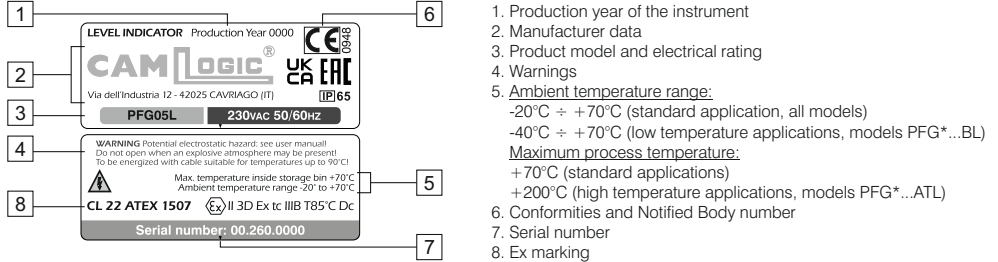


## Use and maintenance manual for rotary level indicator series PFG05L & PFG57L

### PRODUCT IDENTIFICATION

The **PFG05L** and **PFG57L** series instruments are rotary level indicators for granular solids. The identification of the device is accomplished by the specific label outside the casing, whose characteristics are shown below:



Tampering with the label entails the loss of validity of the product certifications.

### Ex MARKING DETAILS

Ex	II	3	D	Ex	tc	IIIB	T**	Dc	
									ATEX MARKING (2014/34/EU / S.I. 2016 No. 1107)
									European community marking for equipment intended for use in areas under risk of explosion.
									Group II equipment intended for use in surface industry.
									Category 3 equipment, suitable for use in areas classified Zone 22.
									Combustible dusts; combustible substance present in the area of installation and the internal volume.
									Ex symbol.
									Protection method Ex t - protection from the ignition of combustible dusts from enclosure.
									For combustible dusts type IIIB (suitable for use with any kind of dust).
									Temperature class (maximum surface temperature the device can reach): T85°C = standard version T200°C = high temperature versions (PFG*...AT)
									EPL (Equipment Protection Level) - Protection level Dc = increased, which is not a source of ignition during normal operation.

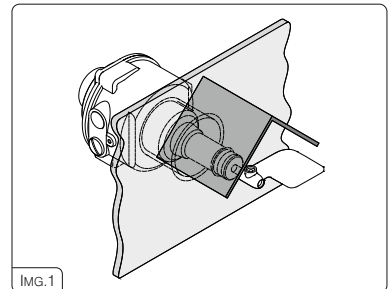
### INSTALLATION

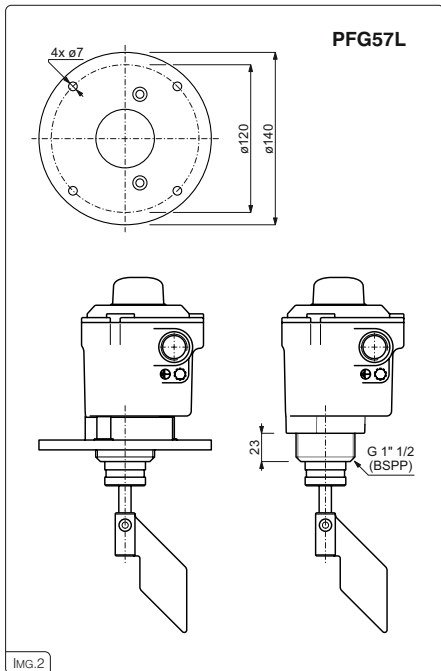
The device can be installed in any position. In case of an horizontal or titled installation, mount the device with the cable entrance on the right side for PFG05L models, or lower side for PFG57L models. The coupling of the instrument with the wall of the container (silos) can be either threaded or flanged; images 2 and 3 show the standard couplings. Always refer to the technical drawings supplied by the Manufacturer together with this manual.

Protect the device from falling material or excessive weight, using protective deflectors. For cable entries, 1 (one) or 2 (two) G 1/2 threaded holes (BSPP) are available. Seal the cable entries with cable glands or sealing caps suitable for the operating range shown on the label.

The protective caps supplied with the device are only for protection during transport and storage, they are not suitable for the use of the instrument and it is responsibility of the installer to replace them.

The diameter of the power supply cable must correspond to the tightening range indicated by the cable gland used.





