



PS-04N

Dual Pressure Switch



- **Stainless steel connection**
- **Self-monitoring**
- **Two setpoints**
- **Analogue output**
- **4-digit 14-segment LED-display**
- **Adjustable keypad lock**

Description:

The PS-04N dual pressure switch consists of a pressure sensor with downstream electronic component. Built in a compact stainless steel housing, conceived for rough industrial conditions to make it stable against interference and shock and vibration-proof, it offers to the user everything that today's state-of-the-art pressure measurement and monitoring technology demands. The pressure is sensed by a ceramic or a piezoresistive sensor. Its accuracy rating is 0.5% of full scale value and the repeatability better than 0.1% full scale. This meets any requirement. The PS-04N is controlled by a microprocessor and capable of self-monitoring with error output. Its maximum configuration offers 2 transistor limiting contacts with adjustable setpoint, adjustable hysteresis and adjustable time lag. The measured value is legibly displayed on a digital connection display and, additionally, put out through a 4 to 20 mA or 0 to 10 VDC socket. All parameters can be easily programmed by means of a diaphragm keypad.

Range of application:

With its pressure range of 0 bar up to 600 bar, the PS-04N dual pressure switch covers a wide spectrum of applications and, therefore, is used across all types of industries. Typical applications are the accumulator charge connection, the locking pressure monitoring and the lubricant control, to name a few. For example, the additional analogous signal can be used for regulating pressure or for reporting functions. Using only one device, the user has simultaneously two setpoints, an onsite display an analogous output for remote transmission, thus replacing a pressure gauge, a mechanical pressure switch and a pressure sensor.

Ordering codes:

Ordering number: PS-04N. 3. 1. R100. 5. 1. P

PS-04N Dual Pressure Switch

Electronic housing:

3 = stainless steel

Sealing:

1 = FKM
3 = EPDM

Operating range:

A01 = 0 bar - 1 bar absolute (piezoresistive sensor)
A05 = 0 bar - 5 bar absolute (piezoresistive sensor)
A10 = 0 bar - 10 bar absolute (piezoresistive sensor)

RP02 = 0 bar - 0.2 bar rel. (piezoresistive sensor)
RP05 = 0 bar - 0.5 bar rel. (piezoresistive sensor)
R001 = 0 bar - 1 bar rel. (piezoresistive sensor)
R002 = 0 bar - 2 bar rel. (piezoresistive sensor)
R005 = 0 bar - 5 bar rel. (piezoresistive sensor)
R010 = 0 bar - 10 bar rel.
R050 = 0 bar - 50 bar rel.
R100 = 0 bar - 100 bar rel.
R200 = 0 bar - 200 bar rel.
R400 = 0 bar - 400 bar rel.
R600 = 0 bar - 600 bar rel. (piezoresistive sensor)

Outputs:

1 = 2 transistor outputs (PNP)
2 = 1 transistor output (PNP) and 1 analogue output 4 to 20 mA
3 = 1 transistor output (PNP) and 1 analogue output 0 to 10 VDC
4 = 2 transistor outputs (PNP) and 1 analogue output 4 to 20 mA
5 = 2 transistor outputs (PNP) and 1 analogue output 0 to 10 VDC

Process connection:

1 = G1/4"-male thread
2 = G1/2"-front flush diaphragm male thread (piezoresistive sensor)**
3 = 1/4"-NPT-male thread
4 = 1/2"-NPT-front flush diaphragm male thread (piezoresistive sensor)**

Sensor:

P = piezoresistive sensor element
K = sensor element from ceramics

** 10 to 600 bar only

Versions:

PS-04N Dual Pressure Switch

Electronic housing:

The electronic housing is made from the materials stainless steel V2A, FKM and PA/PC. The pressure connection is 320° turnable against the housing.

Sealing:

Depending on the media, choice is possible from among: FKM, e.g. for hydraulic oil and EPDM, e.g. for brake fluid.

Operating range:

The ranges from 0-0.2 bar up to 0-600 bar are standard ranges. Special operating ranges are available on request.

Outputs:

The full version of PS-04N provide two PNP transistor outputs and an additional analogue output at standard. Other versions are downgraded in several steps.

Process connection:

The user may choose between G1/4"-male thread, 1/4"-NPT-male thread, G1/2"-front flush diaphragm with male thread connection and 1/2"-NPT-frontflush diaphragm with male thread connection. Front flush versions are always equipped with a piezoresistive sensor element. UNF- and CETOP-connections are available on request.

