

OEM pressure sensor

For industrial applications

Models O-10 (T), O-10 (5)

WIKA data sheet PE 81.65



for further approvals see
page 11

Applications

- Hydraulics and pneumatics
- Pumps and compressors
- Machine building
- Building services

Special features

- Measuring ranges from 0 ... 6 to 0 ... 600 bar
- Non-linearity 0.5 %
- Standard industrial signals
- Electrical connection: Angular connector form A and C, circular connector M12 x 1, Metri-Pack series 150, cable outlet 2 m unshielded or shielded
- Many internationally customary process connections



Pressure sensor model O-10 (T)

Description

The model O-10 pressure sensor has been developed for a wide variety of industrial applications. The large range of process and electrical connections as well as all commonly used pressure ranges and output signals set the model O-10 apart.

For applications in which water is used as a medium we recommend a 5-fold overload safety in combination with a condensation-tight case.

Due to its specifications, its features and its price, the pressure sensor is ideally suited to OEM applications, with an annual quantity requirement of more than 1,000 units of each article number. Accordingly, the minimum order quantity is 50 units per article number.

The model O-10 has been designed specifically for the demands of the global market. The pressure sensor offers international units and the corresponding approvals for the North American and Russian markets.

It goes without saying that the model O-10 can be delivered with customer-specific labelling (e.g. company logo and instrument designation).

Versions

Model O-10 (T)

Standard version

Model O-10 (5)

With 5-fold overload safety and condensation-tight case

For applications with water as a medium a 5-fold overpressure safety for protection against water hammer effects and a condensation-tight case is recommended.

Measuring ranges, model O-10 (T)

Gauge pressure							
bar	0 ... 6 ¹⁾²⁾	0 ... 10 ¹⁾²⁾	0 ... 16	0 ... 25	0 ... 40	0 ... 60	0 ... 100
	0 ... 160	0 ... 250	0 ... 400	0 ... 600			
psi	0 ... 100 ¹⁾²⁾	0 ... 160	0 ... 200	0 ... 250	0 ... 300	0 ... 400	0 ... 500
	0 ... 600	0 ... 750	0 ... 800	0 ... 1,000	0 ... 1,500	0 ... 2,000	0 ... 3,000
	0 ... 4,000	0 ... 5,000	0 ... 6,000	0 ... 7,500	0 ... 8,000		

Vacuum and +/- measuring range						
bar	-1 ... +5 ²⁾	-1 ... +9 ²⁾	-1 ... +15	-1 ... +24	-1 ... +39	-1 ... +59
psi	-30 inHg ... +100 ²⁾	-30 inHg ... +160	-30 inHg ... +200	-30 inHg ... +300	-30 inHg ... +500	

1) Measuring deviation of the zero signal $\leq \pm 0.7\%$ of span

2) Non-linearity $\leq \pm 0.6\%$ of span BFSL

The given measuring ranges are also available in kg/cm², kPa and MPa.

Other measuring ranges on request.

Overload safety

2 times (3 times on request)

Vacuum tightness

Yes

Measuring ranges, model O-10 (5)

Gauge pressure					
bar	0 ... 6	0 ... 10	0 ... 16	0 ... 25	0 ... 40
psi	0 ... 100	0 ... 200	0 ... 500		

Vacuum and +/- measuring range	
bar	-1 ... +5
psi	-30 inHg ... +100

Other measuring ranges on request

Overload safety

5 times

Vacuum tightness

Yes

Output signals, model O-10 (T)

Signal type	Signal
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

Other output signals on request

Load in Ω

Current output (2-wire): $\leq (\text{power supply} - 8 \text{ V}) / 0.02 \text{ A}$
Voltage output (3-wire): $> \text{maximum output signal} / 1 \text{ mA}$
Ratiometric output signal (3-wire): $> 4.5 \text{ k}\Omega$

Output signals, model O-10 (5)

Signal type	Signal
Current (2-wire)	4 ... 20 mA
Voltage (3-wire)	DC 0.5 ... 4.5 V
	DC 1 ... 5 V
Ratiometric (3-wire)	DC 0.5 ... 4.5 V

Other output signals on request

Load in Ω

Current output (2-wire): $\leq (\text{power supply} - 8 \text{ V}) / 0.02 \text{ A}$
Voltage output (3-wire): $> \text{maximum output signal} / 1 \text{ mA}$
Ratiometric output signal (3-wire): $> 4.5 \text{ k}\Omega$

Voltage supply

Power supply

The power supply depends on the selected output signal.

4 ... 20 mA:	DC 8 ... 30 V
DC 0.5 ... 4.5 V:	DC 8 ... 30 V
DC 0 ... 5 V:	DC 8 ... 30 V
DC 1 ... 5 V:	DC 8 ... 30 V
DC 0 ... 10 V:	DC 14 ... 30 V
DC 0.5 ... 4.5 V (ratiometric):	DC 4.5 ... 5 V

The power supply for the pressure sensor must be made via an energy-limited electric circuit in accordance with section 9.4 of UL/EN/IEC 61010-1 or an LPS to UL/EN/IEC 60950-1 or class 2 in accordance with UL1310/UL1585 (NEC or CEC). The power supply must be suitable for operation above 2,000 m should the pressure sensor be used at this altitude.

Total current consumption

Current output: Corresponds to the value of the output signal current (4 ... 20 mA), maximum 25 mA

Voltage output: 5 mA

Reference conditions (per IEC 61298-1)

Temperature

15 ... 25 °C (59 ... 77 °F)

Atmospheric pressure

860 ... 1,060 mbar (12.5 ... 15.4 psi)

Humidity

45 ... 75 % gauge

Power supply

Current output: DC 14 V

Voltage output: DC 24 V

Ratiometric output signal: DC 5 V

Nominal position

Calibrated in vertical mounting position with process connection facing downwards.

Time response

Settling time

< 2 ms

Accuracy specifications, model O-10 (T)

Non-linearity (per IEC 61298-2)

≤ ±0.5 % of span BFSL

A different non-linearity applies to some measuring ranges, see “Measuring ranges O-10 (T)”.

Measuring deviation of the zero signal

≤ ±0.5 % of span

A different measuring deviation applies to some measuring ranges, see “Measuring ranges model O-10 (T)”.

Accuracy at reference conditions

≤ ±1.2 % of span

Temperature error at 0 ... 80 °C (32 ... 176 °F)

≤ ±1.5 % of span

Long-term stability

≤ ±0.3 % of span/year

Accuracy specifications, model O-10 (5)

Non-linearity (per IEC 61298-2)

≤ ±0.5 % of span BFSL

Measuring deviation of the zero signal

≤ ±1 % of span

Accuracy at reference conditions

≤ ±2.0 % of span

Temperature error at 0 ... 80 °C (32 ... 176 °F)

Mean temperature coefficient of zero point

Typical: 0.3 % of span/10 K

Maximum: 0.6 % of span/10 K

Mean temperature coefficient of span

≤ ±0.1 % of span/10 K

Long-term drift

≤ ±0.2 % of span/year