Azienda Certificata
UNI EN ISO 9001

Explosion Proof Electrical Equipment
AD VIGANO

Notifica ATEX
CESI 03 ATEX 019Q

Safety Advice IS-CS-ATEX
Morsettiere e pulsantiere
Terminal Boxes and Control Stations
series CSX . . . . , CSA . . . . , SSA . ., SD . . . .

In conformità alle norme / Conformity to the rules EN/IEC 60079…
Per i seguenti modi di protezione: / For the following protection mode:

Morsettiere / Terminal boxes:
II 2 G Ex e IIC T6 Gb *or* **II 2 G Ex e IIC T5 Gb**
II 2 G Ex ia IIC T6 Gb
II 2 G Ex e ia IIC T6 Gb

Pulsantiere / Control stations:
II 2 G Ex d e IIC T6 Gb
II 2 G Ex d e ia IIC T6 Gb

II 2 D Ex tb IIIC T85°C Db IP66
II 2 D Ex tb IIIC T100°C Db IP66
II 2 D Ex tb ia IIIC T85°C Db IP66

Ingress Protection: IP66

Ambient Temperature (Ta):
Ta minimum: -40°C (for all protection mode)
-20°C enclosure with SI elements

Ta maximum: +40°C or +55°C or +65°C (*)
(*) in funzione della potenza dissipata / in function to the power dissipation

Certificato di Conformità / Conformity Certificate: CEC 14 ATEX 057

Documento riservato. Ogni modifica deve essere sottoposta all'organismo notificato.
Confidential document. Any change must be submitted to the notified authority.

AD VIGANO Explosion Proof Electrical Equipment Concorezzo (MB) Italia	**IS-CS-ATEX Enclosures series CSX, CSA, SSA and SD**
Emesso da: **UT**	Verificato e approvato da: **PA**

Instructions for using

General usage

The safety measures and the equipment used on CSX.., SD.., CSA.., SSA..enclosure series for installation, use and maintenance places, must follow the specific instructions, explained in this manual book, and the national applicable installation rules. It must also follow the additional rules for hazardous areas with explosion danger: EN-IEC 60079-14 (for installation and tests), EN-IEC 60079-17 (for the maintenance) and EN-IEC 60079-19 (for repair).

Usage

These rules are applied to the enclosures with the following explained features.
The enclosures have been studied and manufactured following the regulations of the International rules:
EN 60079-0:2012, EN 60079-1:2014 Ex d, EN 60079-7:2007 Ex e, EN 60079-11:2012 Ex ia,
EN 60079-31:2014 Ex tb.
IEC 60079-0:20011, IEC 60079-1:2014 Ex d, IEC 60079-7:2006 Ex e, IEC 60079-11:2011 Ex ia and IEC 60079-31:2013 Ex tb.
The ingress protection of enclosure in conformity to the rule EN 60529+A2:2013 and
IEC 60529+AMD2:2013 is IP 66.

These instructions have been conceived for installer and technical users who have already a background of technical experience on the use and start-up of equipment and electrical machinery in areas with explosion of danger, and who have been already trained and informed accordingly.

Instructions Manual

These instructions are supplied with dimensions and engineering drawings, technical data necessary to perform a correct installation and connection. Refer to the drawings for complete instructions.

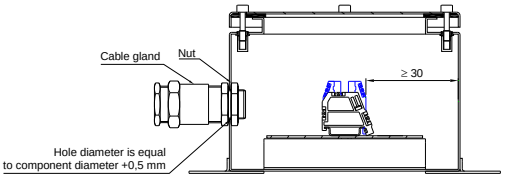
Usage Limitation

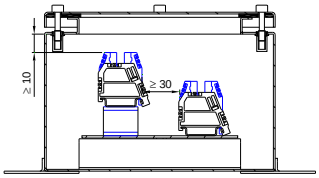
The enclosures are manufactured in accordance to protection mode: "Ex e", "Ex ia", "Ex e ia" (terminal boxes); "Ex d e", "Ex d e ia" (control stations) and "Ex tb", "Ex tb ia".
The protection level refer to every single box is indicated on the certificate tag fixed to the box. Furthermore they have a protection degree IP66 using a gasket, in accordance with the features showed in the specific certificate.