Sensor:

The PS-04N is equipped with a piezoresistive sensor element at standard. Operating ranges from 0-10 bar rel. up to 0-400 bar rel. can also be equipped with a sensor element from ceramics.

Technical specifications:

Operating ranges gauge pressure: 0 - 0.2 bar, overload up to 0.3 bar
0 - 0.5 bar, overl. up to 0.75 bar
0 - 1 bar, overload up to 1,5 bar
0 - 2 bar, overload up to 3 bar
0 - 5 bar, overload up to 7.5 bar
0 - 10 bar, overload up to 15 bar
0 - 50 bar, overload up to 75 bar
0 - 100 bar, overl. up to 150 bar
0 - 200 bar, overl. up to 300 bar
0 - 400 bar, overl. up to 600 bar
0 - 600 bar, overl. up to 800 bar

Operating ranges absolute pressure: 0 - 1 bar, overload up to 1.5 bar
0 - 2 bar, overload up to 3 bar
0 - 5 bar, overload up to 7.5 bar
0 - 10 bar, overload up to 15 bar

max. Ambient temp.: -10°C up to +70°C

max. Storage temp.: -30°C up to +80°C

max. Media temp.: -25°C up to +100°C

Compensated range: -10°C up to +70°C

Temperature factor ZERO: $< \pm 0.2\%$ F.S. / 10 K

Temperature factor SPAN: $< \pm 0.3\%$ F.S. / 10 K

Linearity error: $< \pm 0.5\%$ of full scale at 25°C

Repeatability: $\pm 0.1\%$ of full scale

Resolution: 12 Bit
(4096 steps per measuring span)

Scan rate: 1000/s

Weight: app. 300 g

Dimensions: 110 x 40 mm without counter plug

Operating elements: 3 press keys with perceptible pressure point

Sensor element: ceramics or piezoresistive

Process connection: G- or NPT-
1/4"-male thread or
1/2"-male thread front flush

Wetted parts: stainless steel 1.4301,
brass MS58, FKM or EPDM

Elektrical specifications:

Display: 4-digit 14-segment LED-display, height of digits 9 mm, red

Connection: plug connector M12 x 1,
4- or 5-pole

Protection class: IP65, class III (IP67 on request)

Supply voltage: 15 VDC up to 32 VDC,
reverse polarity protected
(SELV, PELV)

Power consumption: app. 50 mA without load

Shock resistance: 50 g (11 ms) acc.
DIN EN 60028-2-27

Vibration: 20 g (10 to 2000 Hz) acc.
DIN EN 60028-2-26

Analogue outputs:

Power output: 4 to 20 mA

Voltage output: 0 to 10 VDC

Load: max. 10 mA

Adjusting range: 25% to 100% of full scale

Refreshing rate: 2 ms

PNP-transistor-outputs:

Switching function: NO / NC,
window and diagnostic modes
adjustable

Load: max. 500 mA,
short-circuit safe

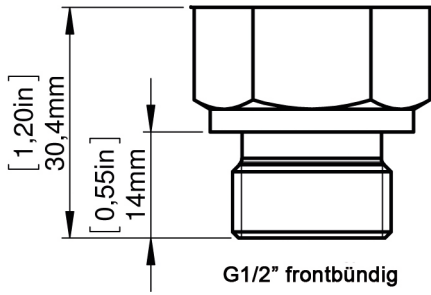
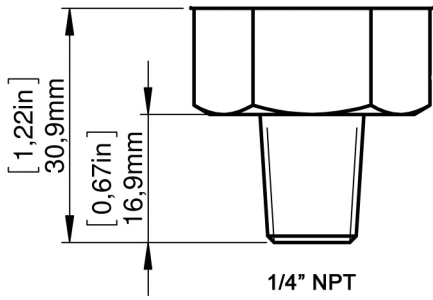
Adjustability of setpoint and resetpoint: 0% to 125% of full scale

