Precont® PN4LM

Pressure transmitter / Pressure switch with data memory
for hygienic applications

Technical information TI05.25

hygenic design | 0/4...20mA 4x PNP | CIP SIP capable | EHEDG conform | process temperature 150°C

Application

Hygienic and aseptic applications in

- Food and beverage industry
- Pharmaceutical industry
- Biotechnology
- Sterile process engineering

Main features

- 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
- Metallic front-flush EHEDG conformal diaphragm
- Highest accuracy – characteristic deviation to ≤ 0,15% of measuring range
- Integrated evaluation electronic
- Graphic display, keyboard
- 4x PNP switch output
- 1x current output 0/4...20mA – voltage output 0...10V
- Measure data memory for more than 500.000 measuring values
- Battery powered data logger function
- Connector plug M12
- Enclosure and display rotatable for optimal operability in each installation position
- Extensive diagnostic functions for system analysis

Description

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.

CE

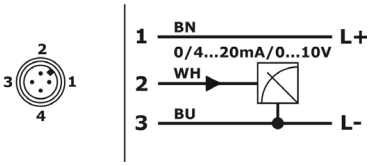
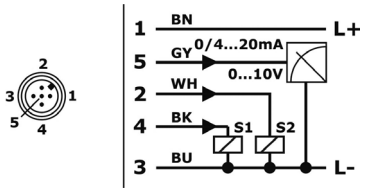
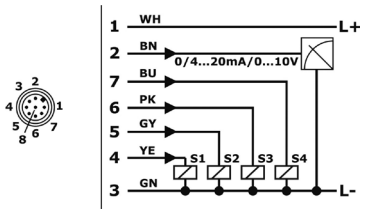
FEEL FREE TO
CONTACT US

Lauterbachstr. 57 ½, D - 84307 Eggenfelden
info@acs-controlsystem.com
www.acs-controlsystem.com
+49 8721-96680

Technical Data

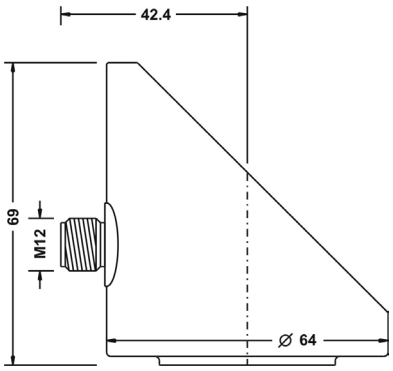
Analogue output – current 0...20mA
Operating range IOut 0...20,5mA, max. 22mA
Permitted load RL ≤ (US - 9V) / 22mA
Step response time T90 ≤ 15 ms (td = 0s)
Start-up time tOn ≤ 1s
Analogue output – current 4...20mA
Operating range IOut 3,8...20,5mA, min. 3,6mA, max. 22mA
Permitted load RL ≤ (US - 9V) / 22mA
Step response time T90 ≤ 15 ms (td = 0s)
Start-up time tOn ≤ 1s
Analogue output – voltage 0...10V
Operating range UOut 0 ... 10,5 V, max. 11 V
Permitted load RL ≥ UOut / 3mA
Step response time T90 ≤ 15 ms (td = 0s / RL = 10kR)
Start-up time tOn ≤ 1s
Switch output PNP S1 / S2 / S3 / S4
FunctionPNP switch to +L
Output voltage UOut UOut ≥ US – 2V
Output current IL 0... ≤ 200mA, current limited, short circuit protected
Step response time T90 ≤ 25 ms (td = 0s)
Rise time T90 < 30µs (RL < 3kR / IOut > 4,5mA)
Start-up time tOn ≤ 1s
Switch cycles ≥ 100.000.000
Environmental conditions
Environmental temperature -20°C...+70°C
Limitation
Backlight LCD ≥ 60% >> -20°C...+60°C
Backlight LCD ≥ 80% >> -20°C...+50°C
Protection IP65/IP67 (EN/IEC 60529)
Climatic classification 4K4H (EN/IEC 60721-3-4)
Shock classification 15g [11ms] (EN/IEC 60068-2-27)
Vibration classification 4g [10...2000 Hz] (EN/IEC 60068-2-6)
EM compatibility Operation device class B / Industrial range (EN/IEC 61326)
Tightening torque ≤ 50Nm
Weight 0,7...1,6kg

