



Pressure measurement

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



Type:

Precont® PS4LM

In brief



Application

- Hygienic and aseptic applications in
 - Food and beverage industry
 - Pharmaceutical industry
 - Biotechnology
 - Sterile process engineering

Your benefits

- Wide range of applications
- Finely graded measuring ranges from 100 mbar up to 25 bar
- Wide process temperature range -20°C to +150°C
- Various *hygienic and aseptic process connections*
- High protection class IP65 / IP67
- Wide environmental temperature range -40°C to +85°C
- Metallic front-flush *EHEDG conformal diaphragm*
- High accuracy – characteristic deviation $\leq 0,5\%$ 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 25 bar (gauge), measuring ranges from 0 bar to 25 bar (absolute), measuring spans from 100 mbar to 25 bar, process temperatures from -20°C to +150°C, process material CrNi-steel as well as the availability of a variety of hygienic EHEDG-conformal process connections like thread ISO 228-1 with front-flush O-ring gasket dairy coupling DIN 11851, Varivent® and DRD the device is especially suitable for the use for food and beverage industry, pharmaceutical industry, biotechnology and sterile process engineering.

The pressure switch 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 device with 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. Through its optimized design, the front-flush process connection enables the cleanability of the wetted diaphragm to be integrated into the process.

The device is particularly suitable for the special conditions of CIP/SIP cleaning processes, such as chemical stability towards cleaning liquids and high temperatures. Low-maintenance and trouble-free pressure measurement is thus also guaranteed in critical applications with frequently changing media.



The front-flush diaphragm is completely welded with the process connection and supplied with a positive seal. A reliable, dead-space free sealing between the process connection and the process adapter resp. measuring medium is thus assured.

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.

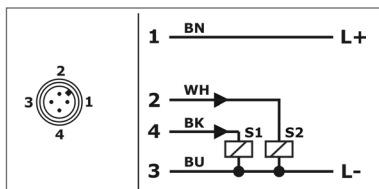
Obviously is the optional marking of a measurement point designation resp. TAG, a customer label or of a neutral type label, of course also per laser marking.



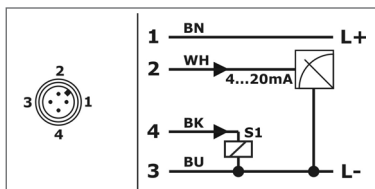
Technical Data

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 ms	
Measuring accuracy		
Characteristic deviation:	≤ ± 0,5% FS	
Long term drift:	≤ ± 0,2% FS / year	not cumulative
Temperature deviation	Zero: ≤ ±0,02% FS / K (0...80°C) / ≤ ±0,03% FS / K (-20...0°C / +80...+150°C) Zero - Measuring range 0...100 mbar / 0...250 mbar: ≤ ±0,04% FS / K (0...+80°C) / ≤ ±0,06% FS / K (-20...0°C / +80...+150°C) Span: ≤ ±0,02% FS / K (0...80°C) / ≤ ±0,03% FS / K (-20...0°C / +80...+150°C)	
Materials		
Diaphragm: (process wetted)	Steel 1.4435/316L	
Process connection: (process wetted)	Steel 1.4435/316L	
Terminal enclosure:	CrNi-steel	
Gaskets: (process wetted)	FPM – fluorelastomere (e.g. Viton®) EPDM – ethylene-propylene-dienmonomere, FDA-listed	
Environmental conditions		
Environmental temperature:	- 40°C...+85°C	
Process temperature:	-20°C...+150°C	
Process pressure:	- 1 bar ...25 bar	
Protection:	IP65/IP67	EN/IEC 60529

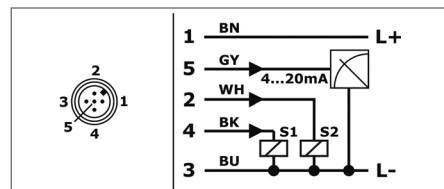
Electrical connection



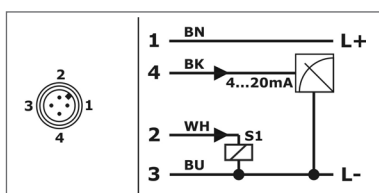
Signal 2x PNP
Conductor color standard connection cable M12
- A-coded: BN = brown, WH = white, BU = blue, BK = black



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

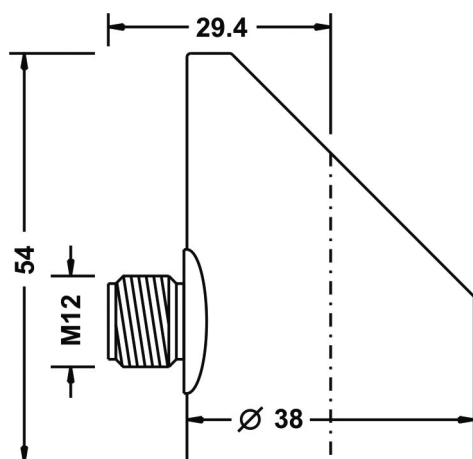


Signal 4...20 mA / 2x PNP
Conductor color standard connection cable M12 - A-coded:
BN = brau brown n, WH = white, BU = blue, BK = black, GY = grau

