

Scope : USER MANUAL TNCLS Backlight for level gauge				BARTEC	
Date: 12.10.2022	Rev. P	Checked by : S.Gr.	Approved by E.T.	Page : 1 of 5	Document no. : 50-CLS-5

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Further technical information is available on www.bartec-technor.no

Note on instructions

When working in hazardous areas, the safety of personnel and equipment depends on compliance with the relevant safety regulations. The people in charge of installation and maintenance bear a special responsibility and it is essential that they have knowledge of the applicable rules and regulations. These instructions provide a summary of the most important safety measures and must be read by everyone working with the product. The instructions to be kept for future reference and must be available throughout the expected life of the product.

Technical specifications

The equipment listed in this manual is certified according to the latest requirements of the ATEX Directive and the IECEx scheme.

 II 2 G Ex eb mb op is IIC T4 Gb  II 2 D Ex tb IIIC T 130°C Db

Max. Voltage 254 Vac, 50 – 60 Hz, 62 Vdc

Tamb: -35°C to +60°C

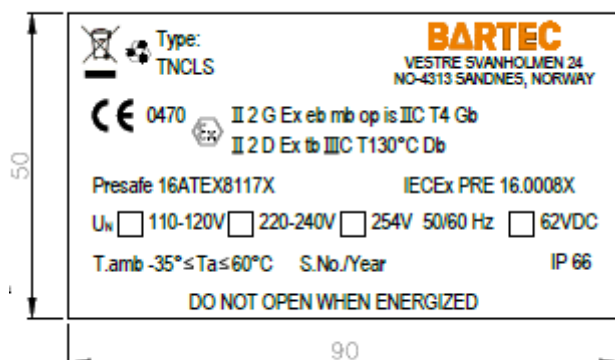
Equipment with EPDM gasket : IP64
Equipment with silicone gasket : IP66

The certificate numbers are :

ATEX : Presafe 16ATEX 8117X

IECEX: PRE 16.0008X

Label:



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Applicable standards

EN 60079- 0:2018	IEC 60079-0 :2017
EN 60079- 7:2015/A1 :2018	IEC 60079 -7:2017
EN 60079-18:2015/A1 :2017	IEC 60079-18:2017
EN 60079- 28:2015	IEC 60079-28:2015
EN 60079- 31:2014	IEC 60079-31:2013

Description

Our backlight enclosure is made of stainless steel 316L.

Safety instructions

The device must be installed, used and maintained in accordance with the following standards:

- EN 60079-14 (electrical installations in explosive gas atmosphere)
- EN 60079-17 (inspection and maintenance in hazardous areas)

It is forbidden to change components, installation, wiring etc. without the prior consent of Bartec Technor AS.

We cannot accept any responsibility for failure to observe these regulations

Make sure of the compatibility between the information on the nameplate, the explosive atmosphere present, the area of use and ambient temperatures and surfaces.

Any damage of the device can cause ineffective in the explosion-proof protection.

The installation of the enclosure must be performed only by qualified, competent and authorized personnel.

Abnormal use as well as the non-compliance with the instructions of the present document will invalidate the guarantee of the product.

Manufacturer traceability is ensured only at the first known delivery destination.

Transport, storage, Installation

- Check that the product has not been damaged during transport.
If any, do the statutory reserves to the carrier
- Do not put into service damaged products

Packaging	Location storage	Duration storage
Open	In an indoor clean location, without contact with external substances. Constant temperature (-40°C < T < +70°C). Air humidity below 50 %.	2 years or more if inspected regular for cleanness and mechanical damages.

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Putting into service

When mounting the enclosure ensure that there are no damages, especially inspect the gasket and cover of the equipment. TNCLS Backlights shall be installed on the Level Gauges by help of the Installation brackets delivered with the backlights. Ensure that brackets are mounted between lights if two or more lights are connected. Do not install lights without these brackets.

- The quantity of supplied brackets is as per below specified quantities. The quantity of
- Installation Brackets to be used upon installation shall be as follows:
 - 1 pair for enclosures with 1 module ("LED slot").
 - 2 pairs for enclosures with 2, 3 and 4 modules.
 - Examples:

TNCLS 34-1 (one module)	: 1 pair
TNCLS 34-3 (3 modules)	: 2 pairs
TNCLS 34-7, i.e. (34-4)+(34-3)	: 4 pairs
TNCLS 27-9, i.e. (27-4)+(27-4)+(27-1)	: 5 pairs

For High Pressure Level Gauges with larger nuts there is a special bracket with Ø32mm hole. See page 5.

