



# Pressure measurement

Pressure switch for general applications  
Monitoring of absolute or relative pressure  
in gases, vapors, liquids and dust



Type:

Precont® PS4SM

## In brief



## Application

- General applications in
  - Machinery and plant engineering
  - Air-conditioning and refrigeration plant engineering
  - Hydraulic and pneumatic systems
  - Process industry
  - Environmental technology

## Your benefits

- *Wide range of applications*
- Finely graded measuring ranges from 400 mbar up to 1000 bar
- Wide process temperature range -40°C to +125°C
- High protection class IP65 / IP67
- Wide environmental temperature range -40°C to +85°C
- Metallic front-flush or internal diaphragm
- High accuracy – characteristic deviation ≤ 0,5% of measuring range
- Integrated evaluation electronic: Digital display, function LED's, keyboard / 2x PNP switch output / 1x current output 4...20mA / Connector plug M12
- *High operating comfort*: enclosure and display rotatable for *optimal operability* in each installation position
- Robust high brightness LED display for *best readability*
- 3-key operation without additional assistance with tactile feedback

## Description

The device is an electronic pressure switch for monitoring, control as well as continuous measurement of pressures in gases, vapors, liquids and dusts.

The operational reliability of the device is ensured only at the intended use. Due to the device construction with measuring ranges from -1 bar to 1000 bar (gauge), measuring ranges from 0 bar to 1000 bar (absolute), measuring spans from 400 mbar to 1000 bar, process temperatures from -40°C to +125°C, process material CrNi-steel as well as the availability of industrial standard process connections like, thread ISO 228-1 (EN 837 manometer) and thread ISO 228-1 (front-flush) the device is especially suitable for the use for machinery and plant engineering, air-conditioning and refrigeration plant engineering, hydraulic and pneumatic systems,

process industry, environmental technology and facility and building automation.

The device is suitable for demanding measuring requirements. Due to its high accuracy and the high flexibility of configuration, the device can be suited a wide variety of applications.

The front-flush diaphragm has been specifically designed for the measurement of viscous, paste-like, adhesive, crystallizing, particle-laden and contaminated media, which would clog the pressure channel of conventional process connections. The robust design and the high-quality workmanship turns the device into a very high quality product, which even the most adverse environmental conditions cannot affect, whether the lowest temperatures when used outdoors,



extreme shock and vibration or aggressive media.

A captive laser marking of the type label ensures the identifiability throughout the entire lifetime of the device.

Obviously is the optional marking of a measurement point designation resp. TAG, a customer label or of a neutral type label, of course also per laser marking.

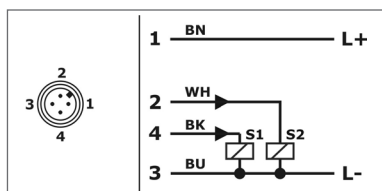
A LABS-free resp. silicone-free version, a factory calibration with calibration certificate and a customer specific configuration resp. preset is also optionally available like factory certifications for drink water resp. food suitability.



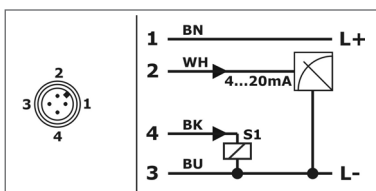
# Technical Data

Technical Data	
Supply voltage:	10,5...35VDC, reverse polarity protected
Supply current:	≤ 60mA Analogue output max. 22,5mA Switch output with no load
Switch output S1 / S2	
Function:	PNP switch to +L
Output current:	0... ≤ 200mA current limited, short circuit protected
Analogue output 4...20mA	
Operating range:	3,9...21mA, min. 3,8mA, max. 22mA
Permitted load:	≤ (US - 10,5V) / 22mA
Start-up time:	≤ 1 s
Measuring accuracy	
Characteristic deviation:	≤ ± 0,5% FS
Long term drift:	≤ ± 0,2% FS / year not cumulative
Temperature deviation	Measuring range ≤ 25 bar: ≤ ±0,02% FS / K (0...80°C) / ≤ ±0,03% FS / K (-40...0°C / +80...+125°C) Measuring range ≥ 40 bar: ≤ ±0,02% FS / K (-40...100°C) / ≤ ±0,03% FS / K (+100...+125°C)
Materials	
Diaphragm: (process wetted)	Process connection type 0 / type 5 - front-flush / Process connection type 1 / type 6 - EN 837 / ≤ 25 bar: Steel 1.4571/316Ti Process connection type 1 / type 6 - EN 837 / ≥ 40 bar: Steel 1.4542/630 / Steel 1.4534/SI13800
Process connection: (process wetted)	Steel 1.4571/316Ti
Terminal enclosure:	CrNi-steel
Gaskets: (process wetted)	NBR - nitrile-butadiene-rubber FPM - fluorelastomere (Viton®) EPDM - ethylene-propylene-dienmonomere
Environmental conditions	
Environmental temperature:	- 40°C...+85°C
Process temperature:	-40°C...+100°C (Expansion: -40°C...+125°C)
Process pressure:	-1 bar ...1000 bar (depending on process connection)
Protection:	IP65/IP67 EN/IEC 60529

