

Pressure transmitter for general industrial applications

Model A-10

WIKA data sheet PE 81.60



Applications

- Machine building
- Machine tools
- Measurement and control technology
- Hydraulics and pneumatics
- Pumps and compressors

Special features

- Measuring ranges from 0 ... 1 bar to 0 ... 600 bar
- Non-linearity 0.25 % or 0.5 %
- Output signal 4 ... 20 mA, 0 ... 10 V, 0 ... 5 V and others
- Electrical connection: Angular connector form A and C, connector M12 x 1, cable outlet 2 m
- Process connection G 1/4 A DIN 3852-E, 1/4 NPT and others



Pressure transmitter model A-10

Description

The A-10 pressure transmitter for general industrial applications is not only notable for its compact design, but it also offers excellent quality at an extremely competitive price.

The user can choose between a non-linearity of 0.25 % and 0.5 %. A free test certificate provides information on the measuring points recorded during manufacture.

The A-10 is set up for worldwide use through the international cULus and GOST certification. The various pressure units and process connections required for particular operating conditions are available at short notice.

Measuring ranges

Relative pressure									
bar	Measuring range	0 ... 1	0 ... 1.6	0 ... 2.5	0 ... 4	0 ... 6	0 ... 10	0 ... 16	0 ... 25
	Overpressure limit	2	3.2	5	8	2	20	32	50
	Measuring range	0 ... 40	0 ... 60	0 ... 100	0 ... 160	0 ... 250	0 ... 400	0 ... 600	
	Overpressure limit	80	120	200	320	500	800	1200	
psi	Measuring range	0 ... 15	0 ... 25	0 ... 30	0 ... 50	0 ... 100	0 ... 160	0 ... 200	0 ... 300
	Overpressure limit	30	60	60	100	200	290	400	600
	Measuring range	0 ... 500	0 ... 1000	0 ... 1500	0 ... 2000	0 ... 3000	0 ... 5000	0 ... 10000	
	Overpressure limit	1000	1740	2900	4000	6000	10000	17400	

Absolute pressure									
bar	Measuring range	0 ... 1	0 ... 1.6	0 ... 2.5	0 ... 4	0 ... 6	0 ... 10	0 ... 16	0 ... 25
	Overpressure limit	2	3.2	5	8	12	20	32	50
psi	Measuring range	0 ... 15	0 ... 25	0 ... 30	0 ... 50	0 ... 100	0 ... 150	0 ... 200	0 ... 300
	Overpressure limit	30	60	60	100	200	290	400	600

Vacuum and +/- measuring range							
bar	Measuring range	-1 ... 0	-1 ... 0.6	-1 ... 1.5	-1 ... 3	-1 ... 5	-1 ... 9
	Overpressure limit	2	3.2	5	8	12	20
	Measuring range	-1 ... 15	-1 ... 24				
	Overpressure limit	32	50				
psi	Measuring range	-30 inHG ... 0	-30 inHG ... 15	-30 inHG ... 30	-30 inHG ... 60	-30 inHG ... 100	-30 inHG ... 160
	Overpressure limit	30	60	60	150	250	350
	Measuring range	-30 inHG ... 200	-30 inHG ... 300				
	Overpressure limit	450	600				

The given measuring ranges are also available in kg/cm², MPa and kPa.
Other measuring ranges available 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): ≤ (power supply - 8 V) / 0.02 A

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

Ratiometric (3-wire): > 4.5k

Voltage supply

Power supply ¹⁾

	Current	Voltage	DC 0 ... 10 V	Ratiometric
Standard	DC 8 ... 30 V	DC 8 ... 30 V	DC 14 ... 30 V	DC 5 V ± 10 %
Option	DC 8 ... 35 V ²⁾	DC 8 ... 35 V	DC 14 ... 35 V	-

1) 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.

2) Not possible with non-linearity 0.25 % BFSL

Total current consumption

Current output: Signal current, maximum 25 mA

Voltage output: 8 mA

Accuracy

Non-linearity per BFSL (IEC 61298-2)	Standard ≤ ± 0.5 % of span	Option ≤ ± 0.25 % of span
Non-repeatability	≤ 0.1 % of span	≤ 0.1 % of span
Long-term drift (per IEC 61298-2)	≤ ± 0.1% of span	≤ ± 0.1% of span
Signal noise	≤ ± 0.3 % of span	≤ ± 0.3 % of span
Settling time	< 4 ms	< 4 ms
Temperature error at 0 ... 80 °C	Typical: 1 % of span Maximum: 2.5 % of span	Typical: 1 % of span Maximum: 2.5 % of span
Measuring deviation of the zero signal	Typical: ≤ ± 0.5% of span Maximum: ≤ ± 0.8 % der Spanne	Typical: ≤ ± 0.15% of span Maximum: ≤ ± 0.4 % of span
Accuracy at room temperature ¹⁾	≤ ±1 % of span	≤ ± 0.5 % of span ≤ ± 0.6 % of span (at 0 ... 5 V)

1) Including non-linearity, hysteresis, zero offset and end value deviation (corresponds to measured error per IEC 61298-2). Calibrated in vertical mounting position with process connection facing downwards.

