

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 ... 6 bar to 0 ... 600 bar
- Non-linearity 0.5 %
- Output 4 ... 20 mA, 0 ... 10 V, 0 ... 5 V, 1 ... 5 V, 0.5 ... 4.5 V, 0.5 ... 4.5 V ratiometric
- Electrical connection: Angular connector form A and C, connector M12 x 1, cable outlet 2 m unshielded or shielded
- Process connection: G 1/4, 1/4 NPT, 7/16-20 UNF BOSS PT1/4, R1/4, G 1/4 female and others



Pressure transmitter model O-10

Description

The model O-10 pressure transmitter is developed for pressure measurement in general industrial applications. Due to its specifications, its features and its price, the O-10 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 O-10 offers a wealth of possibilities and is perfect for a variety of applications. The pressure transmitter offers a wide variety of process and electrical connections as well as all popular pressure ranges and output signals.

While the O-10 is manufactured in Germany, it is designed for the global market. To meet the needs of global applications, the O-10 offers international units and threads. Moreover, relevant approvals, such as those for the North American and Russian markets, have been submitted.

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	0 ... 10	0 ... 16	0 ... 25	0 ... 40	0 ... 60	0 ... 100
	0 ... 160	0 ... 250	0 ... 400	0 ... 600			
psi	0 ... 100	0 ... 160	0 ... 200	0 ... 250	0 ... 300	0 ... 400	0 ... 500
	0 ... 600	0 ... 750	0 ... 800	0 ... 1000	0 ... 1500	0 ... 2000	0 ... 3000
	0 ... 4000	0 ... 5000	0 ... 6000	0 ... 7500	0 ... 8000		

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

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.

Load in Ω

Current (2-wire): $\leq (\text{power supply} - 7 \text{ V}) / 0.02 \text{ A}$

Voltage (3-wire): $> U_{\text{max}} / 1 \text{ mA}$

Ratiometric (3-wire): $> 4.5 \text{ k}$

Voltage supply

Power supply

Current output: DC 8 ... 30 V

Voltage output: DC 8 ... 30 V

Voltage output (0 ... 10 V): DC 14 ... 30 V

Ratiometric output: 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 per 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: Signal current, maximum 25 mA

Voltage output: 5 mA

Accuracy

Non-linearity (IEC 61298-8)

≤ ± 0.5 % of span BFSL

For measuring ranges 0 ... 6 bar, 0 ... 10 bar, 0 ... 100 psi the following applies:

≤ ± 0.6 % of span BFSL

Measuring deviation of the zero signal

≤ ± 0.5 % of span

For measuring ranges 0 ... 6 bar, 0 ... 10 bar, 0 ... 100 psi the following applies:

≤ ± 0.7 % of span

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

Reference conditions (per IEC 61298-1)

Temperature: 15 ... 25 °C
Atmospheric pressure: 950 ... 1050 mbar
Humidity: 45 ... 75 % relative
Power supply: DC 24 V

Operating conditions

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

Resistant to an impact onto concrete from 1 m

Temperatures

Operation: -30 ... +100 °C
Storage: -30 ... +100 °C

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) 4)} PT 3/8 ⁴⁾
SAE	7/16-20 UNF BOSS ¹⁾ 9/16-18 UNF BOSS

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

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

2) Maximum measuring range 400 bar.

3) Sealing available in NBR and FPM/FKM.

4) Sealing made of FPM/FKM.

Materials

Non-wetted parts

Stainless steel 316L, PBT GF 30

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 interference immunity (industrial application)

■ Pressure equipment directive

97/23/EC

RoHS conformity

Yes

Electrical connections

Specifications

Description	Ingress protection	Cable material
Angular connector DIN 175301-803 A	IP 65	-
Angular connector DIN 175301-803 C	IP 65	-
Circular connector M12 x 1 (4-pin)	IP 67	-
Cable outlet, unshielded (2 m) ¹⁾	IP 67	PVC
Cable outlet, shielded (2 m)	IP 67	PVC

1) up to a maximum of 80 °C permitted

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

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

Mating connector are not included in the delivery.

Mating connectors (with and without cable) are available as accessories.

