

(en)	Assembly guidelines – empty enclosures	3
(de)	Montagerichtlinien – Leergehäuse	13
(fr)	Consignes de montage – coffrets vides	23
(es)	Instrucciones de montaje de armarios vacíos	33
(it)	Istruzioni di montaggio – custodie vuote	43
(ru)	Руководство по монтажу – пустые корпуса	53
(br)	Diretrizes de montagem – invólucros vazios	63

Klippon® STB





Empty enclosures characteristics

Material:	Stainless Steel 316L/1.4404
Temperature:	-60 °C ... +100 °C (+120 °C on request)
IP-Rating:	IP 66 according to DIN EN 60529

WARNING



ATEX or IECEx use:

The complete assembled enclosure must be certified by a recognised, notified body and in line with the ATEX directives or IECEx scheme!

Marking:

Directive (RL) 94/9

Ex II 2G Ex e IIC Gb

Ex II 2(1)G Ex e ia IIC Gb

Ex II 1G Ex ia IIC Ga

Ex II2D Ex tb IIIC Db IP6X

IECEx

Ex e IIC Gb

Ex ia IIC Ga

Ex tb IIIC Db IP6X

EC Type Examination Certificate Number:

IBExU07ATEX1147 U

IECEx IBE09.0018U

The following European and International standards apply to this document along with any applicable local regulations.

IEC 60079-0:2007-10 / EN 60079-0:2009

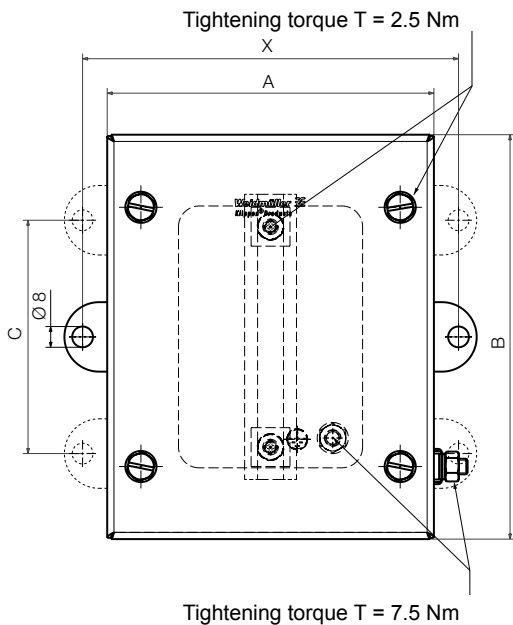
IEC 60079-7:2006-07 / EN 60079-7:2007

IEC 60079-11:2006 / EN 60079-11:2007

IEC 60079-31:2008 / EN 60079-31:2009

Dimensional data refers to the drawing below (dimensions in mm)

	A	B	C	X
KLIPPON® STB 1	120	120	–	145
KLIPPON® STB 1.1	120	150	–	145
KLIPPON® STB 2	150	150	–	175
KLIPPON® STB 2.1	150	190	–	175
KLIPPON® STB 3	190	190	–	215
KLIPPON® STB 4	250	250	–	275
KLIPPON® STB 5	380	160	80	405
KLIPPON® STB 6	400	250	150	425





This document should be read carefully before starting installation. Respect the information stated on the certification label of the enclosure, e.g. Type/s of protection, gas group and temperature class. A copy of the certification label can be found at the end of this notice. Alterations or modifications to the enclosure or its contents may invalidate the certification. The installation, maintenance and repair of these enclosures should only be carried out by authorised and qualified personnel whose training has included instruction on the various types of protection and installation practices (according to IEC/EN 60079-17 and IEC 60079-19; EN 60079-19, IEC/EN 60079-14), the relevant rules and regulations, and on the general principles of area classification.

Certification label

The certification label of the empty enclosure “U” must be removed or covered with the type label of the fully certified apparatus.

Opening of the Enclosure

WARNING



Maintenance and repair of these enclosures should only be carried out by authorised and qualified personnel.

The lid should be removed by loosening the cover fixing screws and any attached lid bonding cable with a suitable tool.

Do not fully unscrew the lid screws and do not remove the gasket from the enclosure lid.