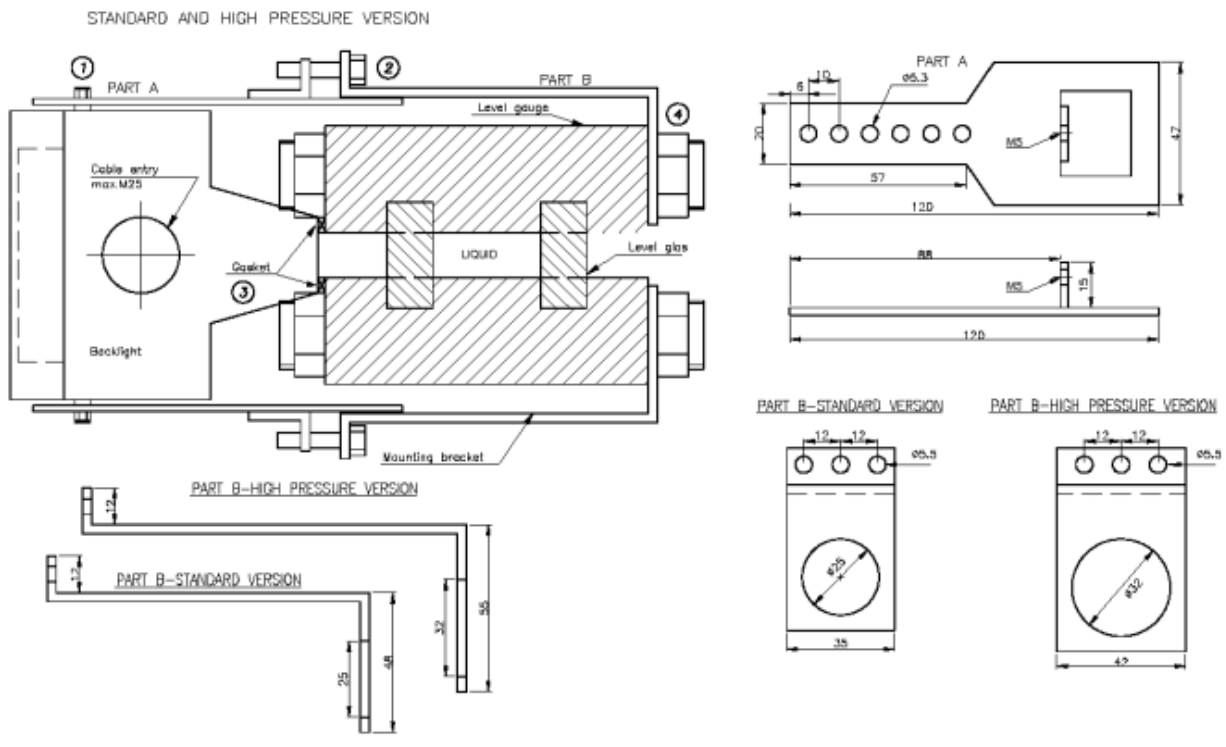
For Level Gauges with high temperatures (> +60°C) there shall be no mechanical contact (except through the installation brackets) between Level Gauge and Backlight, and hence there are special installation kits (brackets) to protect the Backlight against overheating. There are also special kits for installation of TNCLS Backlights upon low temperatures (< -30°C).

TNCLS Backlights shall not be isolated if any heat tracing system is used, or the process temperature is higher than +60°C.

