Pressure Transmitter

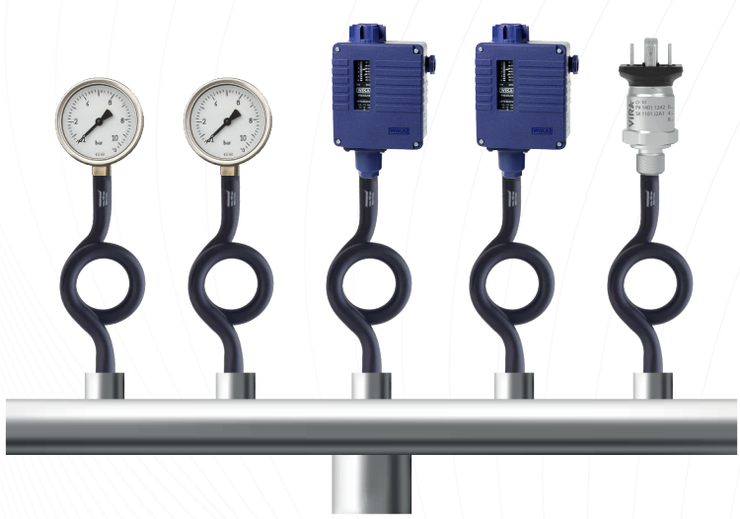
A pressure transmitter is a device that measures the pressure in a system and converts this pressure value into a standard electrical signal. This signal is then transmitted to control systems, indicators or recorders, allowing for the monitoring, control, or recording of the pressure.

The Working principle of a pressure transmitter is as follows:
Firstly, the pressure of the process fluid or gas is applied to the pressure sensor of the device. Subseqently, the pressure sensor generates an electrical signal directly proportional to this applied pressure; this signal can be in the from of a change in resistance, voltage, or capacitance. Next, the electronic circutis receiev this weak and often nonlinear signal from sensor. This signal is then amplified and linearized in a manner proportional to the pressure. In the final stage, this processed signal is converted into an industry-standart current or voltage signal and transmitted to control systems, indicators, or recorders.

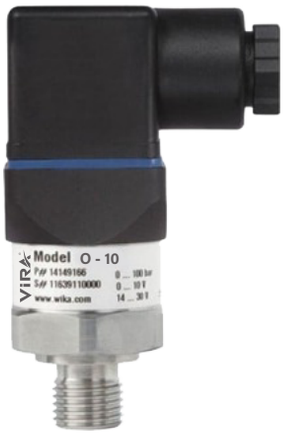
Pressure Switch

A pressure switch is a device that opens or closes an electrical circuit depending on the pressure of a fluid (liquid or gas). It functions as a safety mechanism or a control element in various systems.

The working principle of a pressure switch is as follows:
Pressure switches have a sensing element that detects pressure changes in the system. When this element is subjected to pressure, it changes shape or moves, and this mechanical motion is transferred to the electrical contacts inside the switch. When a specific setpoint is reached, these contacts either close to complete the circuit or open to break the circuit. Thanks to the adjustable setpoint found in many pressure switches, users can customize the pressure value at which the switch activates. Additionally, a feature known as hysteresis or deadband creates a small difference between the pressure at which the switch activates and the pressure at which it deactivates. This feature prevents rapid and unnecessary on-off cycles in the system.



Pressure Transmitter



Type	: O - 10
Non Linearity	: 0.5% BSFL
Wetted Parts	: 316L
Case	: 316L
Unit	: Bar
Perm. Medium Temp.	: 0...+80 °C
Process Connection	: G 1/4 A DIN EN ISO 1179-2

Technical Specification

Output Signal	
Signal Type	
Current (2-wire)	4 ...20 mA
Voltage (3-wire)	- DC 0.5 ... 4.5 V - DC 0 ... 5 V - DC 1 ... 5 V - DC 0 ... 10 V
Ratiometric (3-wire)	DC 0.5 ... 4.5 V
Load in Ω	
Current (2-wire)	≤ (supply voltage - 8 V) / 0.02 A
Voltage (3-wire)	> (supply voltage - 8 V) / 0.02 A
Ratiometric (3-wire)	> 4.5 k Ω

Measuring Ranges, Bar	
0 ... 6 [1) 2)]	**0 ... 100**
0 ... 10 [1) 2)]	**0 ... 160**
0 ... 16	**0 ... 250**
0 ... 25	**0 ... 400**
0 ... 40	**0 ... 600**
0 ... 60	

Output Signal		
Voltage Supply [1)]		
Supply Voltage	Output Signal 4 ...20 mA	DC 8 ... 30 V
	Output Signal DC 0.5 ... 4.5 V	DC 8 ... 30 V
	Output Signal DC 0 ... 5 V	DC 8 ... 30 V
	Output Signal DC 1 ... 5 V	DC 8 ... 30 V
	Output Signal DC 0 ... 10 V	DC 14 ... 30 V
	Output Signal DC 0.5 ... 4.5 V (Ratiornetic)	DC 5 V ± 10%
Current Supply	Current (2-Wire)	
	Voltage (3-Wire)	
Overvoltage protection	DC 36 V	
Dynamic Behavirour		
Settling Time per IEC 61298-2	< 2 ms	

TECHNICAL SPECIFICATION

O-10 Pressure Transmitter

Process Connection				
Standard	**Thread Size**	**Max. Measuring range**	**Overpressure Limit**	**Sealing**
EN 837	G 1/8 B	400 bar [5,800 psi]	572 bar [8,290 psi]	-
	G 1/4 B	600 bar [8,700 psi]	1,200 bar [17,400 psi]	
	G 1/4 Female Thread	600 bar [8,700 psi]	1,200 bar [17,400 psi]	
	G 3/8 B	600 bar [8,700 psi]	1,200 bar [17,400 psi]	
DIN EN ISO 1179-2 (Formerly DIN 3852-E	G 1/4 A	600 bar [8,700 psi]	858 bar [12,400 psi]	- NBR[1)] - FPM/FKM[2)]
DIN EN ISO 9974-2 (Formerly DIN 3852-E	M14 x 1.5	600 bar [8,700 psi]	858 bar [12,400 psi]	
ANSI/ASME B1.20.1	1/8 NPT	400 bar [5,800 psi]	572 bar [8,290 psi]	-
	1/4 NPT	600 bar [8,700 psi]	1,200 bar [17,400 psi]	
	1/4 NPT Female Thread	600 bar [8,700 psi]	1,200 bar [17,400 psi]	
SAE J514 E	7/16-20 UNF-2A, O-ring BOSS	600 bar [8,700 psi]	858 bar [12,400 psi]	- FPM/FKM[2)]
	9/16-20 UNF-2A, O-ring BOSS	600 bar [8,700 psi]	858 bar [12,400 psi]	

Operating Conditions	
Medium Temperature Limit	**-30 ... +100 °C [-22 ... +212 °F]**
Ambient Temperature Limit	**-30 ... +100 °C [-22 ... +212 °F]**
Storage Temperature Limit	**-30 ... +100 °C [-22 ... +212 °F]**
Vibration Resistance per IEC 60068-2-6	**20 g (20 ... 2,000 Hz, 120 min)**
Shock Resistance per IEC 60068-2-27	**40 g (6 ms), Mechanical Shoc**
Free Fall per IEC 60068-2-31	**1 m**
Service Life	**10 Million Load Cycles**

Dimensions in mm [in]