

Precont® PN4SC

Pressure transmitter / Pressure switch with data memory
for general applications

Technical information TI05.25



Application

General applications in

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

Main features

- Wide range of applications
- Finely graded measuring ranges from 50 mbar up to 60 bar
- Wide process temperature range -40°C to +125°C
- Wide variety of process connections
- High protection class IP65 / IP67
- Wide environmental temperature range -20°C to +70°C
- Ceramic front-flush or internal diaphragm
- Highest accuracy – characteristic deviation to $\leq 0,05\%$ 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
- High operating comfort
- 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.

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 suitable for the use at CIP/SIP cleaning processes.

Low-maintenance and trouble-free pressure measurement is thus also guaranteed in critical applications with frequently changing media.

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 low temperatures when used outdoors, high 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

Analogue output – current 0...20mA

Operating range I_{Out} 0...20,5mA, max. 22mA
 Permitted load R_L $\leq (U_S - 9V) / 22mA$
 Step response time T₉₀ ≤ 15 ms (t_d = 0s)
 Start-up time t_{On} ≤ 1 s

Analogue output – current 4...20mA

Operating range I_{Out} 3,8...20,5mA, min. 3,6mA, max. 22mA
 Permitted load R_L $\leq (U_S - 9V) / 22mA$
 Step response time T₉₀ ≤ 15 ms (t_d = 0s)
 Start-up time t_{On} ≤ 1 s

Analogue output – voltage 0...10V

Operating range U_{Out} 0 ... 10,5 V, max. 11 V
 Permitted load R_L $\geq U_{Out} / 3mA$
 Step response time T₉₀ ≤ 15 ms (t_d = 0s / R_L = 10k Ω)
 Start-up time t_{On} ≤ 1 s

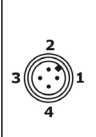
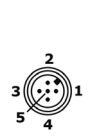
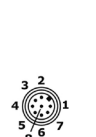
Switch output PNP S1 / S2 / S3 / S4

Function PNP switch to +L
 Output voltage U_{Out} U_{Out} $\geq U_S - 2V$
 Output current I_L 0... $\leq 200mA$, current limited, short circuit protected
 Step response time T₉₀ ≤ 25 ms (t_d = 0s)
 Rise time T₉₀ $< 25\mu s$ (R_L $< 3k\Omega$ / I_{Out} $> 4,5mA$)
 Start-up time t_{On} ≤ 1 s
 Switch cycles $\geq 100.000.000$

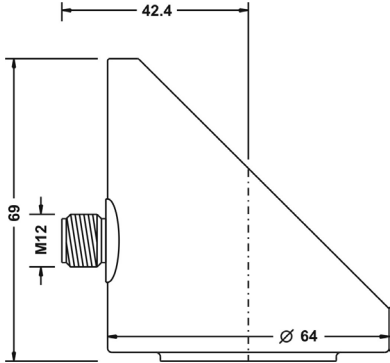
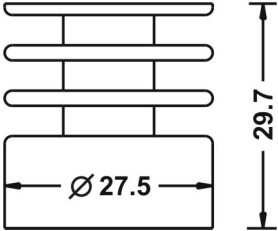
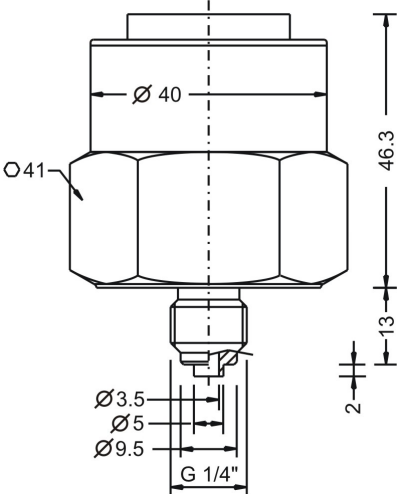
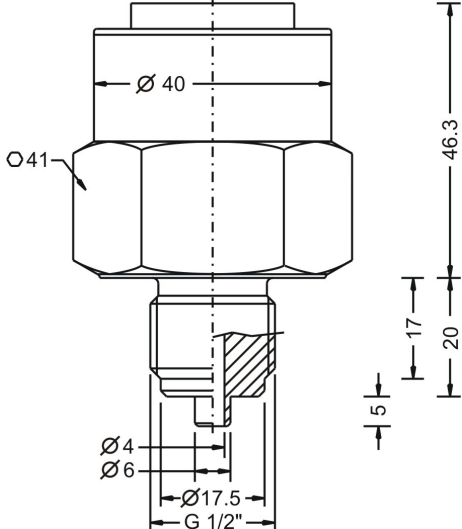
Environmental conditions