Reference conditions (per IEC 61298-1)

Temperature:	15 ... 25 °C
Atmospheric pressure:	950 ... 1050 mbar
Humidity:	45 ... 75 % relative
Nominal position:	Process connection lower mount
Power supply:	DC 24 V
Load:	see "Output signal"
Mounting position:	as required

Operating conditions

Mechanics

Vibration resistance:	10 g (IEC 60068-2-27, under resonance) 20 g available on request
Shock resistance:	500 g (IEC 60068-2-6, mechanical)
Service life:	10 million load cycles

Temperatures

Permissible temperature range			
	Medium	Ambient	Storage
Standard	0 ... +80 °C	0 ... +80 °C	-20 ... +80 °C
Option	-30 ... +100 °C	-30 ... +100 °C	-30 ... +100 °C

Process connections

Connections

Standard	Thread
EN 837	G 1/8 B 1)
	G 1/4 B
	G 1/4 female
	G 3/8 B
	G 1/2 B
DIN 3852-E 2)	G 1/4 A
	G 1/2 A
	M14 x 1.5
ANSI/ASME B1.20.1	1/8 NPT 1)
	1/4 NPT
	1/4 NPT female
	1/2 NPT
DIN 16288	M20 x 1.5
ISO 7	R 1/4
	R 3/8
	R 1/2
KS	PT 1/4
	PT 1/2
	PT 3/8
SAE 2) 3)	7/16-20 UNF O-ring BOSS
	9/16-18 UNF O-ring BOSS

1) Maximum measuring range 400 bar.

2) Maximum overpressure limit 600 bar

3) Maximum permissible temperature -10 ... +100 °C

Sealings

	EN 837	DIN 3852-E	UNF BOSS
Standard	Cu	NBR	FKM
Option	Stainless steel	FKM	-

The sealings listed under "Standard" are included in the delivery.

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

Optional diameters for:

- G 1/4 A DIN 3852-E: Ø 6 mm, Ø 0.6 mm, Ø 0.3 mm
- 1/4 NPT: Ø 6 mm, Ø 0.6 mm, Ø 0.3 mm

Electrical connections

Specifications

Description	Ingress protection	Wire cross-section	Cable diameter	Cable material
Angular connector DIN 175301-803 A				
■ with mating connector	IP 65	up to max. 1.5 mm ²	6 ... 8 mm	-
■ with solid laid cable	IP 65	3 x 0.75 mm ²	6 mm	PUR
Angular connector DIN 175301-803 C				
■ with mating connector	IP 65	up to max. 0.75 mm ²	4.5 ... 6 mm	-
■ with solid laid cable	IP 65	4 x 0.75 mm ²	5.9 mm	PUR
Circular connector M12 x 1 (4-pin)				
■ without mating connector	IP 67	-	-	-
■ straight with solid laid cable	IP 67	3 x 0.34 mm ²	4.4 mm	PUR
■ angled with solid laid cable	IP 67	3 x 0.34 mm ²	4.4 mm	PUR
Cable outlet unshielded	IP 67	3 x 0.34 mm ²	4 mm	PUR

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

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

Cable lengths of 2 m or 5 m are available.

Electrical safety

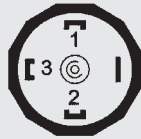
Short-circuit resistance: S₊ vs. 0V

Reverse polarity protection: U_B vs. 0V

Insulation voltage: DC 500 V

Connection diagram

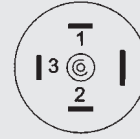
Angular connector DIN 175301-803 A



Assignment

2-wire	UB	0V	
with mating connector with cable	1 brown	2 blue	
3-wire	UB	0V	S+
with mating connector with cable	1 brown	2 blue	3 black

Angular connector DIN 175301-803 C



Assignment

2-wire	UB	0V	
with mating connector with cable	1 brown	2 blue	
3-wire	UB	0V	S+
with mating connector with cable	1 brown	2 blue	3 black

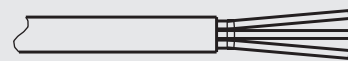
Circular connector M12 x 1, 4-pin



Assignment

2-wire	UB	0V	
with mating connector with cable	1 brown	3 blue	
3-wire	UB	0V	S+
with mating connector with cable	1 brown	3 blue	4 black

Cable outlet



Assignment

2-wire	UB	0V	
	brown	blue	
3-wire	UB	0V	S+
	brown	blue	black

Materials

Wetted parts

Stainless steel 316L
from 10 bar 316L and 13-8 PH

Non-wetted parts

Stainless steel 316L
HNBR
PA66

For sealing materials see „Process connections“

Pressure transmission medium

Synthetic oil: up to 0 ... 6 bar relative,
up to 0 ... 25 bar absolute
Dry measuring cell: from 0 ... 10 bar relative

