

Electronic Pressure Switch

PS 400

Pressure ranges from 0 – 100 mbar to 0 – 600 bar

Field housing stainless steel 316L, accuracy $\leq \pm 0.25$ % FSO

Application

The electronic pressure switch PS 400 is a successful combination of pressure switch in a field housing and digital display. The pressure switch has been specially designed for numerous applications in various industrial sectors, e.g. plant engineering or environmental engineering.

As standard, the PS 400 offers a rotatable display module and a PNP switching output, mounted in a rotatable field housing.

Additional optional versions, such as a second switching output as well as an analogue output are available as well.

Construction

- Accuracy $\leq \pm 0.25$ % FSO
- Sensor stainless steel 316L
- Case and display rotatable
- LED display, 4 digits, 7 segment indication, digit height 10 mm (0.39")
- Output signal 4...20 mA/2-wire
- 1 or optionally 2 independent PNP switching outputs, freely configurable
- Analogue output (optional)
- Degree of protection IP67

Standard Versions

Process Connection

Material: stainless steel 316L (1.4404)
Connection thread: G $\frac{1}{4}$ " (DIN 3852)

Measuring Cell/Sensor

Stainless steel 316L

Sensor Sealing

FKM

Case

Field housing made of stainless steel 316L, degree of protection IP67

Pressure Ranges / Overload Capability in bar

Vacuum	Positive pressure	Absolute pressure	Overload	Burst pressure
-1 / 0	-	-	5	7.5
-	0 – 0.1	-	0.5	1.5
-	0 – 0.16	-	1	1.5
-	0 – 0.25	-	1	1.5
-	0 – 0.4	0 – 0.4	2	3
-	0 – 0.6	0 – 0.6	5	7.5
-	0 – 1.0	0 – 1.0	5	7.5
-	0 – 1.6	0 – 1.6	10	15
-	0 – 2.5	0 – 2.5	10	15
-	0 – 4	0 – 4	20	25
-	0 – 6	0 – 6	40	50
-	0 – 10	0 – 10	40	50
-	0 – 16	0 – 16	80	120
-	0 – 25	0 – 25	80	120
-	0 – 40	0 – 40	105	210
-	0 – 60	0 – 60	210	420
-	0 – 100	0 – 100	210	420
-	0 – 160	0 – 160	600	1000
-	0 – 250	0 – 250	1000	1250
-	0 – 400	0 – 400	1000	1250
-	0 – 600	0 – 600	1000	1250

PN ≥ 1 bar: vacuum resistance unrestricted



Display

LED display, 4 digits, 7 segment indication
Visible area: 37.2x11 mm (1.46x0.43")
Digit height: 10 mm (0.39")

Supply Voltage

$U_B = 13...36$ V DC

Load Impedance

$R_{max} = [(U_B - U_{Bmin}) / 0.2 A] \Omega$
Response time: < 10 ms

Output Signal

4...20 mA/2-wire + 1 PNP switching output
Auxiliary energy: 0.05 % FS
Load impedance: ≤ 0.1 % FS
Response time: < 12 ms

Adjustability

Digital damping: 0.3 to 30 s
Update measured value: 0.0 to 10 s

Accuracy

Max. switching current: 125 mA loadable, short-circuit proof;
 $U_{switch} = U_B - 2$ V;
Switch point accuracy: $\leq \pm 0.25$ % FSO
Repeatability: $\leq \pm 0.1$ % FSO
Switching frequency: 2-wire: 10 Hz / 3-wire: 50 Hz
Switching cycles: > 100 x 10⁶

Temperature

Operating temperature: -40 °C to +85 °C (-40 °F to +185 °F)
Medium temperature: -40 °C to +125 °C (-40 °F to +257 °F)
Storage temperature: -40 °C to +100 °C (-40 °F to +212 °F)

Temperature Caused Error (Zero Point and Span)

Nominal pressure PN	-1 to 0 bar	<0.4 bar	≥ 0.4 bar
Error band (FSO)	$\leq \pm 0.75$ %	$\leq \pm 1$ %	$\leq \pm 0.75$ %
in the compensated range	-20 / +85 °C (-4 / +185 °F)	0 – 70 °C (32 – 158 °F)	-20 / +85 °C (-4 / +185 °F)