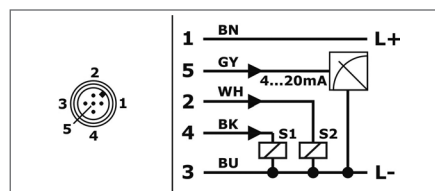
## Electrical connection



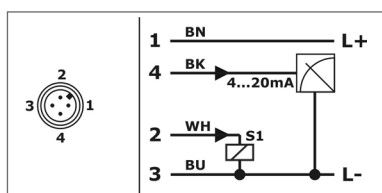
Signal 2x PNP  
Conductor color standard connection cable M12  
- A-coded: BN = brown, WH = white, BU = blue, BK = black



Signal 4...20 mA / 1x PNP  
Conductor color standard connection cable M12  
- A-coded: BN = brown, WH = white, BU = blue, BK = black

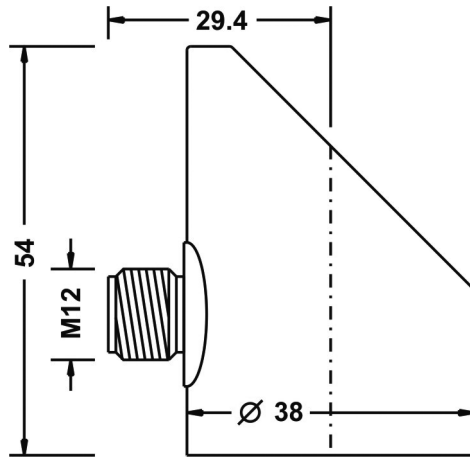


Signal 4...20 mA / 2x PNP  
Conductor color standard connection cable M12 - A-coded:  
BN = brau brown n, WH = white, BU = blue, BK = black, GY = grau

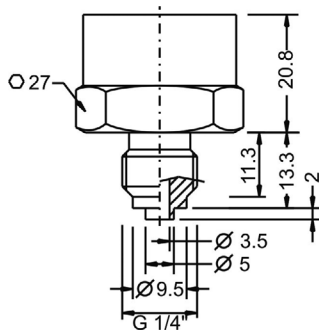


Signal 4...20 mA / 1x PNP / Desina  
Conductor color standard connection cable M12  
- A-coded: BN = brown, WH = white, BU = blue, BK = black

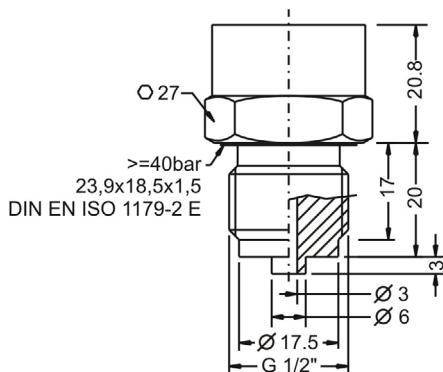
Terminal enclosure



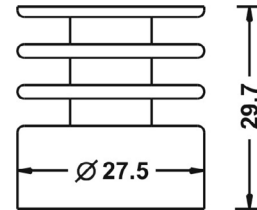
Type 6 – Thread ISO 228-1 – G $\frac{1}{4}$ "B, EN 837