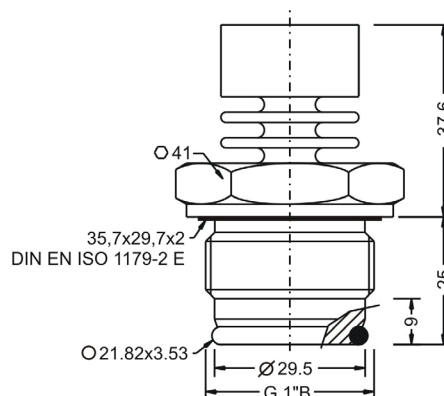


Signal 4...20 mA / 1x PNP / Desina
Conductor color standard connection cable M12
- A-coded: BN = brown, WH = white, BU = blue, BK = black

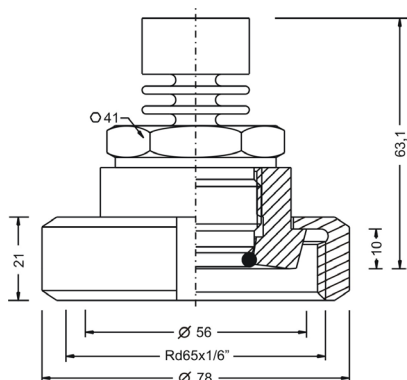
Terminal enclosure



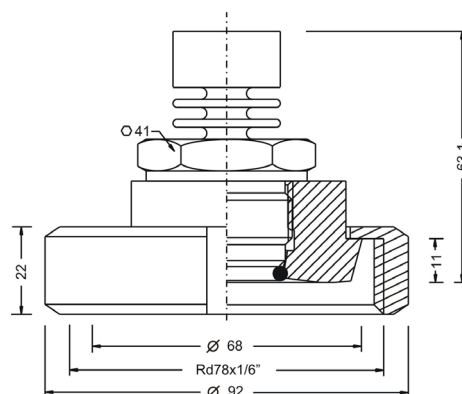
Type 5 – Thread ISO 228-1 – G1" B, front-flush



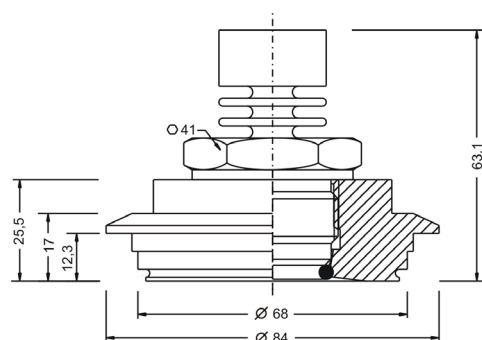
Type N – Dairy coupling DIN 11851 – DN40, PN40



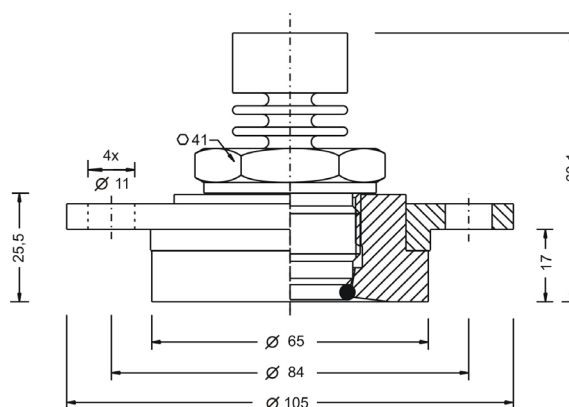
Type M – Dairy coupling DIN 11851 – DN50, PN25



Type P – Varivent® – Type N / tube DN40-162 / 1½"-6", PN40



Type L – DRD – DN50 / Ø65mm, PN25



Type
PS4LHygienic applications

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

Approval
S
Standard

Process connection
5 Thread ISO 228-1 – G1”B, front-flush, O-ring gasket, EHEDG conformal, for welding socket BEFVE10
N Dairy coupling DIN 11851 – DN40, PN40
M Dairy coupling DIN 11851 – DN50, PN25
P Varivent® N tube – DN40...DN162 / 1½”...6”, PN40
L DRD – DN50 / Ø65mm, PN25
Y others

Material process gaskets (process wetted)
1 FPM – fluorelastomere (e.g. Viton®), FDA-listed
3 EPDM – ethylene-propylene-dienmonomere, FDA-listed

Material process connection (process wetted)
V
CrNi-steel

Material terminal enclosure
C
CrNi-steel

Measuring range
01 0...100 mbar
02 0...250 mbar
03 0...400 mbar
04 0...600 mbar
05 0...1 bar
07 0...2,5 bar
08 0...4 bar
09 0...6 bar
10 0...10 bar
11 0...16 bar
12 0...25 bar
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
1
Standard -20°C...+150°C

Pressure type
R Gauge pressure
A Absolute pressure

Measuring system – accuracy
4
0,5%

Electrical connection
S
Plug M12x1

Order code

Precont®

PS4L

M

S

V

C

S

4

S

Equipment

Order information	Model
BKZ0412-VA	Matching cable socket, VA-nut
BKZ0512-VA	Matching cable socket, VA-nut
LKZ0405PUR-AS	Connection cable 5 m, 4-pole, shielded
LKZ0410PUR-AS	Connection cable 10 m, 4-pole, shielded
LKZ0505PUR-AS	Connection cable 5 m, 5-pole, shielded
LKZ0510PUR-AS	Connection cable 10 m, 5-pole
O-Ring 21,82 x 3,53 EPDM	Replacement seal for standard O-Ring
O-Ring 21,82 x 3,53 FPM	Viton ®-O-Ring with FDA approval
O-Ring 21,82 x 3,53 Silicone	Silicone O-ring with FDA approval
BEFVE-10	Sliding sleeve, for connection 5