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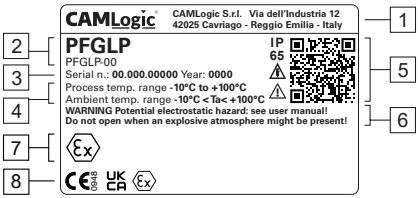
COSTRUZIONI MECCANICHE ELETTRICHE

Operating and maintenance instructions for float level indicator series PFGLP

PRODUCT IDENTIFICATION

The **PFGLP** is a float level indicator for liquids of any kind that utilises hydrostatic thrust.
The device is identified by the label on the side of the case, the characteristics of which are given below:



1. Manufacturer information
2. Product model and reference code for the specific configuration
3. Serial number and year of production
4. Ambient and process temperature range
5. QR code leading to the specific configuration and IP rating
6. Usage warnings
7. Markings and certificate numbers
8. Conformities and certification symbols

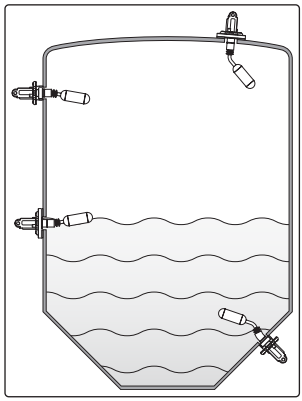
Tampering with the label voids certifications and warranty.

PRODUCT CHARACTERISTICS

Materials:	casing in die-cast aluminium flange in AISI 304L / EN 1.4307, float and rod in AISI 316Ti / EN 1.4571 bellows in neoprene rubber, or silicone on request
Connection to process:	DN40 PN16 flange for **PFGLP**, G 2" (BSPP) threaded connection or flange for **PFGLP22**
Cable size:	0,5 ÷ 2,5 mm² (14 AWG)
Contacts capacity:	10A at 250 VAC
Signal output:	SPDT
Process temperature:	-10 ÷ +100°C (14 ÷ 212°F)
Ambient temperature:	-10 ÷ +100°C (14 ÷ 212°F)
Max ambient pressure:	0,8 ÷ 1,1 bar (11,6 ÷15,9 psi)
Max process pressure:	25 bar (362.6 psi)
Protection rating:	IP65 (dust-tight, protection against water jets)
Means of protection:	class I (PE connected) - overvoltage category II
Environmental conditions:	indoor and outdoor use, altitude up to 2000 m (6.562 ft), max. relative humidity 80% for temp. up to 31°C (88°F) decreasing linearly to 50% at 40°C (104°F), pollution degree 2

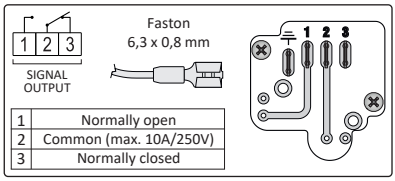
INSTALLATION

The standard version of the PFGLP float level indicator is designed for horizontal installation on the side walls of the tank or container. The horizontal axis of the float must therefore be perpendicular to the tank wall and parallel to the liquid surface.
The version with a curved stem can be mounted from above or on walls with a maximum inclination of 45°, because the curvature of the stem allows optimal operating conditions to be restored, as when the float is parallel to the surface of the liquid.
At rest, the float assumes a negative inclination of approximately 10° on its horizontal axis. As the liquid level rises, the float is affected by the movement and displaced from its rest position until it reaches a positive inclination of approximately 10° on the horizontal axis. This movement is transmitted via magnetic induction to the internal mechanism, which causes the microswitch to switch. There is no passage between the liquid contained in the tank and the interior of the level indicator.