Mechanical Shock

Max. 500 g/1 ms

Mechanical Vibration

Max. 10 g at 25 – 2000 Hz

Electrical Connection

Plug connection M12x1, 5-pin

Reverse Polarity Protection

Available

Electromagnetic Compatibility

Interference emission and stability according to DIN EN 61 326

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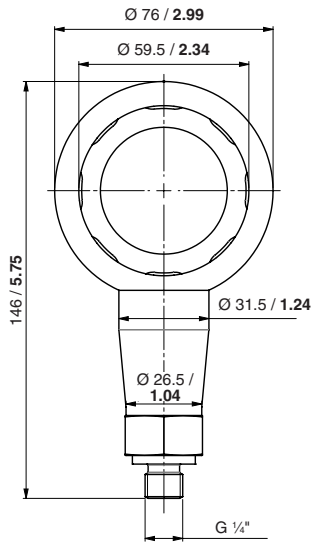
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Case Configuration, Dimensional Data (mm/inch) and Weight, Options, Ordering Information

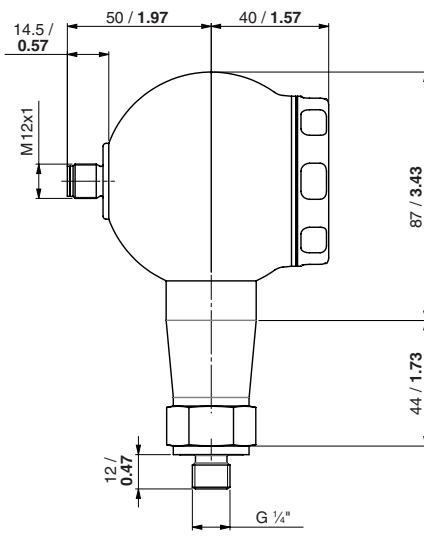
Process Connection

Standard: G 1/4" (DIN 3852)

front view

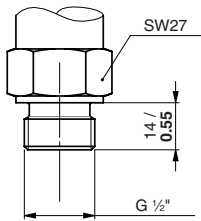


lateral view

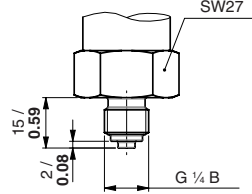


Optional process connections

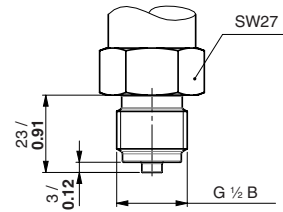
G 1/2" (DIN 3852)



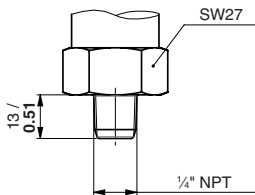
G 1/4 B (DIN EN 837)



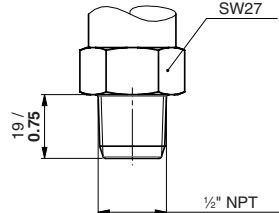
G 1/2 B (DIN EN 837)



1/4" NPT



1/2" NPT



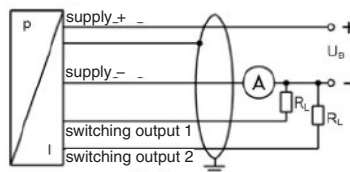
Weight

Approx. 400 g (0.88 lb)

Options

- Output signals: additional PNP output
- Analogue output:
 - 4...20 mA/3-wire
 - $U_B = 24 \text{ V DC} \pm 10 \%$
 - adjustable (turn-down of the span 1:5)
 - response time < 30 ms
 - accuracy:
 - nominal pressure $\geq 0.4 \text{ bar}$: $\leq \pm 0.35 \%$ FSO
 - nominal pressure $< 0.4 \text{ bar}$: $\leq \pm 0.5 \%$ FSO
- Process connections:
 - G 1/2" (DIN 3852)
 - G 1/4 B (DIN EN 837), G 1/2 B (DIN EN 837)
 - 1/4" NPT, 1/2" NPT
- Field housing stainless steel, display 45°

Wiring Diagram



Pin assignment	M12x1 (5-pin), metal
supply +	1
supply -	3
output signal 1	4
output signal 2	5
shield	plug housing

Ordering Information

Please specify in your order:

Basic model	PS 400
Process connection	e.g. G 1/4"
Pressure range	e.g. 0 – 4 bar, positive pressure
Output	e.g. 4...20 mA + 1 PNP

Example: PS 400, G 1/4", 0 – 4 bar positive pressure, 4...20 mA + 1 PNP