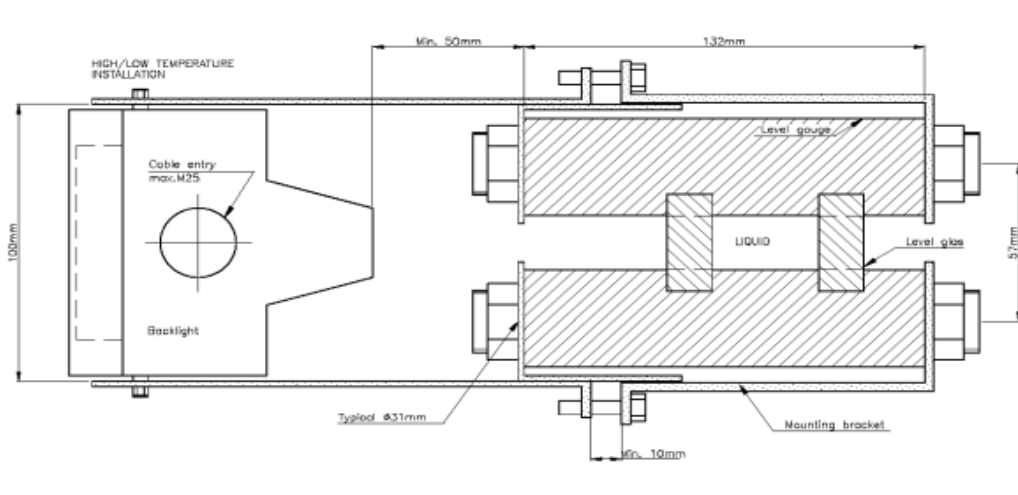
- Verify that the information on the label of the product is in accordance with the permissible conditions for the Ex area of the site of use (Group II: Surface Industries - Category 2: high level of protection for ATEX G for Gas EPL' code - G = for Gas - IPxx: IP rating (waterproofness for solids and liquids).
Check if there is a specific position of mounting.
 - The wiring of the cable conductors must be made with a particular care.
The conductor insulation must reach the terminal. The conductive core must not be damaged.
Cables not to exceed the authorized maximal temperature.
 - Earthing/bonding.
Each metal enclosure has an external connection facility for bonding. It is in reliable electrical contact with the internal earthing terminal and/or earth bar, as well as with any bonding terminals,
 - The size of the internal earthing terminals is in accordance with IEC 60079-0:2017 Ed 7, clause 15 and Table 12.
This implicates for internal earthing; (S: conductor)
 - when $S \leq 16\text{mm}^2$ then $S_{PE} = S$
 - when $16\text{mm}^2 < S \leq 35\text{mm}^2$ then $S_{PE} = 16$
 - when $S > 35\text{mm}^2$ then $S_{PE} = 0.5S$
- External bonding shall be connected
- The gasket supplied with the Backlight is fixed on each side of the LED slots at the front of the Backlight (the face of the installation which will be in contact with the Level Gauge). Torque cover screws: 2 Nm
 - The backlights are installed as follows, see also arrangement examples on page 5.
 - The installation brackets shall normally be installed in the upper and lowest fixing point on the enclosure (except 1-module units, which have one bracket position only).
 - The adjustment screw (2) connecting the two parts of the installation brackets shall be unscrewed as far as possible before fitting the bracket onto the Level Gauge.

- The installation brackets to be installed as horizontal as possible. Adjustments can be done by the 3 holes in part B of the bracket.
- All adjustment screws on the brackets to be firmly tightened.
- When connecting cables, ensure that the incoming cables/wires are isolated from all sources of power during installation and until the cover is mounted on the enclosure.
- Provide effective equipotential connection with a conductor with a cross-sectional area of at least 4mm².
- For other installation applications, contact Bartec Technor for further information.

Standard and High Pressure Installation



High/Low Temperature



Installation

Before starting

- Make sure the unit has been correctly mounted and not damaged
- Make sure the wiring and the tightening of the terminal screws have been performed properly. (See tightening torque for terminals in manufacturers descriptive documents)
- The cable gland must be tightened
(See gland torque for glands in manufacturers descriptive documents see description of the)
- The device shall not include any foreign objects and check that no part is damaged
- Perform the dielectric test between terminals and earth with: $(1\ 000 + 2U)$ V or 1500V whichever is the greatest for 60 seconds. During the test no electrical arcing shall occur. The test shall be performed using calibrated measuring equipment. The measuring equipment should have a calibration not extending one year.

Maintenance

The maintenance and repair work on devices must be made only by authorized and trained persons for that purpose.

Before any work the devices must be switched off. In addition:

- Prevent and avoid any formation of layers of dusts: make a periodic cleaning with a wet cloth

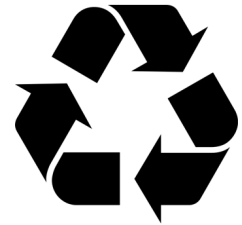
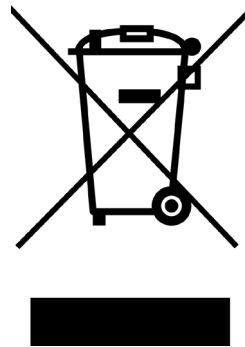
The following checks must be made at least once a year:

- The outdoor equipment and surfaces must not be damaged
- The cable entries and blanking plugs must be tightened
- Check tightness of the connections, rewiring if necessary
- Prior to closing, check the cleanliness of the gasket and screws.



Dismantling, taking out of service:

When removing the enclosure and taking it out of service, the same precautions apply as those observed when mounting the enclosure. The enclosure with its content must be handled according to the WEEE (Waste Electrical and Electronic Equipment) Directive, 2012/19/EU.



SS316L

Special Conditions for safe use (X):

To be used in an area where there is low risk of mechanical danger.