Pressure transmitter
For general industrial applications
Model A-10

For further approvals, see Page 10

Configurator

Standard articles

Applications

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

Special features

- Excellent quality and proven technology
- Exceptionally large variety covers almost all applications
- All configurable variants are available at short notice from quantities of 1 upwards
- Particularly cost-efficient

Pressure transmitter, model A-10

Description

The field-proven model A-10 pressure transmitter (pressure sensor) is the all-rounder for pressure measurement in industrial environments. Compactly built, it can be integrated into a wide range of machine designs. The many measuring ranges, and special measuring ranges, contribute to its universal applicability.

Excellent quality and proven technology
Our many years of experience and precise knowledge of customer needs have been incorporated into the development of the model A-10. It has been proving itself in countless applications for over ten years. The consistently high quality and its reliable function are appreciated worldwide and regularly confirmed by both internal and external audits. This bestseller can tolerate up to 100 million load cycles with almost constant precision.

Exceptionally large variety covers almost all applications
Depending on the requirement, the model A-10 measures gauge pressure, vacuum and absolute pressure. It can be flexibly configured into over 2 million variants and can thus be effortlessly integrated into almost any plant concept.

All configurable variants are available at short notice from quantities of 1 upwards
Every custom-configured model A-10 will be ready for shipment, starting from a batch size of 1, no later than five working days after the order is placed. Large quantities can also be delivered quickly. The short delivery times help both OEMs to meet short production times and distributors to procure the right product for their customers quickly.

Particularly cost-efficient
The model A-10 is particularly cost-efficient and offers very good performance, matched to the majority of applications in terms of precision and robustness. The high reliability and long service life ensure low maintenance and replacement costs.

Smart in sensing

Data sheets showing similar products:
Pressure transmitter for demanding industrial applications; model S-20; see data sheet PE 81.61
Pressure sensor with IO-Link; model A-1200; see data sheet PE 81.90

Specifications

Optionally the model A-10 is available with an improved non-linearity. Depending on the selected non-linearity the following values result:

Accuracy specifications	Non-linearity ≤ ±0.5 % of span	Non-linearity ≤ ±0.25 % of span
Non-linearity per BFSL per IEC 61298-2		
Measuring range ≤ 0.1 bar [≤ 1.45 psi]	≤ ±0.5 % of span	-
Measuring range > 0.1 bar [> 1.45 psi]	≤ ±0.5 % of span	≤ ±0.25 % of span [1]
Accuracy	→ See “Max. measured error per IEC 61298-2”	
Max. measured error per IEC 61298-2		
Measuring range ≥ 0.6 bar [≥ 8.7 psi]	≤ ±1 % of span	≤ ±0.5 % of span
Measuring range ≥ 0.4 bar [≥ 5.8 psi]	≤ ±1.2 % of span	≤ ±0.7 % of span
Measuring range ≥ 0.25 bar [≥ 3.6 psi]	≤ ±1.3 % of span	≤ ±0.8 % of span
Measuring range ≥ 0.16 bar [≥ 2.3 psi]	≤ ±1.5 % of span	≤ ±1 % of span
Measuring range ≥ 0.1 bar [≥ 1.45 psi]	≤ ±1.8 % of span	-
Measuring range ≥ 0.05 bar [≥ 0.73 psi]	≤ ±2.4 % of span	-
Zero point error [2] [3]		
4 ... 20 mA / DC 1 ... 5 V / DC 0.5 ... 4.5 V / DC 0.5 ... 4.5 V ratiometric	≤ ±0.3 % of span	≤ ±0.2 % of span
DC 0 ... 10 V	≤ ±0.5 % of span	≤ ±0.4 % of span
DC 0 ... 5 V [4]	≤ ±0.6 % of span	-

1) Not possible with output signal DC 0 ... 5 V.
2) Measuring ranges ≤ 0.1 bar [≤ 1.45 psi] (or equivalent) only possible with ≤ ±0.5 % of span.
3) Outside reference conditions, add the temperature hysteresis for measuring ranges < 0.6 bar [< 8.7 psi].
4) Not possible with measuring ranges ≤ 0.1 bar [≤ 1.45 psi] (or equivalent).

Further details on: accuracy specifications		
Signal noise	≤ 0.2 % of span	
Non-repeatability per IEC 61298-2		
Measuring range < 0.1 bar [< 1.45 psi]	≤ 0.2 % of span	
Measuring range > 0.1 bar [> 1.45 psi]	≤ 0.1 % of span	
Temperature error at 0 ... 80 °C [32 ... 176 °F]		
-	Typical	≤ ±1 % of span
Measuring range < 1 bar [< 14.5 psi]	Maximum	≤ ±2.5 % of span
Measuring range ≥ 1 bar [≥ 14.5 psi]	Maximum	≤ ±1.5 % of span
Measuring range ≥ 10 bar [≥ 145 psi]	Maximum	≤ ±2 % of span
Measuring range > 25 bar [> 360 psi]	Maximum	≤ ±1.5 % of span
Temperature hysteresis -30 ... +100°C [-22 ... +212 °F] for measuring ranges < 0.6 bar [< 8.7 psi]		
Measuring range < 0.6 bar [< 8.7 psi]	Gauge pressure	≤ 0.2 % of span
	Absolute pressure	≤ 0.2 % of span
Measuring range < 0.4 bar [< 5.8 psi]	Gauge pressure	≤ 0.3 % of span
	Absolute pressure	≤ 0.3 % of span
Measuring range < 0.25 bar [< 3.6 psi]	Gauge pressure	≤ 0.5 % of span
	Absolute pressure	≤ 0.5 % of span
Measuring range < 0.16 bar [< 2.3 psi]	Gauge pressure	≤ 0.7 % of span
	Absolute pressure	≤ 0.8 % of span
Measuring range < 0.1 bar [< 1.45 psi]	Gauge pressure	≤ 1.4 % of span

Further details on: accuracy specifications	
Long-term drift per IEC 61298-2	
Measuring range ≤ 0.1 bar [≤ 1.45 psi]	≤ ±0.5 % of span [1]
Measuring range ≤ 0.4 bar [≤ 5.8 psi]	≤ ±0.2 % of span
Measuring range > 0.4 bar [> 5.8 psi]	≤ ±0.1 % of span
Additional zero point error depending on the mounting position for measuring ranges ≤ 1 bar [≤ 15 psi]	
Mounting position 180°, vertical, top process connection	≤ 1 mbar [≤ 0.015 psi]
Mounting position 90°, horizontal	≤ 0.6 mbar [≤ 0.009 psi]
Reference conditions	Per IEC 61298-1

1) Outside reference conditions, add the temperature hysteresis for measuring ranges ≤ 0.1 bar [≤ 1.45 psi].

Measuring ranges, gauge pressure

bar	
0 ... 0.05	0 ... 10 [1]
0 ... 0.1	0 ... 16 [1]
0 ... 0.16	0 ... 25 [1]
0 ... 0.25	0 ... 40
0 ... 0.4	0 ... 60
0 ... 0.6	0 ... 100
0 ... 1	0 ... 160
0 ... 1.6	0 ... 250
0 ... 2.5	0 ... 400
0 ... 4	0 ... 600
0 ... 6	0 ... 1,000

1) If the medium is water, the “increased stability” option should be used.

psi	
0 ... 1	0 ... 300 [1]
0 ... 5	0 ... 500
0 ... 15	0 ... 1,000
0 ... 25	0 ... 1,500
0 ... 30	0 ... 2,000
0 ... 50	0 ... 3,000
0 ... 100	0 ... 5,000
0 ... 160 [1]	0 ... 10,000
0 ... 200 [1]	0 ... 15,000

1) If the medium is water, the “increased stability” option should be used.

inWC	
0 ... 20	0 ... 120
0 ... 40	0 ... 150
0 ... 60	0 ... 200
0 ... 80	0 ... 250
0 ... 100	0 ... 400

Measuring ranges, absolute pressure

bar abs.	
0 ... 0.1	0 ... 2.5
0 ... 0.16	0 ... 4
0 ... 0.25	0 ... 6
0 ... 0.4	0 ... 10
0 ... 0.6	0 ... 16
0 ... 1	0 ... 25
0 ... 1.6	-

psi abs.	
0 ... 5	0 ... 100
0 ... 15	0 ... 150
0 ... 25	0 ... 200
0 ... 30	0 ... 300
0 ... 50	-

inWC abs.	
0 ... 40	0 ... 150
0 ... 60	0 ... 200
0 ... 80	0 ... 250
0 ... 100	0 ... 400
0 ... 120	-

Vacuum and compound measuring ranges

bar	
-0.025 ... +0.025	-0.3 ... +0.3
-0.05 ... 0	-0.4 ... 0
-0.05 ... +0.05	-0.5 ... +0.5
-0.05 ... +0.15	-0.6 ... 0
-0.05 ... +0.2	-1 ... 0
-0.05 ... +0.25	-1 ... +0.6
-0.1 ... 0	-1 ... +1.5
-0.1 ... +0.1	-1 ... +3
-0.15 ... +0.15	-1 ... +5
-0.16 ... 0	-1 ... +9 [1]
-0.2 ... +0.2	-1 ... +15 [1]
-0.25 ... 0	-1 ... +24 [1]

1) If the medium is water, the “increased stability” option should be used.

→ Other measuring ranges on request.

psi	
-1 ... 0	-30 inHg ... +100
-30 inHg ... 0	-30 inHg ... +160 [1]
-30 inHg ... +15	-30 inHg ... +200 [1]
-30 inHg ... +30	-30 inHg ... +300 [1]
-30 inHg ... +60	-

1) If the medium is water, the “increased stability” option should be used.

inWC	
-10 ... +10	-80 ... 0
-20 ... 0	-100 ... 0
-20 ... +20	-100 ... +100
-40 ... 0	-120 ... 0
-40 ... +40	-125 ... +125
-50 ... +50	-150 ... 0
-60 ... 0	-200 ... +200
-75 ... +75	-250 ... 0

Further details on: measuring range		
Units	■ bar ■ psi ■ inWC ■ mbar ■ kg/cm² ■ MPa ■ kPa	
Maximum working pressure	→ Corresponds to the upper measuring range value / measuring range full scale value → Any permanent operation above the maximum working pressure is not permissible	
Overpressure limit	The overpressure limit is based on the measuring range. Depending on the selected process connection and the seal, restrictions in overpressure limit can result.	
bar	Measuring ranges ≤ 0.1 bar	0.2 bar
	Measuring ranges ≤ 0.4 bar	1 bar
	Measuring ranges < 1.6 bar	3 bar
	Measuring ranges ≥ 1.6 bar	2 times
	Measuring range 1,000 bar	1.43 times
bar abs.	Measuring ranges ≤ 0.4 bar abs.	1 bar abs.
	Measuring ranges < 1.6 bar abs.	3 bar abs.
	Measuring ranges ≥ 1.6 bar abs.	2 times
psi	Measuring ranges ≤ 1 psi	3 psi
	Measuring ranges ≤ 5 psi	14.5 psi
	Measuring ranges < 25 psi	45 psi
	Measuring ranges ≥ 25 psi	2 times
	Measuring ranges 160 psi, 1,000 psi, 1,500 psi and 10,000 psi	1.7 times
	Measuring range 15,000 psi	1.43 times
psi abs.	Measuring ranges ≤ 5 psi abs.	14.5 psi abs.
	Measuring ranges < 25 psi abs.	45 psi abs.
	Measuring ranges ≥ 25 psi abs.	2 times

Further details on: measuring range		
inWC	Measuring ranges ≤ 40 inWC	80 inWC
	Measuring ranges ≤ 200 inWC	400 inWC
	Measuring ranges ≤ 400 inWC	1,200 inWC
inWC abs.	Measuring ranges ≤ 200 inWC abs.	400 inWC abs.
	Measuring ranges ≤ 400 inWC abs.	1,200 inWC abs.
Vacuum resistance	Yes (restriction with measuring ranges ≤ 0.1 bar [≤ 1 psi, 40 inWC]: -0.2 bar [-3 psi, -80 inWC])	
Leakage rate	■ < $5*10^{-3}$ mbar*l/s ■ < $1*10^{-6}$ mbar*l/s 1) 2)	

1) With hydrogen applications
2) With applications of hazardous fluids, liquids and gases in accordance with directive 2014/68/EU article 13, regulation (EC) no. 1272/2008 or GHS1.

→ Further overpressure limits on request

Process connection				
Standard	**Thread size**	**Max. measuring range**	**Overpressure limit**	**Seal**
EN 837	G ⅛ B	400 bar [5,000 psi]	572 bar [8,290 psi]	Copper
	G ¼ B	1,000 bar [15,000 psi]	1,480 bar [21,400 psi]	■ Copper ■ Stainless steel
	G ¼ female thread	1,000 bar [15,000 psi]	1,480 bar [21,400 psi]	Without
	G ⅜ B	1,000 bar [15,000 psi]	1,480 bar [21,400 psi]	■ Copper ■ Stainless steel
	G ½ B	1,000 bar [15,000 psi]	1,480 bar [21,400 psi]	■ Copper ■ Stainless steel
DIN EN ISO 1179-2	G ¼ A	600 bar [8,000 psi]	858 bar [12,440 psi]	■ NBR ■ EPDM
		1,000 bar [15,000 psi]	1,480 bar [21,400 psi]	FPM/FKM
	G ½ A	600 bar [8,000 psi]	858 bar [12,440 psi]	■ NBR ■ FPM/FKM
DIN EN ISO 9974-2	M14 x 1.5	600 bar [8,000 psi]	858 bar [12,440 psi]	■ NBR ■ FPM/FKM ■ EPDM
ANSI/ASME B1.20.1	⅛ NPT	400 bar [5,000 psi]	572 bar [8,290 psi]	-
	¼ NPT	1,000 bar [15,000 psi]	1,480 bar [21,400 psi]	
	¼ NPT, female thread	1,000 bar [15,000 psi]	1,480 bar [21,400 psi]	
	½ NPT	1,000 bar [15,000 psi]	1,480 bar [21,400 psi]	
DIN 16288	M20 x 1.5	1,000 bar [15,000 psi]	1,480 bar [21,400 psi]	■ Copper ■ Stainless steel
ISO 7	R ¼	1,000 bar [15,000 psi]	1,480 bar [21,400 psi]	-
	R ⅜	1,000 bar [15,000 psi]	1,480 bar [21,400 psi]	
	R ½	1,000 bar [15,000 psi]	1,480 bar [21,400 psi]	
KS	PT ¼	1,000 bar [15,000 psi]	1,480 bar [21,400 psi]	-
	PT ½	1,000 bar [15,000 psi]	1,480 bar [21,400 psi]	
	PT ⅜	1,000 bar [15,000 psi]	1,480 bar [21,400 psi]	
SAE J514	7/16-20 UNF O-ring BOSS	600 bar [8,000 psi]	858 bar [12,440 psi]	FPM/FKM
-	Flange connection	100 bar [1,000 psi]	143 bar [2,070 psi]	Without

Details must be tested separately in the respective application. The specified values for the overpressure limit serve only as a rough orientation. The values depend on the temperature, the seal used, the selected torque, the type and material of the mating thread and the prevailing operating conditions.

Further details on: process connection	
Max. measuring range	→ See table “Process connection” on page 5
Overpressure limit	→ See table “Process connection” on page 5
Seal	→ See table “Process connection” on page 5
Pressure port diameter	■ 3.5 mm (standard for all process connections) ■ 0.6 mm (compatible with all male threads) ■ 0.3 mm (compatible with all male threads) ■ 6 mm (compatible with G ¼ A, others on request) ■ T-restrictor possible (for process connections G ¼ B, G ⅜ B, G ½ B and M20 x 1.5)
Possible restrictions	Depending on the choice of seal on the process connection, there may be restrictions in the permissible temperature range.
NBR	-30 … +100 °C [-22 ... +212 °F]
FPM/FKM	■ -20 … +100 °C [-4 ... +212 °F] ■ -40 … +100 °C [-40 ... +212 °F]
EPDM	-40 … +100 °C [-40 ... +212 °F]
Copper	-40 … +100 °C [-40 ... +212 °F]
Stainless steel	-40 … +100 °C [-40 ... +212 °F]

Output signal		
Signal type		
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	
Load Ω		
Current (2-wire)	≤ (auxiliary power - 8 V) / 0.02 A	
Voltage (3-wire)	> Maximum output signal / 1 mA	
Ratiometric (3-wire)	> 10k	
Voltage supply		
Auxiliary power	Output signal 4 ... 20 mA	■ DC 8 ... 30 V ■ DC 8 ... 35 V [1) 2)]
	Output signal DC 0 ... 5 V [1) 3)]	■ DC 8 ... 30 V ■ DC 8 ... 35 V
	Output signal DC 1 ... 5 V	■ DC 8 ... 30 V ■ DC 8 ... 35 V
	Output signal DC 0.5 ... 4.5 V	■ DC 8 ... 30 V ■ DC 8 ... 35 V
	Output signal DC 0 ... 10 V	■ DC 14 ... 30 V ■ DC 14 ... 35 V
	Output signal DC 0.5 ... 4.5 V, ratiometric	DC 5 V ±10 %
Current supply	Current (2-wire)	Signal current, max. 25 mA
	Voltage (3-wire)	8 mA
	Ratiometric (3-wire)	8 mA

Output signal		
Dynamic behaviour		
Settling time per IEC 61298-2	Measuring range ≥ 0.4 bar [≥ 5.8 psi]	< 1 ms [4]
	Measuring range < 0.4 bar [< 5.8 psi]	< 1 min
Switch-on time	Measuring range ≥ 0.4 bar [≥ 5.8 psi]	< 15 ms
	Measuring range < 0.4 bar [< 5.8 psi]	< 1 min

1) Not possible with non-linearity 0.25 % BFSL.
2) Only possible for temperatures to 80 °C [176 °F].
3) Not possible with measuring ranges ≤ 0.1 bar [≤ 1.45 psi] (or equivalent).
4) < 300 ms with DNV approval and measuring range ≥ 0.4 bar [≥ 5.8 psi] ... ≤ 0.6 bar [≤ 8.7 psi].

→ Other output signals on request.

Electrical connection				
Connection type	**IP code** [1]	**Wire cross-section**	**Cable diameter**	**Cable material**
Angular connector DIN EN 175301-803 A				
With mating connector, PG9 (standard)	IP65	To max. 1.5 mm²	6 ... 8 mm	-
With mating connector, PG11	IP65	To max. 1.5 mm²	8 ... 10 mm	
With mating connector, PG13.5 [2]	IP65	To max. 1.5 mm²	10 ... 14 mm	
With moulded cable [3]	IP65	3 x 0.75 mm²	6 mm	PUR
Angular connector DIN EN 175301-803 C [3]				
With mating connector	IP65	To max. 0.75 mm²	4.5 ... 6 mm	-
Circular connector M12 x 1 (4-pin)				
Without mating connector	IP67	-	-	-
Straight with moulded cable [3]	IP67	3 x 0.34 mm²	4.3 mm	PUR
Angled with moulded cable [3]	IP67	3 x 0.34 mm²	4.3 mm	PUR
Cable outlet				
Unshielded [3]	IP67	3 x 0.34 mm²	4 mm	PUR
OEM version, unshielded [4]	IP67	3 x 0.14 mm²	2.85 mm	TPU

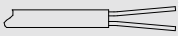
1) The stated IP codes only apply when plugged in using mating connectors that have the appropriate IP code.
2) Not feasible with cULus approval.
3) Not feasible with DNV approval.
4) To max. 90 °C [194 °F].

Further details on: electrical connection	
Connection type	→ See table “Electrical connection” on page 7
Wire cross-section	→ See table “Electrical connection” on page 7
Cable diameter	→ See table “Electrical connection” on page 7
Pin assignment	→ See table “Pin assignment”
Ingress protection (IP code) per IEC 60529	→ See table “Electrical connection” on page 7
Short-circuit resistance	S+ vs. U-
Reverse polarity protection	U+ vs. U- No reverse polarity protection with ratiometric output signal
Insulation voltage	DC 500 V

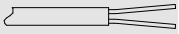
Pin assignment

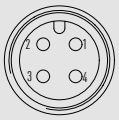
All connectors with moulded cable have the same colour assignment as the unshielded cable outlet.

Angular connector DIN 175301-803 A			
		2-wire	3-wire
	U_+	1	1
	U-	2	2
	S+	-	3

Cable outlet, unshielded			
		2-wire	3-wire
	U_+	Brown	Brown
	U-	Blue	Blue
	S+	-	Black

Angular connector DIN 175301-803 C			
		2-wire	3-wire
	U_+	1	1
	U-	2	2
	S+	-	3

Cable outlet, OEM version, unshielded			
		2-wire	3-wire
	U_+	Brown	Brown
	U-	Blue	Blue
	S+	-	Black

Circular connector M12 x 1 (4-pin)			
		2-wire	3-wire
	U_+	1	1
	U-	3	3
	S+	-	4

Legend

U_+ Positive power supply terminal
U- Negative power supply terminal
S+ Analogue output

Material	
Material (wetted)	
< 10 bar [< 150 psi]	Stainless steel 316L
≥ 10 bar [≥ 150 psi]	Stainless steel 316L and PH grade steel
≤ 25 bar abs. [≤ 400 psi abs.]	Stainless steel 316L
Material (in contact with the environment)	■ Stainless steel 316L ■ HNBR ■ PA and PBT ■ TPU and PUR (cable outlet)
Pressure transmission medium	
< 10 bar [< 150 psi]	Synthetic oil
≥ 10 bar [≥ 150 psi]	Dry measuring cell
≤ 25 bar abs. [≤ 400 psi abs.]	Synthetic oil

Operating conditions			
	Medium temperature limit	**Ambient temperature limit** [2) 5)]	**Storage temperature limit**
Temperature ranges [1)]			
Voltage signal, current signal and ratiometric	0 ... 80 °C [32 ... 176 °F]	0 ... 80 °C [32 ... 176 °F]	-40 ... +70 °C [-40 ... +158 °F]
Extended temperature ranges [1)]			
Voltage signal	-30 ... +100 °C [-22 ... +212 °F]	-30 ... +100 °C [-22 ... +212 °F]	-40 ... +70 °C [-40 ... +158 °F]
Current signal [3) 4)]	-40 ... +100 °C [-40 ... +212 °F]	-40 ... +100 °C [-40 ... +212 °F]	-40 ... +70 °C [-40 ... +158 °F]

1) For restrictions of the temperature ranges due to the seal used, see “Further details on: process connection”.
2) Restrictions and derating of the ambient temperature depend on the medium temperature.
3) With cULus approval the minimum ambient and medium temperature is -30 °C [-22 °F].
4) Only with auxiliary power DC 8 ... 30 V.
5) Only with housed mounting location that is protected from condensation.

Further details on: operating conditions		
Humidity	0 ... 90 % relative humidity (non-condensing)	
Operating altitude	≤ 2,000 m above seal level	
Pollution degree	2	
Overvoltage category	I	
Vibration resistance per IEC 60068-2-6	■ 10g ■ 20g (≥ -30 °C [-22 °F]) [1)] (on request)	
Shock resistance per IEC 60068-2-27	With ≥ -30 °C [-22 °F]	500g
	With < -30 °C [-22 °F]	100g
Ingress protection (IP code) per IEC 60529	→ See “Electrical connection”	
Service life		
Measuring range ≥ 600 bar [≥ 8,000 psi]	10 million load cycles	
Measuring range > 0.1 bar [> 1 psi]	100 million load cycles	
Measuring range ≤ 0.1 bar [≤ 1 psi]	10 million load cycles	

1) With DNV approval only feasible for measuring range ≥ 0 ... 1.6 bar [≥ 0 ... 25 psi].

