

OEM pressure transmitter for general industrial applications Model O-10

WIKA data sheet PE 81.65



Applications

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

Special features

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



Pressure transmitter model O-10

Description

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

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

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

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

Measuring ranges

Relative 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	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 ¹⁾	-1 ... 9 ¹⁾	-1 ... 15	-1 ... 24	-1 ... 39	-1 ... 59
psi	-30 inHg ... 100 ¹⁾	-30 inHg ... 160	-30 inHg ... 200	-30 inHg ... 300	-30 inHg ... 500	

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

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

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

Overpressure limit

2 times, 3 times on request

Vacuum resistance

Yes

Output signal

Signal type	Value
Current (2-wire)	4 ... 20 mA
Voltage (3-wire)	DC 0 ... 10 V
	DC 0 ... 5 V
	DC 1 ... 5 V
	DC 0.5 ... 4.5 V
Ratiometric (3-wire)	DC 0.5 ... 4.5 V

Other output signals available on request.

Depending on the output signal the following loads apply:

Output signal	Load in Ω
4 ... 20 mA	$\leq (\text{power supply} - 7 \text{ V}) / 0.02 \text{ A}$
DC 0 ... 10 V	$> \text{Max. output signal} / 1 \text{ mA}$
DC 0 ... 5 V	
DC 1 ... 5 V	
DC 0.5 ... 4.5 V	
DC 0.5 ... 4.5 V ratiometric	$> 4.5 \text{ k}$

Voltage supply

Power supply

The permissible power supply depends on the corresponding value of the output signal.

Output signal	Power supply
4 ... 20 mA	DC 8 ... 30 V
DC 0 ... 10 V	DC 14 ... 30 V
DC 0 ... 5 V	DC 8 ... 30 V
DC 1 ... 5 V	DC 8 ... 30 V
DC 0.5 ... 4.5 V	DC 8 ... 30 V
DC 0.5 ... 4.5 V ratiometric	DC 5 V \pm 10 %

The power supply for the pressure transmitter must be made via an energy-limited electrical circuit in accordance with section 9.3 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 transmitter be used at this altitude.

Total current consumption

■ Current output

The total current consumption corresponds to the value of the output signal current (4 ... 20 mA), maximum 25 mA

■ Voltage output

5 mA

Accuracy

Non-linearity

≤ ±0.5 % of span BFSL (per IEC 61298-8)

A different non-linearity applies to some measuring ranges (see "Measuring ranges").

Measuring deviation of the zero signal

≤ ±0.5 % of span

A different measuring deviation applies to some measuring ranges (see "Measuring ranges").

Accuracy at room temperature

≤ ±1.2 % of span

Temperature error (at 0 ... 80 °C)

≤ ±1.5 % of span

Long-term stability

≤ ±0.3 % of span (per year)

Settling time

< 2 ms

Process connections

Standard	Thread
EN 837	G 1/8 B ²⁾
	G 1/4 B
	G 1/4 female
	G 3/8 B
DIN 3852-E	G 1/4 A ^{1) 3)}
	M14 x 1.5 ³⁾
ANSI/ASME B1.20.1	1/8 NPT ²⁾
	1/4 NPT ¹⁾
	1/4 NPT female
ISO 7	R 1/4 ¹⁾
	R 3/8
KS	PT 1/4 ¹⁾
	PT 3/8
SAE	7/16-20 UNF BOSS ^{1) 4)}
	9/16-18 UNF BOSS ⁴⁾

1) Optional diameters 6 mm, 0.6 mm, 0.3 mm on request.

2) Maximum measuring range 0 ... 400 bar.

3) Sealing from NBR and FPM/FKM available.

4) The sealing is made of FPM/ FKM.

All process connections are available, as standard, with an entry bore of diameter 3.5 mm.

For dimensions see item "Dimensions in mm".

Operating conditions

Ingress protection (per IEC 60529)

The ingress protection depends on the type of electrical connection.

