PSD-30 DİJİTAL AYARLANABİLİR BASINÇ ŞALTERİ (SWİTCH)

Applications

- Machine tools
- Hydraulics and pneumatics
- Pumps and compressors
- Machine building

Special features

- Easily readable, robust display
- Intuitive and fast setup
- Easy and flexible mounting configurations

Electronic pressure switch, model PSD-30

Description

Award-winning in design and functionality
The successful design and the excellent functionality of the WIKA switch family were already confirmed by winning the "iF product design award 2009" for the PSD-30 pressure switch.

The robust LED display has been designed using 9 mm high characters (the largest possible) and with a slight incline in order to make reading the pressure as easy as possible from a long way off. A 14-segment display has been used, since it represents text very well.
The 3-key operation makes simple, intuitive menu navigation possible, with no need for additional assistance. The menu navigation conforms to the latest VDMA standard.
The VDMA standard for fluid sensors (24574-1, part 1 - pressure switches) has the aim of simplifying the use of pressure switches by standardising menu navigation and display.
The control keys have been designed as large as possible and are arranged ergonomically to ensure fast and easy adjustments. Operation without any additional assistance is made easier through the tactile feedback.

Customised installation
The installation of the PSD-30 and PSD-31 can be flexibly adapted to the individual mounting situation. Due to the almost unlimited rotation of the display and case by more than 300°, the display can be adjusted independently of the electrical connection. The display can thus always be aligned to face the operator, and the M12 x 1 connection positioned to suit the desired cable routing.

High quality
During development of the WIKA switch family a high value was placed on a robust design and the selection of appropriate materials suited to machine-building applications. For this reason the case and the threaded connection of the electrical connector are made from stainless steel. Overwinding or tearing off the connector is therefore virtually impossible.

IO-Link 1.1
With the optional output signal in accordance with the IO-Link communication standard, the PSD-30 and PSD-31 allow a fast integration into modern automation systems. IO-Link offers an even faster installation, parameterisation and higher functionality of the PSD-30 and PSD-31.

Measuring ranges

Gauge pressure								
bar	0 ... 1 [1]	0 ... 1.6 [1]	0 ... 2.5	0 ... 4	0 ... 6	0 ... 10	0 ... 16	0 ... 25
	0 ... 40	0 ... 60	0 ... 100	0 ... 160	0 ... 250	0 ... 400	0 ... 600	
psi	0 ... 15 [1]	0 ... 25 [1]	0 ... 30 [1]	0 ... 50	0 ... 100	0 ... 160	0 ... 200	0 ... 300
	0 ... 500	0 ... 1,000	0 ... 1,500	0 ... 2,000	0 ... 3,000	0 ... 5,000	0 ... 8,000	

Absolute pressure								
bar	0 ... 1 [1]	0 ... 1.6 [1]	0 ... 2.5	0 ... 4	0 ... 6	0 ... 10	0 ... 16	0 ... 25
psi	0 ... 15 [1]	0 ... 25 [1]	0 ... 30 [1]	0 ... 50	0 ... 100	0 ... 160	0 ... 200	0 ... 300

Vacuum and +/- measuring range								
bar	-1 ... 0 [1]	-1 ... +0.6 [1]	-1 ... +1.5	-1 ... +3	-1 ... +5	-1 ... +9	-1 ... +15	-1 ... +24
psi	-14.5 ... 0 [1]	-14.5 ... +15 [1]	-14.5 ... +30	-14.5 ... +50	-14.5 ... +100	-14.5 ... +160	-14.5 ... +200	-14.5 ... +300

1) Not available for PSD-31.

The given measuring ranges are also available in kg/cm², kPa and MPa.
Special measuring ranges between 0 ... 1 and 0 ... 600 bar (0 ... 15 bis 0 ... 8,000 psi) are available on request.
Special measuring ranges have a reduced long-term stability and increased temperature errors.

Overload safety
The overload safety is based on the sensor element used. Depending on the selected process connection and sealing, restrictions in overload safety can result.

- 2 times
- 1.7 times for the relative pressure measuring ranges 160 psi, 1,000 psi and 1,500 psi

Vacuum-tight
Yes

Display

14-segment LED, red, 4-digit, 9 mm (0.35 inch) character size
Display can be turned electronically through 180°
Update (adjustable): 100, 200, 500 or 1,000 ms

Operating conditions

Permissible temperature ranges

Medium: -20 ... +85 °C (-4 ... +185 °F)
Ambient: -20 ... +80 °C (-4 ... +176 °F)
Storage: -20 ... +70 °C (-4 ... +158 °F)
Nominal temperature: 0 ... 80 °C (32 ... 176 °F)

Humidity

45 ... 75 % r. h.

Vibration resistance

10 g (IEC 60068-2-6, under resonance)

Shock resistance

50 g (IEC 60068-2-27, mechanical)

Service life, mechanics

100 million load cycles (10 million load cycles for measuring ranges > 600 bar/7,500 psi)

Ingress protection

IP65 and IP67

The stated ingress protection (per IEC 60529) only applies when plugged in using mating connectors that have the appropriate ingress protection.

Mounting position

as required

Materials

Wetted parts

Process connection: 316L
Pressure sensor: < 10 bar (150 psi): 316L
≥ 10 bar (150 psi): PH steel

Non-wetted parts

Case: 304
Keyboard: TPE-E
Display window: PC
Display head: PC+ABS-Blend

Pressure transmission medium:
Synthetic oil for all gauge-pressure measuring ranges < 10 bar (150 psi), all absolute-pressure measuring ranges and flush versions.

Options for specific media

- Oil and grease free: Residual hydrocarbon: < 1,000 mg/m²
  Only available for PSD-30
- Oxygen, oil and grease free:
  Residual hydrocarbon: < 200 mg/m²
  Packaging: Protection cap on the process connection
  Max. permissible temperature -20 ... +60 °C (-4 ... +140 °F)
  Only available for PSD-30
  Available measuring ranges:
  0 ... 10 to 0 ... 400 bar (0 ... 150 to 0 ... 5,000 psi)
  -1 ... 9 to -1 ... 24 bar (-14.5 ... 160 to -14.5 ... 300 psi)
  Factory supplied without sealing

Process connections

Available connections, model PSD-30

Standard	Thread	Overload limit	Sealing
DIN 3852-E	G ¼ A	1,000 bar (14,500 psi)	NBR (options: without, FPM/FKM)
	G ½ A	1,000 bar (14,500 psi)	NBR (options: without, FPM/FKM)
EN 837	G ¼ B [1)]	1,000 bar (14,500 psi)	without (options: copper, stainless steel)
	G ¼ female	1,000 bar (14,500 psi)	-
	G ½ B [1)]	1,000 bar (14,500 psi)	without (options: copper, stainless steel)
ANSI/ASME B1.20.1	¼ NPT [1)]	1,000 bar (14,500 psi)	-
	½ NPT [1)]	1,000 bar (14,500 psi)	-
ISO 7	R ¼ [1)]	1,000 bar (14,500 psi)	-
KS	PT ¼ [1)]	1,000 bar (14,500 psi)	-
-	G ¼ female (Ermeto compatible)	1,000 bar (14,500 psi)	-

1) suitable for oxygen, oil and grease free.

Other connections on request.

Available connections, model PSD-31

Standard	Thread	Overload limit	Sealing
-	G ½ B with flush diaphragm	1,000 bar (14,500 psi)	NBR (options: FPM/FKM)

Restrictor (option)
For applications where pressure spikes can occur, the use of a restrictor is recommended. The restrictor narrows the pressure port to 0.3 mm and thus increases the resistance against pressure spikes.