Options for special media	
Oil- and grease-free	
Residual hydrocarbon	< 1,000 mg/m²
Water (increased stability)	
Measuring ranges	10 ... 25 bar [150 ... 360 psi]

Packaging and instrument labelling	
Packaging	■ Individual packaging ■ Multiple packaging (up to 20 pieces possible)
Instrument labelling	■ WIKA product label, glued ■ Customised product label on request

Approvals

Logo	Description	Region
CE	**EU declaration of conformity**	European Union
	EMC Directive EN 61326 emission (group 1, class B) and immunity (industrial application)	
	Pressure Equipment Directive	
	RoHS directive	
EAC	**EAC**	Eurasian Economic Community
	EMC Directive	
c UL us LISTED	**UL** Safety (e.g. electr. safety, overpressure, ...)	USA and Canada

Optional approvals

Logo	Description	Region
	PAC Kazakhstan Metrology, measurement technology	Kazakhstan
-	**MChS** Permission for commissioning	Kazakhstan
	PAC Ukraine Metrology, measurement technology	Ukraine
	PAC Uzbekistan Metrology, measurement technology	Uzbekistan
DNV	**DNV** [1] Ships, shipbuilding (e.g. offshore)	Germany
-	**CRN** Safety (e.g. electr. safety, overpressure, ...)	Canada
NSF	**NSF** NSF/ANSI/CAN 61 Drinking Water System Components – Health Effects	USA and Canada

1) Not for measuring ranges < 0.16 bar [< 2.3 psi] and not for medium temperature range -40 ... +100 °C [-40 ... +212 °F].

Manufacturer's declaration

Logo	Description
-	**China RoHS directive**
MTTF	> 100 years

Test report

Test report	
Non-linearity 0.5 %	3 measuring points
Non-linearity 0.25 %	5 measuring points

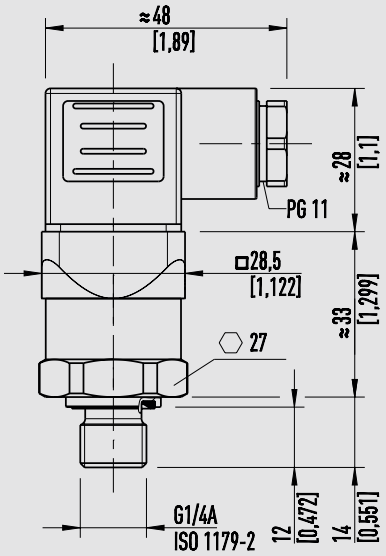
Certificates

Certificates	
Certificate	2.2 test report per EN 10204 (e.g. state-of-the-art manufacturing, material proof, indication accuracy)

→ For approvals and certificates, see website

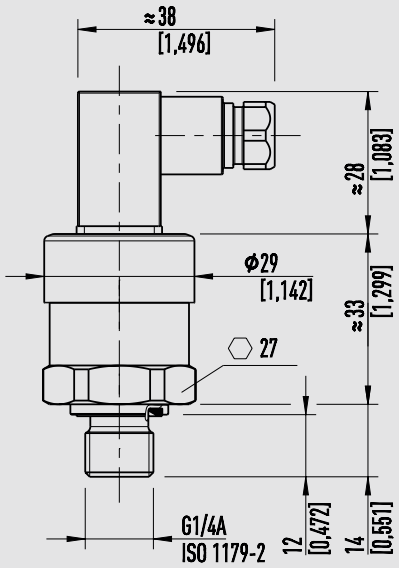
Dimensions in mm [in]

With angular connector form A



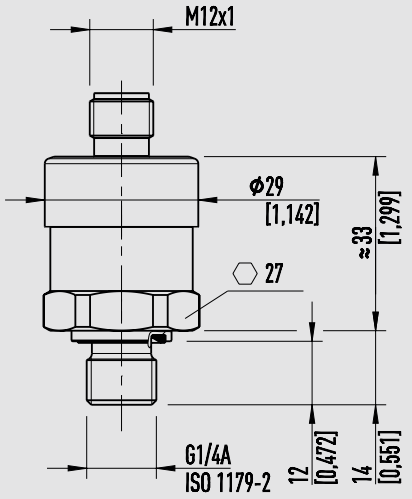
Weight: approx. 80 g [0.18 lb]

With angular connector form C



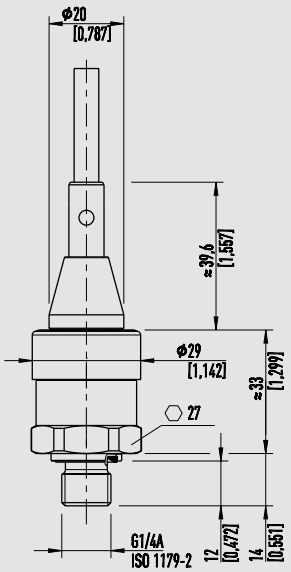
Weight: approx. 80 g [0.18 lb]

With circular connector M12 x 1



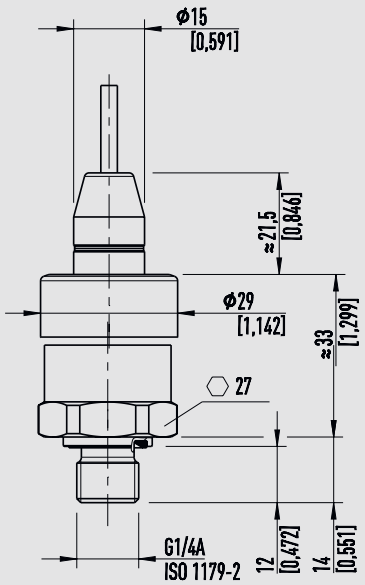
Weight: approx. 80 g [0.18 lb]

With standard cable outlet, unshielded



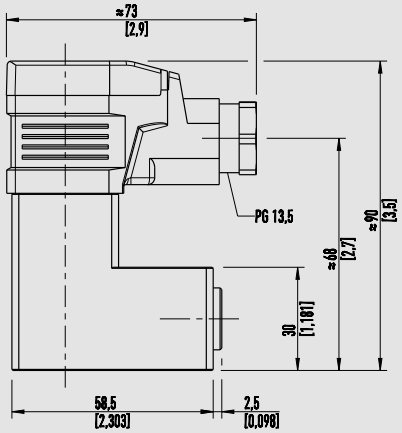
Weight: approx. 80 g [0.18 lb]

With cable outlet, OEM version, unshielded



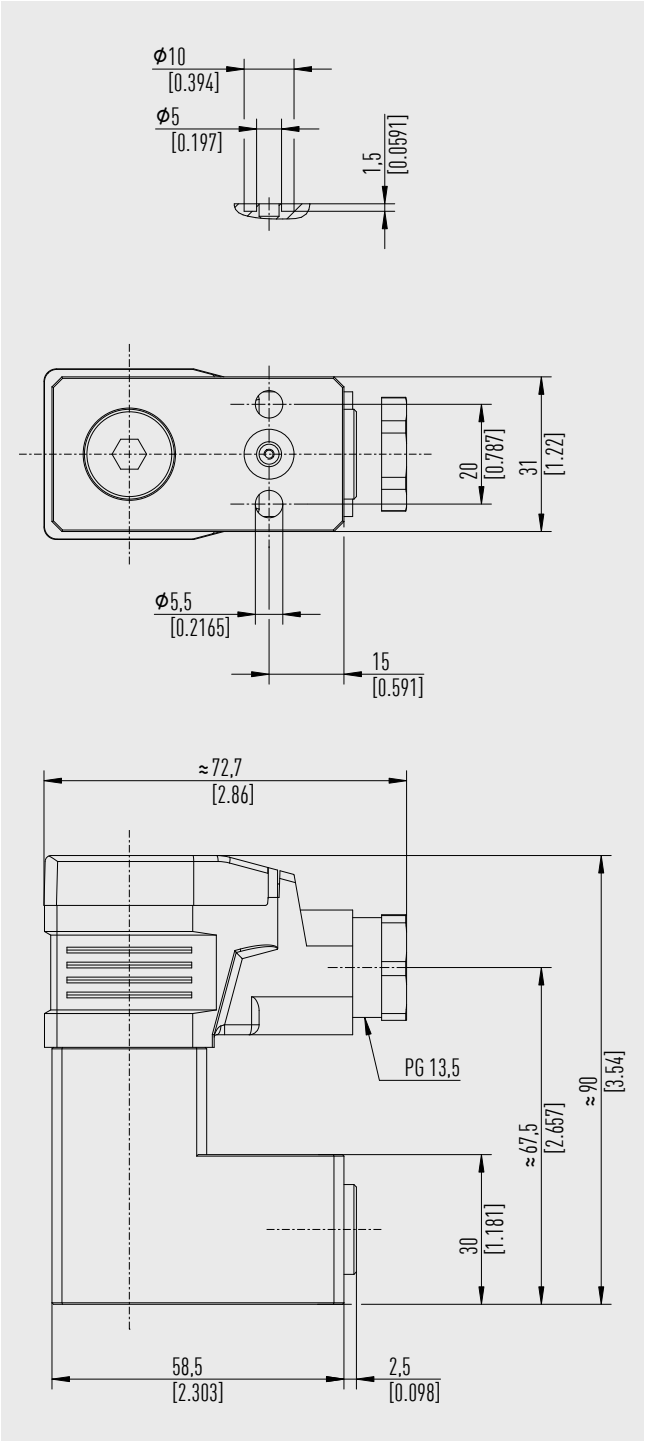
Weight: approx. 80 g [0.18 lb]

With angular connector form A and flange connection



Weight: approx. 350 g [0.77 lb]

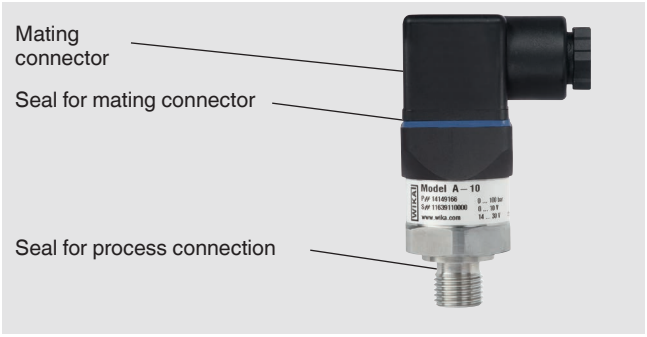
Process connections



Flange connection	For dimensions, see drawing

→ For further process connections, see technical information IN 00.14.

Accessories and spare parts



Description	Version	Order number
Mating connector		
Angular connector DIN EN 175301-803 A	Gland PG9	11427567
	Gland PG11	14243778
	Gland PG13.5	1604627
	With 2 m cable [1]	11225793
	With 5 m cable [1]	11250186
Angular connector DIN EN 175301-803 C [1]	Gland PG7	1439081
Circular connector M12 x 1, 4-pin, straight	Without cable	2421262
	With 2 m cable [1]	11250780
	With 5 m cable [1]	11250259
Circular connector M12 x 1, 4-pin, angled	Without cable	2421270
	With 2 m cable [1]	11250798
	With 5 m cable [1]	11250232
Seals for process connection		
G ⅛ EN 837	Copper	11251051
G ¼ B EN 837	Copper	11250810
	Stainless steel	11250844
G ⅜ B EN 837	Copper	11250861
	Stainless steel	11251042
G ½ B EN 837	Copper	11250861
	Stainless steel	11251042
M14 x 1.5 DIN EN ISO 9974-2	NBR	1537857
	FPM/FKM	14045531
	EPDM	14110827
M20 x 1.5 DIN 16288	Copper	11250861
	Stainless steel	11251042
7/16-20 UNF O-ring BOSS SAE J514	FPM/FKM	14146066
G ¼ A DIN EN ISO 1179-2	NBR	1537857
	FPM/FKM	14045531
	EPDM	14110827
G ½ A DIN EN ISO 1179-2	NBR	1039067
	FPM/FKM	1039075
Seals for mating connectors, blue (WIKA)		
Angular connector DIN 175301-803 A		1576240
Angular connector DIN 175301-803 C		11169479

1) Connector not permissible for model A-10 with DNV approval.

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

Ordering information

Model / Non-linearity / Measuring range / Process connection / Seal / Permissible medium temperature range / Output signal / Auxiliary power / Electrical connection / Certificates / Approvals

Standard articles

Configurator

WIKA Alexander Wiegand SE & Co. KG
Alexander-Wiegand-Straße 30
63911 Klingenberg/Germany
Tel. +49 9372 132-0
info@wika.de
www.wika.de

Pressure transmitter
For demanding industrial applications
Model S-20

For further approvals, see page 13

Applications

- Critical industrial applications
- Demanding applications in research and development
- Harsh environments in the process industry

Special features

- Extreme variety, available at short notice from 1 piece
- High accuracy, low temperature error, selectable adjustment temperature
- Proven technology
- Special media and special versions

Pressure transmitter, model S-20

Configurator

Standard articles

Description

The S-20 pressure transmitter is a versatile specialist for demanding tasks and harsh environments. The measuring ranges from 0 ... 0.4 to 0 ... 1,600 bar [0 … 5.8 to 0 … 23,200 psi] can be combined with many output signals, electrical connections and process connections. These configuration possibilities allow for over 1 billion versions and leave much room for tailor-made customisation. The S-20 is also at home in critical industrial applications and works reliably with heat, vibrations or aggressive media.

Extreme variety, available at short notice from 1 piece
The S-20 can be freely configured and optimally adapted to the plant requirements. All common versions are available from a batch size of 1 within a few days.

High accuracy, low temperature error, selectable adjustment temperature
The S-20 measures pressures particularly accurately and reliably and is available in three accuracy classes.

The selectable adjustment temperatures of +4 °C, +40 °C, +60 °C and +80 °C [+39 °F, +104 °F, +140 °F, +176 °F] reduce the temperature error to a minimum.

Proven technology
The S-20 is based on proven technologies, tried and tested in the field. With up to 100 million load cycles and a long-term stability to < 0.1 %, it constantly provides precise data for processes and plants. Regular audits permanently ensure highest quality standards.

Special media and special versions
Versions for special media, for example oxygen and hydrogen applications, high temperatures and levels of cleanliness are available. In addition, the S-20 can be delivered with IP68 and IP6K9K ingress protection.

Data sheets showing similar products and accessories:
Pressure transmitter; for general industrial applications; model A-10; see data sheet PE 81.60

Specifications

The model S-20 is available with an improved non-linearity. Depending on the selected non-linearity the following values result:

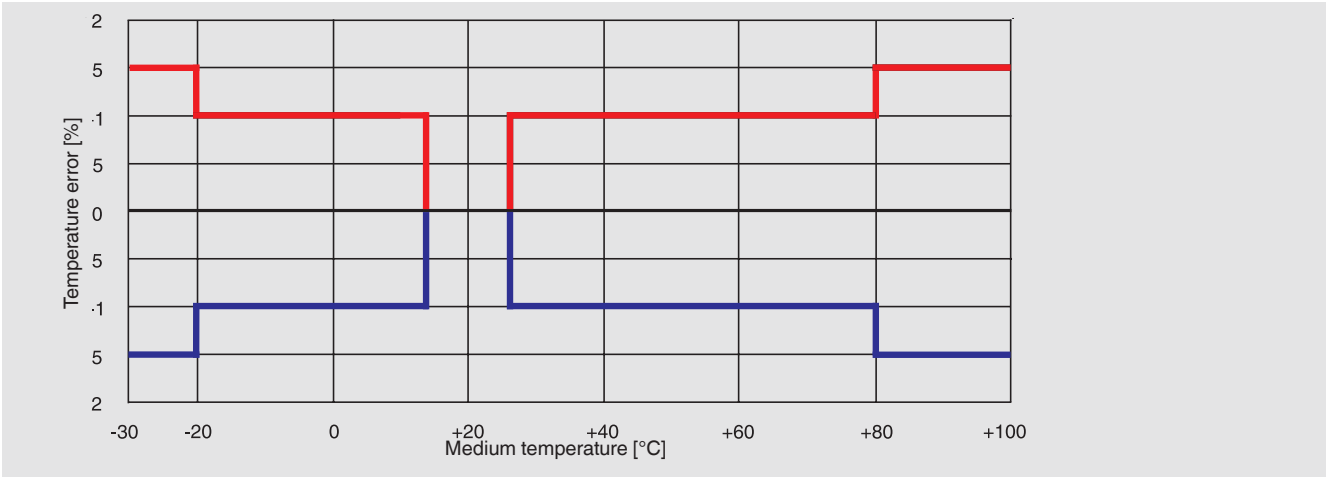
Accuracy specifications	Non-linearity ≤ ±0.5 % of span	Non-linearity ≤ ±0.25 % of span	Non-linearity ≤ ±0.125 % of span [1]
Non-linearity per BFSL per IEC 61298-2	≤ ±0.5 % of span	≤ ±0.25 % of span	≤ ±0.125 % of span
Non-linearity per terminal method per IEC 61298-2	≤ ±1 % of span	≤ ±0.5 % of span	≤ ±0.25 % of span
Accuracy at adjustment temperature	→ See "Max. measured error per IEC 61298-2"		
Max. measured error per IEC 61298-2	≤ ±1 % of span	≤ ±0.5 % of span	≤ ±0.25 % of span

1) Restrictions for the non-linearity of 0.125 % BFSL or 0.25 % per terminal method:
Available output signals: 4 ...20 mA and DC 0 ... 10 V
Available measuring ranges: all measuring ranges specified in the data sheet
Other output signals or measuring ranges on request.

Further details on: accuracy specifications	
Non-repeatability per IEC 61298-2	≤ 0.1 % of span
Zero point error	■ ≤ ±0.2 % of span, factory-set ■ ≤ ±0.1 % of span, factory-set [1]
Temperature hysteresis	≤ 0.1 % of span at > 80 °C [176 °F]
Long-term drift per IEC 61298-2	■ ≤ ±0.1 % of span ■ ≤ ±0.2 % of span (with special measuring ranges and measuring ranges < 1 bar [<15 psi])
Temperature error (for adjustment temperature 15 ... 25 °C [59 ... 77 °F])	→ See chart „Temperature error“
	For measuring ranges < 1 bar [<15 psi], special measuring ranges and instruments with an increased overpressure limit, the respective temperature error increases by 0.5 % of span
Adjustment temperature	■ 15 ... 25 °C [59 ... 77 °F] ■ 4 °C ±5 °C [39.2 °F ±9 °F] ■ 40 °C ±5 °C [104 °F ±9 °F] ■ 60 °C ±5 °C [140 °F ±9 °F] ■ 80 °C ±5 °C [176 °F ±9 °F]
Additional zero point error depending on the mounting position for measuring ranges ≤ 1 bar [≤15 psi]	
Mounting position 180°, vertical, top process connection	≤ 1 mbar [≤ 0.015 psi]
Mounting position 90°, horizontal, lateral process connection	≤ 0.6 mbar [≤ 0.009 psi]
Reference conditions	Per IEC 61298-1

1) Restrictions for zero point error 0.1 % (factory-set):
Available output signals: 4 ...20 mA and DC 0 ... 10 V
Available measuring ranges: all gauge pressure measuring ranges specified in the data sheet
Not available in combination with optional adjustment temperatures.

Temperature error



Measuring ranges, gauge pressure

bar	
0 ... 0.4	0 … 40
0 ... 0.6	0 … 60
0 … 1	0 … 100
0 … 1.6	0 … 160
0 … 2.5	0 … 250
0 … 4	0 … 400
0 … 6	0 … 600
0 … 10	0 … 1,000
0 … 16	0 … 1,600
0 … 25	-

psi	
0 … 10	0 … 600
0 … 15	0 … 750
0 … 25	0 … 1,000
0 … 30	0 … 1,500
0 … 50	0 … 2,000
0 … 60	0 … 3,000
0 … 100	0 … 4,000
0 … 150	0 … 5,000
0 … 160	0 … 6,000
0 … 200	0 … 7,500
0 … 250	0 … 10,000
0 … 300	0 … 15,000
0 … 400	0 … 20,000
0 … 500	-

Measuring ranges, absolute pressure

bar abs.	
0 … 0.4	0 … 6
0 … 0.6	0 … 10
0 … 1	0 … 16
0 … 1.6	0 … 25
0 … 2.5	0 … 40
0 … 4	-

psi abs.	
0 … 10	0 … 150
0 … 15	0 … 160
0 … 25	0 … 200
0 … 30	0 … 250
0 … 50	0 … 300
0 … 60	0 … 400
0 … 100	0 … 500

Vacuum and compound measuring ranges

bar	
-0.4 … 0	-1 … +5
-0.6 … 0	-1 … +9
-1 … 0	-1 … +15
-1 … +0.6	-1 … +24
-1 … +1.5	-1 … +39
-1 … +3	-1 … +59

psi	
-30 inHg ... 0	-30 inHg ... +100
-30 inHg ... +15	-30 inHg ... +160
-30 inHg ... +30	-30 inHg ... +200
-30 inHg ... +45	-30 inHg ... +300
-30 inHg ... +60	-30 inHg ... +500

Further details on: measuring ranges		
Units	■ bar ■ psi ■ kg/cm^2 ■ MPa ■ kPa	
Maximum working pressure	→ Corresponds to the upper measuring range value / measuring range full scale value → Any permanent operation above the maximum working pressure is not permissible	
Special measuring ranges	From 0 ... 0.4 to 0 ... 1,600 bar [0 ... 10 to 0 ... 20,000 psi] available on request. Special measuring ranges have an increased long-term drift and higher temperature errors.	
Overpressure limit	The overpressure limit is based on the measuring range. Depending on the selected process connection and the seal, restrictions in overpressure limit can result. A higher overpressure limit will result in a higher temperature error.	
bar	Measuring ranges ≤ 16 bar	3 times
	Measuring ranges > 16 bar	2 times
	Measuring range 1,000 bar	1.45 times
	Measuring ranges > 1,000 bar	1.25 times
bar abs.	Measuring ranges ≤ 16 bar abs.	3 times
	Measuring ranges > 16 bar abs.	2 times
	Measuring range 40 bar abs.	1.5 times
psi	Measuring ranges ≤ 300 psi	3 times
	Measuring ranges > 300 psi	2 times
	Measuring ranges 600 psi, 1,000 psi, 1,500 psi, 4,000 psi, 6,000 psi, 10,000 psi	1.7 times
	Measuring range 15,000 psi	1.45 times
	Measuring ranges > 15,000 psi	1.25 times
psi abs.	Measuring ranges ≤ 300 psi abs.	3 times
	Measuring ranges > 300 psi abs.	2 times
	Measuring range 500 psi abs.	1.5 times
Vacuum resistance	Yes	
Leakage rate	■ $< 5*10^{-3}$ mbar*l/s ■ $< 1*10^{-6}$ mbar*l/s [1) 2)]	

1) With oxygen and hydrogen applications.
2) With applications of hazardous fluids, liquids and gases in accordance with directive 2014/68/EU article 13, regulation (EC) no. 1272/2008 or GHS1.

→ Further overpressure limits on request.