IMG.2

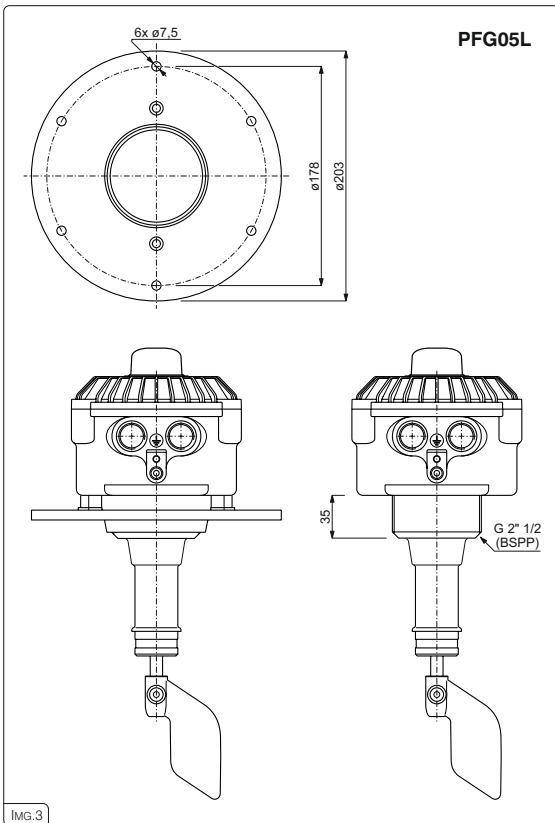
### ELECTRICAL CONNECTION

The entire connection of the device must take place while the device is de-energized. The earthing connection (by means of an M5x8 screw and a notched stainless-steel washer) must take place before any other connection is established.

On the device there are two terminals for the protective earth connection, marked by the relative symbols (IEC 60417 / BS EN 60417-1): one inside the casing and one outside, in proximity of the cable entry. 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 16mm<sup>2</sup>. Connect both earthing terminals to the equipotential line.

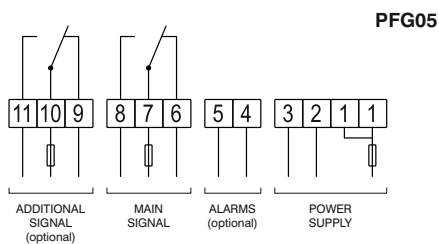
Before putting the device into service, make sure that the power supply voltage corresponds to the voltage indicated on the plate. Protect the power and signal carrying cables with an overload protection element (rated current ≤ 10A).

A disconnect switch must be present near the device, to cut off power supply in the event of a fault. Utilize cables suitable for use up to 90°C. The wiring diagram is located inside the lid.



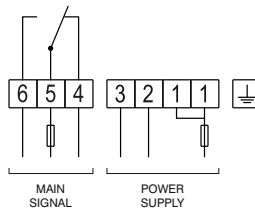
IMG.3

	115/230 AC	24/48 AC	24 DC
1	Neutral	Neutral	±24V
2	115V (50/60Hz)	24V (50/60Hz)	±24V
3	230V (50/60Hz)	48V (50/60Hz)	unused
4	Rotation control (voltage equal to contact 1)		
5	Voltage control (voltage equal to contact 7)		
6	Normally closed		
7	Common (max. 10A/250V)		
8	Normally open		
9	Normally closed		
10	Common (max. 10A/250V)		
11	Normally open		



PFG05

	115/230 AC	24/48 AC	24 DC
1	Neutral	Neutral	±24V
2	115V (50/60Hz)	24V (50/60Hz)	±24V
3	230V (50/60Hz)	48V (50/60Hz)	unused
4	Normally closed		
5	Common (max. 10A/250V)		
6	Normally open		



### SAFETY WARNINGS

The installation, maintenance and diagnostics of the device must be carried out only by authorized personnel informed about the regulations in force. Before starting work, specialized personnel must have read and understood the instructions. When using electrically operated equipment, it is necessary to take the appropriate safety precautions, required by current regulations, to reduce the risk of fire, electric shock, and injury to people.

Before installing the device, check its perfect integrity making sure that it has not been damaged during transport.

The removal/replacement/modification of any part of the device entails the loss of validity of the certifications of the products itself.

The earthing connection is mandatory and the sole responsibility of the installer.

Level indicators must be used within the range of ambient temperatures indicated on the plate. The **PFG\*...BL** models are suitable for use in low temperatures un to -40°C, thanks to the internal self-regulating heater, which guarantees a service temperature inside the casing, necessary to its proper operation. When an internal temperature of 20°C is reached, the heater switches off autonomously.