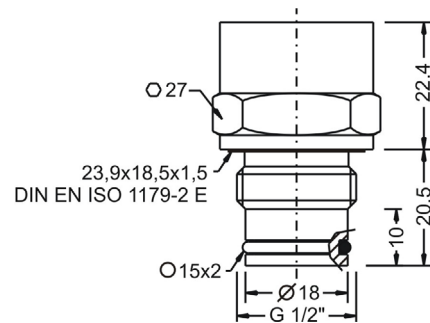
Type 1 – Thread ISO 228-1 – G $\frac{1}{2}$ "B, EN 837



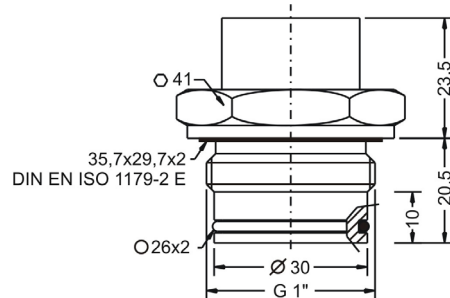
Temperature decoupler



Type 0 – Thread ISO 228-1 – G $\frac{1}{2}$ "B, front-flush



Type 5 – Thread ISO 228-1 – G1"B, front-flush



PS4S

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Type  
Standard

Measuring system – material diaphragm (process wetted) / sensor type  
CrNi-steel / strain gauge

Approval  
Standard

Process connection  
6 Thread ISO 228-1 – G¼”B, EN 837 manometer (without process gasket)  
1 Thread ISO 228-1 – G½”B, EN 837 manometer (≥ 40 bar without process gasket)  
0 Thread ISO 228-1 – G½”B, front-flush, O-ring gasket  
not for measuring ranges 0...400 mbar / 0...1 bar / –1...0 bar / 0...1000 bar  
5 Thread ISO 228-1 – G1”B, front-flush, O-ring gasket  
for measuring ranges 0...400 mbar / 0...1 bar / –1...0 bar  
Y others

Material process gaskets (process wetted)  
0 without / NBR – nitrile-butadiene-rubber  
1 FPM – fluorelastomere (e.g. Viton®)  
3 EPDM – ethylene-propylene-dienmonomere, FDA-listed  
Y others

Material process connection (process wetted)  
V CrNi-steel

Material terminal enclosure  
C CrNi-steel

Measuring range  
03 0...400 mbar  
05 0...1 bar  
08 0...4 bar  
09 0...6 bar  
10 0...10 bar  
11 0...16 bar  
12 0...25 bar  
13 0...40 bar  
14 0...60 bar  
19 0...100 bar  
20 0...160 bar  
21 0...250 bar  
22 0...320 bar  
23 0...400 bar  
24 0...600 bar  
25 0...1000 bar, only for process connection type 1, 6 – G½”B, G¼”B EN 837  
16 –1...0 bar  
17 –1...+1 bar  
YY Special measuring range

Electronic – output  
A 2x switch PNP, supply 24VDC  
B 1x switch PNP, 1x signal 4...20mA , supply 24VDC  
C 2x switch PNP, 1x signal 4...20mA, supply 24VDC  
D 1x switch PNP, 1x signal 4...20mA, supply 24VDC, Desina

Electronic – function  
S Standard

Process temperature  
0 Standard –40°C...+100°C  
1 Extended –40°C...+125°C, temperature decoupler

Pressure type  
R Gauge pressure  
A Absolute pressure, (≤ 25 bar)

Measuring system – accuracy  
4 0,5%

Electrical connection  
S Plug M12x1

Order code

Precont®

PS4S

M

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Zubehör

Bestellbezeichnung	Ausführung
BKZ0412-VA	Passende Kabeldose, VA-Mutter
BKZ0512-VA	Passende Kabeldose, VA-Mutter (bei 0...10 V)
LKZ0405PUR-AS	Anschlusskabel 5 m, 4-polig
LKZ0410PUR-AS	Anschlusskabel 10 m, 4-polig
LKZ0505PUR-AS	Anschlusskabel 5 m, 5-polig
LKZ0510PUR-AS	Anschlusskabel 10 m, 5-polig
REMO12	Einschweißmuffe, für Anschluss 2
REMO10	Einschweißmuffe, für Anschluss 5
BEFK12	Einschweißmuffe, für Anschluss 0