

P40-2

Pressure Transmitter Datasheet



At a Glance

- Premium Pressure Transmitter for gauge and pressure measurement with 3 years warranty
- High repeatability and long-term stability
- High overload resistance
- Measuring ranges up to 400 bar (6000psi)
- Customer specific measuring ranges available
- Flush mounted or manometer connection
- Housing and connection made from 316L

Overview

Application

P40-2 transducers have been designed for precise measurement of gauge and absolute pressure in industrial applications. The measurement ranges available start from -125 ... 125 mbar or 0...250 mbar to the highest measurement ranges of -1 ... 400 bar or 0...400 bar. Custom ranges are also available for volume applications. P40-2 transducers are made from AISI 316L stainless steel for improved robustness and have a permissible overload is four times the nominal span.

Typical applications: Hydraulic systems, compressed air, cold production, pump pressure and flow rate, industrial measuring and control technology

Function

The P40-2 pressure transmitter is available with a process connection with internal diaphragm or in a flush-mount design (ideal for viscous and solids-bearing medium). The process pressure deflects the metal process isolating diaphragm of the sensor and a fill fluid transfers the pressure to a Wheatstone bridge (semiconductor technology). As pressure varies, the related bridge output voltage changes and is measured by the connected device. The transducer has a 4...20mA (2-wire) output signal.

Technical Data

Measuring Range	-1/0 ... 400bar										
Long Term Drift	0.2% Full scale (FS)/year (non-cumulative)										
Accuracy	0.3% FS (including linearity, repeatability, zero point and span, hysteresis)										
Thermal Error	<table border="1"> <tr> <td>Measuring range</td> <td>- 20 ... +85°C (-4 ... +185°F)</td> <td>-40...-20 °C (-40...-4 °F)</td> </tr> <tr> <td>< 1 bar</td> <td>< 1% FS</td> <td><1.2 % FS</td> </tr> <tr> <td>≥ 1 bar</td> <td>< 0.8% FS</td> <td>< 1% FS</td> </tr> </table>		Measuring range	- 20 ... +85°C (-4 ... +185°F)	-40...-20 °C (-40...-4 °F)	< 1 bar	< 1% FS	<1.2 % FS	≥ 1 bar	< 0.8% FS	< 1% FS
Measuring range	- 20 ... +85°C (-4 ... +185°F)	-40...-20 °C (-40...-4 °F)									
< 1 bar	< 1% FS	<1.2 % FS									
≥ 1 bar	< 0.8% FS	< 1% FS									
Process Temperature	-40 ... +100°C (-40 ... +212°F)										
Ambient Temperature	-40 ... +85 °C (-40 ...+185 °F)										
Storage Temperature	-40 ...+85 °C (-40 ...+185 °F)										
Ambient Humidity	4 ... 95% HR (non-condensing)										
Response Time	6ms (dead time)										
Setting time	10ms (t_{63})										
Lifetime	>100M cycles										

Mechanical Configuration

Pressure Port	See under "Process Connections"
Wetted Parts	Membrane: 1.4435 (X2CrNiMo 18-14-3), AISI 316L Fitting: 1.4404 (X2CrNiMo 17-12-2), AISI 316L
Non-wetted parts	Housing 316L; pressure venting element PBT/PC; lower part connector PPSU; design element PMT/PC; cable PUR (UL 94 V0); valve connector PA (sealing NBR; screw V2A)
Process media	Gases, vapors, liquids and dust
Mounting Position	Any position
Electrical Connection	Plug connection or fixed cable connection
Mis-wire protection	Yes, incl. overvoltage protection
Protection	IP65, NEMA Type 4X IP68, NEMA 4X/6P (fixed cable connection)
Vibration	Warranted for 5 ... 200H: 0.05g ² /Hz (IEC 60068-2-64:2008)
Approvals	CE, conforms to European Pressure Directive, RoHS compliant, CSA C/US
Weight	Approx. 250 grams (connector) Approx. 500 grams (5m cable length) up to 1600 grams (25m cable length)

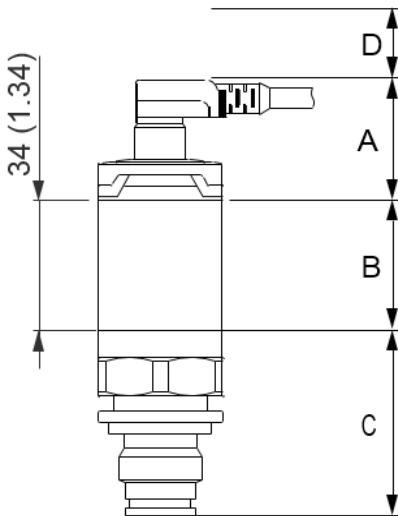
Output Signals

Current Output	4 ... 20 mA
Output Signal	2-wire, linear characteristic curve
Signal Range	3.8 ... 20.5 mA
Error Signal	> 21mA according to NAMUR NE43
Max. Burden	Depending of supply voltage: $R = (\text{Supply voltage} - 6.5V)/22\text{mA}$
Supply Voltage	10 ... 30V DC
Current Consumption	≤ 26mA
Fuse Protection	Micro fuse 500mA (slow)