Designation	Ingress protection
Angular connector DIN 175301-803 A	IP 65
Angular connector DIN 175301-803 C	IP 65
Circular connector M12 x 1.5 (4-pin)	IP 67
Cable outlet, unshielded ^{1) 2)}	IP 67
Cable outlet, shielded	IP 67

1) up to a maximum of 80 °C permitted.

2) not cULus approved.

The stated ingress protection only applies when plugged in using mating connectors that have the appropriate ingress protection.

Vibration resistance

20 g (20 ... 2000 Hz, 120 min.) per IEC 60068-2-6 (vibration under resonance)

Shock resistance

40 g (6 ms) per IEC 60068-2-27 (mechanical shock)

Service life

10 million load cycles

Free fall test

Resistant to an impact onto concrete from 1 m

Temperatures

Permissible temperature ranges	
Operation	-30 ... +100 °C
Medium	-30 ... +100 °C
Storage	-30 ... +100 °C

Reference conditions (per IEC 61298-1)

Temperature

15 ... 25 °C

Atmospheric pressure

860 ... 1,060 mbar

Humidity

45 ... 75 % relative

Power supply


DC 24 V

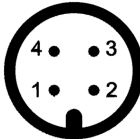
Electrical connections

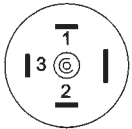
Electrical safety


Short-circuit resistance:	S+ vs. 0V
Reverse polarity protection:	UB vs. 0V
Overvoltage protection:	DC 36 V
Insulation voltage:	DC 750 V

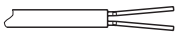
Connection diagrams

Angular connector DIN 175301-803 A			
		2-wire	3-wire
	UB	1	1
	0V	2	2
	S+	-	3

Circular connector M12 x 1			
		2-wire	3-wire
	UB	1	1
	0V	3	3
	S+	-	4

Angular connector DIN 175301-803 C			
		2-wire	3-wire
	UB	1	1
	0V	2	2
	S+	-	3

Cable outlet, shielded			
		2-wire	3-wire
	UB	brown	brown
	0V	blue	blue
	S+	-	black

Cable outlet, unshielded			
		2-wire	3-wire
	UB	brown	brown
	0V	green	green
	S+	-	white

Legend	
UB	Positive power supply terminal
0V	Reference potential
S+	Positive output terminal

Other connections available on request (e.g. Metri Pack 150 series).

Mating connectors are not included in the delivery.
Mating connectors (with and without cable) are available as accessories.

Materials

Non-wetted parts

Stainless steel 316L, PBT GF 30

Cable material (cable outlet): PVC

Wetted parts

Stainless steel 316L, 13-8 PH

Approvals, directives and certificates

CE conformity

- EMC directive 2004/108/EC, EN 61326 emission (group 1, class B) and immunity (industrial application)
- Pressure equipment directive 97/23/EC