Installation places

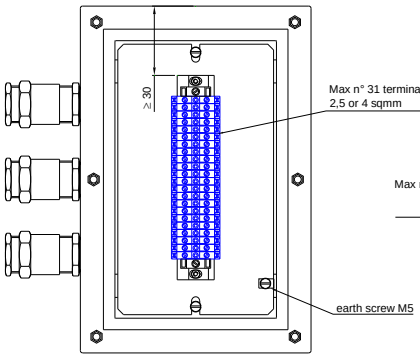
The enclosures are to be used in surface plants. They are intended for areas classified as Zone 1-21 or Zone 2-22, in accordance to EN-IEC 60079-10-1 and EN-IEC 60079-10-2.
Installers and users are always responsible for the characteristics accordance of the places where the equipments are installed to the limits and features as above.

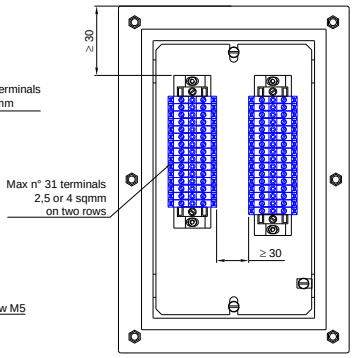
CSX Terminal boxes and control boxes manufacturing characteristics