Closing the Enclosure Lid

Before closing the cover, ensure that:

- That all covers and earth studs / bolts are fully tightened.
- The lid, gasket and surrounding area are clear of any dirt or dust.
- The lid is correctly oriented to the base of the enclosure.
- Place the lid on the enclosure and tighten all the lid securing screws.



Screws have to be tightened crosswise manner!

Tightening torque

Tightening torque lid screws:	2.5 Nm
Tightening torque earth stud:	7.5 Nm
Tightening torque earth stud inside:	7.5 Nm
Tightening torque slide nut inside:	2.5 Nm

Fitting Cable Glands

The ingress protection rating (IP6x) that is stated on the certification label must be maintained.

The enclosure may be supplied complete with cable entries. Where the installer drills cable entries, they must be installed in accordance to the areas/limitations as specified on the certified drawings and in accordance with the enclosure certificate.

Where adjacent cable entries are installed, sufficient clearance must be maintained to allow the fitting of sealing/retaining washers and the rotation of the cable gland hexagons.

If site drilling takes place, carefully remove any drilling debris, particularly debris that is close to sealing areas. Take care that the material does not become overheated and that there is no visible deformation of the enclosure. For the installation of cable glands it is necessary to follow the guidelines as stated in the instructions issued by the manufacturer.

Earthing and Bonding

The Klippon® STB enclosures are fitted with an internal / external M6 earth stud as standard.

It is important when providing protective wiring that the correct size of conductor is used and that this is connected to a suitably sized earth stud. The following table details the size of cable that is required for a variety of applications.

Earth Stud Selection

Determine minimum protective conductor size from the following table.

Phase conductor size (mm ²)	Minimum protective conductor size (mm ²)
1.5	1.5*
2.5	2.5*
4	4
6	6
10	10
16	16
25	16
35	16
50	25
* Internal connections	

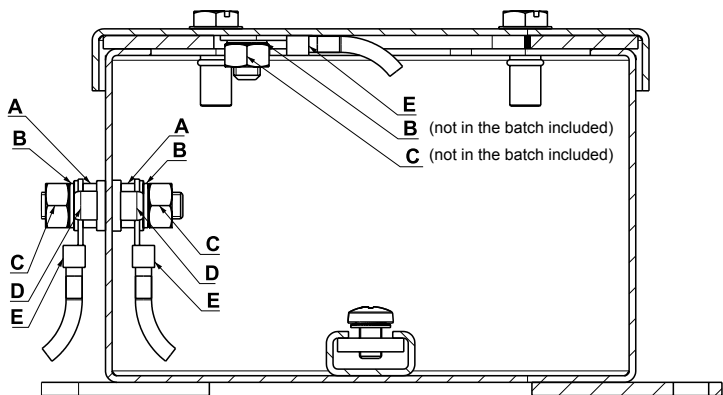
Please note that an M6 earth stud is fitted as standard and this is suitable for protective conductors of up to 25 mm². In some circumstances internal earth bonding arrangements may have to be made. An M6 earth stud is also welded to the inside of the enclosure lid NB. To use the earth stud in the lid you must use M6 nuts, washers etc. When connecting an earth conductor to the lid, ensure that it is of sufficient length to allow normal operation without stretching, e.g. when lid is removed.

It is sometimes a requirement of the customer to fit an earth bar assembly into an enclosure. This consists of an earth busbar that is mounted on support blocks and is fitted with the required number of ZB clamps. Earth terminals and ZB clamps fitted inside an enclosure do not count towards the overall terminal content, but they must be considered for creepage and clearance distances.

The installer is responsible for earthing and bonding arrangements external to the enclosures.

Internal/External Earth Stud Assembly

The drawing below provides a view of all standard earthing connections and a profile of earth stud.



- A Square nut
- B Conical spring washer
- C Hexagon nut
- D Clamp strap
- E Cable lug (not in the batch included)

Lid Earth Screw Assembly

Attach the cable lug to the earth screw followed by the spring washer and tighten the complete assembly with a full nut (up to max. force 7.5 Nm).

Inspection, Maintenance and Repairs

WARNING



Disconnect power supply before installing or servicing these enclosures.

