EARL Pressure switch type 188

Application

The rugged and hardwearing **pressure switches series 188** is used to control pressures in the range 0.1 to 15 bar.

Operation (bellows operated units)

The pressure acts upon a spring loaded metal bellows. On reaching the adjusted set point, the bellows operates via a push rod the micro switch. In case of the explosion-proof model, a permanent magnet fixed to the bellows acts on the explosion-proof sealed contact located adjacent to the rising tube. In case of bellows breakage this model switches to the safe side thus staying sealed. The set point is either fixed or adjustable.

Advantages

- Simple construction make the units highly reliable.
- Stainless steel model for use with aggressive media or in aggressive environment.
- Models available in sea-water resistant gun metal for use in marine climates.
- Explosion-proof models available to several standards.
- The units operate in any position.
- No maintenance needed.
- Long-term continuity of spares availability.

Suitability

- Pump pressure control.
- Air pressure control.
- Controlling of liquid levels under atmospheric pressure.
- High pressure gas control.
- Leakage control.
- Compressor control.

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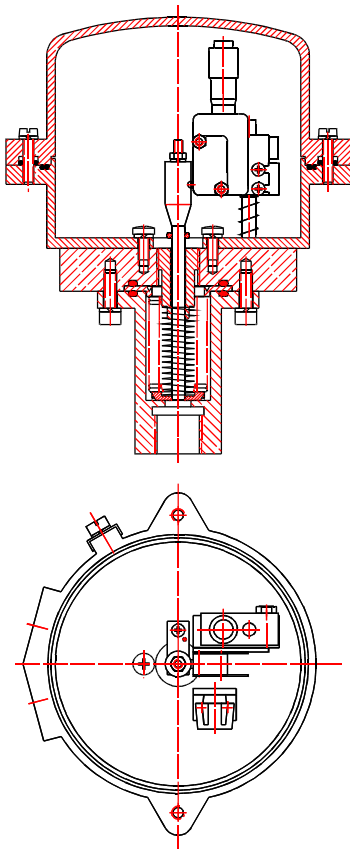
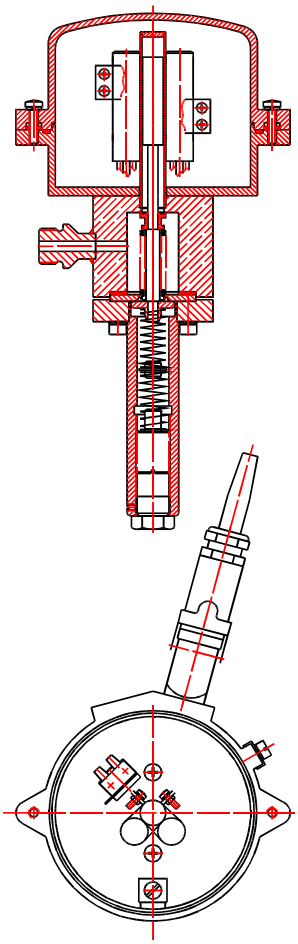
Models

- Type 188 — Bellows operated unit, control range 0.1 to 15 bar. Process connection G 1/2 or 1/2“ NPT at the bottom.
- Type 188(Ex)i — Same as type 188, but suitable for the use in intrinsically safe circuits.
- Type 188(Ex) — Bellows operated unit with encapsulated reed contact, Explosion-proof (Ex)II 2 G EEx de IICT6 EG – design approved, certificate TÜV 03 ATEX 2163, control range 0.1 to 25 bar, set point adjustable. Process connection G 1/8 sideways.
- Type 188 S — Bellows unit for low set point with high max. pressure.

Version: **Type 188** **Type 188S (with 2 contacts)**





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Technical data

- Standard model

The wetted parts are made of corrosion and acid resistant stainless steel, material no. 1.4571 / ss316Ti switch housing aluminium, painted light grey according to RAL 7001; the cable entry uses M 20 x 1.5 ISO; protection class according to DIN 40050 IP 54, one switch contact, either fixed or adjustable.

- Alternative models

- Wetted parts made of Monel / Hastelloy.
- Switch housing made of corrosion and acid resistant stainless steel, material no. 1.4408 or Gunmetal
- Protection class DIN 40050 IP 65.
- Model with diaphragm seal.
- Process connection to meet customer requirements.

Standard switching ranges for

bellows operates units	0.1 to 0.3 bar 0.3 to 0.9 bar 0.5 to 1.5 bar 1.0 to 3.0 bar 2.0 to 6.0 bar 3.0 to 9.0 bar 5.0 to 15.0 bar
Admissible deviation of actual set point	+/- 5 of required set point.
Repeatability of adjusted set point	+/- 2 % of switching value.
Hysteresis	between on and off ≤ +/- 10 % of switching value.
Overload protection for bellows operated units	Standard 16 bar. Special model 40 bar.
Operating temperature	Within the switch housing max. 100 °C, for higher temperatures the unit has to be installed such that the temperature inside the unit does not exceed 100 °C. Models for higher temperatures on request.
Ambient air temperature	-25 to +70 °C. -20 to +40°C (explosion-proof model).

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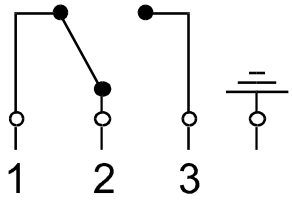
Switch contacts

Typ	Contact-material	U max	I max	P max
GWW / GWW ht	AgSnO	250 V AC/DC	3:00 AM	450 VA / 300 W
GWG / GWG ht	Gold	42 V AC/DC	300 mA	13 VA / 13 W
Microswitch		250 V AC	10 (4) A	

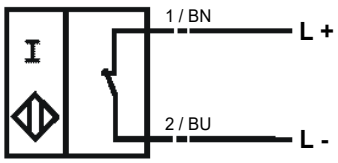
Inductive proximity switch (S.P.S.T.)
Ui = 16V; Ii = 25 mA; Pi = 64 mW

Wiring diagram for contacts

Wiring diagram for magnetic contact or micro switch S.P.D.T.



Wiring diagram for inductive proximity sensor (NC / opener) acc. NAMUR SPST



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