Measuring Ranges

Measuring range bar	Customized. maximum Measuring Range bar – Gauge (Absolute)	Smallest Measuring Span bar - Gauge(Absolute)	Overload Limit bar Gauge/Absolute Pressure	Burst Pressure bar Gauge/Absolute Pressure
0.25	-0.25 (0) ... +0.25	0.25 (0.25)	1/1	1.6/1.6
0.4	-0.4 (0) ... +0.4		1/1	1.6/1.6
0.6	-0.6 (0) ... +0.6			
1	-1.0 (0) ... +1.0	0.4 (0.4)	2.7/2.7	4/4
1.6	-1.0 (0) ... +1.6		6.7/6.7	10/10
2.5	-1.0 (0) ... +2.5			
4	-1.0 (0) ... +4.0	0.8 (0.8)	10.7/10.7	16/16
6	-1.0 (0) ... +6.0	2.4 (2)	16/25	24/40
10	-1.0 (0) ... +10	2 (2)	25/25	40/40
16	-1.0 (0) ... +16			
25	-1.0 (0) ... +25	5 (8)	25/100	100/160
40	-1.0 (0) ... +40	8 (8)	100/100	160/160
60	-1 (0) ... +60			
100	-1 (0) ... +100	20 (20)	100/100	160/160
250	-1 (0) ... +250			
320	-1 (0) ... +320	80 (80)	400/400	600/600
400	-1 (0) ... +400			

Process Connections/Pressure Ports



A: Electrical Connection

M12: 45mm (1,77")
 Valve Connector: 52mm (2,05")
 Cable Outlet: 25mm (1,00")

B: Basic Housing

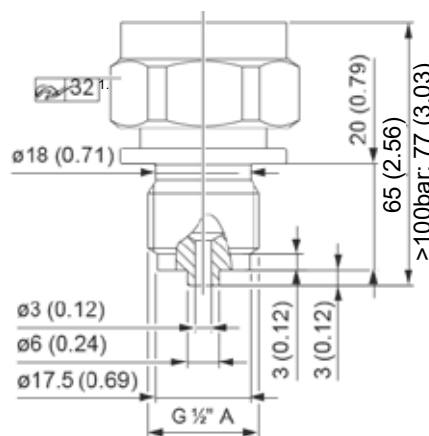
34mm (1,34")
 Ø 31,5 mm (1,24")

C: Process Connections

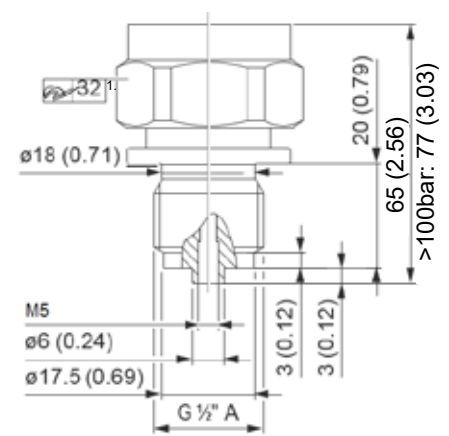
See sketches

D: Mounting Space

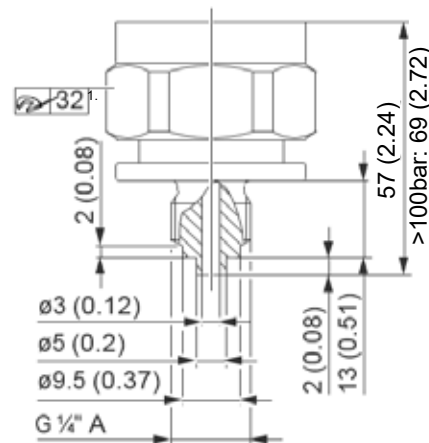
Sufficient space to mount plugs and outgoing cable needs to be provided.



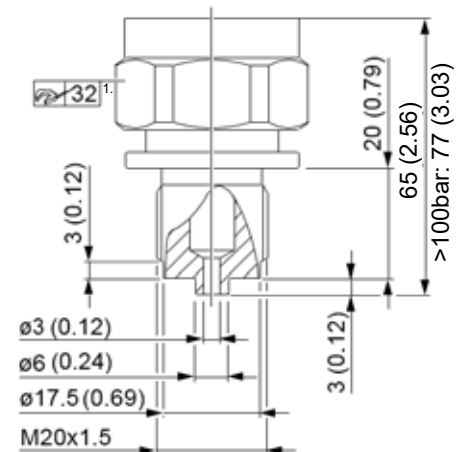
G 1/2" A, EN 837, ISO 228



G 1/2" A with M5 inner thread (optional with mechanical damping)