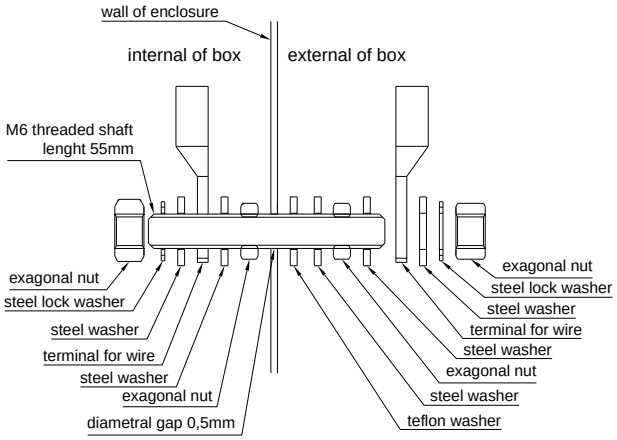


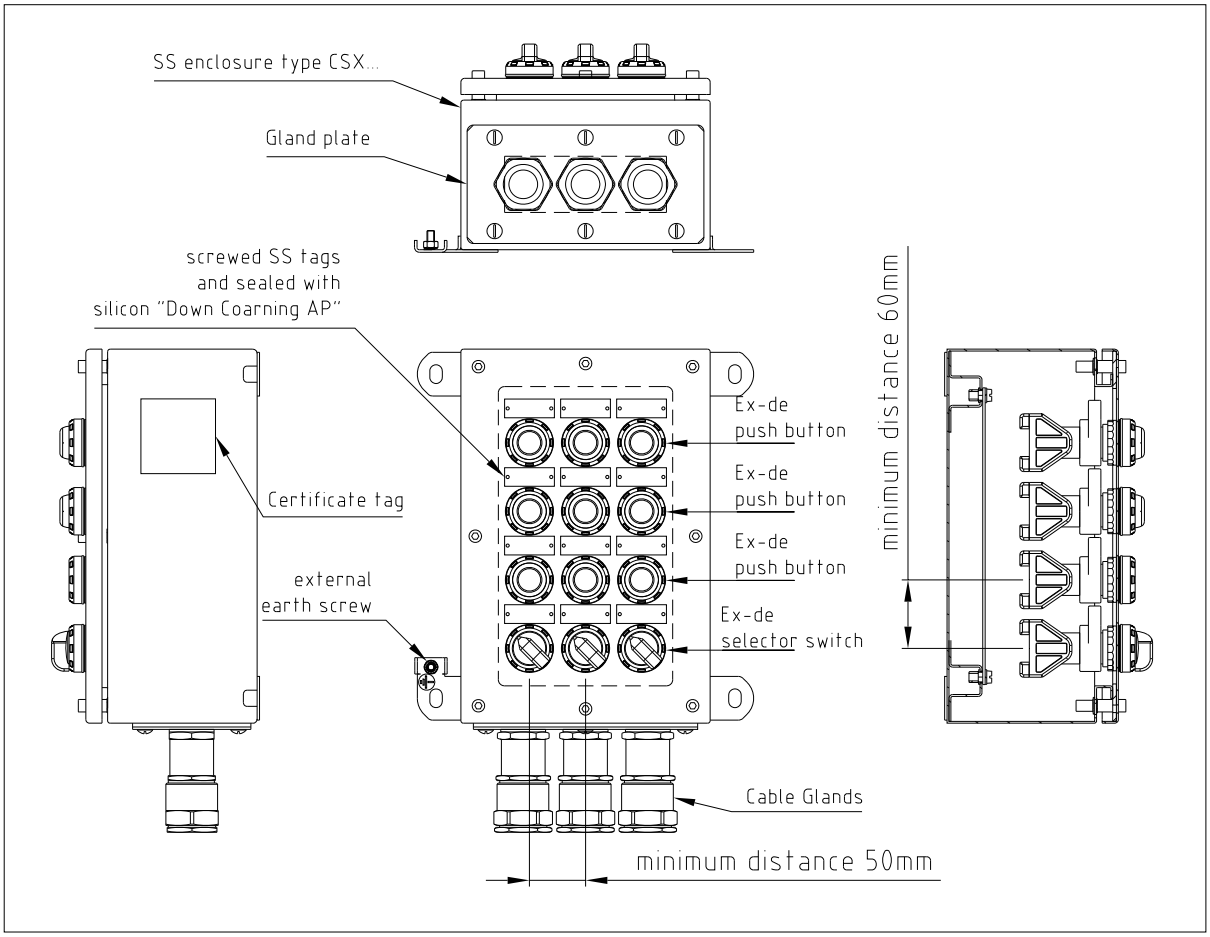


Earth passing screw

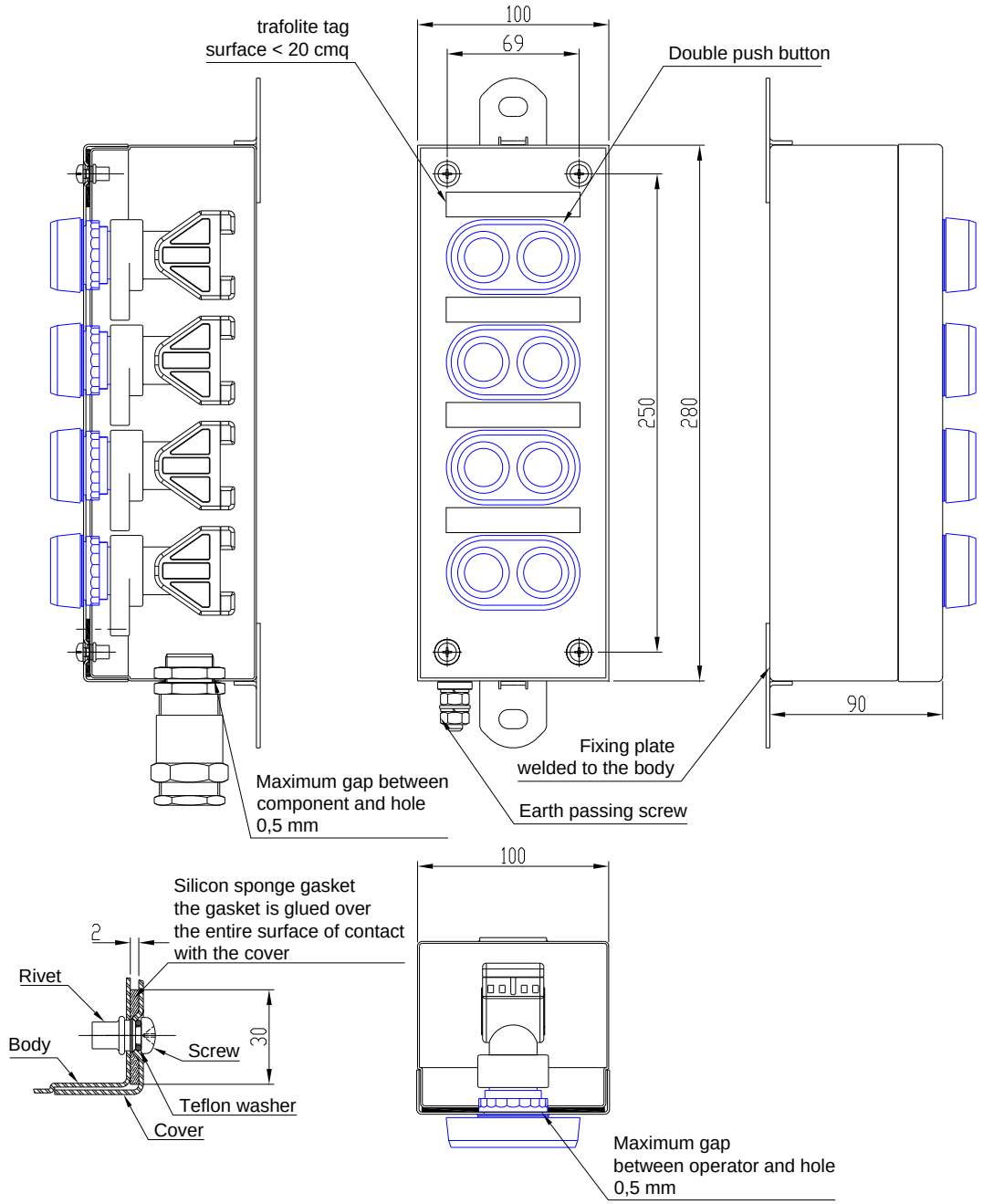




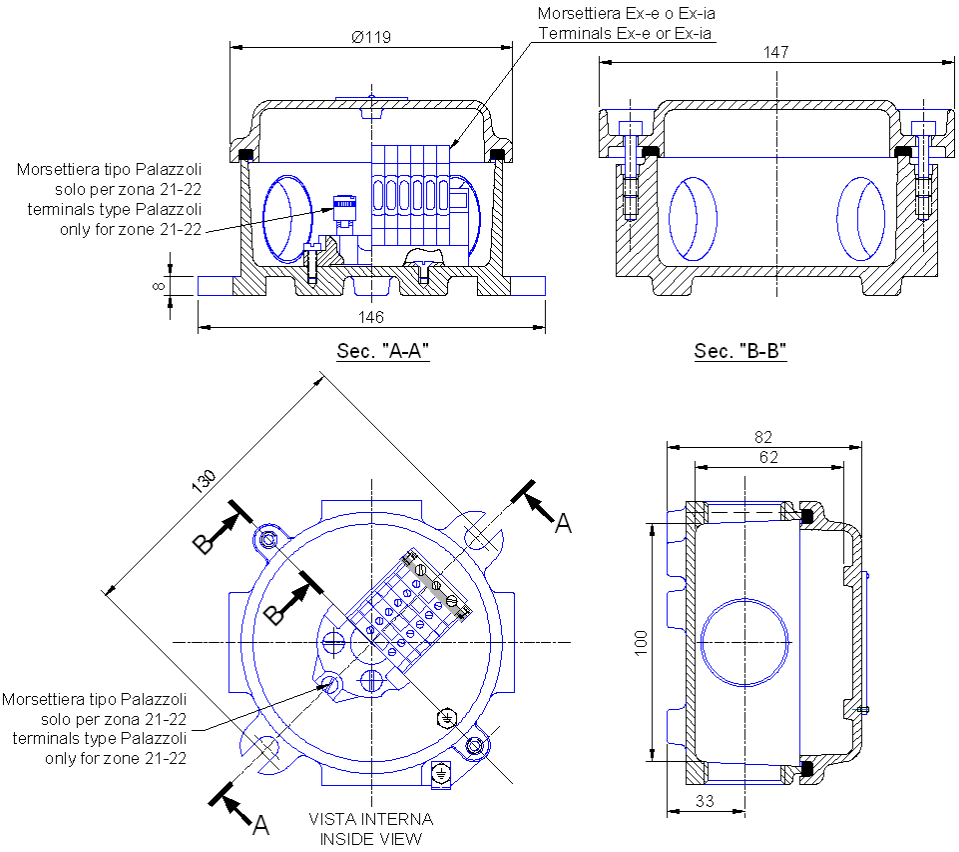