Process connection					
Standard	**Thread size**	**Max. measuring range**	**Overpressure limit**	**Pressure port**	**Seal**
DIN EN ISO 1179-2	G ¼ A [1)]	600 bar [7,500 psi]	858 bar [12,400 psi]	■ 2.5 mm [0.1 in] ■ 0.3 mm [0.01 in] ■ 0.6 mm [0.02 in] ■ 6 mm [0.24 in] [2)]	■ NBR ■ FPM/ FKM ■ EPDM
		1,000 bar [15,000 psi]	1,480 bar [21,400 psi]	■ 2.5 mm [0.1 in] ■ 0.3 mm [0.01 in] ■ 0.6 mm [0.02 in]	■ FPM/ FKM
	G ½ A	600 bar [7,500 psi]	858 bar [12,440 psi]	■ 2.5 mm [0.1 in] ■ 0.3 mm [0.01 in] ■ 0.6 mm [0.02 in] ■ 12 mm [0.48 in] [2)]	■ NBR ■ FPM/ FKM
DIN EN ISO 9974-2	M14 x 1.5	600 bar [7,500 psi]	858 bar [12,440 psi]	■ 2.5 mm [0.1 in] ■ 0.3 mm [0.01 in] ■ 0.6 mm [0.02 in]	■ NBR ■ FPM/ FKM ■ EPDM
EN 837	G ⅛ B	400 bar [5,000 psi]	572 bar [8,290 psi]	■ 2.5 mm [0.1 in]	■ Copper
	G ¼ B [1)]	1,000 bar [15,000 psi]	1,480 bar [21,400 psi]	■ 2.5 mm [0.1 in] ■ 0.3 mm [0.01 in] ■ 0.6 mm [0.02 in]	■ Copper ■ Stainless steel ■ Without
	G ¼, female	1,000 bar [15,000 psi]	1,480 bar [21,400 psi]	■ 2.5 mm [0.1 in]	-
	G ⅜ B	1,000 bar [15,000 psi]	1,480 bar [21,400 psi]	■ 2.5 mm [0.1 in] ■ 0.3 mm [0.01 in] ■ 0.6 mm [0.02 in]	■ Copper ■ Stainless steel ■ Without
	G ½ B [1)]	1,000 bar [15,000 psi]	1,480 bar [21,400 psi]	■ 2.5 mm [0.1 in] ■ 0.3 mm [0.01 in] ■ 0.6 mm [0.02 in]	■ Copper ■ Stainless steel ■ Without
DIN 16288	M12 x 1.5	1,000 bar [15,000 psi]	1,480 bar [21,400 psi]	■ 2.5 mm [0.1 in] ■ 0.3 mm [0.01 in] ■ 0.6 mm [0.02 in]	■ Copper ■ Stainless steel ■ Without
	M20 x 1.5	1,000 bar [15,000 psi]	1,480 bar [21,400 psi]	■ 2.5 mm [0.1 in] ■ 0.3 mm [0.01 in] ■ 0.6 mm [0.02 in]	■ Copper ■ Stainless steel ■ Without
ANSI/ASME B1.20.1	⅛ NPT	400 bar [5,000 psi]	572 bar [8,290 psi]	■ 2.5 mm [0.1 in]	-
	¼ NPT	1,000 bar [15,000 psi]	1,480 bar [21,400 psi]	■ 2.5 mm [0.1 in] ■ 0.3 mm [0.01 in] ■ 0.6 mm [0.02 in] ■ 6 mm [0.24 in] [2)]	-
	¼ NPT, female	1,000 bar [15,000 psi]	1,480 bar [21,400 psi]	■ 2.5 mm [0.1 in]	-
	½ NPT [1)]	1,000 bar [15,000 psi]	1,480 bar [21,400 psi]	■ 2.5 mm [0.1 in] ■ 0.3 mm [0.01 in] ■ 0.6 mm [0.02 in] ■ 12 mm [0.48 in] [2)]	-
SAE J514	7/16-20 UNF-2A O-ring BOSS	600 bar [7,500 psi]	858 bar [12,400 psi]	■ 2.5 mm [0.1 in] ■ 0.3 mm [0.01 in] ■ 0.6 mm [0.02 in]	■ NBR ■ FPM/ FKM
	7/16-20 UNF-2A 74°	800 bar [10,000 psi]	1,144 bar [16,590 psi]	■ 2.5 mm [0.1 in] ■ 0.3 mm [0.01 in] ■ 0.6 mm [0.02 in]	-
	9/16-18 UNF-2A O-ring BOSS	600 bar [7,500 psi]	858 bar [12,400 psi]	■ 2.5 mm [0.1 in] ■ 0.3 mm [0.01 in] ■ 0.6 mm [0.02 in]	■ NBR ■ FPM/ FKM

Process connection					
Standard	**Thread size**	**Max. measuring range**	**Overpressure limit**	**Pressure port**	**Seal**
ISO 7	R ¼ [1]	1,000 bar [15,000 psi]	1,480 bar [21,400 psi]	■ 2.5 mm [0.1 in] ■ 0.3 mm [0.01 in] ■ 0.6 mm [0.02 in]	-
	R ⅜	1,000 bar [15,000 psi]	1,480 bar [21,400 psi]	■ 2.5 mm [0.1 in] ■ 0.3 mm [0.01 in] ■ 0.6 mm [0.02 in]	-
	R ½	1,000 bar [15,000 psi]	1,480 bar [21,400 psi]	■ 2.5 mm [0.1 in] ■ 0.3 mm [0.01 in] ■ 0.6 mm [0.02 in]	-
KS	PT ¼ [1]	1,000 bar [15,000 psi]	1,480 bar [21,400 psi]	■ 2.5 mm [0.1 in] ■ 0.3 mm [0.01 in] ■ 0.6 mm [0.02 in]	-
	PT ⅜	1,000 bar [15,000 psi]	1,480 bar [21,400 psi]	■ 2.5 mm [0.1 in] ■ 0.3 mm [0.01 in] ■ 0.6 mm [0.02 in]	-
	PT ½	1,000 bar [15,000 psi]	1,480 bar [21,400 psi]	■ 2.5 mm [0.1 in] ■ 0.3 mm [0.01 in] ■ 0.6 mm [0.02 in]	-
Process connection > 1,000 bar [> 15,000 psi]					
-	M16 x 1.5 female	1,600 bar [20,000 psi]	2,288 bar [33,180 psi]	2.5 mm [0.1 in]	-
-	9/16-18 UNF, female F250-C	1,600 bar [20,000 psi]	2,288 bar [33,180 psi]	2.5 mm [0.1 in]	-
ANSI/ASME B1.20.1	1/2 NPT	1,600 bar [20,000 psi]	2,288 bar [33,180 psi]	2.5 mm [0.1 in]	-
EN 837	G ½ B	1,600 bar [20,000 psi]	2,288 bar [33,180 psi]	2.5 mm [0.1 in]	Without
DIN 16288	M20 x 1.5	1,600 bar [20,000 psi]	2,288 bar [33,180 psi]	2.5 mm [0.1 in]	Without

1) For medium temperatures to 150 °C [302 °F] or 200 °C [392 °F] available with cooling element.
2) Wider pressure port with 6 mm [0.24 in] or 12 mm [0.48 in] only feasible for measuring ranges up to and including 0 ... 40 bar [0 ... 500 psi].

Details must be tested separately in the respective application. The specified values for the overpressure limit serve only as a rough orientation. The values depend on the temperature, the seal used, the selected torque, the type and material of the mating thread and the prevailing operating conditions.

→ Other process connections and seals on request.
→ For information on process connections, see technical information IN 00.14 at www.wika.com.

Further details on: process connection	
Max. measuring range	→ See table “Process connection”
Overpressure limit	→ See table “Process connection”
Seal	→ See table “Process connection”
Pressure port diameter	→ See table “Process connection”
Possible restrictions	Depending on the choice of seal at the process connection, there may be restrictions in the permissible temperature range
NBR	-30 ... +100 °C [-22 ... + +212 °F]
FPM/FKM	-40 ... +200 °C [-40 ... +392 °F]
EPDM	-40 ... +125 °C [-40 ... +257 °F]
Copper	-40 ... +200 °C [-40 ... +392 °F]
Stainless steel	-40 ... +200 °C [-40 ... +392 °F]

Output signal

Signal type			
Current (2-wire)	■ 4 ... 20 mA ■ 20 ... 4 mA		
Voltage (3-wire)	■ DC 0 ... 10 V ■ DC 0 ... 5 V ■ DC 1 ... 5 V ■ DC 0.5 ... 4.5 V ■ DC 1 ... 6 V ■ DC 10 ... 0 V		
Ratiometric (3-wire)	DC 0.5 ... 4.5 V		
Load in Ω			
Current (2-wire)	≤ (auxiliary power - 7.5 V) / 0.023 A		
Voltage (3-wire)	> maximum output signal / 1 mA		
Ratiometric (3-wire)	> 4.5k		
Signal damping	See table “Further details on: output signal”		
Signal clamping			
Output signal 4 ... 20 mA	Zero point	■ 3.6 mA ■ 3.8 mA ■ 4.0 mA	
	Full scale	■ 20 mA ■ 21.5 mA ■ 23 mA	
Output signal DC 0 ... 10 V	Full scale	■ DC 10 V ■ DC 11.5 V	
Voltage supply			
Auxiliary power	Output signal 4 ... 20 mA	DC 8 ... 36 V	
	Output signal 20 ... 4 mA	DC 8 ... 36 V	
	Output signal DC 0 ... 10 V	DC 12 ... 36 V	
	Output signal DC 0 ... 5 V	DC 8 ... 36 V	
	Output signal DC 1 ... 5 V	DC 8 ... 36 V	
	Output signal DC 0.5 ... 4.5 V	DC 8 ... 36 V	
	Output signal DC 1 ... 6 V	DC 9 ... 36 V	
	Output signal DC 10 ... 0 V	DC 12 ... 36 V	
	Output signal DC 0.5 ... 4.5 V ratio	DC 5 V ±10 %	
	→ With cULus approval, limited to max. DC 35 V		
Current supply	Current (2-wire)	Signal current, max. 25 mA	
	Voltage (3-wire)	Max. 12 mA	
Dissipation loss	Current (2-wire)	828 mW (22 mW/K derating of dissipation loss at ambient temperatures ≥ 100 °C [≥ 212 °F])	
	Voltage (3-wire)	432 mW	
Overvoltage resistance	DC 40 V → Not for ratiometric output signals		
Dynamic behaviour			
Settling time per IEC 61298-2	→ See table “Further details on: output signal”		
Switch-on time	150 ms		
Start-up drift	5 s (60 s with optional zero point adjustment 0.1 %)		

Further details on: output signal			
Signal type	**Settling time per IEC 61298-2**		**Signal damping**
	3 dB limit frequency 500 Hz	**3 dB limit frequency 1,000 Hz [1)]**	
Current (2-wire)	3 ms	1 ms	■ 10 ms ■ 50 ms ■ 100 ms ■ 500 ms ■ 1,000 ms ■ 2,500 ms ■ 5,000 ms
Voltage (3-wire)	2 ms	1 ms	
Ratiometric (3-wire)	2 ms	1 ms	

1) Alternative specifications for 4 ... 20 mA output signal:
Load: ≤ (auxiliary power - 11.5 V) / 0.023 A
Auxiliary power: DC 12 ... 36 V

→ Other output signals on request.

Electrical connection					
Connection type	**IP code [1)]**	**Wire cross-section**	**Cable diameter**	**Cable material**	**Permissible temperature**
Angular connector DIN EN 175301-803 A [2)]					
With mating connector	IP65	Max. 1.5 mm²	6 ... 8 mm	-	-30 ... +100 °C [-22 ... +212 °F]
With mating connector (conduit)	IP65	Max. 1.5 mm²	-	-	-30 ... +100 °C[-22 ... +212 °F]
With mating connector with moulded cable	IP65	3 x 0.75 mm²	6 mm	PUR	-30 ... +100 °C (cULus: -25 ... +85 °C) [-22 ... +212 °F (cULus: -4 ... +185 °F)]
With mating connector with moulded cable, shielded	IP65	6 x 0.5 mm²	6.8 mm	PUR	-25 ... +85 °C [-4 ... +185 °F]
Angular connector DIN EN 175301-803 C [2)]					
With mating connector	IP65	Max. 0.75 mm²	4.5 ... 6 mm	-	-30 ... +100 °C [-22 ... +212 °F]
Circular connector M12 x 1, 4-pin [2)]					
Without mating connector	IP67	-	-	-	-30 ... +100 °C [-22 ... +212 °F]
With straight mating connector with moulded cable	IP67	3 x 0.34 mm²	4.3 mm	PUR	-25 ... +80 °C [-4 ... +176 °F]
With straight mating connector with moulded cable, shielded	IP67	3 x 0.34 mm²	5.5 mm	PUR	-25 ... +80 °C [-4 ... +176 °F]
With angled mating connector with moulded cable	IP67	3 x 0.34 mm²	4.3 mm	PUR	-25 ... +80 °C [-4 ... +176 °F]
Circular connector M12 x 1, 4-pin, metal					
Without mating connector	IP67	-	-	-	-40 ... +125 °C (cULus: +85 °C) [-40 ... +257 °F (cULus: +185 °F)]
With straight mating connector with moulded cable	IP67	3 x 0.34 mm²	4.3 mm	PUR	-25 ... +80 °C [-4 ... +176 °F]
With straight mating connector with moulded cable, shielded	IP67	3 x 0.34 mm²	5.5 mm	PUR	-25 ... +80 °C [-4 ... +176 °F]
With angled mating connector with moulded cable	IP67	3 x 0.34 mm²	4.3 mm	PUR	-25 ... +80 °C [-4 ... +176 °F]
Bayonet connector, 6-pin	IP67	-	-	-	-40 ... +125 °C [-40 ... +257 °F]
Field case	IP6K9K	-	7 ... 13 mm	-	-25 ... +100 °C [-4 ... +212 °F]

Electrical connection					
Connection type	**IP code** [1]	**Wire cross-section**	**Cable diameter**	**Cable material**	**Permissible temperature**
Cable outlet					
Cable outlet IP67	IP67	3 x 0.34 mm²	5.5 mm	PUR	-30 ... +100 °C [-22 ... +212 °F]
Cable outlet ½ NPT conduit	IP67	6 x 0.35 mm²	6.1 mm	PUR	-30 ... +100 °C (cULus: +90 °C) [-22 ... +212 °F (cULus: +194 °F)]
Cable outlet IP68	IP68	6 x 0.35 mm²	6.1 mm	PUR	-30 ... +125 °C (cULus: +90 °C) [-22 ... +257 °F (cULus: +194 °F)]
Cable outlet IP68, FEP	IP68	6 x 0.39 mm²	5.8 mm	FEP	-40 ... +125 °C (cULus: +105 °C) [-40 ... +257 °F (cULus: +221 °F)]
Cable outlet IP6K9K	IP6K9K	6 x 0.35 mm²	6.1 mm	PUR	-30 ... +125 °C (cULus: +90 °C) [-22 ... +257 °F (cULus: +194 °F)]

1) The stated IP codes only apply when plugged in using mating connectors that have the appropriate IP code.
2) Customer zero point adjustment available as an option.

→ Other connections on request.

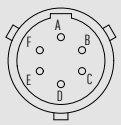
Further details on: electrical connection	
Connection type	→ See table “Electrical connection”
Wire cross-section	→ See table “Electrical connection”
Cable diameter	→ See table “Electrical connection”
Pin assignment	→ See “Maximum permissible medium temperature”
Ingress protection (IP code) per IEC 60529	→ See table “Electrical connection”
Cable length	■ 2 m ■ 5 m ■ 6 ft ■ 15 ft
Assembly of the cable outlets	
Cable outlet IP67	■ Unfinished wire ends ■ Tinned wire ends ■ With end splices
Cable outlet ½ NPT conduit	■ With end splices ■ Tinned wire ends
Cable outlet IP68	■ With end splices ■ Tinned wire ends
Cable outlet IP68, FEP	■ With end splices ■ Tinned wire ends
Cable outlet IP6K9K	■ With end splices ■ Tinned wire ends
Short-circuit resistance	S+ vs. U- → Not for ratiometric output signals
Reverse polarity protection	U+ vs. U- → Not for ratiometric output signals
Insulation voltage	DC 750 V

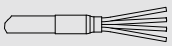
→ Other cable lengths on request.

Pin assignment

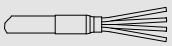
Angular connector DIN 175301-803 A			
		2-wire	3-wire
	U+	1	1
	U-	2	2
	S+	-	3
	Shield (option)	4	4

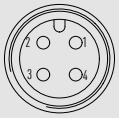
Angular connector DIN 175301-803 C			
		2-wire	3-wire
	U_+	1	1
	U_-	2	2
	S_+	-	3
	Shield (option)	4	4

Bayonet connector (6-pin)			
		2-wire	3-wire
	U+	A	A
	U-	B	B
	S+	-	C
	Shield	Case	Case

Cable outlet			
		2-wire	3-wire
	U+	Brown (BN)	Brown (BN)
	U-	Blue (BU)	Blue (BU)
	S+	-	Black (BK)
	Shield [1]	Grey (GY)	Grey (GY)

1) With cable outlet IP67 and cable outlet ½ NPT conduit, the shield is optional

Mating connector with moulded cable			
		2-wire	3-wire
	U+	Brown (BN)	Brown (BN)
	U-	Blue (BU)	Blue (BU)
	S+	-	Black (BK)

Circular connector M12 x 1 (4-pin)			
		2-wire	3-wire
	U+	1	1
	U-	3	3
	S+	-	4
	Shield (option)	Case	Case

Field case			
		2-wire	3-wire
	U+	1	1
	U-	2	2
	S+	-	3
	Shield	5	5

Legend

U_+ Positive power supply terminal
U_- Negative power supply terminal
S_+ Analogue output

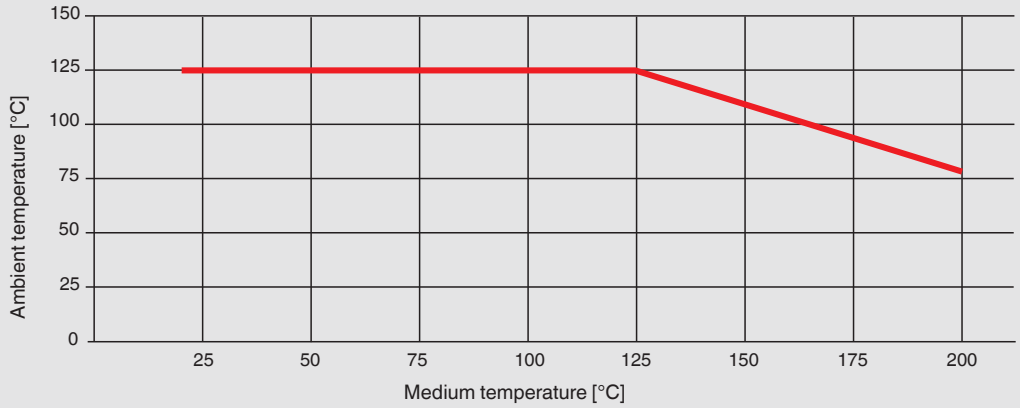
→ Other pin assignments on request.

Material		
Material (wetted)		
Relative measuring ranges	Measuring ranges ≤ 25 bar [≤ 400 psi]	Stainless steel 316L
	Measuring ranges > 25 bar [> 400 psi]	Stainless steel 316L + PH grade steel
	Measuring ranges > 1,000 bar [> 15,000 psi]	ASTM 630 and PH grade steel
Absolute pressure measuring ranges	Stainless steel 316L	
Sealing materials	→ See table „Process connection“	
Material (in contact with the environment)		
Case	316Ti	
Electrical connection	Angular connector DIN 175301-803 A	PBT/PET GF30
	Angular connector DIN 175301-803 C	PBT/PET GF30
	Circular connector M12 x 1, 4-pin	PBT/PET GF30
	Circular connector M12 x 1, 4-pin, metal	316L
	Bayonet connector, 6-pin	316L, nickel-plated Al
	Field case	316L, 316Ti, nickel-plated brass
	Cable outlet IP67	PA66, PBT/PET GF30, PUR
	Cable outlet ½ NPT conduit	316L, PUR
	Cable outlet IP68	316L, PUR
	Cable outlet IP68, FEP	316L, FEP
	Cable outlet IP6K9K	316L, PUR
Pressure transmission medium	Measuring ranges ≤ 25 bar [≤ 400 psi]	Synthetic oil
	Measuring ranges > 25 bar [> 400 psi]	Dry measuring cell
	Measuring ranges ≤ 40 bar abs. [≤ 500 psi abs.]	Synthetic oil

Operating conditions		
Medium temperature limit	**Ambient temperature limit**	**Notes**
-30 ... +100 °C [-22 ... +212 °F]	-30 ... +100 °C [-22 ... +212 °F]	-
-40 ... +125 °C [-40 ... +257 °F]	-40 ... +125 °C [-40 ... +257 °F]	-
-40 ... +150 °C [-40 ... +302 °F]	-40 ... +125 °C [-40 ... +257 °F] 1)	400 bar [5,000 psi] With integrated cooling element
-40 ... +200 °C [-40 ... +392 °F]	-40 ... +125 °C [-40 ... +257 °F] 1)	400 bar [5,000 psi] With integrated cooling element
-20 ... +60 °C [-4 ... +140 °F]	-20 ... +60 °C [-4 ... +140 °F]	Oxygen version

1) Derating curve and formula (see following chart)

Derating curve for cooling elements



Maximum permissible ambient temperature

T_{amb} (T_{med} < 125 °C) = 125 °C

T_{amb} (T_{med} ≥ 125 °C) = -0.62 x T_{med} + 202 °C

Maximum permissible medium temperature

T_{med} (T_{amb} < 80 °C) = 200 °C

T_{med} (T_{amb} ≥ 80 °C) = -1.61 x T_{amb} + 326 °C

T_{amb} = ambient temperature [°C]
T_{med} = medium temperature [°C]

Depending on the choice of seal on the process connection and the electrical connection, there may be restrictions in the medium and ambient temperature (for restrictions, see “Process connection” and “Electrical connection”).

Further details on: operating conditions	
Storage temperature limit	-40 ... +70 °C [-40 ... +158 °F]
Humidity per EN 60068-2-30	0 ... 95 % relative humidity (non-condensing)
Humidity per CSA certificate	0 ... 80 % relative humidity (non-condensing)
Vibration resistance per IEC 60068-2-6	20g, 10 ... 2,000 Hz
	40g, 10 ... 2,000 Hz for circular connector M12 x 1, metal
	10g, 10 ... 2,000 Hz for instruments with cooling element
Shock resistance per IEC 60068-2-27	100g, 6 ms
	500g, 1 ms for circular connector M12 x 1, metal
Operating altitude	≤ 2,000 m above seal level
Ingress protection (IP code) per IEC 60529	→ See “Electrical connection”
Pollution degree	2
Overvoltage category	I
Service life	
Measuring ranges < 600 bar [< 7,500 psi]	100 million load cycles
Measuring ranges ≥ 600 bar [≥ 7,500 psi]	10 million load cycles

Options for special media		
Food	Food-compatible transmission fluid	
Oil- and grease-free		
Residual hydrocarbon	< 1,000 mg/m²	
Packaging	Protective cap on the process connection	
Oxygen, oil- and grease-free		
Residual hydrocarbon	Measuring ranges < 30 bar [< 435 psi]	< 500 mg/m²
	Measuring ranges > 30 bar [> 435 psi]	< 200 mg/m²
Medium temperature limit	-20 ... +60 °C [-4 ... +140 °F]	
Max. measuring range	400 bar [5,000 psi]	
Overpressure limit	2 times	
Leakage rate	< 1*10⁻⁶ mbar*l/s	
Influence of mounting position (measuring ranges ≤ 1 bar)	Mounting position 180°, vertical, top process connection	≤ 1.4 mbar [≤ 0.02 psi]
	Mounting position 90°, horizontal, lateral process connection	≤ 0.8 mbar [≤ 0.012 psi]
Packaging	Protective cap on the process connection	
Hydrogen, oil- and grease-free		
Measuring ranges	0.4 bar ... 1,000 bar [10 psi ... 15,000 psi]	
Material (wetted)	316L and Elgiloy® (2.4711)	
Residual hydrocarbon	< 1,000 mg/m²	
Leakage rate	< 1*10⁻⁶ mbar*l/s	
	→ For further information, see technical information IN 00.40 on the website.	
Water (increased stability)		
Measuring ranges	10 ... 25 bar [150 ... 400 psi]	
Dry measuring cell		
Measuring ranges	10 bar ... 25 bar [150 psi ... 360 psi]	
Overpressure limit	2 times	

Packaging and instrument labelling	
Packaging	Individual packaging
Instrument labelling	■ WIKA product label, lasered ■ Customised product label on request

Approvals

Logo	Description	Country
CE	**EU declaration of conformity**	European Union
	EMC Directive	
	Pressure Equipment Directive	
	RoHS directive	
cULus LISTED	**UL** Safety (e.g. electr. safety, overpressure, ...)	USA and Canada
EAC	**EAC** EMC Directive	Eurasian Economic Community
	KazInMetr Metrology, measurement technology	Kazakhstan
-	**MTSCHS** Permission for commissioning	Kazakhstan
	UkrSEPRO Metrology, measurement technology	Ukraine
	Uzstandard Metrology, measurement technology	Uzbekistan
-	**CRN** Safety (e.g. electr. safety, overpressure, ...)	Canada

Manufacturer's information

Logo	Description
-	**China RoHS directive**
MTTF	> 100 years

Test report

Test report	
Non-linearity 0.5 %	3 measuring points
Non-linearity 0.25 %	5 measuring points
Non-linearity 0.125 %	5 measuring points

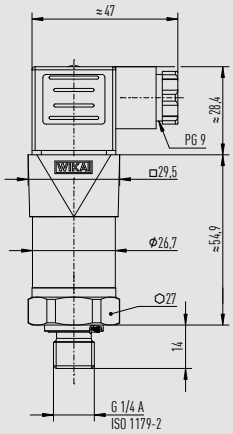
Certificates (option)

Certificates	
Certificates	■ 2.2 test report per EN 10204 (e.g. state-of-the-art manufacturing, material proof, indication accuracy) ■ 3.1 inspection certificate per EN 10204 (e.g. material proof for wetted metal parts, indication accuracy, calibration certificate)
Calibration	■ Factory calibration certificate ■ DAkkS calibration certificate (traceable and accredited in accordance with ISO/IEC 17025)
Recommended calibration interval	1 year (dependent on conditions of use)