Ensure that only authorised and trained personnel perform repairs and maintenance work on equipment that is placed into a hazardous area. The training has included instruction on the various types of protection and installation practices, the relevant rules and regulations and on the general principles of area classification. Care must be taken to maintain the integrity of the type of protection provided for the enclosure; this may require consultation with the manufacturer. When necessary, the working area shall be confirmed gasfree prior to commencement of any work. Maintenance and repairs must only be undertaken using original spare parts and after prior consultation with Weidmüller.

Inspection

After opening an enclosure, a visual inspection of the lid gasket must be performed to ensure no foreign objects may interfere with the enclosure sealing function. A visual inspection of the apparatus shall be carried out appropriate to the installation environment. Inspection should include verification that all certification details are clearly legible and that lid screws are secured to the correct torque. Checks should also include that there is no ingress (dust or liquid) inside the enclosure and that all cable glands and main earth connections are installed professionally and are in good condition.

Make sure you are in compliance with the latest IEC 60079-17/ EN 60079- 17 and any other relevant national regulations that pertain to the maintenance of electrical equipment in hazardous atmospheres. Working with live voltages is not permitted without prior written approval from the facility operator.

Typical maintenance tasks are listed below:

- The gasket on increased safety enclosures should be checked for damage and replace the enclosure if necessary.
- Any discoloration could indicate a rise in temperature and the development of a potential hazard.
- Cable glands and stopping plugs should be checked for tightness.

Cleaning

During each inspection, the enclosure should be cleaned with a damp cloth. It is not allowed to clean the enclosure with hydrocarbon based cleaning compounds!

Repair

Make sure that all is in compliance with the latest IEC 60079-19/ EN 60079-19 and all relevant national regulations while carrying out repair and maintenance of electrical equipment in hazardous atmospheres. It is not permissible for modifications and rework to be carried out that could jeopardize the characteristics essential to explosion protection (type of protection and temperature class).

Only the manufacturers' authorised parts can be used for replacements and modifications. Failing to do so might invalidate the certificate. If it is necessary to remove the equipment for maintenance purposes, the exposed conductors must be correctly terminated in an appropriate certified enclosure, e.g. Ex 'e', or isolated from all sources of supply and either insulated or earthed.

Certification Marking

Certification	Standard	Protection	Type of protection
IBEXU 07ATEX1147U	EN 60079-0:2009	⊕ Ex II 2G Ex e IIC T_ Gb	„e“
	EN 60079-7:2007		
	EN 60079-11:2007		
	EN 60079-31:2009		
IECEX IBE09.0018U	IEC 60079-0:2007-10	Ex e IIC Gb	„e“
	IEC 60079-7:2006-07		
	IEC 60079-11:2006		
	IEC 60079-31:2008		
IBEXU 07ATEX1147U	EN 60079-0:2009	⊕ Ex II 2(1)G Ex e ia IIC T_ Gb	„i“
	EN 60079-7:2007		
	EN 60079-11:2007		
	EN 60079-31:2009		
IECEX IBE09.0018U	IEC 60079-0:2007-10	Ex ia IIC Ga	„i“
	IEC 60079-7:2006-07		
	IEC 60079-11:2006		
	IEC 60079-31:2008		
IBEXU 07ATEX1147U	EN 60079-0:2009	⊕ Ex II 2 D Ex tb IIIC T_ Db IP6X	„tb“
	EN 60079-7:2007		
	EN 60079-11:2007		
	EN 60079-31:2009		
IECEX IBE09.0018U	IEC 60079-0:2007-10	Ex tb IIIC Db IP6X	„tb“
	IEC 60079-7:2006-07		
	IEC 60079-11:2006		
	IEC 60079-31:2008		

The surface and the ambient temperature values are specified on the certification label.

The label highlights the maximum limits for the cable and current that can be used.

The following European and International standards apply to this document along with any applicable local regulations.

IEC/EN 60079-0

IEC/EN 60079-7

IEC/EN 61241-0

IEC/EN 61241-1

IEC/EN 60079-11

IEC/EN 60079-14

IEC/EN 60079-17

These safety notices do not claim to be complete. In case of questions please contact us or our representative.

The hardware and the documentation have been produced and checked with care but we do not assume any guarantee of them being faultless. Technical changes are reserved to the manufacturer of the enclosure.