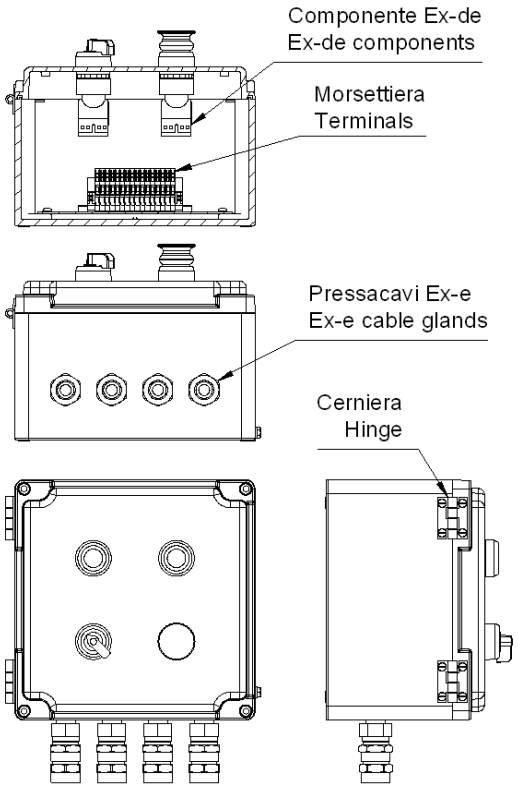
SD . . . . control boxes manufacturing characteristics

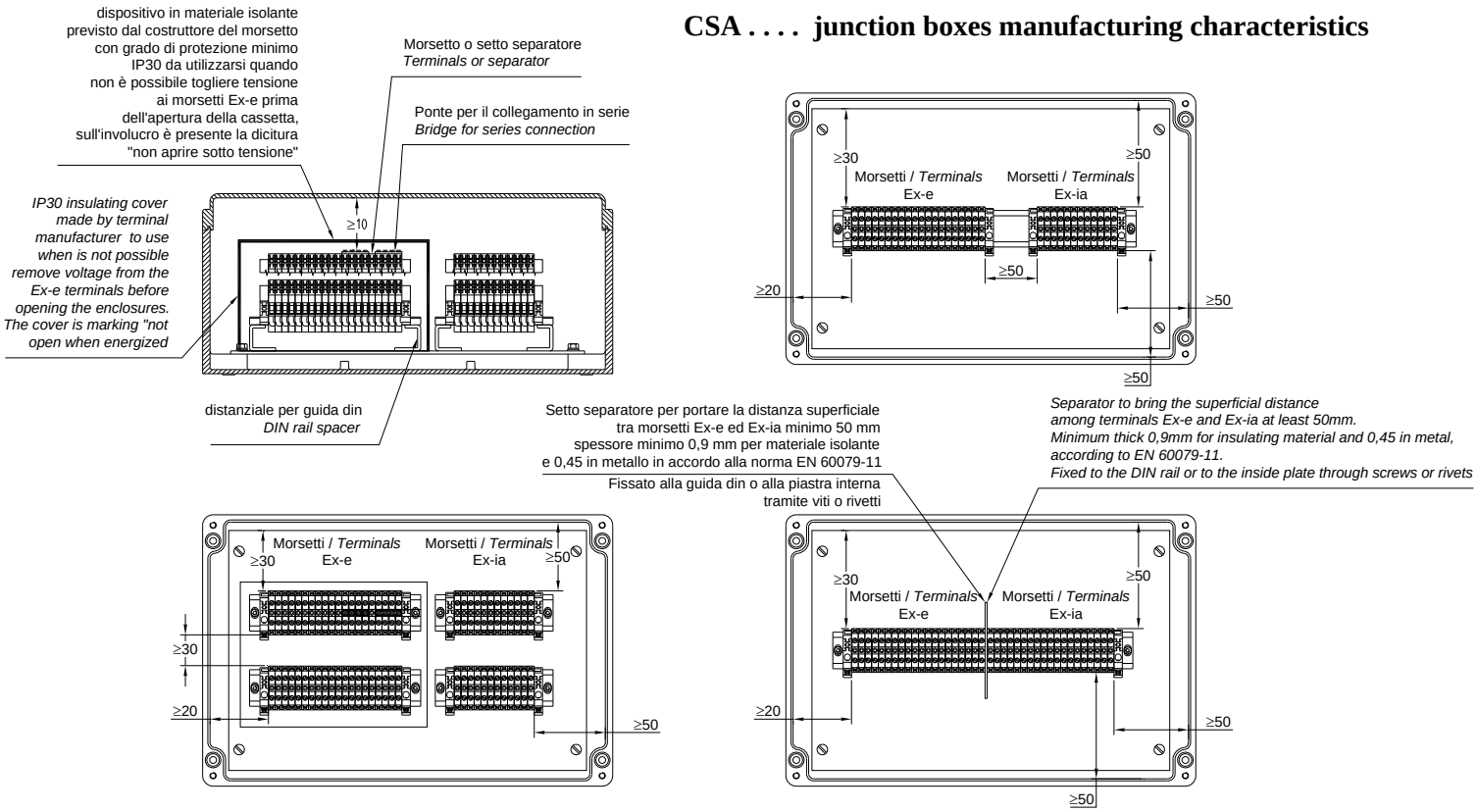


SSA . . . . junction boxes manufacturing characteristics



CSA . . . . control boxes manufacturing characteristics





IP Protection degree

The minimum protection degree from accessing of solid bodies and external liquids is IP 66 with gasket.