→ For approvals and certificates, see website

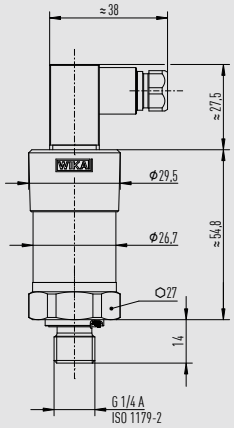
Dimensions in mm [in]

Angular connector DIN EN 175301-803 A



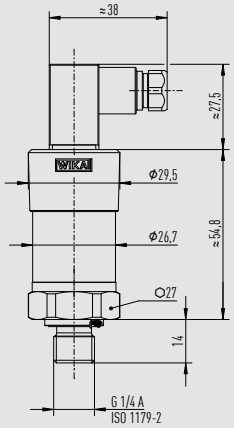
Weight: approx. 150 g [0.331 lb]

Angular connector DIN EN 175301-803 C



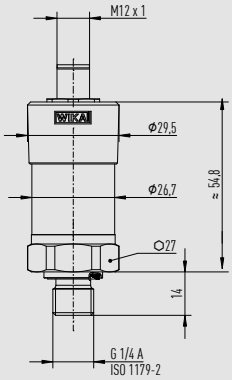
Weight: approx. 150 g [0.331 lb]

Angular connector DIN 175301-803 A with zero point adjustment ring



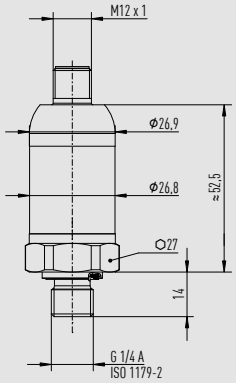
Weight: approx. 150 g [0.331 lb]

Circular connector M12 x 1 (4-pin)



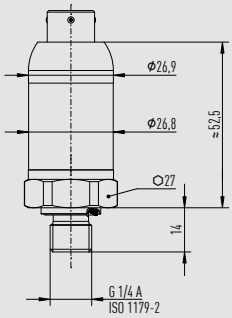
Weight: approx. 150 g [0.331 lb]

Circular connector M12 x 1 (4-pin, metallic)



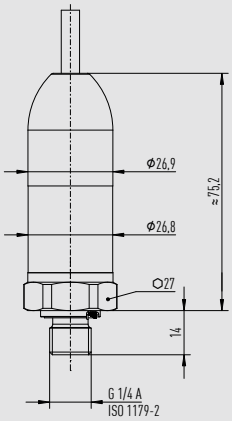
Weight: approx. 150 g [0.331 lb]

Bayonet connector (6-pin)



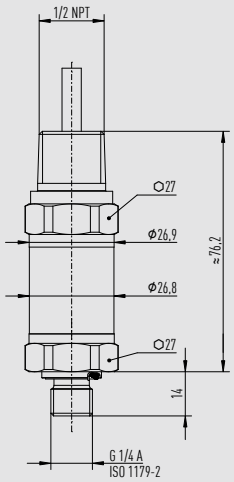
Weight: approx. 150 g [0.331 lb]

Cable outlet IP68, FEP, IP6K9K



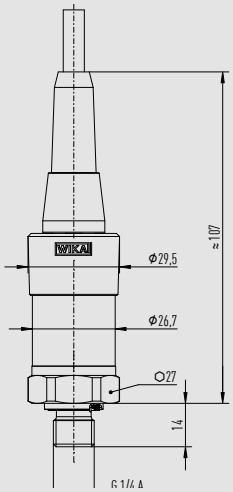
Weight: approx. 220 g [0.485 lb]

Cable outlet ½ NPT conduit



Weight: approx. 220 g [0.485 lb]

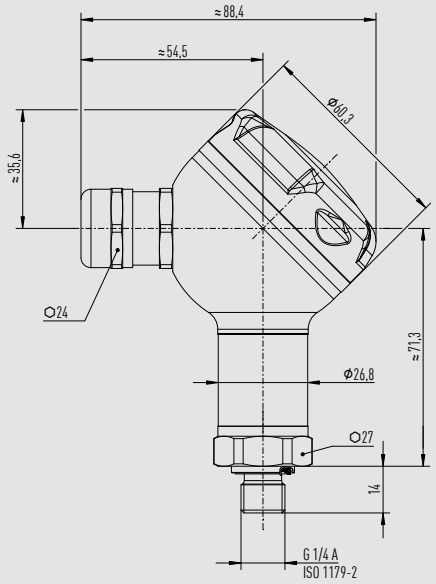
Cable outlet IP67



Weight: approx. 150 g [0.331 lb]

Dimensions in mm [in]

Field case



Weight: approx. 290 g [0.639 lb]

Accessories and spare parts

Description	Version	Order number
Mating connector		
Angular connector DIN 175301-803 A	Gland PG9	11427567
	With 2 m cable	11225793
	With 2 m cable, shielded	14100465
	With 5 m cable	11250186
	Conduit ½ NPT	11022485
Angular connector DIN 175301-803 C	Gland PG7	1439081
Circular connector M12 x 1, 4-pin, straight	With 2 m cable	11250780
	With 5 m cable	11250259
	With 2 m cable, shielded	14056584
Circular connector M12 x 1, 4-pin, angled	With 2 m cable	11250798
	With 5 m cable	11250232
Seals for mating connector		
Angular connector DIN EN 175301-803 A	Blue (WIKA)	1576240
	Brown (neutral)	11437902
Angular connector DIN 175301-803 C	Blue (WIKA)	11169479
	Brown (neutral)	11437881
Seals for process connection		
G ⅛ B EN 837	Copper	11251051
G ¼ B EN 837	Copper	11250810
	Stainless steel	11250844
G ⅜ B EN 837	Copper	11250861
G ½ B EN 837	Copper	11250861
	Stainless steel	11251042
G ¼ A DIN EN ISO 1179-2	NBR	1537857
	FKM/FPM	1576534
G ½ A DIN EN ISO 1179-2	NBR	1039067
	FKM	1039075
M14 x 1.5 DIN EN ISO 9974-2	NBR	1537857
	FKM	1576534
M12 x 1.5 DIN 16288	Copper	11250810
	Stainless steel	11250844
M20 x 1.5 DIN 16288	Copper	11250861
	Stainless steel	11251042
7/16-20 UNF BOSS SAE J514	NBR	14057554
	FKM	11472022
9/16-18 UNF BOSS SAE J514	NBR	14057555
	FKM	2063240

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

Ordering information

Model / Measuring range / Overpressure limit / Output signal / Non-linearity / Adjustment temperature / Zero point setting / Process connection / Pressure port / Seal / Electrical connection / Assembly / Cable length / Shielding / Certificates / Packaging / Instrument labelling / Accessories and spare parts

Standard articles

Configurator

WIKA Alexander Wiegand SE & Co. KG
Alexander-Wiegand-Straße 30
63911 Klingenberg/Germany
Tel. +49 9372 132-0
info@wika.de
www.wika.de

Flush pressure transmitter
For viscous and particle-laden media
Model S-11

for further approvals
see page 6

Applications

- General industrial applications
- Food and beverage industry
- Filling and packing machinery
- Dosing technology
- Level measurement

Special features

- High-quality product
- Many configurations possible
- Flush process connection
- Large stocks for short delivery times
- Vacuum-tight

Fig. left: **Pressure transmitter model S-11**
Fig. right: **Pressure transmitter model S-11 with cooling element**

Configurator

Standard articles

Description

Expert for viscous and particle-laden media
The model S-11 pressure transmitter with flush diaphragm has been specifically designed for the measurement of viscous, paste-like, adhesive, crystallising, particle-laden and contaminated media, which would clog the pressure channel of conventional process connections.

Through its optimised design, the flush process connection enables cleanability with the wetted diaphragm integrated into the process. Low-maintenance and trouble-free pressure measurement is thus also guaranteed in critical applications with frequently changing media.

High accuracy, a robust design, high-quality workmanship and the high flexibility of configuration are key features of the model S-11.

Flush process connection
All process connections of the flush pressure transmitter are made of stainless steel and are fully welded and isolate the medium from the pressure measuring instrument via a positive seal. A reliable, dead-space free sealing between the process connection and the measuring medium is thus assured.

For high medium temperatures of up to 150 °C (302 °F), the pressure transmitter is also available with an integrated cooling element.

Specifically for the food and beverage industry, a version with internal system fill fluid in accordance with FDA 21 CFR 178.3750 can be chosen.

Data sheets showing similar products:
High-quality pressure transmitter for general industrial applications; model S-20; see data sheet PE 81.61
Pressure transmitter for applications in hazardous areas; model IS-3, see data sheet PE 81.58
Pressure transmitter for highest pressure applications; model HP-2; see data sheet PE 81.53

Measuring ranges

Gauge pressure								
bar	**Measuring range**	**0 ... 0.1**	**0 ... 0.16**	**0 ... 0.25**	**0 ... 0.4**	**0 ... 0.6**	**0 ... 1**	**0 ... 1.6**
	Overload safety	1	1.5	2	2	4	5	10
	Measuring range	**0 ... 2.5**	**0 ... 4**	**0 ... 6**	**0 ... 10**	**0 ... 16**	**0 ... 25**	**0 ... 40**
	Overload safety	10	17	35	35	80	50	80
	Measuring range	**0 ... 60**	**0 ... 100**	**0 ... 160**	**0 ... 250**	**0 ... 400**	**0 ... 600**	
	Overload safety	120	200	320	500	800	1,200	
psi	**Measuring range**	**0 ... 15**	**0 ... 20**	**0 ... 30**	**0 ... 50**	**0 ... 60**	**0 ... 100**	**0 ... 150**
	Overload safety	145	145	145	240	240	500	500
	Measuring range	**0 ... 160**	**0 ... 200**	**0 ... 250**	**0 ... 300**	**0 ... 400**	**0 ... 500**	**0 ... 600**
	Overload safety	1,160	1,160	1,160	1,160	1,160	1,160	1,160
	Measuring range	**0 ... 750**	**0 ... 1,000**	**0 ... 1,500**	**0 ... 2,000**	**0 ... 3,000**	**0 ... 5,000**	**0 ... 6,000**
	Overload safety	1,740	1,740	2,900	4,600	7,200	11,600	11,600

Absolute pressure								
bar	**Measuring range**	**0 ... 0.25**	**0 ... 0.4**	**0 ... 0.6**	**0 ... 1**	**0 ... 1.6**	**0 ... 2.5**	**0 ... 4**
	Overload safety	2	2	4	5	10	10	17
	Measuring range	**0 ... 6**	**0 ... 10**	**0 ... 16**				
	Overload safety	35	35	80				
psi	**Measuring range**	**0 ... 15**	**0 ... 25**	**0 ... 50**	**0 ... 100**	**0 ... 250**		
	Overload safety	72.5	145	240	500	1,160		

Vacuum and +/- measuring range						
bar	**Measuring range**	**-0.6 ... 0**	**-0.4 ... 0**	**-0.25 ... 0**	**-0.16 ... 0**	**-0.1 ... 0**
	Overload safety	4	2	2	1.5	1
	Measuring range	**-1 ... 0**	**-1 ... +0.6**	**-1 ... +1.5**	**-1 ... +3**	**-1 ... +5**
	Overload safety	5	10	10	17	35
	Measuring range	**-1 ... +9**	**-1 ... +15**	**-1 ... +24**		
	Overload safety	35	80	50		
psi	**Measuring range**	**-30 inHg ... 0**	**-30 inHg ... +30**	**-30 inHg ... +60**	**-30 inHg ... +100**	**-30 inHg ... +160**
	Overload safety	72.5	240	240	500	1,160
	Measuring range	**-30 inHg ... +200**	**-30 inHg ... +300**			
	Overload safety	1,160	1,160			

The given measuring ranges are also available in mbar, MPa and further units.

Vacuum tightness
Yes

Output signals

Output signal

Signal type	Signal
Current (2-wire)	4 ... 20 mA
Current (3-wire)	0 ... 20 mA
Voltage (3-wire)	DC 0 ... 10 V
	DC 0 ... 5 V

Other output signals on request.

Load in Ω

Depending on the signal type the following loads apply:
Current (2-wire): ≤ (power supply - 10 V) / 0.02 A
Current (3-wire): ≤ (power supply - 3 V) / 0.02 A
Voltage (3-wire): > max. output signal / 1 mA

Voltage supply

Power supply

The power supply depends on the selected output signal
4 ... 20 mA (2-wire): DC 10 ...30 V
0 ... 20 mA (3-wire): DC 10 ...30 V
DC 0 ... 10 V: DC 14 ... 30 V
DC 0 ... 5 V: DC 10 ...30 V

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 % r. h.

Power supply

DC 24 V

Mounting position

Calibrated in vertical mounting position with process connection facing downwards.

Accuracy specifications

Accuracy at reference conditions

Accuracy	
Standard	≤ ±0.5 % of span
Option	≤ ±0.25 % of span [1]

1) Only for measuring ranges ≥ 0.25 bar

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.

Non-linearity (per IEC 61298-2)

≤ ±0.2 % of span BFSL

Non-repeatability

≤ 0.1 % of span

Temperature error in rated temperature range

Rated temperature range:
0 ... 80 °C (32 ... 176 °F)

Mean temperature coefficient of zero point:
Measuring range > 0.25 bar: ≤ ±0.2 % of span/10 K
Measuring range ≤ 0.25 bar: < ±0.4 % of span/10 K

Mean temperature coefficient of span:
≤ ±0.2 % of span/10 K

long-term stabilty at reference conditions

≤ ±0.2 % of span/year

Adjustability of zero point and span

Adjustment is made using potentiometers inside the instrument.
Not possible for IP68 cable outlet.

Zero point: ± 5 %
Span: ± 5 %

Time response

Settling time

≤ 2 ms

Operating conditions

Ingress protection (per IEC 60529)
The ingress protection depends on the type of electrical connection.

Electrical connection	Ingress protection
Angular connector DIN 175301-803 A	IP65
Circular connector M12 x 1 (4-pin)	IP67
Cable outlet IP67	IP67
Cable outlet IP68	IP68 [1)]

1) Adjustability of zero point and span not possible.

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

Vibration resistance
Process connections without cooling element:
20 g (IEC 60068-2-6, under resonance)

Process connections with cooling element:
10 g (IEC 60068-2-6, under resonance)

Shock resistance
Process connections without cooling element:
1,000 g (IEC 60068-2-27, mechanical)

Process connections with cooling element:
400 g (IEC 60068-2-27, mechanical)

Permissible temperature ranges
Also meets EN 50178, tab. 7, operation (C) 4K4H, storage (D) 1K4, transport (E) 2K3.

Process connections without cooling element		
Medium		
■ Standard	-30 ... +100 °C	-22 ... +212 °F
■ Option	-30 ... +125 °C	-22 ... +257 °F
Ambient	-20 ... +80 °C	-4 ... +176 °F
Storage	-40 ... +100 °C	-40 ... +212 °F

Process connections with cooling element		
Medium	-20 ... +150 °C	-4 ... +302 °F
Ambient	-20 ... +80 °C	-4 ... +176 °F
Storage	-40 ... +100 °C	-40 ... +212 °F

Electrical connections

Short-circuit resistance
S+ vs. U-

Reverse polarity protection
U+ vs. U-

Overvoltage protection
DC 36 V

Insulation voltage
DC 500 V with NEC class 02 voltage supply (low voltage and low current max. 100 VA even under fault conditions)

Connection diagrams

Angular connector DIN 175301-803 A

	2-wire	3-wire
U+	1	1
U-	2	2
S+	-	3

Wire cross-section max. 1.5 mm2 (AWG 16)
Cable diameter 6 ... 8 mm (0.24 ... 0.31")

Circular connector M12 x 1 (4-pin)

	2-wire	3-wire
U+	1	1
U-	3	3
S+	-	4

Cable outlet

	2-wire	3-wire
U+	brown (BN)	brown (BN)
U-	green (GN)	green (GN)
S+	-	white (WH)
Shield	grey (GY)	grey (GY)

Wire cross-section 6 x 0.5 mm² (AWG 20)
Cable diameter 6.8 mm (0.27")
Cable lengths 1.5 m, 3 m, 5 m, 10 m, 15 m
(4.9 ft, 9.8 ft, 16.4 ft, 32.8 ft, 49.2 ft)

Other connections on request.

Process connections

Thread	Available measuring ranges	
G ½ B flush [1)]	0 ... 2.5 to 0 ... 600 bar	0... 50 to 0 ... 6,000 psi
G 1 B flush [1)]	0 ... 0.1 to 0 ... 1.6 bar	0 ... 15 psi
Hygienic G 1 B flush (in accordance with 3-A Sanitary Standards)	0 ... 0.1 to 0 ... 25 bar	0 ... 15 to 0 ... 300 psi

1) Process connection also available with cooling element.

Cooling elements

For higher medium temperatures, process connections with a cooling element are available (see “Operating conditions”).

Sealing

Process connection	Max. medium temperature	Sealing material and max. pressure limitation		
		Standard	Option 1	Option 2
without cooling element	up to 100 °C (212 °F)	NBR up to 600 bar (8,700 psi)	FKM/FPM [1)] up to 600 bar (8,700 psi)	EPDM up to 200 bar (2,900 psi)
	up to 125 °C (257 °F)	NBR up to 600 bar (8,700 psi)	FKM/FPM [1)] up to 400 bar (5,800 psi)	EPDM up to 200 bar (2,900 psi)
with cooling element	up to 150 °C (302 °F)	FKM/FPM [1)] up to 300 bar (4,350 psi)	EPDM up to 200 bar (2,900 psi)	-
Hygienic	up to 150 °C (302 °F)	EPDM up to 200 bar (2,900 psi)	-	-

1) Minimum permissible medium and ambient temperature -20 °C / -4 °F

O-ring for G ½ B flush process connection optionally available with FFKM seal material (pressure limitation 600 bar (8,700 psi) for all medium temperatures)

The sealings listed under “Standard” are included in the delivery.

Materials

Wetted parts

- G ½ B and G 1 B flush: 316TI
- G 1 B flush, hygienic: 316L
- For sealing materials see “Process connections”

Internal pressure transmission medium

Pressure transmission medium	
Standard	Synthetic oil
Option	Food-compatible system fill fluid per FDA 21 CFR 178.3750

Approvals

Logo	Description	Country
CE	**EU declaration of conformity** ■ EMC directive [1)] EN 61326 emission (group 1, class B) and interference immunity (industrial application) ■ Pressure equipment directive ■ RoHS directive	European Community
CSA	**CSA** Safety (e.g. electr. safety, overpressure, ...)	Canada
EAC	**EAC** Electromagnetic compatibility	Eurasian Economic Community
GOST	**GOST** Metrology, measurement technology	Russia
KazInMetr	**KazInMetr** Metrology, measurement technology	Kazakhstan
-	**MTSCHS** Permission for commissioning	Kazakhstan
BelGIM	**BelGIM** Metrology, measurement technology	Belarus
Uzstandard	**Uzstandard** Metrology, measurement technology	Uzbekistan
3-A	**3-A** Sanitary Standard only for instruments with process connection hygienic G 1 B This instrument is 3-A marked, based on a third party verification for conformance to the 3-A standard.	USA

1) The existence of strong electromagnetic fields in a frequency range of < 2.7 GHz can result in increased measuring errors up to 1 %. Do not install the instruments in the vicinity of strong electromagnetic sources of interference (e.g. transmitting devices, radio equipment), or use sheath current filters where applicable.

Manufacturer‘s information and certifications

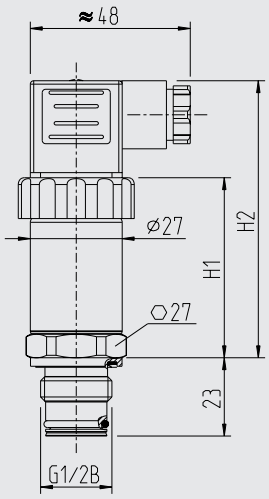
Logo	Description
-	**China RoHS directive**
-	**MTTF > 100 years**

Approvals and certificates, see website

Dimensions in mm (inch)

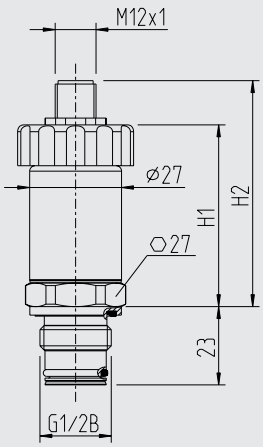
Pressure transmitter

with angular connector DIN 175301-803 A



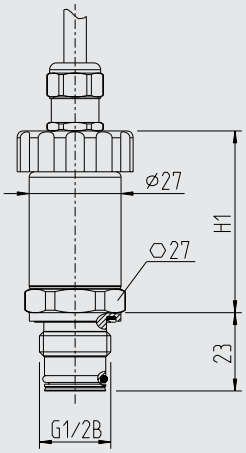
Weight approx. 0.2 kg / 7 oz

with M12 x 1 circular connector



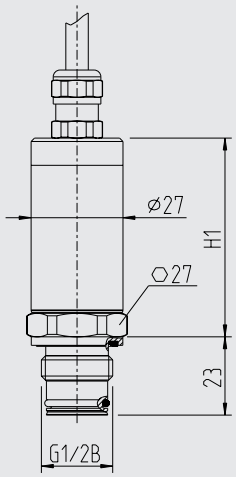
Weight approx. 0.2 kg / 7 oz

with cable outlet IP67



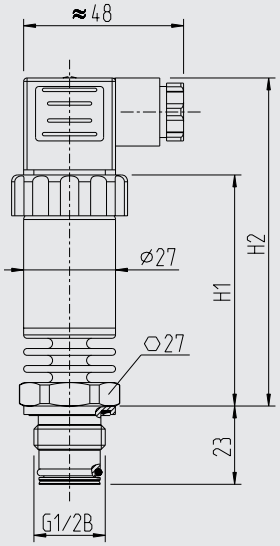
Weight approx. 0.2 kg / 7 oz

with cable outlet IP68



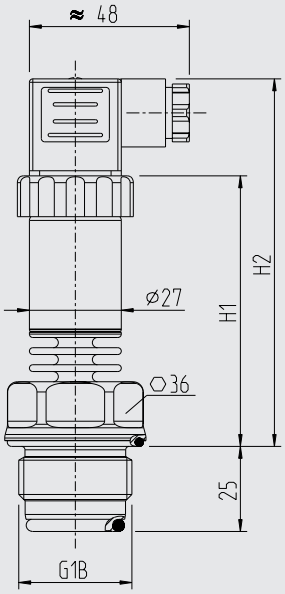
Weight approx. 0.2 kg / 7 oz

with cooling element for medium temperatures up to 150 °C



Weight approx. 0.3 kg / 10 oz

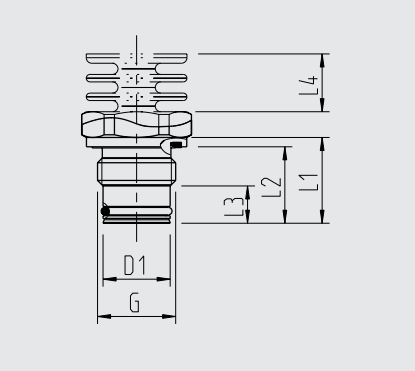
with cooling element for medium temperatures up to 150 °C and hygienic process connection



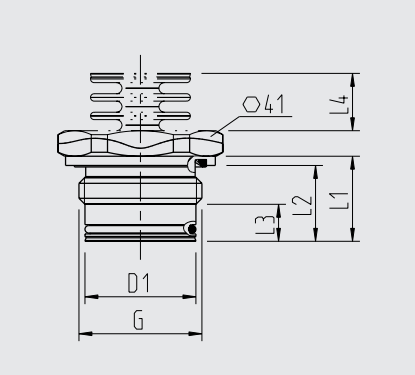
Weight approx. 0.5 kg / 18 oz

Electrical connection	Dimension	Process connection		
		G ½ B, G 1 B		G 1 hygienic
		without cooling element	with cooling element	with cooling element
Angular connector DIN 175301-803 A	H1	54 (2.13)	69 (2.72)	80 (3.15)
	H2	83.5 (3.29)	98 (3.56)	109 (4.29)
Circular connector M12 x 1	H1	54 (2.13)	69 (2.72)	80 (3.15)
	H2	67 (2.64)	82 (3.23)	93 (3.66)
Cable outlet IP67	H1	54 (2.13)	69 (2.72)	80 (3.15)
Cable outlet IP68	H1	58 (2.28)	73 (2.87)	84 (3.31)

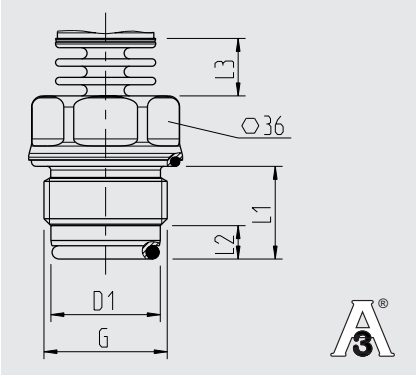
Process connections



G	D1	L1	L2	L3	L4
G ½ B	18 (0.71)	23 (0.91)	20.5 (0.81)	10 (0.4)	15.5 (0.61)



G	D1	L1	L2	L3	L4
G 1 B	30 (1.19)	23 (0.91)	20.5 (0.81)	10 (0.4)	15.5 (0.61)



G	D1	L1	L2	L3
G 1 B hygienic	29.5 (1.17)	25 (0.99)	9 (0.36)	15.5 (0.61)

Surface roughness of wetted metallic parts, Ra ≤ 0.76 µm

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

Accessories

Welding socket

	Designation	Order number
	Welding socket for G ½ B flush	1192299
	Welding socket for G 1 B flush	1192264
	Welding socket for G 1 B hygienic flush	14145179
	Welding socket for G 1 B hygienic flush with leak-control channel Fulfils the 3-A Sanitary Standards	14145183

For further adapter systems for measuring instruments with G 1 B hygienic process connection, see data sheet AC 09.20.

