



ROEMHELD

F 9.735

Pressure Switch

Hydraulic-electronic signal converter with IO-Link, with teach-in function as an option
2 switching outputs/1 analogue output, pressure range up to 600 bar



Application

Pressure switches generate an electrical switching command or a signal for further work steps when a preset pressure value is reached or exceeded.

Pressure switches are used, for example, to switch pump motors or valves on and off and to control power units, machines and systems.

Description

These pressure switches measure the pressure in hydraulic systems and convert it into electrical signals.

All devices are provided with 2 outputs. While output 1 is a freely programmable switching output, output 2 can be selected as analogue output or switching output.

The switching and reset points, the output logic and time delays can be programmed with the operating keys.

Display and analogue output are equipped with adjustable damping for dynamic measurements.

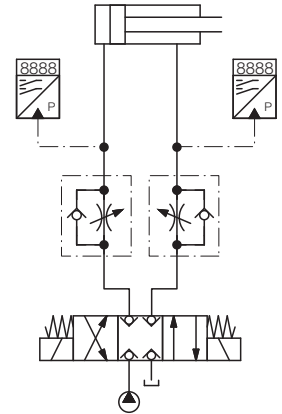
Installation example



Advantages

- IO-Link interface
- Two transistor switching outputs
- Analogue output with adjustable start and end point
- 4 x 7 segment LED display
- Continuous ACTUAL pressure display
- Accuracy $< \pm 0.1\%$ of the final value
- Teach-in function as an option
- Any mounting position
- Operating and display panel can be rotated by 345°
- Display in bar, psi or MPa
- Non-resetting cycle counter
- 'Loc' to prevent unwanted adjustment
- Self-monitoring function: Overload, cable break and sensor function
- Fast pressure peak detection
> 600 measurements per second
- CE/UL/UKCA certification

Application example



Versions

There are two different versions, which differ in the type of adjustment option.

Pressure switch with classic parametrisation Part no. 9740079

The desired switching and reset points are entered using a classic three-button control panel.

This version can be parameterised conventionally for all applications, independent of the pressurisation of the pressure switch.

Pressure switch with teach-in function Part no. 9740080

With the Teach-In procedure, a present pressure is stored in the pressure switch by pressing a button (Enter/Set button). This pressure value corresponds to the operating pressure.

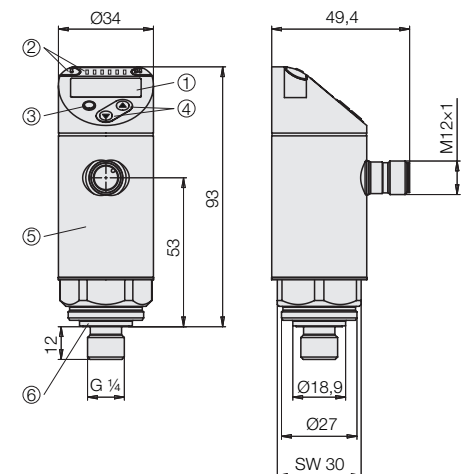
The pressure switch automatically calculates the optimum switching and reset points for output 1 (e.g. pump control / sequence control) and output 2 (e.g. machine control / release).

It is useful to adjust the operating pressure with the pressure relief valve. Detailed instructions can be found in the operating manual BA F9735.

The factory setting is 10 % hysteresis (output 1) and 20 % hysteresis (output 2).

Automatic parameterisation at the touch of a button (Teach-In) allows the pressure switch to be adapted very quickly to changing pressures. Furthermore, setting errors are avoided.

Dimensions



1. Alphanumeric display 4-character/digit red/green
2. LEDs optical display unit / switching status
3. Program key (Enter / Set button)
4. Arrow keys up / down (Reset / Esc)
5. Upper part of housing, rotatable 345°
6. Seal

Technical characteristics

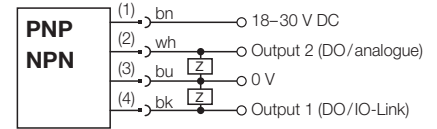
Connection	M12 connector 4-pin
Compressive strength	800 bar / 11580 psi
Min. burst pressure	2500 bar / 36250 psi
Pressure pick-up	Peak-value memory every 1.5 ms
Operating voltage	18 to 30 V DC
Protected against short circuits	Yes
Protected against reverse battery	Yes
Voltage drop (max. load)	< 2 V
Current consumption (without load)	< 35 mA
Switching outputs	2 x NO/NC is 250 mA
Delay time adjustable	
Switch-on delay	0 to 50 s
Switch-off delay	0 to 50 s
Adjustment range 9740079	
Switching point	In 1-bar intervals
Reset point	In 1-bar intervals
Adjustment range 9740080	
Switching point	1 to 100 % of p-Teach
Reset point	0 to 99 % of p-Teach
Switching frequency	max. 500 Hz
Reproducibility	< ±0.1 % of the final value
Analogue output	4 to 20 mA or 0 to 10 V
Load	Max. 500 Ω
Error detection analogue output	In case of line break
Damping adjustable	0 to 4 s
Linearity deviation	Max. ±0.25 % of Pn
System pressure display	4 x 7 segment LED
Display damping adjustable	0 to 4 s
Switching function display	2 x LED yellow
Operating temperature	– 25 to +80 °C
Temperature drift	< ±0.2 % / 10 K (–25 to +80 °C)
Pressure port	G 1/4 A, SW30
Sensor head material	Stainless steel 1.4542
Body material	Stainless steel 1.4404; PBT+PC-GF30/20; PC
Code class (EN 60529)	IP65; IP67
MTTF	129 years
Switching cycles	> 100 million
Weight	243 g
Certification	CE/ UL/ UKCA
Communication interface	IO-Link*
Transmission type	COM2 (38.4 kbaud)
IO-Link revision	1.1
SDCI standard	IEC 61131-9

	Pressure switch with classic parameterisation	Pressure switch with Teach-in function
Part no.	9740079	9740080

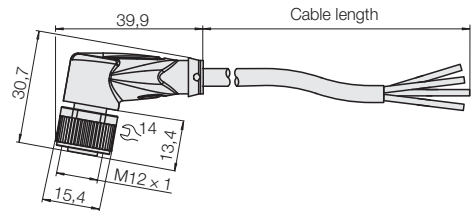


* IODD information at:

Connection 4-pole



Accessories



Cable socket angled

Cable length approx. 3 m

Part no. 3829 283

Cable socket angled

for analogue operation, cable shielded

Cable length approx. 5 m

Part no. 3829 282

Further accessories

See data sheet F 9.300 (page 6)