Thermal Electrical Features

- Maximum voltage/current:

"Ex d e" version 250 V / 16A with push buttons and 690V / 180A with switches ; 630 V / 452A for Ex e connections; 1000 V / 452A for Ex tb enclosures

- Terminals Section (mm^2) / maximum current: 452A for 300 mm^2 ;(Ex e, Ex tb)

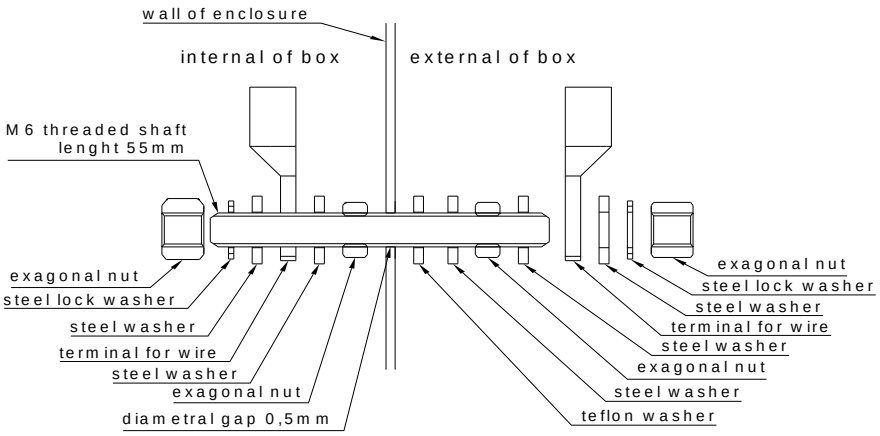
Earth terminal (earth connection)

The enclosure have two threaded connections for earthing: one internal and one external that is against loosening and rotation.

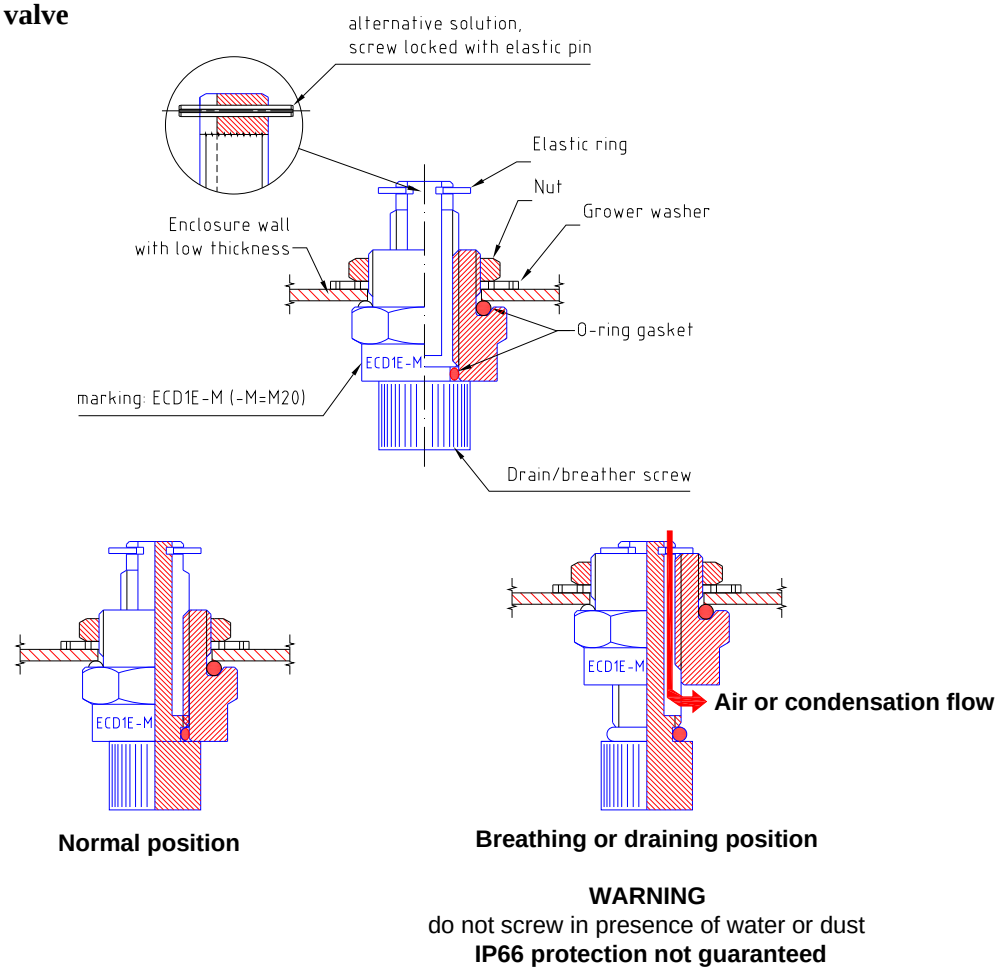
In the terminal block there is always an earth terminal installed on DIN rail, with equivalent section as phase terminals. The earth terminal is electrical connected with the enclosure through a bridge with the earth screw or through the connection terminal-DIN rail-internal plate.