Mating connector

Designation	Order number			
	without cable	2 m cable, shielded	5 m cable, shielded	10 m cable, shielded
Angular connector DIN 175301-803 A				
■ with cable gland, metric	11427567	14100465	14100466	-
■ with cable gland, conduit	11022485	-	-	-
Circular connector M12 x 1 (4-pin)				
■ straight	-	14086880	14086883	14086884
■ angled	-	14086889	14086891	14086892

Sealings for mating connectors

Mating connector	Order number	
	Blue (WIKA)	Brown (neutral)
Angular connector DIN EN 175301-803 A	1576240	11437902

Sealings for process connection

Thread size and sealing	Order number			
	NBR	FPM/FKM	EPDM	FKKM
G ½ B				
■ O-ring	14072275	14072276	14072277	14073739
■ Profile sealing	1039067	1039075	1538306	-
G 1 B				
■ O-ring	1108247	1099094	1535056	-
■ Profile sealing	1100386	1145967	11522381	-
G 1 B hygienic				
■ O-ring	-	-	2225859	-
■ Profile sealing	-	-	11522381	-

Ordering information

Model / Measuring range / Output signal / Accuracy / Electrical connection / Medium temperature / Process connection / Sealing / System fill fluid

Standard articles

Configurator

WIKA Alexander Wiegand SE & Co. KG
Alexander-Wiegand-Straße 30
63911 Klingenberg/Germany
Tel. +49 9372 132-0
info@wika.de
www.wika.de

Pressure transmitter
Intrinsic safety Ex ia
Model IS-3

For further approvals, see page 10

Applications

- Chemical, petrochemical industry
- Oil, natural gas
- Machine building
- Compressors, compressor systems

Special features

- Ignition protection type intrinsically safe (Ex ia) with Equipment Protection Level (EPL) Ga, Da, Ma
- Large selection of common approvals for use in hazardous areas, e.g. ATEX, IECEx, FM, CSA, EACEx or NEPSI
- Exceptionally large variety covers almost all applications – even under extreme operating conditions
- Excellent quality and proven technology

Pressure transmitter, model IS-3

Configurator

Standard articles

Description

The model IS-3 intrinsically safe pressure transmitter has been designed for gas hazardous areas (EPL Ga) and can also be used with combustible dusts (EPL Da) and in mines susceptible to firedamp (EPL Ma). The model IS-3 is suitable for pressure ranges up to 6,000 bar [87,000 psi] and medium temperatures up to 200 °C [392 °F]. It features numerous approvals, such as ATEX, IECEx, FM and CSA. Thanks to the flush design variant, the IS-3 is also suitable for crystalline and viscous media, and also for applications where residue-free cleaning is needed.

Large selection of approvals
The model IS-3 offers many globally established approvals for use in hazardous areas – even for smaller markets. For system suppliers, approval combinations reduce the number of instrument variants that they have to keep available for their markets.

Exceptionally large variety
The model IS-3 shines with its level of customisation and diverse integration possibilities. The high-pressure version is designed for a maximum of 6,000 bar [87,000 psi]. Depending on the configuration, ingress protection up to IP68 and use with medium temperatures up to +200 °C [392 °F] are possible.

Excellent quality, proven in the field
The model IS-3 and its predecessors have been used reliably for over 20 years. The consistently high quality and its reliable function are regularly confirmed by both internal and external audits.

Data sheets showing similar products:
Pressure transmitter with flameproof enclosure; for applications in explosion-protected areas; models E-10 and E-11; see data sheet PE 81.27

Specifications

Accuracy specifications		
Non-linearity per BFSL per IEC 61298-2	≤ ±0.2 % of span	
Accuracy	→ See „Max. measured error per IEC 61298-2“	
Max. measured error per IEC 61298-2	■ ≤ ±0.5 % of span ■ ≤ ±0.25 % of span [1]	
Zero point setting	±5 % → Through potentiometer within the instrument	
Adjustability of span	±5 % → Through potentiometer within the instrument	
Non-repeatability per IEC 61298-2	< 0.1 % of span	
Mean temperature coefficient at 0 ... 80 °C [32 ... 176 °F]		
Zero point	Measuring range ≤ 0.25 bar [≤ 5 psi]	≤ ±0.4 % of span/10 K
	Measuring range > 0.25 bar [> 5 psi]	≤ ±0.2 % of span/10 K
Span	≤ ±0.2 % of span/10 K	
Long-term stability per IEC 61298-2	≤ ±0.2 % of span/year	
Reference conditions	Per IEC 61298-1	

1) Only for measuring ranges ≥ 0.25 bar [3 psi] and ≤ 1,000 bar [15,000 psi].

Measuring ranges, gauge pressure

bar	
0 ... 0.1	0 ... 60
0 ... 0.16	0 ... 100
0 ... 0.25	0 ...160
0 ... 0.4	0 ... 250
0 ... 0.6	0 ... 400
0 ... 1	0 ... 600
0 ... 1.6	0 ... 1,000 [1]
0 ... 2.5	0 ... 1,050 [1] [2]
0 ... 4	0 ... 1,600 [1] [2]
0 ... 6	0 ... 2,500 [1] [2]
0 ... 10	0 ... 4,000 [1] [2]
0 ... 16	0 ... 5,000 [1] [2]
0 ... 25	0 ... 6,000 [1] [2]
0 ... 40	-

1) Only for instruments without flush process connection.
2) Only for instruments with ignition protection type Ex ia.

psi	
0 ... 3	0 ... 500
0 ... 5	0 ... 600
0 ... 10	0 ... 750
0 ... 15	0 ... 800
0 ... 20	0 ... 1,000
0 ... 25	0 ... 1,500
0 ... 30	0 ... 2,000
0 ... 50	0 ... 3,000
0 ... 60	0 ... 4,000
0 ... 100	0 ... 5,000
0 ... 150	0 ... 6,000
0 ... 160	0 ... 7,500
0 ... 200	0 ... 8,000
0 ... 250	0 ... 10,000 [1]
0 ... 300	0 ... 15,000 [1]
0 ... 400	-

1) Only for instruments without flush process connection.

Measuring ranges, absolute pressure

bar	
0 ... 0.25	0 ... 4
0 ... 0.4	0 ... 6
0 ... 0.6	0 ... 10
0 ... 1	0 ... 16
0 ... 1.6	0 ... 25
0 ... 2.5	-

psi	
0 ... 5	0 ... 100
0 ... 10	0 ... 160
0 ... 15	0 ... 200
0 ... 30	0 ... 300
0 ... 60	-

Vacuum and +/- measuring ranges

bar	
-1 ... 0	-1 ... +5
-1 ... +0.6	-1 ... +9
-1 ... +1.5	-1 ... +15
-1 ... +3	-1 ... +24

psi	
-15 inHg ... 0	-30 inHg ... 100
-30 inHg ... 0	-30 inHg ... 160
-30 inHg ... 15	-30 inHg ... 200
-30 inHg ... 30	-30 inHg ... 300
-30 inHg ... 60	-

Other measuring ranges on request.

Further details on: Measuring range	
Units	■ bar ■ psi ■ mbar ■ inWC ■ MPa ■ kg/cm²
Maximum working pressure	→ Corresponds to the upper measuring range value / measuring range full scale value → Any permanent operation above the maximum working pressure is not permissible
Overpressure limit	The overpressure limit is based on the measuring range. Depending on the selected process connection and the seal, restrictions in overpressure limit can result.
Measuring ranges ≤ 25 bar [≤ 400 psi]	3 times
Measuring ranges from 0 ... 40 to 0 ... 600 bar [0 ... 500 to 0 ... 8,000 psi]	2 times → 1.7 times the overpressure limit at 1,000 psi, 1,500 psi, 4,000 psi and 6,000 psi
Measuring ranges from 0 ... 1,000 to 0 ... 2,500 bar [0 ... 10,000 to 0 ... 15,000 psi]	1.4 times
Measuring ranges > 2,500 bar	1.15 times
Vacuum resistance	Yes

Process connection				
Thread	**Max. measuring range in bar [psi]**	**Overpressure limit in bar [psi]**	**Permissible temperature ranges in °C [°F] for ignition protection type Ex ia**	**Seal**
EN 837				
G ¼ B	1,000 [15,000]	1,480 [21,500]	-20 ... +80 [-4 ... +176]	-
	400 [5,000]	800 [11,600]	-40 ... +150 [-40 ... +302]	-
	400 [5,000]	800 [11,600]	-40 ... +200 [-40 ... +392]	-
G ½ B	1,000 [15,000]	1,480 [21,500]	-20 ... +80 [-4 ... +176]	-
	400 [5,000]	800 [11,600]	-40 ... +150 [-40 ... +302]	-
	400 [5,000]	800 [11,600]	-40 ... +200 [-40 ... +392]	-
DIN EN ISO 1179-2				
G ¼ A	600 [8,000]	858 [12,500]	-20 ... +80 [-4 ... +176]	NBR
			-15 ... +80 [+5 ... +176]	FKM/FPM
	400 [5,000]	600 [8,700]	■ -15 ... +150 [+5 ... +302] ■ -15 ... +200 [+5 ... +392]	FKM/FPM
G ½ A	600 [8,000]	858 [12,500]	-20 ... +80 [-4 ... +176]	NBR
			-15 ... +80 [+5 ... +176]	FKM/FPM
ANSI/ASME B1.20.1				
1/4 NPT	1,000 [15,000]	1,480 [21,500]	-20 ... +80 [-4 ... +176]	-
1/2 NPT	1,000 [15,000]	1,480 [21,500]	-20 ... +80 [-4 ... +176]	-
	400 [5,000]	800 [11,600]	■ -40 ... +150 [-40 ... +302] ■ -40 ... +200 [-40 ... +392]	-
DIN 16288				
M20 x 1.5	1,000 [15,000]	1,480 [21,500]	-20 ... +80 [-4 ... +176]	-
Female thread with sealing cone				
M16 x 1.5	6,000	7,000 [101.500]	-20 ... +80 [-4 ... +176]	-
	→ Not available for psi measuring ranges			
M20 x 1.5	6,000	7,000 [101.500]	-20 ... +80 [-4 ... +176]	-
	→ Not available for psi measuring ranges			
9/16-18 UNF/ female F250-C	6,000 [87,000]	7,000 [101.500]	-20 ... +80 [-4 ... +176]	-
ISO 7				
R ⅜	1,000 [15,000]	1,480 [21,500]	-20 ... +80 [-4 ... +176]	-
R ¼	1,000 [15,000]	1,480 [21,500]	-20 ... +80 [-4 ... +176]	-
	400 [5,000]	800 [11,600]	-40 ... +150 [-40 ... +302]	-
	400 [5,000]	800 [11,600]	-40 ... +200 [-40 ... +392]	-
-				
G ½ male/G ¼ female	1,000 [15,000]	1,480 [21,500]	-20 ... +80 [-4 ... +176]	-

Process connection				
Thread	**Max. measuring range in bar [psi]**	**Overpressure limit in bar [psi]**	**Permissible temperature ranges in °C [°F] for ignition protection type Ex ia**	**Seal**
Flush				
G ½ B	600 [8,000]	1,200 [17,500]	-20 ... +80 [-4 ... +176]	NBR
			-15 ... +80 [+5 ... +176]	FKM/FPM
		600 [8,700]	-15 ... +150 [+5 ... +302]	FKM/FPM
		1,200 [17,500]	-20 ... +80 [-4 ... +176]	FFKM
			-20 ... +150 [-4 ... +302]	FFKM
		800 [11,600]	-20 ... +80 [-4 ... +176]	EPDM
		400 [5,800]	-20 ... +150 [-4 ... +302]	EPDM
G 1 B	1,6 [30]	4.8 [69]	-20 ... +80 [-4 ... +176]	NBR
			-15 ... +80 [+5 ... +176]	FKM/FPM
			-20 ... +80 [-4 ... +176]	EPDM
			-15 ... +150 [+5 ... +302]	FKM/FPM
			-20 ... +150 [-4 ... +302]	EPDM
G 1 hygienic	25 [300]	50 [720]	-20 ... +150 [-4 ... +302]	EPDM

Details must be tested separately in the respective application. The specified values for the overpressure limit serve only as a rough orientation. The values depend on the temperature, the seal used, the selected torque, the type and the material of the mating thread and the prevailing operating conditions.
Permissible temperature ranges depend on the process connection, the EPL, the temperature class, the electrical connection and the seal, see chapter “Specifications” in the operating instructions.

Output signal	
Signal type	4 ... 20 mA
Load	
Model IS-3	≤ (auxiliary power - 10 V) / 0.02 A - (cable length in m x 0.14 Ω)
Model IS-3 with field case	≤ (auxiliary power - 11 V) / 0.02 A
	With test signal ≤ 15 Ω
Voltage supply	
Model IS-3	DC 10 ... 30 V
Model IS-3 with field case	DC 11 ... 30 V
Power consumption	
Model IS-3	Pmax ≤ 800mW
Dynamic behaviour	
Settling time per IEC 61298-2	≤ 2 ms
Settling time per IEC 61298-2 for medium temperatures below -30 °C [-22 °F]	≤ 10 ms

Electrical connection					
Connection type	**IP code [1] [2] IEC 60529**	**Ignition protection type**	**Materials**	**Wire cross-section in mm²**	**Cable diameter in mm [in]**
Angular connector DIN EN 175301-803-A					
PG9	IP65	Ex ia	PA6	Max. 1.5	6 ... 8 [0.24 ... 0.31]
1/2 NPT	IP65	Ex ia	PA6	Max. 1.5	6 ... 8 [0.24 ... 0.31]
PG13.5 (GL)	IP65	Ex ia	PA6	Max. 1.5	10 ... 14 [0.39 ... 0.55]
Circular connector IEC 61076-2-106					
M16 x 0.75, 5-pin	IP67	■ Ex ia ■ Ex ec	PA6, nickel-plated Zn	-	-
Circular connector IEC 61076-2-101 A-COD					
M12 x 1	IP67	Ex ia	PA6, stainless steel	-	-
Bayonet connector MIL-DTL-26482					
4-pin	IP67	Ex ia	PA6, stainless steel, nickel-plated Al	-	-
6-pin	IP67	Ex ia	PA6, stainless steel, nickel-plated Al	-	-
Cable outlet					
Cable outlet	IP67	Ex ia	PA6, stainless steel, nickel-plated brass, PUR	0.5	6.8 [0.27]
Cable outlet with protective cap	IP67 [3]	■ Ex ec ■ Ex tc	PA66/6-FR, stainless steel, PUR	0.34	5.5 [0.22]
Cable outlet with cable gland	IP68	Ex ia	Stainless steel, nickel-plated brass, PUR	0.5	6.8 [0.27]
	→ Condition: max. 72 h at 300 mbar [4.35 psi]				
Cable outlet with cable gland conduit 1/2 NPT	IP68	Ex ia	Stainless steel, nickel-plated brass, PUR	0.5	6.8 [0.27]
	→ Condition: max. 72 h at 300 mbar [4.35 psi]				
Cable outlet, permanent use in the medium	IP68	■ Ex ia ■ Ex ec ■ Ex tc	Stainless steel ■ PUR ■ FEP	0.5	7.5 [0.3]
	→ Restriction: max. 2 bar [29 psi] ambient pressure				
Field case					
Nickel-plated brass cable gland	IP69K	Ex ia	Stainless steel, nickel-plated brass	Max. 1.5	7 … 13 [0.28 ... 0.51]
Stainless steel cable gland	IP69K	Ex ia	Stainless steel	Max. 1.5	8 ... 15 [0.31 ... 0.59]
Plastic cable gland	IP69K	Ex ia	Stainless steel, plastic	Max. 1.5	6.5 … 12 [0.26 ... 0.47]
Cable gland conduit ½ NPT	IP69K	Ex ia	Stainless steel, plastic	Max. 1.5	6.5 … 12 [0.26 ... 0.47]
Cable gland conduit M20 x 1.5	IP69K	Ex ia	Stainless steel, plastic	Max. 1.5	6.5 … 12 [0.26 ... 0.47]

1) The stated IP codes only apply when plugged in using mating connectors that have the appropriate IP code.
2) In combination with FM and CSA approvals, the ingress protection is always specified as IP65.
3) Precondition: Avoidance of water accumulation in the protective cap

Further details on: Electrical connection	
Features	
Angular connector	Adjustable
Circular connector	■ Adjustable ■ Not adjustable (without PA6 material)
Bayonet connector	Adjustable
Cable outlet	■ Adjustable ■ Not adjustable (without PA6 material) → Depending on version
Field case	■ Spring terminal ■ Screw terminal ■ Adjustable
Reverse polarity protection	U+ vs. U
Insulation voltage	DC 500 V

Pin assignment

Angular connector DIN 175301-803 A

	2-wire
U_+	1
U-	2
Shield	-

Circular connector M12 x 1 IEC 61076-2-101 (4-pin)

	2-wire
U_+	1
U-	3
Shield	-

Bayonet connector MIL-DTL-26482 (6-pin)

	2-wire
U_+	A
U-	B
Shield	-

Bayonet connector MIL-DTL-26482 (4-pin)

	2-wire
U_+	A
U-	B
Shield	-

Circular connector M16 x 0.75 IEC 61076-2-106 (5-pin)

	2-wire
U_+	3
U-	1
Shield	-

All cable outlets

	2-wire
U_+	Brown (BN)
U-	Green (GN)
Shield	Grey (GY)

Cable outlet IP67 with protective cap

	2-wire
U_+	Brown (BN)
U-	Blue (BU)
Shield	Shielding braid

Field case

	2-wire
U_+	1
U-	2
Test+	3
Test-	4
Shield	5

Legend

U+ Positive power supply terminal
U- Negative power supply terminal
Test+ Positive test connection
Test- Negative test connection

Material			
Material (wetted)			
Flush process connections	Measuring ranges ≤ 25 bar [≤ 400 psi]	G 1 B flush	316Ti
		G 1 B hygienic	316L
	Measuring ranges ≤ 600 bar [≤ 8.700 psi]	G ½ B flush	316Ti
Process connections with pressure port	Measuring ranges ≤ 25 bar [≤ 400 psi]	Permissible temperature range ≥ -20 °C ... ≤ 80°C [≥ -4 ... ≤ 176 °F]	316Ti
	Measuring ranges ≤ 25 bar [≤ 400 psi]	Permissible temperature range < -20 °C ... > 80°C [< -4 ... > 176 °F]	316L and 316Ti
	Measuring ranges ≥ 40 bar [≥ 500 psi]	Permissible temperature range < -20 °C ... > 80°C [< -4 ... > 176 °F]	316L and 316Ti and S13800
	Measuring ranges ≥ 40 und ≤ 1.050 bar [≥ 500 und ≤ 15.000 psi]	-	316Ti and S13800
	Measuring ranges > 1.050 bar [> 15.000 psi]	-	S13800
Seal	→ See table „Process connection”		
Material (in contact with the environment)			
Case	Stainless steel		
Electrical connection	→ See table „Electrical connection”		
Pressure transmission medium			
< 25 bar [400 psi]	Synthetic oil		
≥ 25 bar [400 psi]	Dry measuring cell		
≤ 25 bar abs. [400 psi abs.]	Synthetic oil		

Version for special media		
Food	Food-compatible pressure transmission medium	
Oil- and grease-free	Residual hydrocarbon	< 1,000 mg/m²
Oxygen	Measuring ranges	≥ 40 bar [500 psi] ... ≤ 400 bar [5,000 psi]
	Material (wetted parts)	316L und Elgiloy® (2.4711)
	Max. permissible temperature range	-20 ... +60 °C [-4 ... +140 °F]
Hydrogen	Measuring ranges	≥ 25 bar [400 psi] ... ≤ 1.050 bar [15.000 psi]
	Material (wetted)	316Ti and Elgiloy® (2.4711)

Operating conditions	
Permissible temperature limits for ignition protection type Ex ia	
Medium temperature limit / Ambient temperature limit	Permissible temperature ranges depend on the option selected above, the EPL, the temperature class, the selected electrical connection and the selected seal.
Storage temperature limit	-15 ... +70 °C [5 ... 158 °F]
Permissible temperature limits for ignition protection type Ex ec and Ex tc	
Medium temperature limit	T6: -15 ... +55 °C [5 ... +131 °F]
	T4/T5: -15 ... +70 °C [5 ... +158 °F]
Ambient temperature limit	T6: -15 ... +55 °C [5 ... +131 °F]
	T4/T5: -15 ... +70 °C [5 ... +158 °F]

Operating conditions	
Storage temperature limit	-15 ... +70 °C [5 ... +158 °F]
Ingress protection (IP code) per IEC 60529	→ See table „Electrical connection”
Vibration resistance per IEC 60068-2-6	
-	20g
Field case and cable outlet IP67 with protective cap	10g
Measuring range > 1,000 bar	5g
Medium temperature ranges / Medium temperatures < -20 °C and > 80 °C [< -4 and > 176 °F]	5g
Medium temperature ranges / Medium temperatures < -20 °C and > 80 °C [< -4 and > 176 °F] with field case	2g
Shock resistance per IEC 60068-2-27	
-	1,000g
Field case	600g
Measuring range > 1,000 bar	100g
Cable outlet IP67 with protective cap	100g
Medium temperature ranges / Medium temperatures < -20 °C and > 80 °C [< -4 °F and > 176 °F]	100g
Medium temperature ranges / Medium temperatures < -20 °C and > 80 °C [< -4 °F and > 176 °F] with field case	50g

Packaging and instrument labelling	
Packaging	Individual packaging
Instrument labelling	WIKA product label, glued

