

The cable connections are made into the terminal block in the flameproof enclosure. See section 7 of this manual for access to the flameproof enclosure.

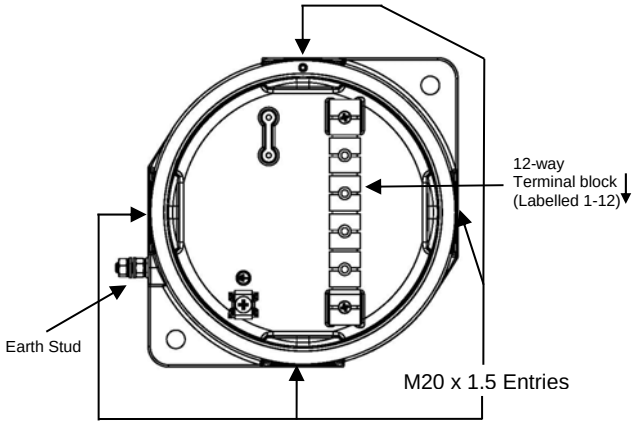


Fig 3: STExJ2T01 Entries and Terminal Block Location

DIN Rail Version (STExJ2D01)

The cable connections are made into the DIN Rail in the flameproof enclosure. See section 7 of this manual for access to the flameproof enclosure.

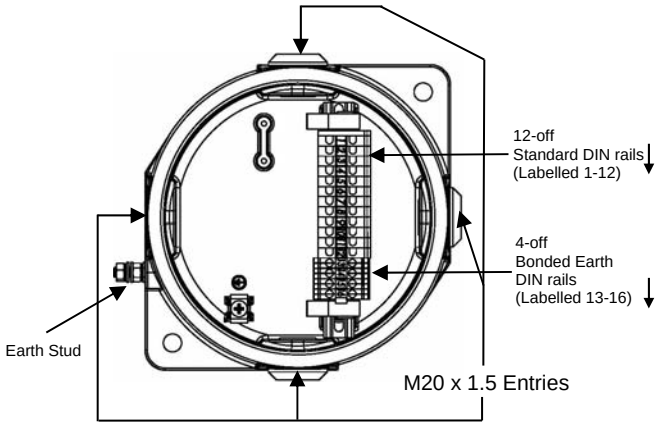


Fig 4: STExJ2D01 Entries and Terminal Block Location

Wires having a cross sectional area between 0.5 mm² to 2.5mm² can be connected to each terminal way. If an input and output wire is required the 2-off Live/Neutral or +/- terminals can be used. If fitting 2-off wires to one terminal way the sum of the 2-off wires must be a maximum cross sectional area of 2.5mm². Strip wires to 8mm. Wires may also be fitted using ferrules. Terminal screws need to be tightened down with a tightening torque of 0.45 Nm / 5 Lb-in. When connecting wires to the terminals great care should be taken to dress the wires so that when the cover is inserted into the chamber the wires do not exert excess pressure on the terminal blocks. This is particularly important when using cables with large cross sectional areas such as 2.5mm².

12) Maintenance, Overhaul and Repair

Maintenance, repair and overhaul of the equipment should only be carried out by suitably qualified personnel in accordance with the current relevant standards:

EN60079-19/IEC60079-19
Explosive atmospheres – Equipment repair, overhaul and reclamatio

EN 60079-17/IEC60079-17
Explosive atmospheres – Electrical installations inspection and maintenance

Units must not be opened while an explosive atmosphere is present.

If opening the unit during maintenance operations a clean environment must be maintained and any dust layer removed prior to opening the unit.

Flameproof threaded joints and cemented joints are not permitted to be repaired.

Electrostatic charging hazard - Clean only with a damp cloth.