Time delay: 0 to 50 s adjustable

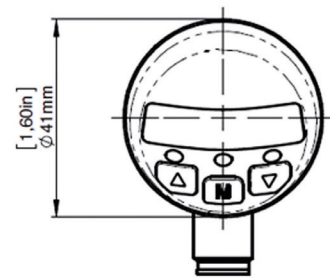
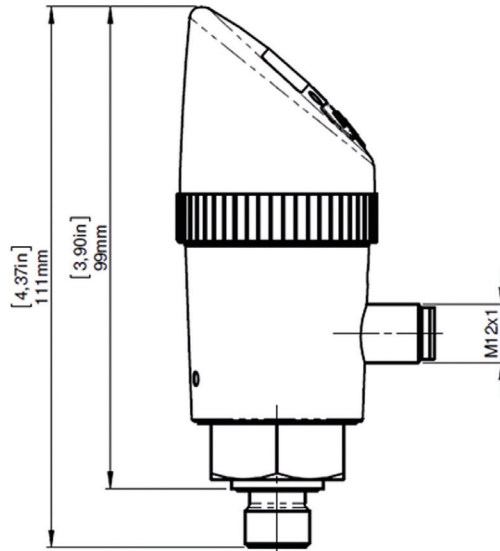
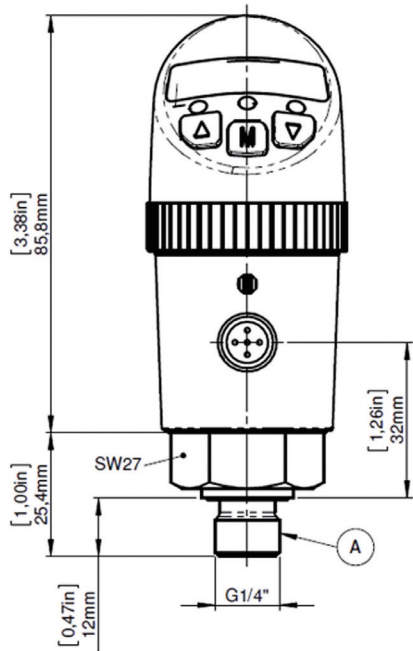
Switching frequency: max. 100 Hz

Display: LED(s) red

Process connection:

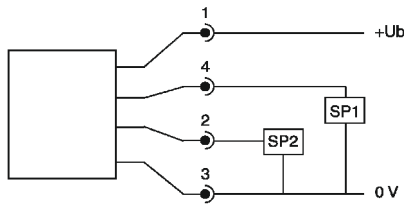


Dimensions:

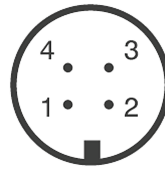


Elektrical connection and plug connection:

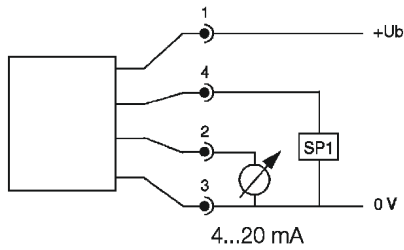
Version: 2 switching outputs



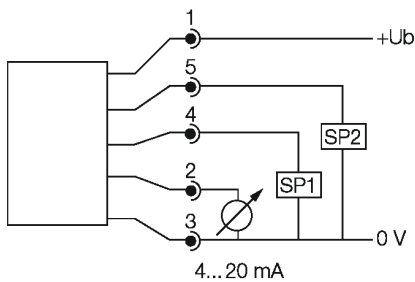
plug 4-pole



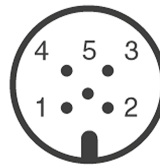
Version: 1 switching output + 1 Analogue



Version: 2 switching outputs + 1 Analogue



plug 5-pole



PIN assignement:

Plug connector M 12x1, 4/5-pole	Version with 1 switching output	Version with 2 switching outputs	Version with 1 switching output and 1 analogue output	Version with 2 switching outputs and 1 analogue output
Pin 1 (brown)	+Ub 15 to 32 VDC	+Ub 15 to 32 VDC	+Ub 15 to 32 VDC	+Ub 15 to 32 VDC
Pin 2 (white)	not connected	SP2 (0.5A max.)	analogue 4 to 20 mA or 0 to 10 VDC	analogue 4 to 20 mA or 0 to 10 VDC
Pin 3 (blue)	0V	0V	0V	0V
Pin 4 (black)	SP1 (0.5A max.)	SP1 (0.5A max.)	SP1 (0.5A max.)	SP1 (0.5A max.)
Pin 5 (grey)	not connected	not connected	not connected	SP2 (0.5A max.)