Approvals

Logo	Description	Country
CE	**EU declaration of conformity**	European Union
	EMC directive EN 61326 emission (group 1, class B) and immunity (industrial environments)	
	Pressure Equipment Directive	
	RoHS directive	
Ex	ATEX directive Hazardous areas - Ex i Zone 0 gas [II 1G Ex ia IIA T4/T5/T6 Ga] [II 1G Ex ia IIC T4/T5/T6 Ga] Zone 1 mounting to zone 0 gas [II 1/2G Ex ia IIC T4/T5/T6 Ga/Gb] Zone 2 gas [II 3G Ex ic IIC T4/T5/T6 Gc X] Zone 20 dust [II 1D Ex ia IIIB T_{200} 135 °C Da] [II 1D Ex ia IIIC T135 °C Da] Zone 21 mounting to zone 20 dust [II 1/2D Ex ia IIIB T_{200} 135 °C Da/Db] [II 1/2D Ex ia IIIC T135 °C Da/Db] Mining [I M1 Ex ia I Ma] - Ex e Zone 2 gas [II 3G Ex ec IIC T4/T5/T6 Gc X] - Ex t Zone 22 dust [II 3D Ex tc IIIC T90 °C Dc X]	
IEC IECEx	**IECEx** Hazardous areas - Ex i Zone 0 gas [Ex ia IIA T4/T5/T6 Ga] [Ex ia IIC T4/T5/T6 Ga] Zone 1 mounting to zone 0 gas [Ex ia IIC T4/T5/T6 Ga/Gb] Zone 2 gas [Ex ic IIC T4/T5/T6 Gc X] Zone 20 dust [Ex ia IIIB T_{200} 135 °C Da] [Ex ia IIIC T135 °C Da] Zone 21 mounting to zone 20 dust [Ex ia IIIB T_{200} 135 °C Da/Db] [Ex ia IIIC T135 °C Da/Db] Mining [Ex ia I Ma] - Ex e Zone 2 gas [Ex ec IIC T4/T5/T6 Gc X] - Ex t Zone 22 dust [Ex tc IIIC T90 °C Dc X]	International
FM APPROVED	**FM** Hazardous areas (see approval)	USA
c SP us	**CSA**	USA and Canada
	Safety (e.g. electr. safety, overpressure, ...)	
	Hazardous areas (see approval)	
	PAC Kazakhstan Metrology, measurement technology	Kazakhstan
-	**MTSCHS** Permission for commissioning	Kazakhstan
-	**PAC Ukraine** Metrology, measurement technology	Ukraine
	PAC Uzbekistan Metrology, measurement technology	Uzbekistan
Ex NEPSI	**NEPSI** Hazardous areas (see approval)	China
KCs	**KCs (KOSHA)** Hazardous areas (see approval)	South Korea
DNV	**DNV GL** Ships, shipbuilding (e.g. offshore)	International
-	**CRN** Safety (e.g. electr. safety, overpressure, ...)	Canada

Manufacturer's information

Logo	Description
MTTF	> 100 years
-	**China RoHS directive**

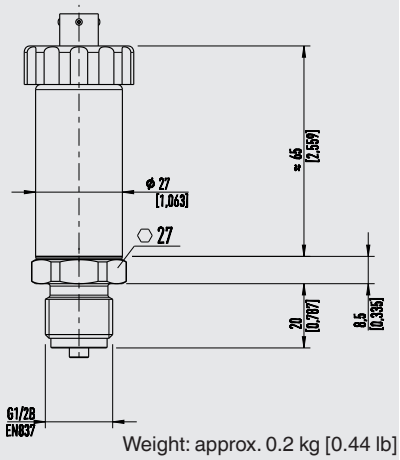
→ For approvals and certificates, see website

Safety-related characteristic values (Ex)

Safety-related characteristic values (Ex)		
Supply and signal circuit		
For ATEX/IECEx ignition protection type Ex ia	See product label	
	Voltage	Ui = DC 30 V
	Current	Ii = 100 mA
	Power	Group I (mines susceptible to firedamp): P_i = 800 mW
		Group II (explosive gas atmosphere other than mines): P_i = 800 mW
		Group IIIB (explosive gas atmosphere other than mines): P_i = 800/650 mW
		Group IIIC (explosive gas atmosphere other than mines): P_i = 750/650/550 mW
	Effective internal capacitance (version with non-detachable cable connection)	■ Ci ≤ 16.5 nF ■ Ci ≤ 16.5 nF + 0.2 nF/m
	Effective internal inductance (version with non-detachable cable connection)	■ Li = 0 µH ■ Li = 0 µH + 2 µH/m
Supply and signal circuit for CSA and FM	See product label	
	Entity/non-incendive parameters	V_{max}/Ui = 30 V I_{max}/Ii = 100 mA at ambient temperature ≤ 85 °C [185 °F] I_{max}/Ii = 87 mA at ambient temperature > 85 °C [185 °F] P_{max}/Pi = 0.8 W Ci = 16.5 nF (flying leads: + 0.2 nF/m) Li = 0 µH (flying leads: + 2 µH/m)

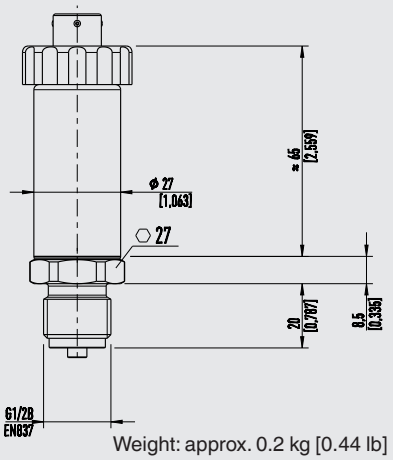
Dimensions in mm [in]

Bayonet connector, MIL-DTL-26482 (4-pin), adjustable



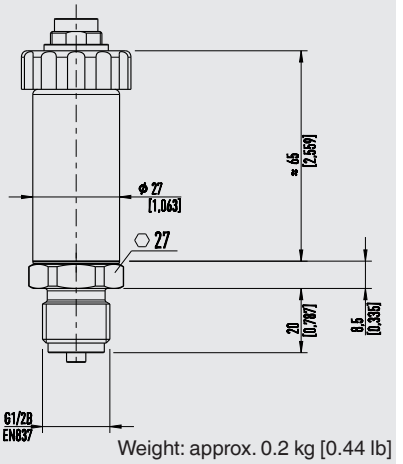
Weight: approx. 0.2 kg [0.44 lb]

Bayonet connector, MIL-DTL-26482 (6-pin), adjustable



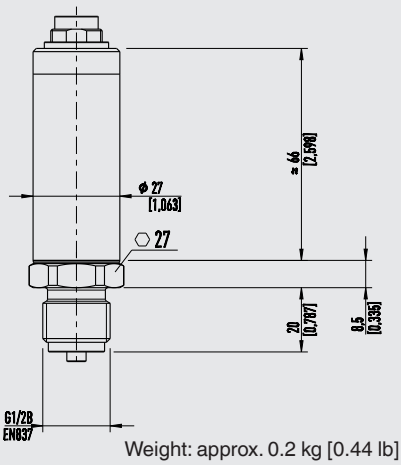
Weight: approx. 0.2 kg [0.44 lb]

Circular connector M16 x 0.75, IEC 61076-2-106 (5-pin), adjustable



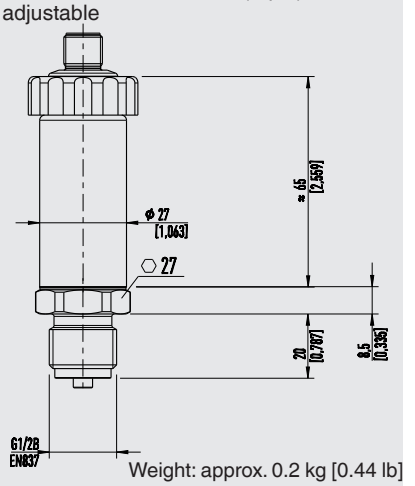
Weight: approx. 0.2 kg [0.44 lb]

Circular connector M16 x 0.75, IEC 61076-2-106 (5-pin), not adjustable



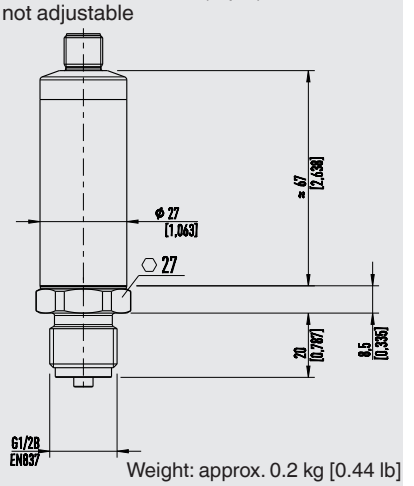
Weight: approx. 0.2 kg [0.44 lb]

Circular connector M12 x 1, IEC 61076-2-101 A-COD (4-pin), adjustable



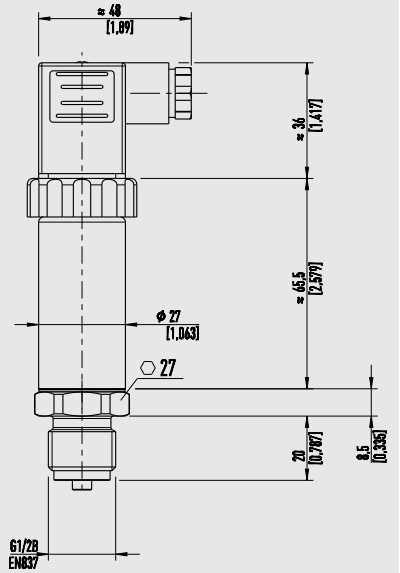
Weight: approx. 0.2 kg [0.44 lb]

Circular connector M12 x 1, IEC 61076-2-101 A-COD (4-pin), not adjustable



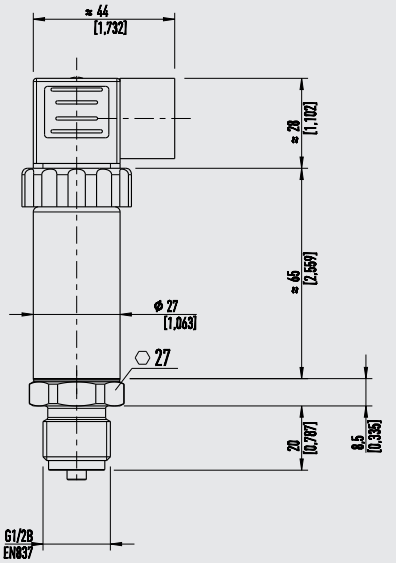
Weight: approx. 0.2 kg [0.44 lb]

Angular connector, DIN EN 175301-803 A PG 9, adjustable



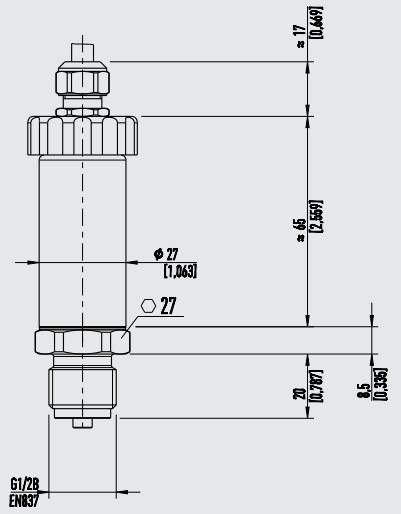
Weight: approx. 0.2 kg [0.44 lb]

Angular connector, DIN EN 175301-803 A ½ NPT, adjustable



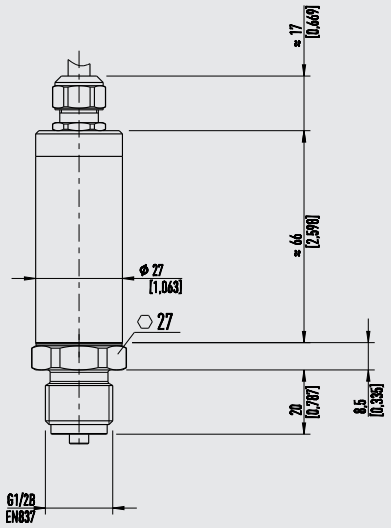
Weight: approx. 0.2 kg [0.44 lb]

Cable outlet IP67, adjustable



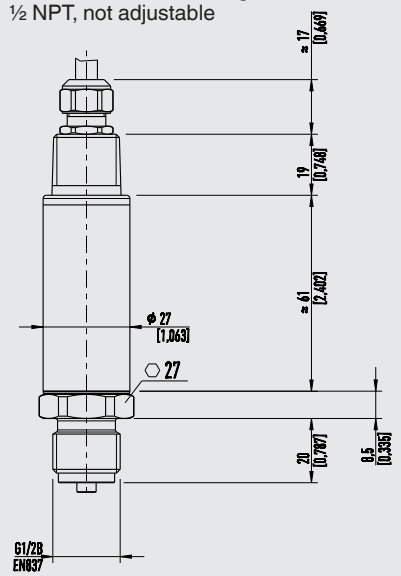
Weight: approx. 0.25 kg [0.55 lb]

Cable outlet IP68, cable gland, not adjustable



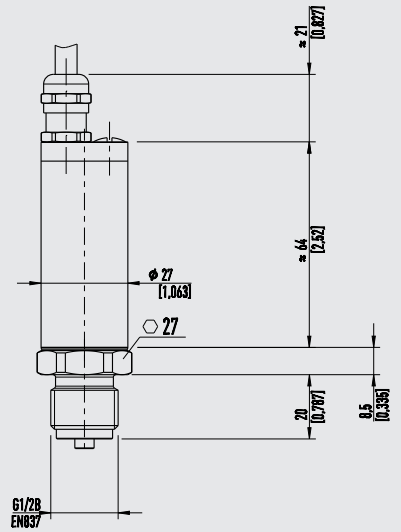
Weight: approx. 0.25 kg [0.55 lb]

Cable outlet IP68, cable gland conduit ½ NPT, not adjustable



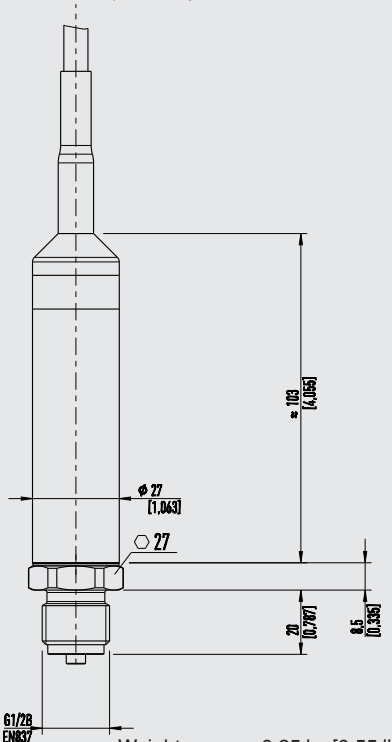
Weight: approx. 0.25 kg [0.55 lb]

Cable outlet IP68, cable gland, adjustable



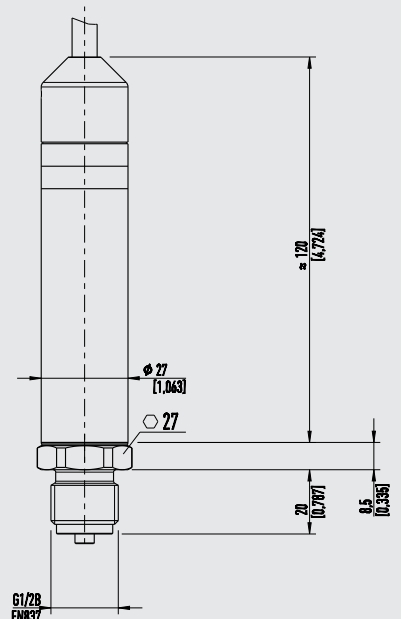
Weight: approx. 0.25 kg [0.55 lb]

Cable outlet IP68 PUR, (permanent use in the medium), not adjustable



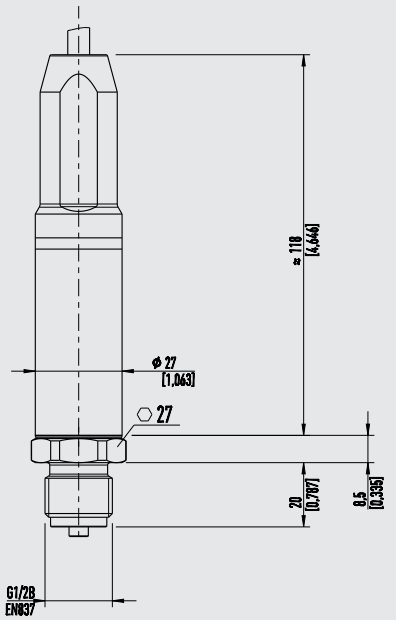
Weight: approx. 0.25 kg [0.55 lb]

Cable outlet IP68 FEP, (permanent use in the medium), not adjustable



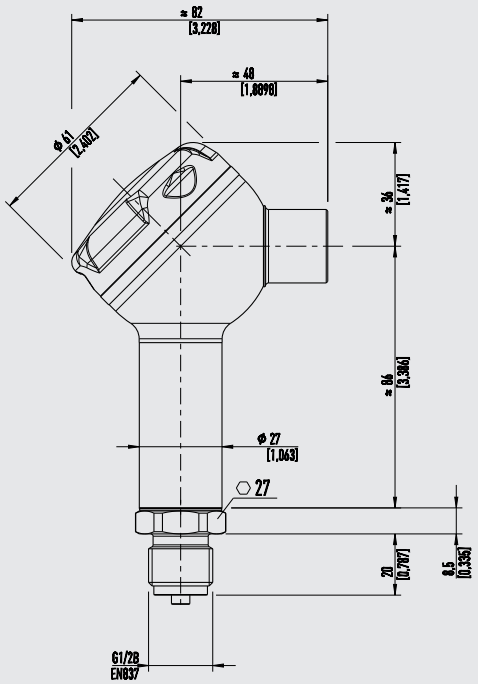
Weight: approx. 0.3 kg [0.66 lb]

Cable outlet IP67 with protective cap, not adjustable



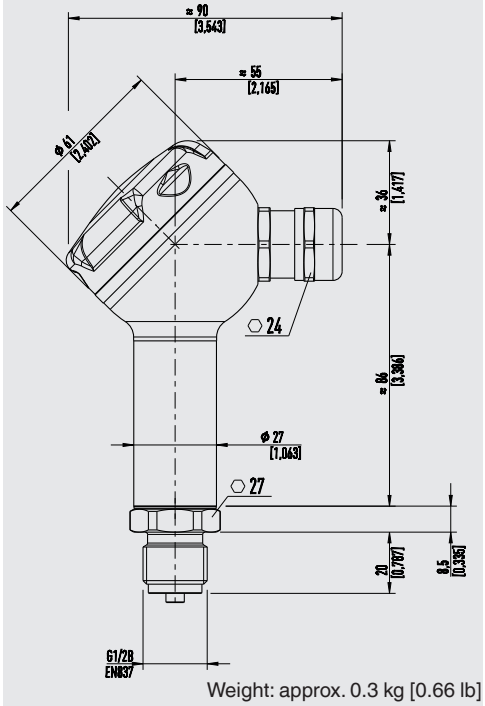
Weight: approx. 0.25 kg [0.55 lb]

Field case, conduit ½ NPT-I, adjustable



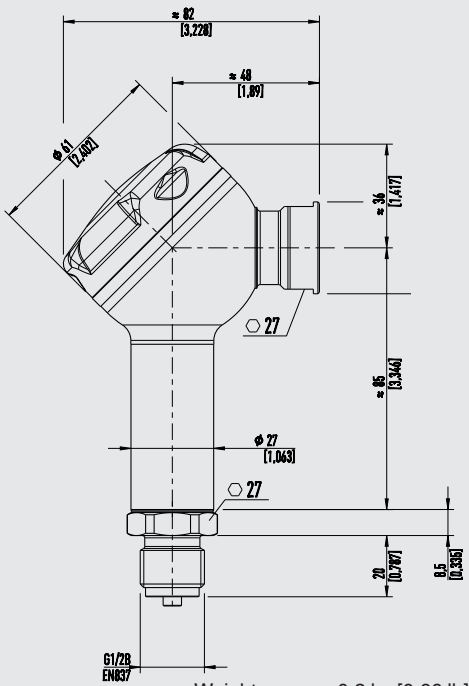
Weight: approx. 0.3 kg [0.66 lb]

Field case, cable gland, adjustable



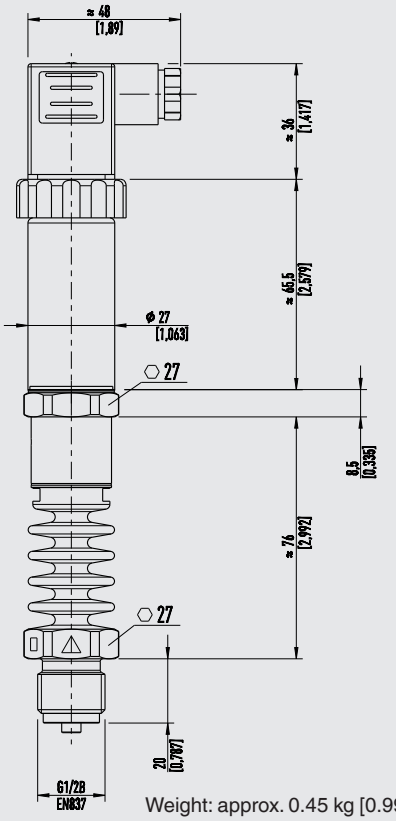
Weight: approx. 0.3 kg [0.66 lb]

Field case, conduit M20 x 1.5-I, adjustable



Weight: approx. 0.3 kg [0.66 lb]

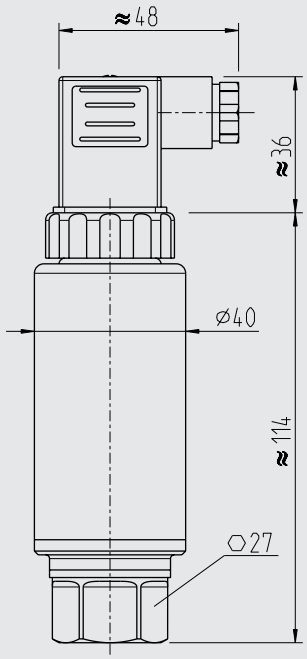
IS-3 for optional medium temperature ranges
-40 ... +150 °C [-40 ... 302 °F] and -40 ... +200 °C [-40 ... +392 °F]



Weight: approx. 0.45 kg [0.99 lb]

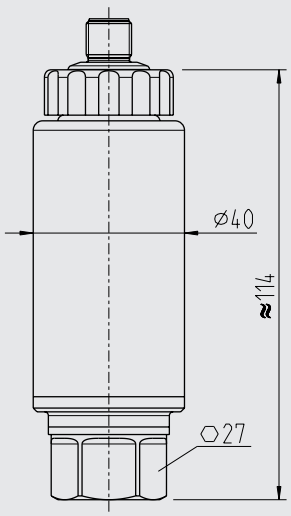
Pressure transmitters in high-pressure version

Angular connector,
DIN EN 175301-803 A PG 9, Adjustable



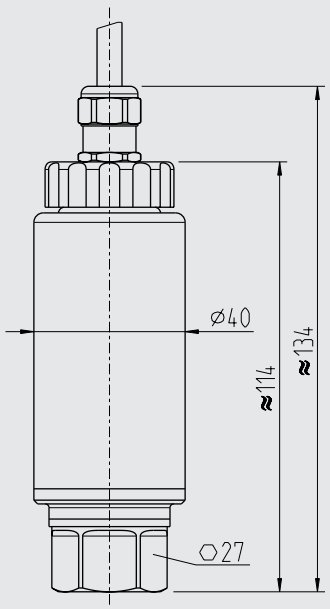
Weight: approx. 0.3 kg [0.66 lb]

Circular connector M12 x 1,
IEC 61076-2-101 A-COD (4-pin), Adjustable



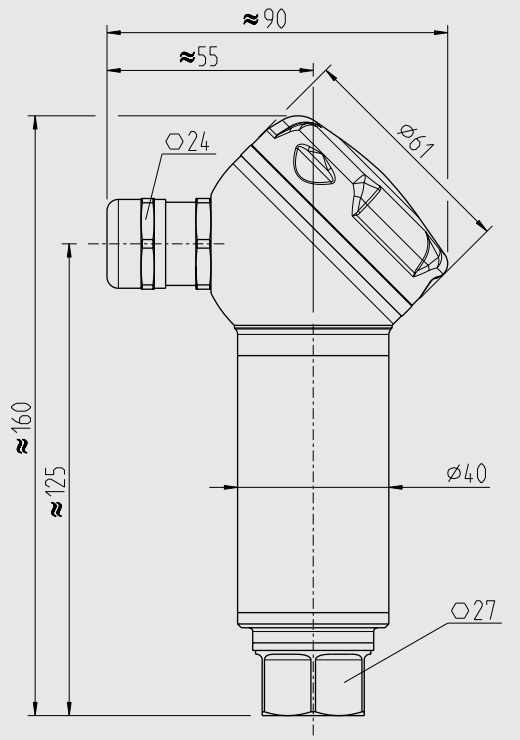
Weight: approx. 0.3 kg [0.66 lb]

Cable outlet IP67, Adjustable



Weight: approx. 0.3 kg [0.66 lb]

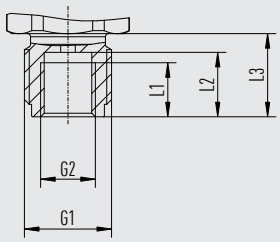
Field case, Cable gland, Adjustable



Weight: approx. 0.45 kg [0.99 lb]

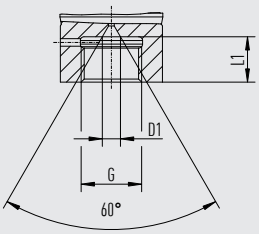
Process connections

-



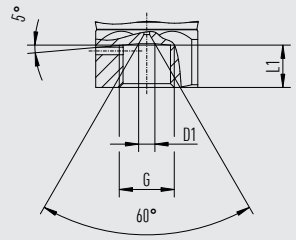
G1	G2	L1	L2	L3
G ½ B	**G ¼ I**	13 [0.51]	15.5 [0.61]	20 [0.79]

Sealing cone



G	L1	D1
M16 x 1.5	12 [0.47]	4.8 [0.189]
M20 x 1.5	15 [0.59]	

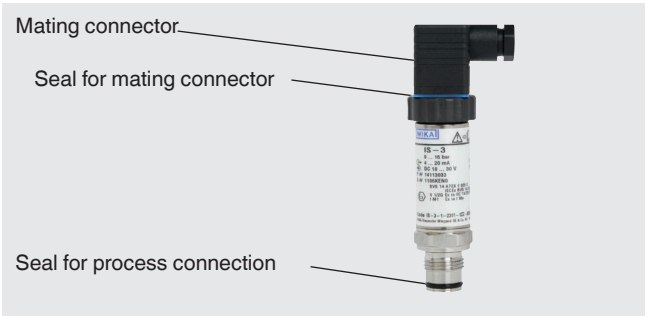
Sealing cone



G	L1	D1
9/16 UNF	11.2 [0.44]	4.3 [0.17]

→ For further information on process connections, see technical information IN 00.14.