Environmental temperature -20°C...+70°C
 Limitation
 Backlight LCD $\geq 60\%$ $>> -20^\circ C...+60^\circ C$
 Backlight LCD $\geq 80\%$ $>> -20^\circ C...+50^\circ C$
 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 $\leq 50Nm$
 Weight 0,6...1,5kg

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
 1 BN 0/4...20mA/0...10V L+ 2 WH 0...10V L- 3 BU L-	 1 BN 0/4...20mA/0...10V L+ 2 WH 0...10V L- 3 BU L- 4 BK S1 5 GY S2	 1 WH 0/4...20mA/0...10V L+ 2 BN 0...10V L- 3 BU L- 4 YE S1 5 GY S2 6 PK S3 7 BU S4 8 GN

Dimensions (mm)

Terminal enclosure	Temperature decoupler
	
Internal process membrane Type 6 – Thread ISO 228-1 – G¼"A, EN 837	Internal process membrane Type 1 – Thread ISO 228-1 – G½"A, EN 837
	

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

Order code

Version

PN4S Standard

Sensor (process wetted)
C Capacitive, ceramic Al₂O₃

Approval
S Standard

Process connection

- 6 Thread ISO 228-1 – G $\frac{1}{4}$ "A, EN 837 (manometer)
- 1 Thread ISO 228-1 – G $\frac{1}{2}$ "A, EN 837 (manometer)
- 3 Thread ISO 228-1 – G $\frac{1}{4}$ "A, DIN EN ISO 1179-2 E
- 4 Thread ISO 228-1 – G $\frac{1}{4}$ "I, inner thread
- 2 Thread ISO 228-1 – G $\frac{1}{2}$ "A, inner bore $\varnothing$ 11,4mm
- E Thread ANSI – NPT $\frac{1}{4}$ "
- C Thread ANSI – NPT $\frac{1}{2}$ "
- 9 Thread ISO 228-1 – G $\frac{1}{2}$ "A, front-flush
- 8 Thread ISO 228-1 – G $\frac{1}{4}$ "A, DIN EN ISO 1179-2 E, front-flush
- 5 Thread ISO 228-1 – G $\frac{1}{2}$ "A, DIN EN ISO 1179-2 E, front-flush
- 7 Thread ISO 228-1 – G $\frac{1}{2}$ "B, front-flush
- A Thread ISO 228-1 – G $\frac{1}{2}$ "A, extended, front-flush
- R Milk pipe coupling DIN 11851 – DN25, PN40, front-flush
- 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 (1 $\frac{1}{2}$ "...6"), $\varnothing$ 68mm, PN40, front-flush
- L DRD – DN50, $\varnothing$ 65mm, PN25, front-flush
- U Clamp DIN 32676-A – DN20, PN25, front-flush
- S Clamp DIN 32676-A/-C – DN25...40/1"...1 $\frac{1}{2}$ ", ISO 2852 – DN25...38, PN25, front-flush
- T Clamp DIN 32676-A/-C – DN50/2", ISO 2852 – DN40...51, PN25, front-flush

Material process seal (process wetted)
1 FKM/FPM
3 EPDM – FDA, food applications
4 FFKM
6 FFKM – high density, gas applications

Material process connection (process wetted)
V 316L/316Ti

Material terminal enclosure
C CrNi-steel N41, 304

Measuring range

- 26 0...50 mbar
- 01 0...100 mbar
- 02 0...200 mbar
- 03 0...400 mbar
- 04 0...600 mbar
- 05 0...1 bar
- 06 0...1,6 bar
- 07 0...2,5 bar
- 08 0...4 bar
- 09 0...6 bar
- YY Special measuring range

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

- 0 -40°C...+100°C
- 1 -40°C...+125°C, temperature decoupler

Pressure type

- R Gauge pressure
- A Absolute pressure (FS $\geq$ 100mbar)

Measuring accuracy

- 1 $\leq \pm 0,2\%$
- 3 $\leq \pm 0,1\%$, linearization protocol
- 6 Xcellence: $\leq \pm 0,05\%$, (FS $\geq$ 200mbar)
Linearization protocol

Electrical connection

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

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Precont® PN4S

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