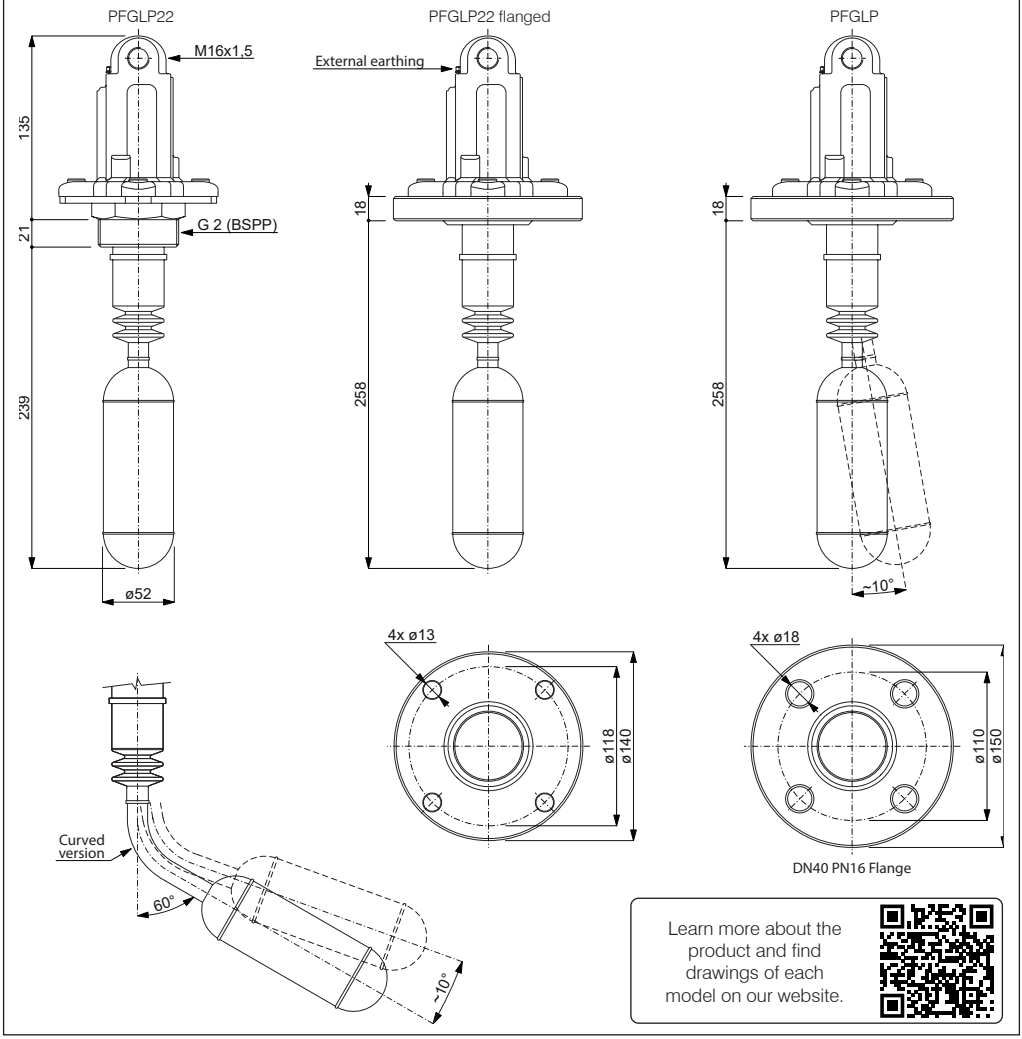


WIRING

The entire connection of the device must take place while the device is de-energised.
The earthing connection must take place before any other connection is established. One terminal for the protective earth connection is outside the casing with an M4x8 screw and a notched stainless-steel washer, near the cable entry, and another is inside, marked by the relative symbol (IEC 60417-5017).
The cross-sectional area of the protective earth (PE) conductor must be the same as that of the phase conductor (S), with a maximum of 16 mm². Protect the cables with an overload protection element (rated current ≤ 10A).
A disconnect switch must be present near the device, to cut off power supply in the event of a fault. Use Faston terminals to connect to the microswitch terminals inside the casing, according to the diagram shown on the left.



REFERENCE FIGURES



SAFETY WARNINGS

All the operations described in the documentation must be carried out only by qualified personnel authorized by the plant manager, adopting all the appropriate safety precautions to reduce the risk of fire, electric shock and personal injury.
Before installation, perform a visual inspection of the device to make sure that it did not sustain any damage during transport or storage. If anomalies are found, the product must be sent to the Manufacturer for restoration of efficiency. The operational safety of the device is guaranteed only by use in accordance with the regulations, the instructions for use and any additional instructions. Arbitrary transformations or modifications are categorically prohibited. In the event of improper or non-intended use, the device can be a source of dangers related to the specific application, or damage to the plant due to incorrect assembly or configuration.
Verify that the power supply system complies with the standards, with an automatic protection switch incorporated.
Any control, cleaning, maintenance, change or replacement of parts must be carried out with the indicator disconnected and the plug disconnected from the power supply.

SPECIFIC CONDITIONS FOR USE OF ATEX MODELS

⚠ It is necessary for the operator to refer to this documentation to preserve the protection afforded by the equipment!