Accessories and spare parts



Designation		Order number
Mating connector (for ignition protection type Ex ia)		
Angular connector DIN EN 175301-803 A	Metric, with 2 m moulded cable	11225793
	Metric, with 5 m moulded cable	11250186
Circular connector M12 x 1, 4-pin, straight	IP67, for self-assembly / without cable	2421262
Circular connector M12 x 1, 4-pin, angled	IP67, for self-assembly / without cable	2421270
Seals for mating connector		
Angular connector DIN 175301-803 A	Blue (WIKA)	1576240
	Brown (neutral)	11437902
Seals for process connection		
G ¼ B, EN 837	Copper	11250810
	Stainless steel	11250844
G ½ B, EN 837	Copper	11250861
	Stainless steel	11251042
M20 x 1.5, DIN 16288	Copper	11250861
	Stainless steel	11251042
G ¼ A	NBR	1537857
	FKM	1576534
G ½ A	NBR	1039067
	FKM	1039075
Welding socket		
G ½ B, flush		1192299
G 1 B, flush		1192264
G 1 B, hygienic flush		14145179

Ordering information

Model / Measuring range / Accuracy / Process connection / Seal / Electrical connection / Temperature range of medium

Standard articles

Configurator

WIKA Alexander Wiegand SE & Co. KG
Alexander-Wiegand-Straße 30
63911 Klingenberg/Germany
Tel. +49 9372 132-0
info@wika.de
www.wika.com

Flush pressure transmitter
For viscous and particle-laden media
Model S-11

for further approvals
see page 6

Applications

- General industrial applications
- Food and beverage industry
- Filling and packing machinery
- Dosing technology
- Level measurement

Special features

- High-quality product
- Many configurations possible
- Flush process connection
- Large stocks for short delivery times
- Vacuum-tight

Fig. left: **Pressure transmitter model S-11**
Fig. right: **Pressure transmitter model S-11 with cooling element**

Configurator

Standard articles

Description

Expert for viscous and particle-laden media
The model S-11 pressure transmitter with flush diaphragm has been specifically designed for the measurement of viscous, paste-like, adhesive, crystallising, particle-laden and contaminated media, which would clog the pressure channel of conventional process connections.

Through its optimised design, the flush process connection enables cleanability with the wetted diaphragm integrated into the process. Low-maintenance and trouble-free pressure measurement is thus also guaranteed in critical applications with frequently changing media.

High accuracy, a robust design, high-quality workmanship and the high flexibility of configuration are key features of the model S-11.

Flush process connection
All process connections of the flush pressure transmitter are made of stainless steel and are fully welded and isolate the medium from the pressure measuring instrument via a positive seal. A reliable, dead-space free sealing between the process connection and the measuring medium is thus assured.

For high medium temperatures of up to 150 °C (302 °F), the pressure transmitter is also available with an integrated cooling element.

Specifically for the food and beverage industry, a version with internal system fill fluid in accordance with FDA 21 CFR 178.3750 can be chosen.

Data sheets showing similar products:
High-quality pressure transmitter for general industrial applications; model S-20; see data sheet PE 81.61
Pressure transmitter for applications in hazardous areas; model IS-3, see data sheet PE 81.58
Pressure transmitter for highest pressure applications; model HP-2; see data sheet PE 81.53

Measuring ranges

Gauge pressure								
bar	**Measuring range**	**0 ... 0.1**	**0 ... 0.16**	**0 ... 0.25**	**0 ... 0.4**	**0 ... 0.6**	**0 ... 1**	**0 ... 1.6**
	Overload safety	1	1.5	2	2	4	5	10
	Measuring range	**0 ... 2.5**	**0 ... 4**	**0 ... 6**	**0 ... 10**	**0 ... 16**	**0 ... 25**	**0 ... 40**
	Overload safety	10	17	35	35	80	50	80
	Measuring range	**0 ... 60**	**0 ... 100**	**0 ... 160**	**0 ... 250**	**0 ... 400**	**0 ... 600**	
	Overload safety	120	200	320	500	800	1,200	
psi	**Measuring range**	**0 ... 15**	**0 ... 20**	**0 ... 30**	**0 ... 50**	**0 ... 60**	**0 ... 100**	**0 ... 150**
	Overload safety	145	145	145	240	240	500	500
	Measuring range	**0 ... 160**	**0 ... 200**	**0 ... 250**	**0 ... 300**	**0 ... 400**	**0 ... 500**	**0 ... 600**
	Overload safety	1,160	1,160	1,160	1,160	1,160	1,160	1,160
	Measuring range	**0 ... 750**	**0 ... 1,000**	**0 ... 1,500**	**0 ... 2,000**	**0 ... 3,000**	**0 ... 5,000**	**0 ... 6,000**
	Overload safety	1,740	1,740	2,900	4,600	7,200	11,600	11,600

Absolute pressure								
bar	**Measuring range**	**0 ... 0.25**	**0 ... 0.4**	**0 ... 0.6**	**0 ... 1**	**0 ... 1.6**	**0 ... 2.5**	**0 ... 4**
	Overload safety	2	2	4	5	10	10	17
	Measuring range	**0 ... 6**	**0 ... 10**	**0 ... 16**				
	Overload safety	35	35	80				
psi	**Measuring range**	**0 ... 15**	**0 ... 25**	**0 ... 50**	**0 ... 100**	**0 ... 250**		
	Overload safety	72.5	145	240	500	1,160		

Vacuum and +/- measuring range						
bar	**Measuring range**	**-0.6 ... 0**	**-0.4 ... 0**	**-0.25 ... 0**	**-0.16 ... 0**	**-0.1 ... 0**
	Overload safety	4	2	2	1.5	1
	Measuring range	**-1 ... 0**	**-1 ... +0.6**	**-1 ... +1.5**	**-1 ... +3**	**-1 ... +5**
	Overload safety	5	10	10	17	35
	Measuring range	**-1 ... +9**	**-1 ... +15**	**-1 ... +24**		
	Overload safety	35	80	50		
psi	**Measuring range**	**-30 inHg ... 0**	**-30 inHg ... +30**	**-30 inHg ... +60**	**-30 inHg ... +100**	**-30 inHg ... +160**
	Overload safety	72.5	240	240	500	1,160
	Measuring range	**-30 inHg ... +200**	**-30 inHg ... +300**			
	Overload safety	1,160	1,160			

The given measuring ranges are also available in mbar, MPa and further units.

Vacuum tightness
Yes

Output signals

Output signal

Signal type	Signal
Current (2-wire)	4 ... 20 mA
Current (3-wire)	0 ... 20 mA
Voltage (3-wire)	DC 0 ... 10 V
	DC 0 ... 5 V

Other output signals on request.

Load in Ω

Depending on the signal type the following loads apply:
Current (2-wire): ≤ (power supply - 10 V) / 0.02 A
Current (3-wire): ≤ (power supply - 3 V) / 0.02 A
Voltage (3-wire): > max. output signal / 1 mA

Voltage supply

Power supply

The power supply depends on the selected output signal
4 ... 20 mA (2-wire): DC 10 ...30 V
0 ... 20 mA (3-wire): DC 10 ...30 V
DC 0 ... 10 V: DC 14 ... 30 V
DC 0 ... 5 V: DC 10 ...30 V

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 % r. h.

Power supply

DC 24 V

Mounting position

Calibrated in vertical mounting position with process connection facing downwards.

Accuracy specifications

Accuracy at reference conditions

Accuracy	
Standard	≤ ±0.5 % of span
Option	≤ ±0.25 % of span [1]

1) Only for measuring ranges ≥ 0.25 bar

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.

Non-linearity (per IEC 61298-2)

≤ ±0.2 % of span BFSL

Non-repeatability

≤ 0.1 % of span

Temperature error in rated temperature range

Rated temperature range:
0 ... 80 °C (32 ... 176 °F)

Mean temperature coefficient of zero point:
Measuring range > 0.25 bar: ≤ ±0.2 % of span/10 K
Measuring range ≤ 0.25 bar: < ±0.4 % of span/10 K

Mean temperature coefficient of span:
≤ ±0.2 % of span/10 K

long-term stabilty at reference conditions

≤ ±0.2 % of span/year

Adjustability of zero point and span

Adjustment is made using potentiometers inside the instrument.
Not possible for IP68 cable outlet.

Zero point: ± 5 %
Span: ± 5 %

Time response

Settling time

≤ 2 ms

Operating conditions

Ingress protection (per IEC 60529)
The ingress protection depends on the type of electrical connection.

Electrical connection	Ingress protection
Angular connector DIN 175301-803 A	IP65
Circular connector M12 x 1 (4-pin)	IP67
Cable outlet IP67	IP67
Cable outlet IP68	IP68 [1)]

1) Adjustability of zero point and span not possible.

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

Vibration resistance
Process connections without cooling element:
20 g (IEC 60068-2-6, under resonance)

Process connections with cooling element:
10 g (IEC 60068-2-6, under resonance)

Shock resistance
Process connections without cooling element:
1,000 g (IEC 60068-2-27, mechanical)

Process connections with cooling element:
400 g (IEC 60068-2-27, mechanical)

Permissible temperature ranges
Also meets EN 50178, tab. 7, operation (C) 4K4H, storage (D) 1K4, transport (E) 2K3.

Process connections without cooling element		
Medium		
■ Standard	-30 ... +100 °C	-22 ... +212 °F
■ Option	-30 ... +125 °C	-22 ... +257 °F
Ambient	-20 ... +80 °C	-4 ... +176 °F
Storage	-40 ... +100 °C	-40 ... +212 °F

Process connections with cooling element		
Medium	-20 ... +150 °C	-4 ... +302 °F
Ambient	-20 ... +80 °C	-4 ... +176 °F
Storage	-40 ... +100 °C	-40 ... +212 °F

Electrical connections

Short-circuit resistance
S+ vs. U-

Reverse polarity protection
U+ vs. U-

Overvoltage protection
DC 36 V

Insulation voltage
DC 500 V with NEC class 02 voltage supply (low voltage and low current max. 100 VA even under fault conditions)

Connection diagrams

Angular connector DIN 175301-803 A

	2-wire	3-wire
U+	1	1
U-	2	2
S+	-	3

Wire cross-section max. 1.5 mm2 (AWG 16)
Cable diameter 6 ... 8 mm (0.24 ... 0.31")

Circular connector M12 x 1 (4-pin)

	2-wire	3-wire
U+	1	1
U-	3	3
S+	-	4

Cable outlet

	2-wire	3-wire
U+	brown (BN)	brown (BN)
U-	green (GN)	green (GN)
S+	-	white (WH)
Shield	grey (GY)	grey (GY)

Wire cross-section 6 x 0.5 mm² (AWG 20)
Cable diameter 6.8 mm (0.27")
Cable lengths 1.5 m, 3 m, 5 m, 10 m, 15 m
(4.9 ft, 9.8 ft, 16.4 ft, 32.8 ft, 49.2 ft)

Other connections on request.

Process connections

Thread	Available measuring ranges	
G ½ B flush [1)]	0 ... 2.5 to 0 ... 600 bar	0... 50 to 0 ... 6,000 psi
G 1 B flush [1)]	0 ... 0.1 to 0 ... 1.6 bar	0 ... 15 psi
Hygienic G 1 B flush (in accordance with 3-A Sanitary Standards)	0 ... 0.1 to 0 ... 25 bar	0 ... 15 to 0 ... 300 psi

1) Process connection also available with cooling element.

Cooling elements

For higher medium temperatures, process connections with a cooling element are available (see “Operating conditions”).

Sealing

Process connection	Max. medium temperature	Sealing material and max. pressure limitation		
		Standard	Option 1	Option 2
without cooling element	up to 100 °C (212 °F)	NBR up to 600 bar (8,700 psi)	FKM/FPM [1)] up to 600 bar (8,700 psi)	EPDM up to 200 bar (2,900 psi)
	up to 125 °C (257 °F)	NBR up to 600 bar (8,700 psi)	FKM/FPM [1)] up to 400 bar (5,800 psi)	EPDM up to 200 bar (2,900 psi)
with cooling element	up to 150 °C (302 °F)	FKM/FPM [1)] up to 300 bar (4,350 psi)	EPDM up to 200 bar (2,900 psi)	-
Hygienic	up to 150 °C (302 °F)	EPDM up to 200 bar (2,900 psi)	-	-

1) Minimum permissible medium and ambient temperature -20 °C / -4 °F

O-ring for G ½ B flush process connection optionally available with FFKM seal material (pressure limitation 600 bar (8,700 psi) for all medium temperatures)

The sealings listed under “Standard” are included in the delivery.

Materials

Wetted parts

- G ½ B and G 1 B flush: 316TI
- G 1 B flush, hygienic: 316L
- For sealing materials see “Process connections”

Internal pressure transmission medium

Pressure transmission medium	
Standard	Synthetic oil
Option	Food-compatible system fill fluid per FDA 21 CFR 178.3750

Approvals

Logo	Description	Country
CE	**EU declaration of conformity** ■ EMC directive [1)] EN 61326 emission (group 1, class B) and interference immunity (industrial application) ■ Pressure equipment directive ■ RoHS directive	European Community
CSA	**CSA** Safety (e.g. electr. safety, overpressure, ...)	Canada
EAC	**EAC** Electromagnetic compatibility	Eurasian Economic Community
GOST	**GOST** Metrology, measurement technology	Russia
KazInMetr	**KazInMetr** Metrology, measurement technology	Kazakhstan
-	**MTSCHS** Permission for commissioning	Kazakhstan
BelGIM	**BelGIM** Metrology, measurement technology	Belarus
Uzstandard	**Uzstandard** Metrology, measurement technology	Uzbekistan
3-A	**3-A** Sanitary Standard only for instruments with process connection hygienic G 1 B This instrument is 3-A marked, based on a third party verification for conformance to the 3-A standard.	USA

1) The existence of strong electromagnetic fields in a frequency range of < 2.7 GHz can result in increased measuring errors up to 1 %. Do not install the instruments in the vicinity of strong electromagnetic sources of interference (e.g. transmitting devices, radio equipment), or use sheath current filters where applicable.

Manufacturer‘s information and certifications

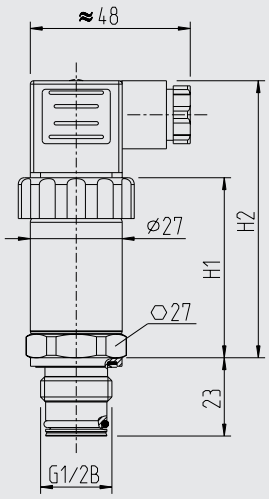
Logo	Description
-	**China RoHS directive**
-	**MTTF > 100 years**

Approvals and certificates, see website

Dimensions in mm (inch)

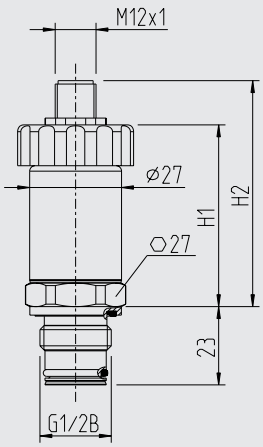
Pressure transmitter

with angular connector DIN 175301-803 A



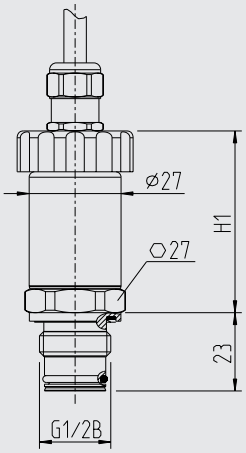
Weight approx. 0.2 kg / 7 oz

with M12 x 1 circular connector



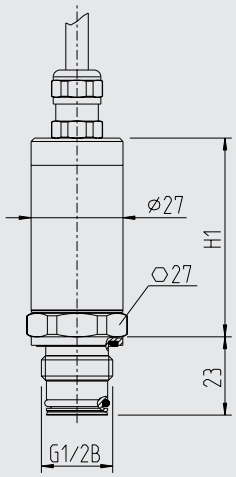
Weight approx. 0.2 kg / 7 oz

with cable outlet IP67



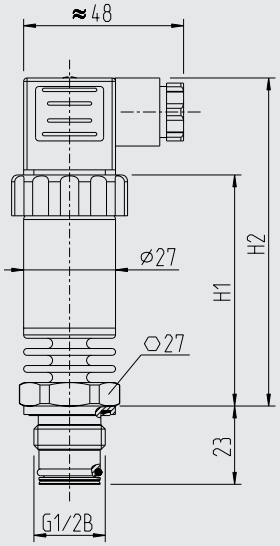
Weight approx. 0.2 kg / 7 oz

with cable outlet IP68



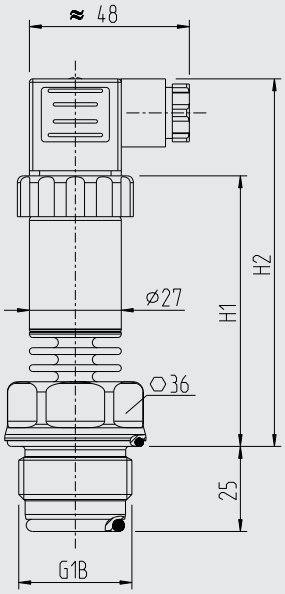
Weight approx. 0.2 kg / 7 oz

with cooling element for medium temperatures up to 150 °C



Weight approx. 0.3 kg / 10 oz

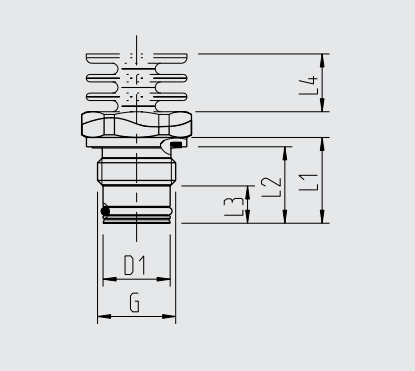
with cooling element for medium temperatures up to 150 °C and hygienic process connection



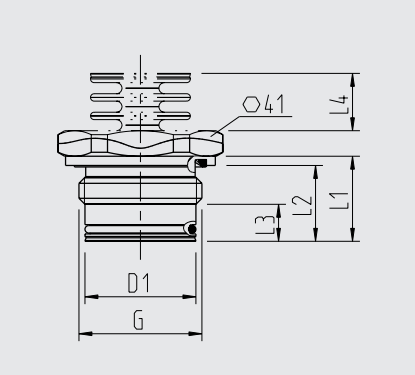
Weight approx. 0.5 kg / 18 oz

Electrical connection	Dimension	Process connection		
		G ½ B, G 1 B		G 1 hygienic
		without cooling element	with cooling element	with cooling element
Angular connector DIN 175301-803 A	H1	54 (2.13)	69 (2.72)	80 (3.15)
	H2	83.5 (3.29)	98 (3.56)	109 (4.29)
Circular connector M12 x 1	H1	54 (2.13)	69 (2.72)	80 (3.15)
	H2	67 (2.64)	82 (3.23)	93 (3.66)
Cable outlet IP67	H1	54 (2.13)	69 (2.72)	80 (3.15)
Cable outlet IP68	H1	58 (2.28)	73 (2.87)	84 (3.31)

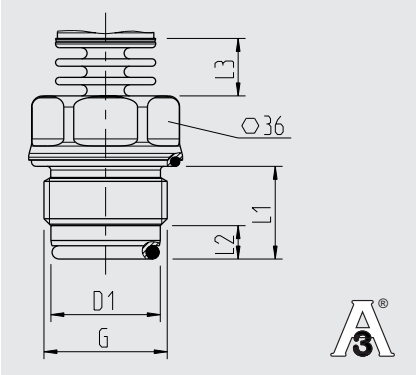
Process connections



G	D1	L1	L2	L3	L4
G ½ B	18 (0.71)	23 (0.91)	20.5 (0.81)	10 (0.4)	15.5 (0.61)



G	D1	L1	L2	L3	L4
G 1 B	30 (1.19)	23 (0.91)	20.5 (0.81)	10 (0.4)	15.5 (0.61)



G	D1	L1	L2	L3
G 1 B hygienic	29.5 (1.17)	25 (0.99)	9 (0.36)	15.5 (0.61)

Surface roughness of wetted metallic parts, Ra ≤ 0.76 µm

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

Accessories

Welding socket

	Designation	Order number
	Welding socket for G ½ B flush	1192299
	Welding socket for G 1 B flush	1192264
	Welding socket for G 1 B hygienic flush	14145179
	Welding socket for G 1 B hygienic flush with leak-control channel Fulfils the 3-A Sanitary Standards	14145183

For further adapter systems for measuring instruments with G 1 B hygienic process connection, see data sheet AC 09.20.

Mating connector

Designation	Order number			
	without cable	2 m cable, shielded	5 m cable, shielded	10 m cable, shielded
Angular connector DIN 175301-803 A				
■ with cable gland, metric	11427567	14100465	14100466	-
■ with cable gland, conduit	11022485	-	-	-
Circular connector M12 x 1 (4-pin)				
■ straight	-	14086880	14086883	14086884
■ angled	-	14086889	14086891	14086892

Sealings for mating connectors

Mating connector	Order number	
	Blue (WIKA)	Brown (neutral)
Angular connector DIN EN 175301-803 A	1576240	11437902

Sealings for process connection

Thread size and sealing	Order number			
	NBR	FPM/FKM	EPDM	FKKM
G ½ B				
■ O-ring	14072275	14072276	14072277	14073739
■ Profile sealing	1039067	1039075	1538306	-
G 1 B				
■ O-ring	1108247	1099094	1535056	-
■ Profile sealing	1100386	1145967	11522381	-
G 1 B hygienic				
■ O-ring	-	-	2225859	-
■ Profile sealing	-	-	11522381	-

Ordering information

Model / Measuring range / Output signal / Accuracy / Electrical connection / Medium temperature / Process connection / Sealing / System fill fluid

Standard articles

Configurator

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Pressure transmitter
Intrinsic safety Ex ia
Model IS-3

For further approvals, see page 10

Applications

- Chemical, petrochemical industry
- Oil, natural gas
- Machine building
- Compressors, compressor systems

Special features

- Ignition protection type intrinsically safe (Ex ia) with Equipment Protection Level (EPL) Ga, Da, Ma
- Large selection of common approvals for use in hazardous areas, e.g. ATEX, IECEx, FM, CSA, EACEx or NEPSI
- Exceptionally large variety covers almost all applications – even under extreme operating conditions
- Excellent quality and proven technology

Pressure transmitter, model IS-3

Configurator

Standard articles

Description

The model IS-3 intrinsically safe pressure transmitter has been designed for gas hazardous areas (EPL Ga) and can also be used with combustible dusts (EPL Da) and in mines susceptible to firedamp (EPL Ma). The model IS-3 is suitable for pressure ranges up to 6,000 bar [87,000 psi] and medium temperatures up to 200 °C [392 °F]. It features numerous approvals, such as ATEX, IECEx, FM and CSA. Thanks to the flush design variant, the IS-3 is also suitable for crystalline and viscous media, and also for applications where residue-free cleaning is needed.