Approvals

- cULus
- GOST

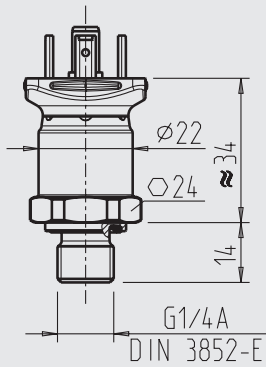
RoHS conformity

Yes

Dimensions in mm

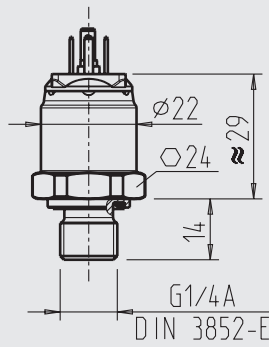
Complete instrument

Angular connector form A



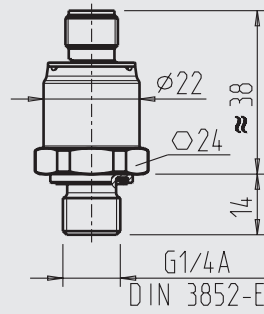
Weight: approx. 80 g

Angular connector form C



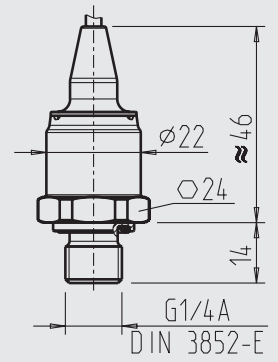
Weight: approx. 80 g

Circular connector M12 x 1



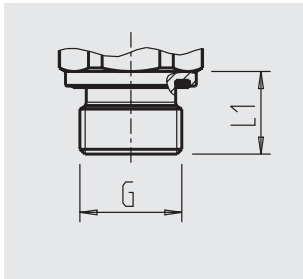
Weight: approx. 80 g

Cable outlet

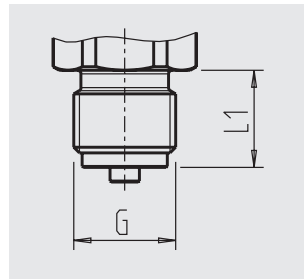


Weight: approx. 80 g

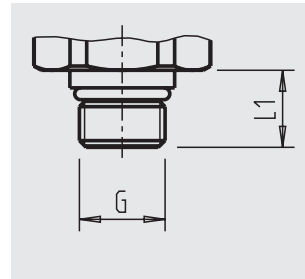
Process connections



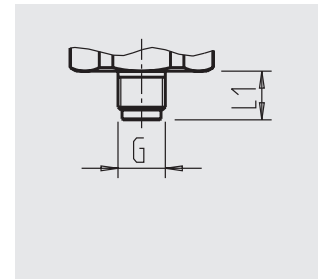
G	L1
G 1/4 A DIN 3852-E	14
M14 x 1.5 DIN 3852-E	14



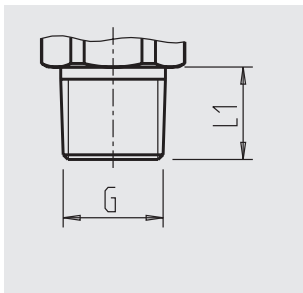
G	L1
G 1/4 B EN 837	13
G 3/8 B EN 837	16



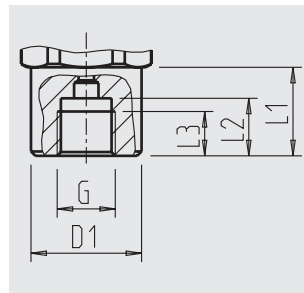
G	L1
9/16-18 UNF BOSS	13
7/16-20 UNF BOSS	12



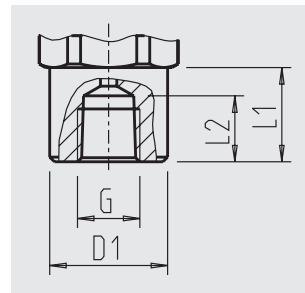
G	L1
G 1/8 B EN 837	10



G	L1
1/4 NPT	13
R 1/4	13
R 3/8	15
PT 1/4	13
PT 3/8	15



G	L1	L2	L3	D1
G 1/4	20	15	12	Ø 25



G	L1	L2	D1
1/4 NPT	20	14	Ø 25

For information on tapped holes and welding sockets, see Technical Information IN 00.14 at www.wika.com.

Accessories and spare parts

Mating connector

	Order number		
	without cable	with 2 m cable	with 5 m cable
Angular connector DIN 175301-803 A			
■ with cable gland, metric	11427567	11225793	11250186
■ with cable gland, conduit	11022485	-	-
Angular connector DIN 175301-803 C			
	1439081	11225823	11250194
Circular connector M12 x 1 (4-pin)			
■ straight	2421262	11250780	11250259
■ angled	2421270	11250798	11250232

Sealings for mating connectors

	Order number
Angular connector DIN 175301-803 A	1576240
Angular connector DIN 175301-803 C	11169479

Only use the accessories and spare parts listed above, otherwise it could lead to the loss of the approval.

Ordering information

Model / Measuring range / Output signal / Process connection / Electrical connection

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