Euroswitch Mod. P3X | P31 Series | Electromagnetic Level Sensor | -G16 1" BSP Thread
Electric Level Floating Switch

EUROSWITCH excellence in sensors

P3X



TECHNICAL DATA

• Use	Mineral oils - Fuels - Water
• Fixing	Aluminum Anodized 1" Gas
• Stem	Brass
• Float	Foamed nylon
• Seeger	Phosphorous bronze
• O-Ring	NBR
• Electrical connection	Connector DIN 43650
• Type of contact	Reed N.O./N.C. (SPDT)
• Max switch. capacity	80 W (50 W SPDT)
• Max switch. current	1 A (1 A SPDT)
• Max switch. voltage	250 Vac (220 Vac SPDT)
• Protection degree	IP65 IP67
• Action type	1B
• Pollution situation	normal
• Fluid specific weight	> 0,75
• Working temperature	-15°C / +80°C
• Weight	~160 gr (for L=100 mm)

Protection Degree

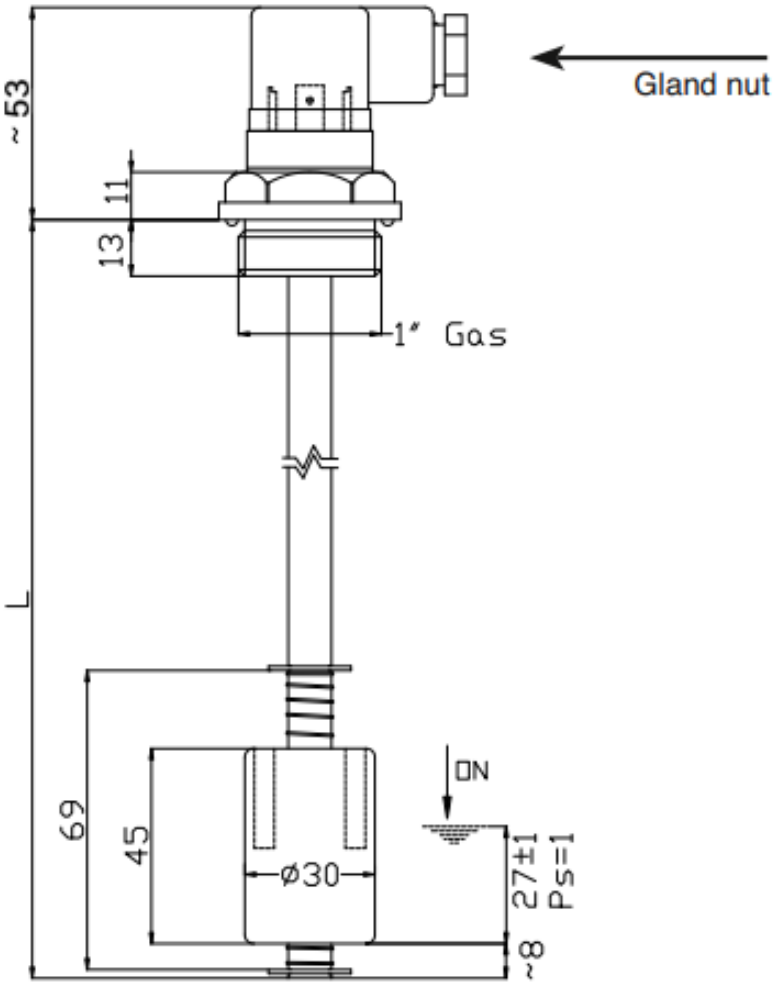
IP65 with connector according to UNI EN 175301-803 (DIN43650)