Electrical safety

Short-circuit resistance: S₊ vs. 0V

Reverse polarity protection: U_B vs. 0V

Overvoltage protection: DC 36 V

Insulation voltage: DC 750 V

Connection diagram

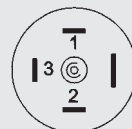
Angular connector DIN 175301-803 A



Assignment

	U _B	0V	S ₊
2-wire	1	2	-
3-wire	1	2	3

Angular connector DIN 175301-803 C



Assignment

	U _B	0V	S ₊
2-wire	1	2	-
3-wire	1	2	3

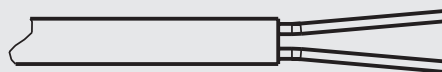
Circular connector M12 x 1, 4-pin



Assignment

	U _B	0V	S ₊
2-wire	1	3	-
3-wire	1	3	4

Cable outlet, unshielded



Assignment

	U _B	0V	S ₊
2-wire	brown	green	-
3-wire	brown	green	white

Cable outlet, shielded



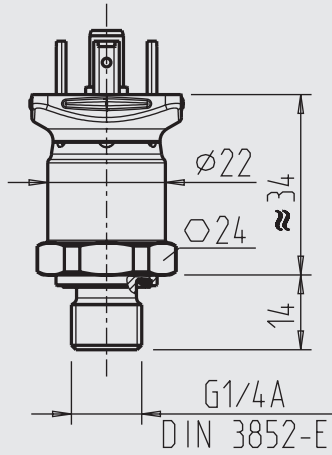
Assignment

	U _B	0V	S ₊
2-wire	brown	blue	-
3-wire	brown	blue	black

Dimensions in mm

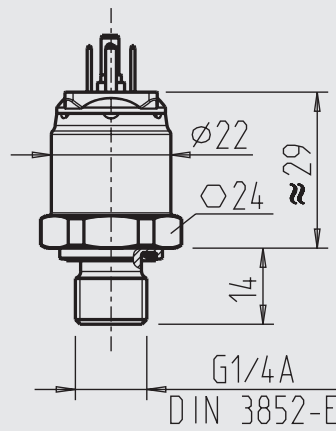
Pressure transmitter

with angular connector form A



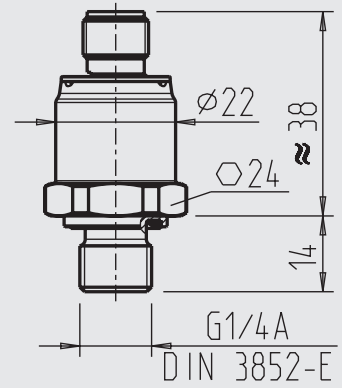
Weight: approx. 80 g

with angular connector form C



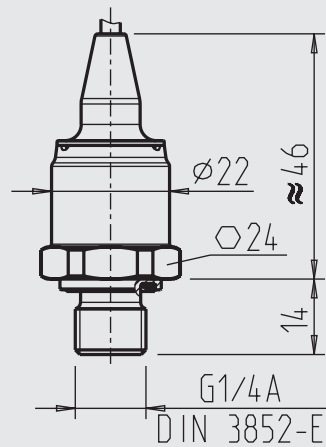
Weight: approx. 80 g

with M12 x 1 circular connector



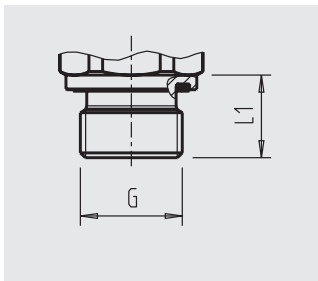
Weight: approx. 80 g

with cable outlet

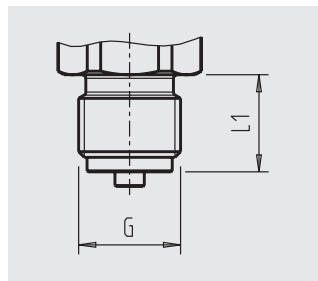


Weight: approx. 80 g

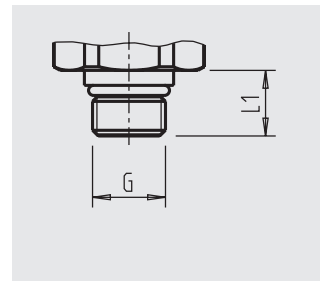
Process connections



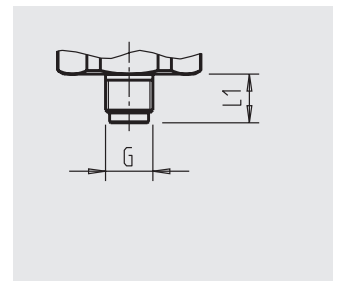
G	L1
G 1/4 A DIN 3852-E	14
M14 x 1.5	14



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

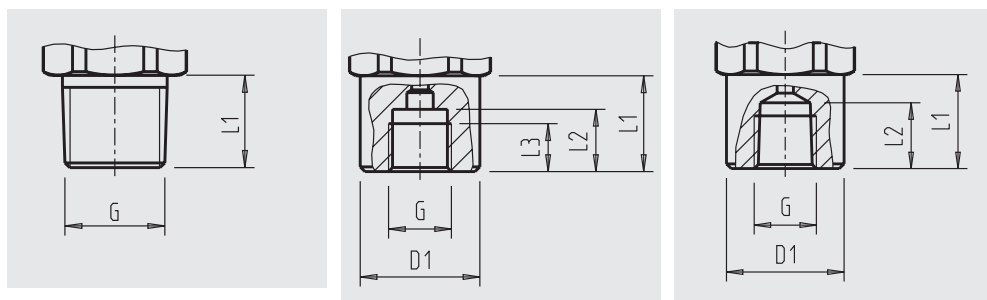


G	L1
9/16-18 UNF BOSS	13
7/16-20 UNF BOSS	12



G	L1
G 1/8 B EN 837	10

Process connections



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	L3
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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