Some enclosures will be provided with earth stud, for directly connect two earth cable inside and external as shoved please make attention at the correct assembly.

The earth connection has a device against loosening and rotation do not remove or replace these devices.



Breather/Drain valve



Normal position

Breathing or draining position

WARNING
do not screw in presence of water or dust
IP66 protection not guaranteed

Terminals cables connection

All cables connections inside the enclosures must be made following the components characteristics. The conductors must be connect to the terminal, without reduction of the minimum distance in air and surface; the insulation part of the conductor has to be in contact with the metallic part of the terminal (with a distance of no more than 3 mm) and blocked in their length. Their lengths inside the enclosure has to be minor or equal at the distance between inside low angle and opposite upper inside angle.
The terminals must be well tightened in order to avoid high contact resistances and consequent warming.

Cable entries

The connections must be performed using cable entries in accordance to the EN-IEC 60079-14 rule.
cable entries must be made with sealing fittings, sealed nipples or mixed cable glands Ex-e and / or Ex-tb certified ATEX with minimum degree of protection IP66.
For cable entries can be using Ex e components type "ROXTEC".
If a cable entry is not used the holes must be closed by a blanking element covered by an ATEX certificate with minimum degree of protection IP66.

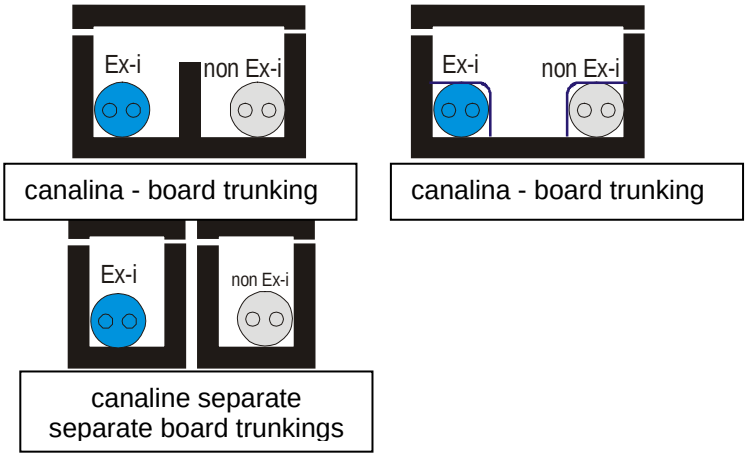
Prescription for SI (intrinsicaly circuits) connection

Cable Ends

The internal connections of the cables to the terminals permit tidy wiring so that they are separate circuits intrinsically safe and non-intrinsically safe according to rules determined by EN 60079-11 and EN 60079-14. The wires must be connected to the terminal without reducing the minimum clearances and creepage of the same, the insulation of the conductor must be near the metal part of the terminal (with not more than 1mm).

The cables of intrinsically safe circuits is made only with insulated cables of type A or B, art. 12.2.2.8 in accordance with EN 60079-14, and in any case following the requirements of art. 12.2.2 of EN 60079-14 (CEI 31-33).