Electrical connection

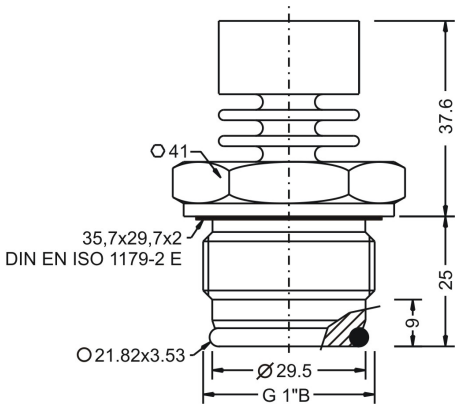
Electronic output type M 1x signal 0/4...20mA-0...10V, supply 24VDC	Electronic output type K 1x signal 0/4...20mA-0...10V, 2x switch PNP, supply 24VDC	Electronic output type R 1x signal 0/4...20mA-0...10V, 4x switch PNP, supply 24VDC
		

Dimensions (mm)

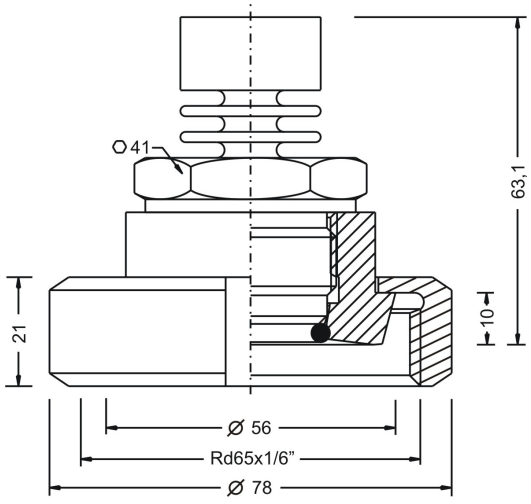
Terminal enclosure



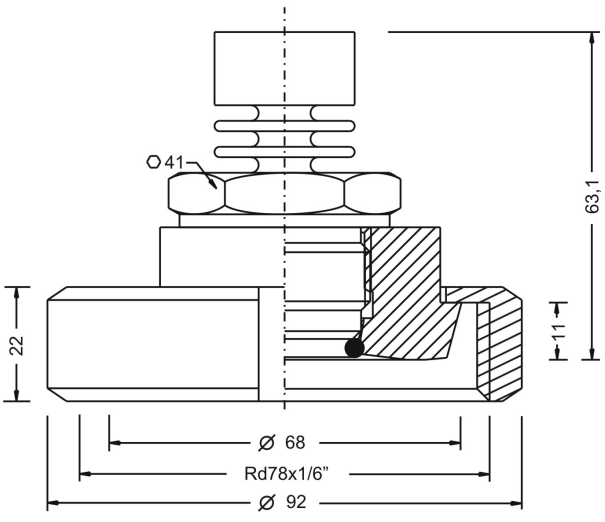
Front-flush process membrane
Type 5 – Thread ISO 228-1 – G1"B, front-flush



Front-flush process membrane
Type N – Dairy coupling DIN 11851 – DN40, PN40



Front-flush process membrane
Type M – Dairy coupling DIN 11851 – DN50, PN25



Further terminal assignment and dimensional drawings can be found in the operating instructions or in the technical information.

Order code

Version
PN4L Hygiene

Sensor (process wetted)
M DMS - piezoresistive, 316L

Approval
S Standard

Process connection
5 Thread ISO 228-1 – G1"B, front-flush, EHEDG (for welding socket BEFVE10)
N Milk pipe coupling DIN 11851 – DN40, PN40, front-flush
M Milk pipe coupling DIN 11851 – DN50, PN25, front-flush
P Varivent N - DN40...162 (1½"...6"), Ø 68mm, PN40, front-flush
L DRD – DN50, Ø 65mm, PN25, front-flush

Material process seal (process wetted)
1 FKM/FPM – FDA
3 EPDM – FDA, food applications

Material process connection (process wetted)
V CrNi-steel 316L

Material terminal enclosure
C CrNi-steel N41, 304

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

Electronic – Output
M Current 0/4...20mA / voltage 0...10V, 3-wire
K Current 0/4...20mA / voltage 0...10V, 2x switch PNP, 3-...5-wire
R Current 0/4...20mA / voltage 0...10V, 4x switch PNP, 3-...7-wire

Electronic – Function
0 Data logger
2 Data logger with time stamp, backup battery

Process temperature
1 -20°C...+150°C

Pressure type
R Gauge pressure
A Absolute pressure

Measuring accuracy
4 ≤ ±0,5%
8 Xcellence: ≤ ±0,15%, linearization protocol

Electrical connection
S Plug M12-A-4P/5P/8P

Precont® PN4L		M	S			V	C				1			S	