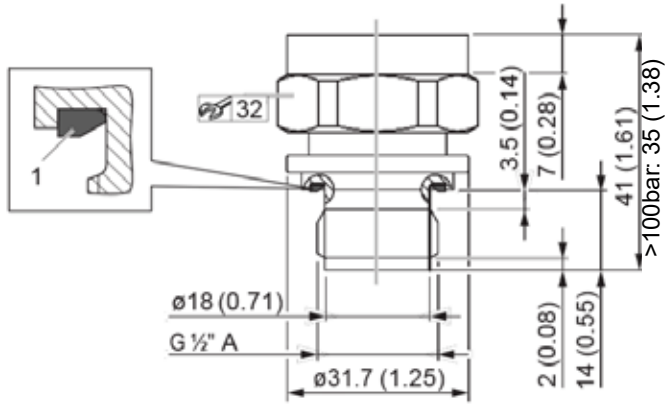
G 1/4" A, EN 837, ISO 228



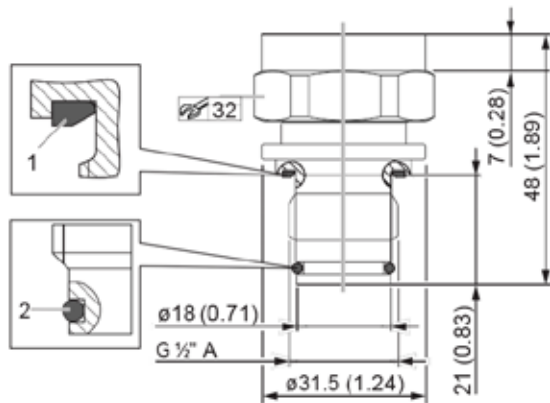
M20x1,5, EN 837

¹ Measuring range >100 bar: SW 27

Process Connections



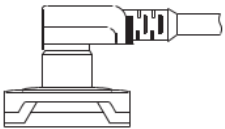
Flush mount, G 1/2" A, DIN3852, ISO 228



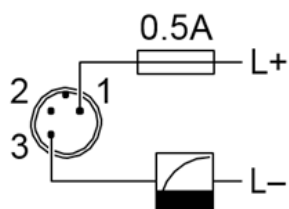
Flush mount, G 1/2" A, DIN3852, ISO 228, with O-ring

- 1. FKM pre-installed gasket
- 2. FKM pre-installed O-ring

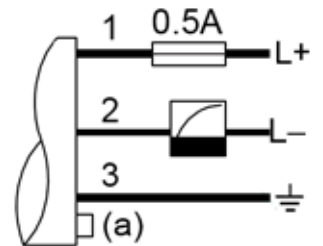
Electrical Connection



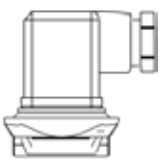
M12 plug



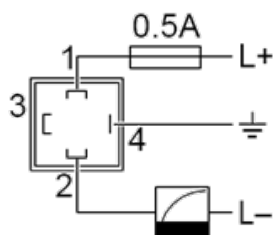
Fixed cable connection



- 1 brown
- 2 blue
- 3 green/yellow
- (a) Reference air tube



Valve connector



Versions/Ordering Structure

P40 - 2 x x - x x x x x - 0 0 x

Process connection

Internal diaphragm

- 1 - G 1/2" A, EN 837, ISO 228
- 2 - G 1/4" A, EN 837, ISO 228
- 3 - M20 x 1,5, EN 837, DIN 13
- 4 - G 1/2" A, with M5 inner thread
- 5 - G 1/2" A, with mechanical damping

Flush mounting

- 7 - G 1/2" A, DIN3852, ISO 228
- 8 - G 1/2" A with O-ring

Electrical connection

- 1 - M12 Connector
- 2 - Valve connector ISO4400 M16
- 3 - Valve connector ISO4400 NPT1/2
- 4 - Cable Outlet with 5m Cable
- 5 - Cable Outlet with 10m Cable
- 6 - Cable Outlet with 25m Cable
- 9 - Cable Outlet, customized length

Options

- 0 - none
- 1 - Free of oil and grease

Measuring

- 0 - Gauge pressure
- 1 - Absolute pressure

Output Filter

- 0 - none
- 1 - 100ms
- 2 - 200ms
- 3 - 300ms
- 4 - 400ms
- 5 - 500ms

Test and Calibration

- 0 - Manufacturing test report
- 1 - Calibration certificate

Measuring Range

- 02 - 0..250 mbar
- 03 - 0..400 mbar
- 04 - 0..600 mbar
- 05 - 0..1.0 bar
- 06 - 0..1.6 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
- 13 - 0..40 bar
- 14 - 0..60 bar
- 15 - 0..100 bar
- 16 - 0..160 bar
- 17 - 0..250 bar
- 18 - 0..320 bar
- 19 - 0..400 bar
- 99 - Customized (starting at -1 bar)

On request: Ex-versions, customized version (non-Ex), connection plug M12, OEM-packaging

Contact



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