### SPECIFIC CONDITION FOR USE OF ATEX

In accordance with Directive 1992/92/EC / DSEAR 2002, it is responsibility of the user to ensure that the equipment, used in areas where an explosive atmosphere might be present, is maintained in such a way as to reduce the risk of explosion. Installation must be carried out in compliance with IEC 60079-14 / BS EN 60079-14 standard.

Install the device in compliance with the Ex-zones indicated in image 4.

Seal the cable entries with cable glands or sealing caps certified in compliance with the Directive 2014/34/EU / S.I. 2016 No. 1107 for the tc protection method, provided with a gasket for the interface with the device casing, able to guarantee a minimum ingress protection (IP) of 65.

The plastic protective caps supplied with the level indicator are not suitable for use in explosive atmospheres and it is responsibility of the installer to replace them. The device is not explosion-proof when the casing is open. Close the cover minding the correct orientation.

After installing, check that you have completely tightened the cover screws and that you have tightened the cable glands and any sealing caps correctly, before starting the device. Avoid the onset of electrostatic charges on plastic parts (do not rub dry).

In the case of the version with lamp **PFG\*...L**, protect the plastic parts from direct exposure to solar radiation.

In the case of models for high temperature applications **PFG\*...ATL**, use cables suitable for temperatures ≥ 100°C.

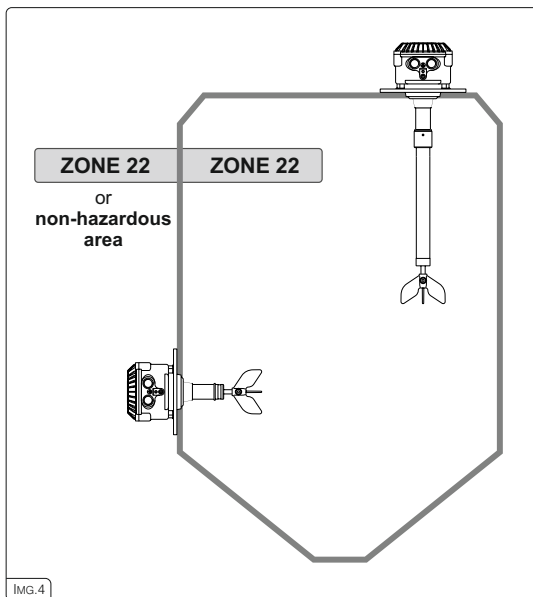
For all PFG57\* versions, the equipment should be installed in such a way that the risk of mechanical danger is low (the aluminium case must be protected against impact).

The maximum surface temperature is calculated taking into account a safety margin, but without considering a possible dust deposit on the equipment. During installation, use and maintenance, any electrostatic charging should be avoided, for example by: protection from direct air flow, cleaning with wet clothes, earthing connection of the housing perfectly grounded.

### MAINTENANCE

Maintenance must be carried out in compliance with IEC 60079-17 / BS EN 60079-17 standards.

CAMLogic level indicators need no routine maintenance, however it is advisable to carry out the following checks: at each opening of the cover or removal of the instrument, visually check the sealing gaskets present.



In case there is evidence of damage or excessive tearing of the gaskets on the cover or other parts of the device, contact the manufacturer CAMLogic for the replacement with suitable materials.

The screws on the cover must be fully tightened and the cable glands and/or sealing caps must be properly tightened; make sure that the power and grounding terminals are correctly connected and in good condition.

## **REPAIR**

The level sensors series **PFG05\*...L** and **PFG57\*...L** can only be repaired by the manufacturer CAMLogic of following instructions from the manufacturer. In case of doubts concerning malfunctions or repairs, contact the manufacturer: CAMLogic S.a.s. di Giovanni Guazzetti & C. - Via dell'Industria 12-12/A - 42025 Cavriago (RE) - Italy.

In any case, the repairs must be carried out in compliance with IEC 60079-19 / BS EN IEC 60079-19 standards.

## **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 only in the repair or replacement free of charge of parts that, after careful examination by the Manufacturer, turn out to be defective.

Warranty, excluding all liability for direct or indirect damage, is considered to be restricted to only defects in materials and has no effect if the parts returned turn out to have been anyhow dismantled, tampered with or repaired by anyone other than the Manufacturer.

Warranty likewise excludes damage deriving from negligence, carelessness, bad or improper use of the level gauge, or from bad handling by the operator and faulty installation. Warranty is moreover forfeit if non-genuine spare parts have been used.

A returned level indicator, even if under warranty, must be shipped carriage free.