Type: Precont® PU4SE

Universal pressure transmitter / pressure switch for general industrial applications

Technical information TI09.18

In brief

up to 100 bar pressure

process temperature 100°C

Protection IP69K

0,5% high accuracy

fast response time

HART® COMMUNICATION FOUNDATION

CE

Ex

Modbus

IO-Link

IEC IECEx

Application

- Machinery and plant engineering
- Air-conditioning and refrigeration plant engineering
- Hydraulic and pneumatic systems
- Process industry
- Environmental technology
- Facility and building automation

Main features

- Measuring ranges from 1 bar up to 100 bar
- Robust ceramic internal diaphragm
- Process temperature range –25°C to +100°C
- Fully welded robust steel enclosure
- High protection class IP69K/IP67
- High accuracy to ≤ 0,5%
- Electronic 4…20mA HART® / RS485 Modbus®-RTU / IO-Link®

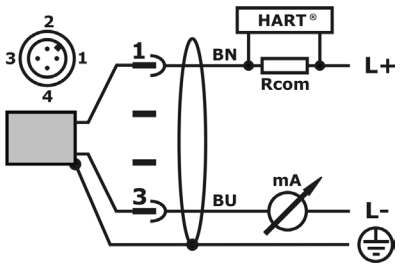
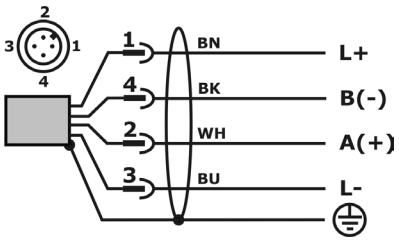
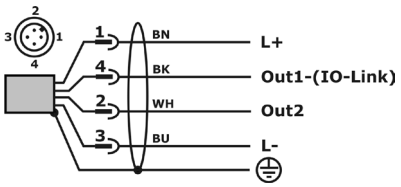
Description

The device is an electronic pressure transmitter / pressure switch for monitoring, control and continuous measurement of pressures.
A high variety of versions of process connections and electronic types allows the use for a wide range of applications, also for demanding measuring requirements.
Due to its high accuracy and the digital adjustability by HART®, RS485 Modbus®-RTU or IO-Link® the device can be suited to a wide variety of applications.
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 stress 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- resp. silicone-free version, a factory calibration with calibration certificate and a customer specific configuration resp. preset is also optionally available like a material test certificate EN10204 3.1 or a factory certifications for drink water suitability.
Customer specific special versions can be realized short-term on request, e.g. special designs for the process connection or other process materials.

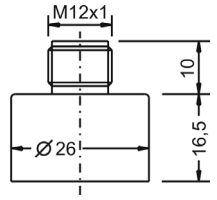
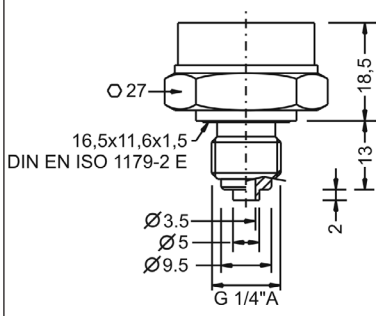
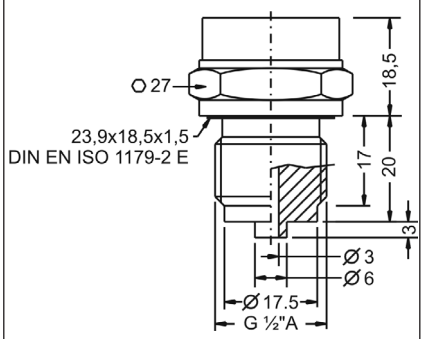
Technical Data

Measuring range	
Nominal pressure PN	0…1bar to 0…100bar
Output type A – Current 4…20mA HART®	
Analogue output 4…20mA	3,9…20,5mA / ≥ 3,8mA / ≤ 22mA / dI ≤ 1µA
Time behavior	T90 ≤ 5ms / ton ≤ 0,2s
Interface	HART®-compliant (7.0) / 1200 Bit/s
Output type V – RS485 Modbus®-RTU	
Interface	RS485, bidirectional / Modbus®-RTU / 9600 Baud (4800…38400 Baud)
Time behavior	T90 ≤ 2ms (t_d = 0s) / ton ≤ 0,1s (t_d = 0s)
Output type L – IO-Link®	
Interface	IO-Link® V1.1 / Com2 (38400 Baud)
Analogue output	0…20mA: 0…20,5mA / ≤ 0,05mA / ≤ 22mA / dI ≤ 1µA 4…20mA: 3,8…20,5mA / ≥ 3,6mA / ≤ 22mA / dI ≤ 1µA
Switch output	2x PP (Push-Pull), switch to +L/-L
Output	Uout ≤ 0,2V, ≥ Us – 2V / Iout 0…200mA (current limited ≤ 450mA, short circuit protected)
Time behavior	T90 ≤ 2ms / ton ≤ 0,1s
Auxiliary power	
Supply voltage Us polarity protected	Type A – 4…20mA HART®: 9…35VDC Type V – RS485 Modbus®-RTU: 6…35VDC Type L – IO-Link®: 9…35VDC, without IO-Link® / 18…30VDC, with IO-Link®
Measuring accuracy	
Characteristic deviation	≤ ±0,5%FSO
Long term drift	≤ ±0,2%FSO/year
Temperature deviation	Tk Zero+Span ≤ ±0,05%FSO/K
Process conditions	
Process temperature	-25°C...+100°C
Pressure cycles	≥ 10 Mio. (1,2xPN)
Environmental conditions	
Environmental temperature	-25°C...+100°C
Protection level	IP69K/IP67 (EN/IEC 60529)
MTTF	463 years

Electrical connection

Electronic output type A Current 4…20mA HART®	Electronic output type V RS485 Modbus®-RTU	Electronic output type L IO-Link®
		

Dimensions (mm)

Terminal enclosure		
		
Process connection type 6 Thread G¼“A, EN 837	Process connection type 1 Thread G½“A, EN 837	
		

Order code

Type
PU4S Standard

Measuring system – material diaphragm (process wetted) / sensor type
E Ceramic Al2O3 96% / strain gauge

Approval
S Standard

Process connection
6 Thread ISO 228-1 – G¼"A, EN 837 manometer
1 Thread ISO 228-1 – G½"A, EN 837 manometer
Y others

Material process gaskets (process wetted)
1 FPM – fluorelastomere (e.g. Viton®)
Y others

Material process connection (process wetted)
V CrNi-steel

Material terminal enclosure
C CrNi-steel

Measuring range
05 0…1 bar
08 0…4 bar
10 0…10 bar
13 0…40 bar
19 0…100 bar
YY Special measuring range

Electronic – output
A Current 4…20mA, HART®-compliant, 2-wire
V RS485 Modbus®-RTU, 4-wire
L IO-Link®, 1x current 0/4…20mA / 2x switch, 4-wire

Electronic – function
S Standard

Process temperature
0 Standard –25°C…+100°C

Pressure type
R Gauge pressure

Measuring system – accuracy
4 0,5%

Electrical connection
S Plug M12x1

Additional options
-SF LABS-free, silicone-free / paint compatible version
-ML Measurement point designation / TAG – Laser marking
-KL Customer label on device – Laser marking
-TN Type label neutral
-MZ Material test certificate – EN10204 3.1
-WT Factory certification – drink water suitability
-KF Configuration / Preset
-WK Factory calibration – calibration certificate

Precont® PU4S		E				V	C			S					S			

Stand 09/2018