In accordance with Directive 1999/92/EC / DSEAR 2002, it is the responsibility of the user to ensure that the equipment, used in areas where explosive atmospheres might be present, is maintained in such a way as to reduce the risk of explosion.

The installation must be carried out in compliance with EN 60079-14.
Seal the cable entry with a cable gland certified for the protection method, in compliance with the Directive 2014/34/EU / S.I. 2016 No. 1107, able to guarantee a minimum ingress protection (IP) of 65. The device is not explosion-proof when the casing is open.
After the installation, check that you have completely tightened the cover screws before starting the device.
The maximum surface temperature is calculated taking into account a safety margin, but without considering a possible dust deposit on the equipment.

MAINTENANCE

The **PFGLP** float level indicators do not require routine maintenance.

REPAIRS

The **PFGLP** can only be repaired by the CAMLogic manufacturer or by following the manufacturer's instructions.
If in doubt about malfunctions or repairs, contact the manufacturer:
CAMLogic S.r.l. - Via dell'Industria 12-12/A - 42025 Cavriago (RE) - Italy (camlogic@camlogic.it - www.camlogic.it).

WARRANTY

CAMLogic, in addition to the terms of the supply contract, guarantees its products for a period of twenty-four (24) months from the date of shipment. This warranty is expressed exclusively in the repair or replacement, free of charge, of those parts which, after careful examination by the manufacturer, are found to be defective.
The warranty, excluding any liability for direct or indirect damages, is limited to material defects only and has no effect if the returned parts are found to have been in any way disassembled, tampered with or repaired by anyone other than the manufacturer. Also excluded from the warranty is damage resulting from negligence, carelessness, incorrect or improper use of the level indicator, operator mishandling or improper installation.
The warranty is also void if non-original spare parts have been used. A returned level indicator, even if under warranty, must be shipped freight prepaid.

Ex MARKING DETAILS

The **PFGLP** float level indicator is available with **ATEX certification** for Zone 1/21 for gases and dust.

	II	2GD	Ex d	IIB	T4	Ex tD	A21	IP65	T135°C	**ATEX MARKING** for gases and dust, Zone 1/21
										European Community marking for equipment intended for use in areas at risk of explosion.
										Group II equipment intended for use in surface industry.
										Category 2: suitable for use in areas classified as Zone 1/21. **G:** flammable gases - mixture of air and hazardous substances in the form of gases or vapors. **D:** combustible dusts - combustible substance present in the installation area and in the internal volume.
										Protection method **Ex d** - flameproof protection
										Gas group: **IIB** (e.g. acetaldehyde, cyclopropane, ethyl ether, ethylene)
										Temperature class (max. surface temperature reached by the device)
										Protection method **Ex t** - protection by enclosure **D:** combustible dusts
										A21: ATEX Zone 21, a hazardous area where an explosive atmosphere is likely to occur occasionally during normal operation
										IP65 (Ingress Protection) - **6** = dust-tight, no dust ingress; **5** = protected against water jets, limited ingress protection.
										Temperature class (max. surface temperature reached by the device)

The **PFGLP22** models, however, are only available with **ATEX certification** for Zone 22 for dust.

	II	3 D	Ex tc	IIIB	T135°C	Dc	**ATEX MARKING** for dust, Zone 22
							European Community marking for equipment intended for use in areas at risk of explosion.
							Group II equipment intended for use in surface industry.
							Category 3: suitable for use in areas classified as Zone 22. **D:** combustible dusts - combustible substance present in the installation area and in the internal volume.
							Protection method **Ex t** - protection by enclosure **c:** this letter indicates the Equipment Protection Level for dust-hazardous areas.
							Dust group: **IIIB** (non-conductive dusts)
							Temperature class (max. surface temperature reached by the device)
							EPL (Equipment Protection Level): level of protection of the equipment. **Da** = very high level of protection **Db** = high level of protection **Dc** = augmented level of protection

Symbol	Reference	Description
	IEC 60417-5017 (2006-08)	Earth / ground
	IEC 60417-5019 (2006-08)	Protective earth / protective ground
	IEC 60417-6042 (2010-11)	Caution: risk of electric shock
	ISO 7000-0434B (2004-01)	Caution: if the instrument is used in a manner not specified by the manufacturer, the protection offered by the equipment may be impaired.

Please note: *the printed version of this manual may not reflect the most recent changes.*
Please always refer to the updated digital version available on the official CAMLogic website: www.camlogic.it