The conductors are attached or anchored or separated, so that they can not be grouped with non-intrinsically safe circuits, even indirectly, so that they are segregated.



The minimum distance between the intrinsically safe circuits and non-intrinsically safe is maintained at 6-8 mm, but not less than that provided in Table 4 of the standard
EN 60079-11. The minimum degree of electrical insulation of the cables is 0.5 kV for intrinsically safe circuits, single, 1 kV between different intrinsically safe circuits in multi-core cables. Follow the requirements of art. 12.2.2.5 of EN 60079-14 (CEI 31-33).

Ex ia cable entries

They must be identified with cable glands in light blue (type RAL 5015).
Cable entries for intrinsically safe circuits when possible are made on a wall where there are no "Ex i" circuits, or on the same wall, but separated by a minimum of 10 cm, between the different cable entries.

Verifications and maintenance

Verification and maintenance of the electrical equipments in areas with explosion dangers must be made following the instructions of EN-IEC 60079-17 rule.

- The cover must be securely locked to the bottom, with torque of 6N/m.

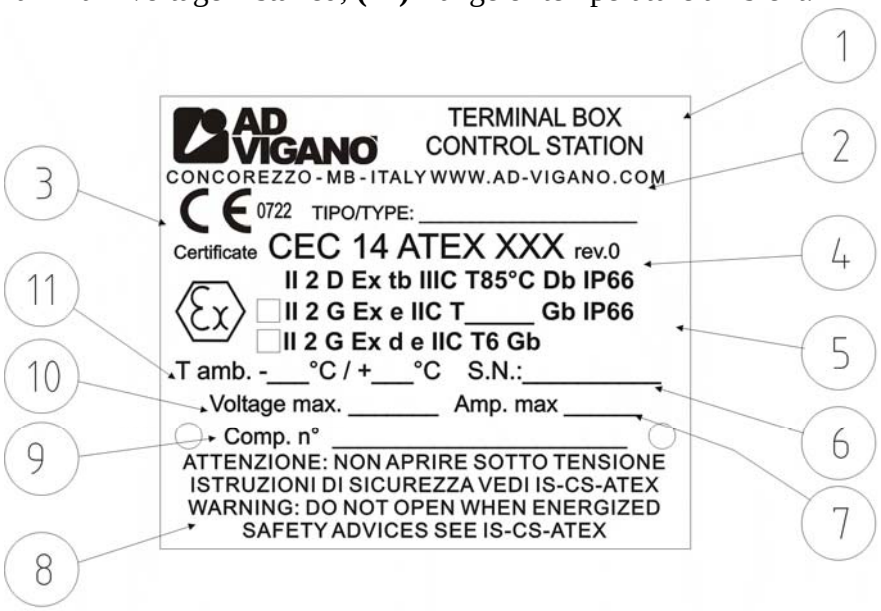
-To guarantee IP 66 protection it is necessary that gasket is maintained in good conditions and must verify after every opening that it doesn't show breakage or cuttings.

-Check the terminals locking to verify that they are not loosening

-Replacement of rubber washers and of parts where cables are entering must be made with identical components of those supplied by the manufacturer in order to guarantee the protection maintenance.

-The locking screws must be in stainless steel, big threaded.

Repairs

All repairs of explosion-proof devices must be made according to the specified criteria of EN-IEC 60079-19 rule. Repairs made by persons that not belong to AD Viganò staff are not allowed, unless a specific written authorization by AD Viganò that granted for persons duly trained.

Certification Tags.
The tags can have constructively different and made of different materials: standard polyvinyl adhesive film with surface <20cm^2 of heat transfer written, produced by 3M and suitable for use in a temperature range between -60°C to +150°C, resistant to solvents.
The film characteristics tamper because the support can not be removed without damage.
To ensure that reported data sheet is attached.
A request can be made of stainless steel with heat transfer printing and fastened with rivets
tag description:
(1) Manufacturer name; **(2)** Using of the equipment; **(3)** Model name SD or CSX followed by numeric code of the size; **(4)** Number of ATEX certificate: **(5)** Protection mode; **(6)** Serial number Year, Month, progressive number YY.MM.xxx; **(7)** Max current installed; **(8)** Document with the safety installation and maintenance instructions;
(9) components number: number of terminals installed or for control stations is n° of electrical contacts; **(10)** Maximum voltage installed; **(11)** Range of temperature ambient.