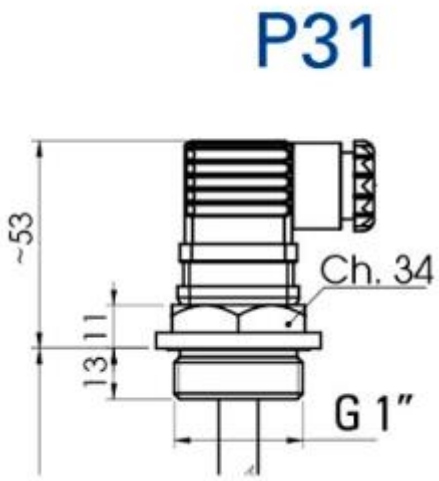
Electromagnetic interference

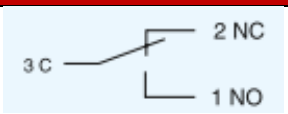
In electromagnetic models, since the contact is operated by a magnetic force, the sensor must not be installed near strong magnetic fields, e.g. an electric motor or fluorescent light, or less than 50 mm from ferromagnetic walls.

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Dimensional Drawing





P3X | P31 Electromagnetic Level Sensor | Level Floating Switch | GAS 1" BSP -G16			
Fluidco Part nr	**Euroswitch Part Nr**	**Length (L=mm)**	
LG-L-SWITCH-150	P31150-500	150	✓
LG-L-SWITCH-250	P31250-500	250	✓
LG-L-SWITCH-300	P31300-500	300	✓

The contact can be converted from N.C. to N.O. by rotating the float upside down

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OPERATING PRINCIPLES OF ELECTROMAGNETIC LEVEL SENSORS

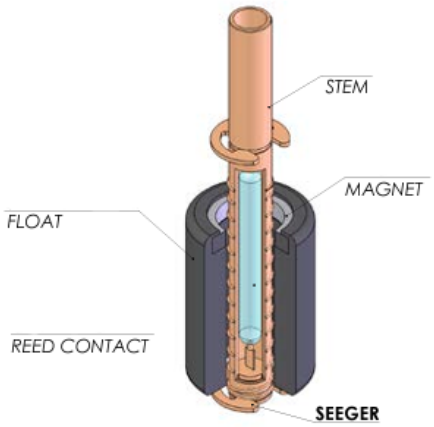


Fig. 1

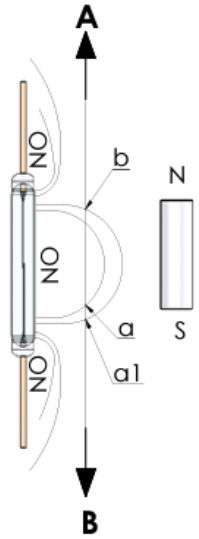


Fig. 2

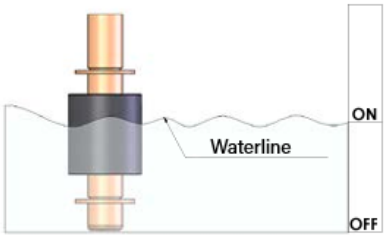


Fig. 3

Electromagnetic level gauges use the force of a magnet in the float to change the electrical status of a reed switch.
Figure 1 shows the components of an electromagnetic level gauge that operates vertically.
Figures 2 and 3 show an indicator with a normally-open contact. When the level of fluid increases, the float moves from B towards A. As soon as the magnet in the float reaches point A, the contact closes. The movement of the float is normally limited by a mechanical stop. If there is no stop, the contact returns to its original position when the magnet passes point B.
When the level of fluid drops, the float moves from A towards B, and as soon as the magnet reaches point A1 the contact opens.
The difference between points A and A1 is called the differential, or hysteresis, of the contact. This differential is normally very small, but it can be increased if necessary using special contacts. To switch a contact from NO to NC or vice versa, it is usually enough to invert the float.

Euroswitch magnetic sensors have been designed for use in multiple load conditions and with different actuation options.
However, in order to maintain the life and reliability features, the magnetic contact must be protected against excessive voltage or current in the presence of specific loads, using appropriate protection circuits.
The diagrams below show the connections of the contact protections normally used and the relevant calculation formulae.

Inductive load
With inductive load, there may be reverse over-voltage that may deteriorate the reed contact.
Different protection circuits can be used to avoid these problems.