Approvals, directives and certificates

Approvals

cULus, GOST

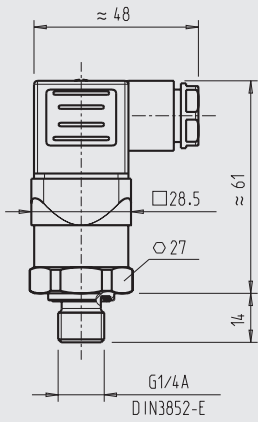
CE conformity

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

Dimensions in mm

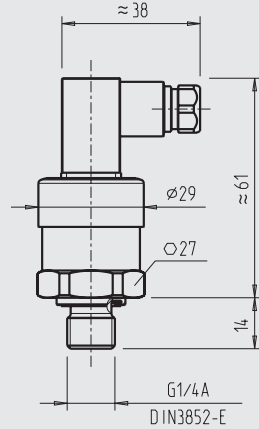
Pressure transmitter

with angular connector form A



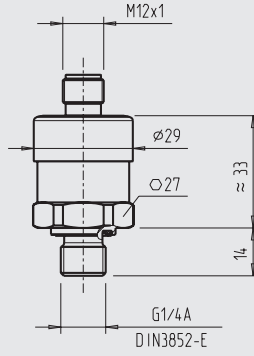
Weight: approx. 80 g

with angular connector form C



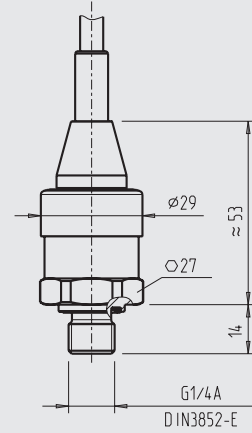
Weight: approx. 80 g

with M12 x 1 circular connector



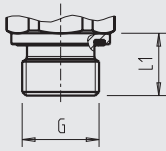
Weight: approx. 80 g

with cable outlet, PUR cable, unshielded

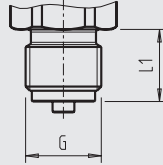


Weight: approx. 80 g

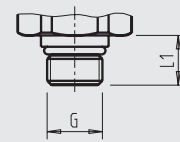
Process connections



G	L1
G 1/4 A DIN 3852-E	12
G 1/2 A DIN 3852-E	14
M14 x 1.5	12

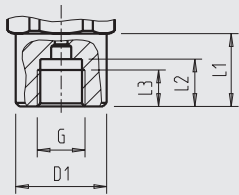


G	L1
G 1/4 B EN 837	13
G 3/8 B EN 837	16
G 1/2 B EN 837	20
M20 x 1.5	20



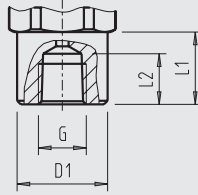
G	L1
9/16-18 UNF BOSS	10
7/16-20 UNF BOSS	9

Female thread

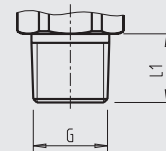


G	L1	L2	L3	D1
G 1/4 EN 837	20	13	10	Ø 25

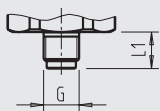
Female thread



G	L1	L2	D1
1/4 NPT	20	14	Ø 25



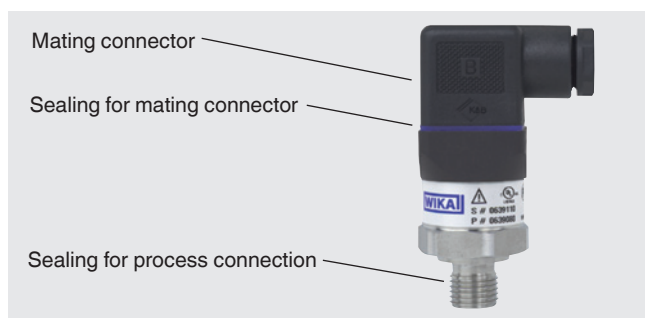
G	L1
1/8 NPT	10
1/4 NPT	13
1/2 NPT	19
R 1/4	13
R 3/8	15
R 1/2	19
PT 1/4	13
PT 3/8	15
PT 1/2	19



G	L1
G 1/8 B EN 837	10

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 1.5, 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

Sealings for process connection

	Order number			
	Cu	Stainless steel	NBR	FKM
G1/4 EN 837, M12x1.5	11250810	11250844	-	-
G1/2 EN 837, M20x1.5	11250861	11251042	-	-
G1/8 EN 837	11251051	-	-	-
G1/4 DIN 3852-E	-	-	1537857	1576534
G1/2 DIN 3852-E	-	-	1039067	1039075

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 / Power supply / Non-linearity / Temperature range / Process connection / Sealing / Electrical connection

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