Large selection of approvals
The model IS-3 offers many globally established approvals for use in hazardous areas – even for smaller markets. For system suppliers, approval combinations reduce the number of instrument variants that they have to keep available for their markets.

Exceptionally large variety
The model IS-3 shines with its level of customisation and diverse integration possibilities. The high-pressure version is designed for a maximum of 6,000 bar [87,000 psi]. Depending on the configuration, ingress protection up to IP68 and use with medium temperatures up to +200 °C [392 °F] are possible.

Excellent quality, proven in the field
The model IS-3 and its predecessors have been used reliably for over 20 years. The consistently high quality and its reliable function are regularly confirmed by both internal and external audits.

Data sheets showing similar products:
Pressure transmitter with flameproof enclosure; for applications in explosion-protected areas; models E-10 and E-11; see data sheet PE 81.27

Specifications

Accuracy specifications		
Non-linearity per BFSL per IEC 61298-2	≤ ±0.2 % of span	
Accuracy	→ See „Max. measured error per IEC 61298-2“	
Max. measured error per IEC 61298-2	■ ≤ ±0.5 % of span ■ ≤ ±0.25 % of span [1]	
Zero point setting	±5 % → Through potentiometer within the instrument	
Adjustability of span	±5 % → Through potentiometer within the instrument	
Non-repeatability per IEC 61298-2	< 0.1 % of span	
Mean temperature coefficient at 0 ... 80 °C [32 ... 176 °F]		
Zero point	Measuring range ≤ 0.25 bar [≤ 5 psi]	≤ ±0.4 % of span/10 K
	Measuring range > 0.25 bar [> 5 psi]	≤ ±0.2 % of span/10 K
Span	≤ ±0.2 % of span/10 K	
Long-term stability per IEC 61298-2	≤ ±0.2 % of span/year	
Reference conditions	Per IEC 61298-1	

1) Only for measuring ranges ≥ 0.25 bar [3 psi] and ≤ 1,000 bar [15,000 psi].

Measuring ranges, gauge pressure

bar	
0 ... 0.1	0 ... 60
0 ... 0.16	0 ... 100
0 ... 0.25	0 ...160
0 ... 0.4	0 ... 250
0 ... 0.6	0 ... 400
0 ... 1	0 ... 600
0 ... 1.6	0 ... 1,000 [1]
0 ... 2.5	0 ... 1,050 [1] [2]
0 ... 4	0 ... 1,600 [1] [2]
0 ... 6	0 ... 2,500 [1] [2]
0 ... 10	0 ... 4,000 [1] [2]
0 ... 16	0 ... 5,000 [1] [2]
0 ... 25	0 ... 6,000 [1] [2]
0 ... 40	-

1) Only for instruments without flush process connection.
2) Only for instruments with ignition protection type Ex ia.

psi	
0 ... 3	0 ... 500
0 ... 5	0 ... 600
0 ... 10	0 ... 750
0 ... 15	0 ... 800
0 ... 20	0 ... 1,000
0 ... 25	0 ... 1,500
0 ... 30	0 ... 2,000
0 ... 50	0 ... 3,000
0 ... 60	0 ... 4,000
0 ... 100	0 ... 5,000
0 ... 150	0 ... 6,000
0 ... 160	0 ... 7,500
0 ... 200	0 ... 8,000
0 ... 250	0 ... 10,000 [1]
0 ... 300	0 ... 15,000 [1]
0 ... 400	-

1) Only for instruments without flush process connection.

Measuring ranges, absolute pressure

bar	
0 ... 0.25	0 ... 4
0 ... 0.4	0 ... 6
0 ... 0.6	0 ... 10
0 ... 1	0 ... 16
0 ... 1.6	0 ... 25
0 ... 2.5	-

psi	
0 ... 5	0 ... 100
0 ... 10	0 ... 160
0 ... 15	0 ... 200
0 ... 30	0 ... 300
0 ... 60	-

Vacuum and +/- measuring ranges

bar	
-1 ... 0	-1 ... +5
-1 ... +0.6	-1 ... +9
-1 ... +1.5	-1 ... +15
-1 ... +3	-1 ... +24

psi	
-15 inHg ... 0	-30 inHg ... 100
-30 inHg ... 0	-30 inHg ... 160
-30 inHg ... 15	-30 inHg ... 200
-30 inHg ... 30	-30 inHg ... 300
-30 inHg ... 60	-

Other measuring ranges on request.

Further details on: Measuring range	
Units	■ bar ■ psi ■ mbar ■ inWC ■ MPa ■ kg/cm²
Maximum working pressure	→ Corresponds to the upper measuring range value / measuring range full scale value → Any permanent operation above the maximum working pressure is not permissible
Overpressure limit	The overpressure limit is based on the measuring range. Depending on the selected process connection and the seal, restrictions in overpressure limit can result.
Measuring ranges ≤ 25 bar [≤ 400 psi]	3 times
Measuring ranges from 0 ... 40 to 0 ... 600 bar [0 ... 500 to 0 ... 8,000 psi]	2 times → 1.7 times the overpressure limit at 1,000 psi, 1,500 psi, 4,000 psi and 6,000 psi
Measuring ranges from 0 ... 1,000 to 0 ... 2,500 bar [0 ... 10,000 to 0 ... 15,000 psi]	1.4 times
Measuring ranges > 2,500 bar	1.15 times
Vacuum resistance	Yes

Process connection				
Thread	**Max. measuring range in bar [psi]**	**Overpressure limit in bar [psi]**	**Permissible temperature ranges in °C [°F] for ignition protection type Ex ia**	**Seal**
EN 837				
G ¼ B	1,000 [15,000]	1,480 [21,500]	-20 ... +80 [-4 ... +176]	-
	400 [5,000]	800 [11,600]	-40 ... +150 [-40 ... +302]	-
	400 [5,000]	800 [11,600]	-40 ... +200 [-40 ... +392]	-
G ½ B	1,000 [15,000]	1,480 [21,500]	-20 ... +80 [-4 ... +176]	-
	400 [5,000]	800 [11,600]	-40 ... +150 [-40 ... +302]	-
	400 [5,000]	800 [11,600]	-40 ... +200 [-40 ... +392]	-
DIN EN ISO 1179-2				
G ¼ A	600 [8,000]	858 [12,500]	-20 ... +80 [-4 ... +176]	NBR
			-15 ... +80 [+5 ... +176]	FKM/FPM
	400 [5,000]	600 [8,700]	■ -15 ... +150 [+5 ... +302] ■ -15 ... +200 [+5 ... +392]	FKM/FPM
G ½ A	600 [8,000]	858 [12,500]	-20 ... +80 [-4 ... +176]	NBR
			-15 ... +80 [+5 ... +176]	FKM/FPM
ANSI/ASME B1.20.1				
1/4 NPT	1,000 [15,000]	1,480 [21,500]	-20 ... +80 [-4 ... +176]	-
1/2 NPT	1,000 [15,000]	1,480 [21,500]	-20 ... +80 [-4 ... +176]	-
	400 [5,000]	800 [11,600]	■ -40 ... +150 [-40 ... +302] ■ -40 ... +200 [-40 ... +392]	-
DIN 16288				
M20 x 1.5	1,000 [15,000]	1,480 [21,500]	-20 ... +80 [-4 ... +176]	-
Female thread with sealing cone				
M16 x 1.5	6,000	7,000 [101.500]	-20 ... +80 [-4 ... +176]	-
	→ Not available for psi measuring ranges			
M20 x 1.5	6,000	7,000 [101.500]	-20 ... +80 [-4 ... +176]	-
	→ Not available for psi measuring ranges			
9/16-18 UNF/ female F250-C	6,000 [87,000]	7,000 [101.500]	-20 ... +80 [-4 ... +176]	-
ISO 7				
R ⅜	1,000 [15,000]	1,480 [21,500]	-20 ... +80 [-4 ... +176]	-
R ¼	1,000 [15,000]	1,480 [21,500]	-20 ... +80 [-4 ... +176]	-
	400 [5,000]	800 [11,600]	-40 ... +150 [-40 ... +302]	-
	400 [5,000]	800 [11,600]	-40 ... +200 [-40 ... +392]	-
-				
G ½ male/G ¼ female	1,000 [15,000]	1,480 [21,500]	-20 ... +80 [-4 ... +176]	-

Process connection				
Thread	**Max. measuring range in bar [psi]**	**Overpressure limit in bar [psi]**	**Permissible temperature ranges in °C [°F] for ignition protection type Ex ia**	**Seal**
Flush				
G ½ B	600 [8,000]	1,200 [17,500]	-20 ... +80 [-4 ... +176]	NBR
			-15 ... +80 [+5 ... +176]	FKM/FPM
		600 [8,700]	-15 ... +150 [+5 ... +302]	FKM/FPM
		1,200 [17,500]	-20 ... +80 [-4 ... +176]	FFKM
			-20 ... +150 [-4 ... +302]	FFKM
		800 [11,600]	-20 ... +80 [-4 ... +176]	EPDM
		400 [5,800]	-20 ... +150 [-4 ... +302]	EPDM
G 1 B	1,6 [30]	4.8 [69]	-20 ... +80 [-4 ... +176]	NBR
			-15 ... +80 [+5 ... +176]	FKM/FPM
			-20 ... +80 [-4 ... +176]	EPDM
			-15 ... +150 [+5 ... +302]	FKM/FPM
			-20 ... +150 [-4 ... +302]	EPDM
G 1 hygienic	25 [300]	50 [720]	-20 ... +150 [-4 ... +302]	EPDM

Details must be tested separately in the respective application. The specified values for the overpressure limit serve only as a rough orientation. The values depend on the temperature, the seal used, the selected torque, the type and the material of the mating thread and the prevailing operating conditions.
Permissible temperature ranges depend on the process connection, the EPL, the temperature class, the electrical connection and the seal, see chapter “Specifications” in the operating instructions.

Output signal	
Signal type	4 ... 20 mA
Load	
Model IS-3	≤ (auxiliary power - 10 V) / 0.02 A - (cable length in m x 0.14 Ω)
Model IS-3 with field case	≤ (auxiliary power - 11 V) / 0.02 A
	With test signal ≤ 15 Ω
Voltage supply	
Model IS-3	DC 10 ... 30 V
Model IS-3 with field case	DC 11 ... 30 V
Power consumption	
Model IS-3	Pmax ≤ 800mW
Dynamic behaviour	
Settling time per IEC 61298-2	≤ 2 ms
Settling time per IEC 61298-2 for medium temperatures below -30 °C [-22 °F]	≤ 10 ms

Electrical connection					
Connection type	**IP code [1] [2] IEC 60529**	**Ignition protection type**	**Materials**	**Wire cross-section in mm²**	**Cable diameter in mm [in]**
Angular connector DIN EN 175301-803-A					
PG9	IP65	Ex ia	PA6	Max. 1.5	6 ... 8 [0.24 ... 0.31]
1/2 NPT	IP65	Ex ia	PA6	Max. 1.5	6 ... 8 [0.24 ... 0.31]
PG13.5 (GL)	IP65	Ex ia	PA6	Max. 1.5	10 ... 14 [0.39 ... 0.55]
Circular connector IEC 61076-2-106					
M16 x 0.75, 5-pin	IP67	■ Ex ia ■ Ex ec	PA6, nickel-plated Zn	-	-
Circular connector IEC 61076-2-101 A-COD					
M12 x 1	IP67	Ex ia	PA6, stainless steel	-	-
Bayonet connector MIL-DTL-26482					
4-pin	IP67	Ex ia	PA6, stainless steel, nickel-plated Al	-	-
6-pin	IP67	Ex ia	PA6, stainless steel, nickel-plated Al	-	-
Cable outlet					
Cable outlet	IP67	Ex ia	PA6, stainless steel, nickel-plated brass, PUR	0.5	6.8 [0.27]
Cable outlet with protective cap	IP67 [3]	■ Ex ec ■ Ex tc	PA66/6-FR, stainless steel, PUR	0.34	5.5 [0.22]
Cable outlet with cable gland	IP68	Ex ia	Stainless steel, nickel-plated brass, PUR	0.5	6.8 [0.27]
	→ Condition: max. 72 h at 300 mbar [4.35 psi]				
Cable outlet with cable gland conduit 1/2 NPT	IP68	Ex ia	Stainless steel, nickel-plated brass, PUR	0.5	6.8 [0.27]
	→ Condition: max. 72 h at 300 mbar [4.35 psi]				
Cable outlet, permanent use in the medium	IP68	■ Ex ia ■ Ex ec ■ Ex tc	Stainless steel ■ PUR ■ FEP	0.5	7.5 [0.3]
	→ Restriction: max. 2 bar [29 psi] ambient pressure				
Field case					
Nickel-plated brass cable gland	IP69K	Ex ia	Stainless steel, nickel-plated brass	Max. 1.5	7 … 13 [0.28 ... 0.51]
Stainless steel cable gland	IP69K	Ex ia	Stainless steel	Max. 1.5	8 ... 15 [0.31 ... 0.59]
Plastic cable gland	IP69K	Ex ia	Stainless steel, plastic	Max. 1.5	6.5 … 12 [0.26 ... 0.47]
Cable gland conduit ½ NPT	IP69K	Ex ia	Stainless steel, plastic	Max. 1.5	6.5 … 12 [0.26 ... 0.47]
Cable gland conduit M20 x 1.5	IP69K	Ex ia	Stainless steel, plastic	Max. 1.5	6.5 … 12 [0.26 ... 0.47]

1) The stated IP codes only apply when plugged in using mating connectors that have the appropriate IP code.
2) In combination with FM and CSA approvals, the ingress protection is always specified as IP65.
3) Precondition: Avoidance of water accumulation in the protective cap

Further details on: Electrical connection	
Features	
Angular connector	Adjustable
Circular connector	■ Adjustable ■ Not adjustable (without PA6 material)
Bayonet connector	Adjustable
Cable outlet	■ Adjustable ■ Not adjustable (without PA6 material) → Depending on version
Field case	■ Spring terminal ■ Screw terminal ■ Adjustable
Reverse polarity protection	U+ vs. U
Insulation voltage	DC 500 V

Pin assignment

Angular connector DIN 175301-803 A

	2-wire
U_+	1
U-	2
Shield	-

Circular connector M12 x 1 IEC 61076-2-101 (4-pin)

	2-wire
U_+	1
U-	3
Shield	-

Bayonet connector MIL-DTL-26482 (6-pin)

	2-wire
U_+	A
U-	B
Shield	-

Bayonet connector MIL-DTL-26482 (4-pin)

	2-wire
U_+	A
U-	B
Shield	-

Circular connector M16 x 0.75 IEC 61076-2-106 (5-pin)

	2-wire
U_+	3
U-	1
Shield	-

All cable outlets

	2-wire
U_+	Brown (BN)
U-	Green (GN)
Shield	Grey (GY)

Cable outlet IP67 with protective cap

	2-wire
U_+	Brown (BN)
U-	Blue (BU)
Shield	Shielding braid

Field case

	2-wire
U_+	1
U-	2
Test+	3
Test-	4
Shield	5

Legend

U+ Positive power supply terminal
U- Negative power supply terminal
Test+ Positive test connection
Test- Negative test connection

Material			
Material (wetted)			
Flush process connections	Measuring ranges ≤ 25 bar [≤ 400 psi]	G 1 B flush	316Ti
		G 1 B hygienic	316L
	Measuring ranges ≤ 600 bar [≤ 8.700 psi]	G ½ B flush	316Ti
Process connections with pressure port	Measuring ranges ≤ 25 bar [≤ 400 psi]	Permissible temperature range ≥ -20 °C ... ≤ 80°C [≥ -4 ... ≤ 176 °F]	316Ti
	Measuring ranges ≤ 25 bar [≤ 400 psi]	Permissible temperature range < -20 °C ... > 80°C [< -4 ... > 176 °F]	316L and 316Ti
	Measuring ranges ≥ 40 bar [≥ 500 psi]	Permissible temperature range < -20 °C ... > 80°C [< -4 ... > 176 °F]	316L and 316Ti and S13800
	Measuring ranges ≥ 40 und ≤ 1.050 bar [≥ 500 und ≤ 15.000 psi]	-	316Ti and S13800
	Measuring ranges > 1.050 bar [> 15.000 psi]	-	S13800
Seal	→ See table „Process connection”		
Material (in contact with the environment)			
Case	Stainless steel		
Electrical connection	→ See table „Electrical connection”		
Pressure transmission medium			
< 25 bar [400 psi]	Synthetic oil		
≥ 25 bar [400 psi]	Dry measuring cell		
≤ 25 bar abs. [400 psi abs.]	Synthetic oil		

Version for special media		
Food	Food-compatible pressure transmission medium	
Oil- and grease-free	Residual hydrocarbon	< 1,000 mg/m²
Oxygen	Measuring ranges	≥ 40 bar [500 psi] ... ≤ 400 bar [5,000 psi]
	Material (wetted parts)	316L und Elgiloy® (2.4711)
	Max. permissible temperature range	-20 ... +60 °C [-4 ... +140 °F]
Hydrogen	Measuring ranges	≥ 25 bar [400 psi] ... ≤ 1.050 bar [15.000 psi]
	Material (wetted)	316Ti and Elgiloy® (2.4711)

Operating conditions	
Permissible temperature limits for ignition protection type Ex ia	
Medium temperature limit / Ambient temperature limit	Permissible temperature ranges depend on the option selected above, the EPL, the temperature class, the selected electrical connection and the selected seal.
Storage temperature limit	-15 ... +70 °C [5 ... 158 °F]
Permissible temperature limits for ignition protection type Ex ec and Ex tc	
Medium temperature limit	T6: -15 ... +55 °C [5 ... +131 °F]
	T4/T5: -15 ... +70 °C [5 ... +158 °F]
Ambient temperature limit	T6: -15 ... +55 °C [5 ... +131 °F]
	T4/T5: -15 ... +70 °C [5 ... +158 °F]

Operating conditions	
Storage temperature limit	-15 ... +70 °C [5 ... +158 °F]
Ingress protection (IP code) per IEC 60529	→ See table „Electrical connection”
Vibration resistance per IEC 60068-2-6	
-	20g
Field case and cable outlet IP67 with protective cap	10g
Measuring range > 1,000 bar	5g
Medium temperature ranges / Medium temperatures < -20 °C and > 80 °C [< -4 and > 176 °F]	5g
Medium temperature ranges / Medium temperatures < -20 °C and > 80 °C [< -4 and > 176 °F] with field case	2g
Shock resistance per IEC 60068-2-27	
-	1,000g
Field case	600g
Measuring range > 1,000 bar	100g
Cable outlet IP67 with protective cap	100g
Medium temperature ranges / Medium temperatures < -20 °C and > 80 °C [< -4 °F and > 176 °F]	100g
Medium temperature ranges / Medium temperatures < -20 °C and > 80 °C [< -4 °F and > 176 °F] with field case	50g

Packaging and instrument labelling	
Packaging	Individual packaging
Instrument labelling	WIKA product label, glued

Approvals

Logo	Description	Country
CE	**EU declaration of conformity**	European Union
	EMC directive EN 61326 emission (group 1, class B) and immunity (industrial environments)	
	Pressure Equipment Directive	
	RoHS directive	
Ex	ATEX directive Hazardous areas - Ex i Zone 0 gas [II 1G Ex ia IIA T4/T5/T6 Ga] [II 1G Ex ia IIC T4/T5/T6 Ga] Zone 1 mounting to zone 0 gas [II 1/2G Ex ia IIC T4/T5/T6 Ga/Gb] Zone 2 gas [II 3G Ex ic IIC T4/T5/T6 Gc X] Zone 20 dust [II 1D Ex ia IIIB T_{200} 135 °C Da] [II 1D Ex ia IIIC T135 °C Da] Zone 21 mounting to zone 20 dust [II 1/2D Ex ia IIIB T_{200} 135 °C Da/Db] [II 1/2D Ex ia IIIC T135 °C Da/Db] Mining [I M1 Ex ia I Ma] - Ex e Zone 2 gas [II 3G Ex ec IIC T4/T5/T6 Gc X] - Ex t Zone 22 dust [II 3D Ex tc IIIC T90 °C Dc X]	
IEC IECEx	**IECEx** Hazardous areas - Ex i Zone 0 gas [Ex ia IIA T4/T5/T6 Ga] [Ex ia IIC T4/T5/T6 Ga] Zone 1 mounting to zone 0 gas [Ex ia IIC T4/T5/T6 Ga/Gb] Zone 2 gas [Ex ic IIC T4/T5/T6 Gc X] Zone 20 dust [Ex ia IIIB T_{200} 135 °C Da] [Ex ia IIIC T135 °C Da] Zone 21 mounting to zone 20 dust [Ex ia IIIB T_{200} 135 °C Da/Db] [Ex ia IIIC T135 °C Da/Db] Mining [Ex ia I Ma] - Ex e Zone 2 gas [Ex ec IIC T4/T5/T6 Gc X] - Ex t Zone 22 dust [Ex tc IIIC T90 °C Dc X]	International
FM APPROVED	**FM** Hazardous areas (see approval)	USA
c SP us	**CSA**	USA and Canada
	Safety (e.g. electr. safety, overpressure, ...)	
	Hazardous areas (see approval)	
	PAC Kazakhstan Metrology, measurement technology	Kazakhstan
-	**MTSCHS** Permission for commissioning	Kazakhstan
-	**PAC Ukraine** Metrology, measurement technology	Ukraine
	PAC Uzbekistan Metrology, measurement technology	Uzbekistan
Ex NEPSI	**NEPSI** Hazardous areas (see approval)	China
KCs	**KCs (KOSHA)** Hazardous areas (see approval)	South Korea
DNV	**DNV GL** Ships, shipbuilding (e.g. offshore)	International
-	**CRN** Safety (e.g. electr. safety, overpressure, ...)	Canada

Manufacturer's information

Logo	Description
MTTF	> 100 years
-	**China RoHS directive**

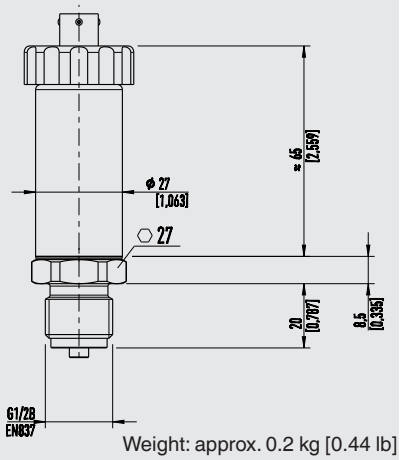
→ For approvals and certificates, see website

Safety-related characteristic values (Ex)

Safety-related characteristic values (Ex)		
Supply and signal circuit		
For ATEX/IECEx ignition protection type Ex ia	See product label	
	Voltage	Ui = DC 30 V
	Current	Ii = 100 mA
	Power	Group I (mines susceptible to firedamp): P_i = 800 mW
		Group II (explosive gas atmosphere other than mines): P_i = 800 mW
		Group IIIB (explosive gas atmosphere other than mines): P_i = 800/650 mW
		Group IIIC (explosive gas atmosphere other than mines): P_i = 750/650/550 mW
	Effective internal capacitance (version with non-detachable cable connection)	■ Ci ≤ 16.5 nF ■ Ci ≤ 16.5 nF + 0.2 nF/m
	Effective internal inductance (version with non-detachable cable connection)	■ Li = 0 µH ■ Li = 0 µH + 2 µH/m
Supply and signal circuit for CSA and FM	See product label	
	Entity/non-incendive parameters	V_{max}/Ui = 30 V I_{max}/Ii = 100 mA at ambient temperature ≤ 85 °C [185 °F] I_{max}/Ii = 87 mA at ambient temperature > 85 °C [185 °F] P_{max}/Pi = 0.8 W Ci = 16.5 nF (flying leads: + 0.2 nF/m) Li = 0 µH (flying leads: + 2 µH/m)

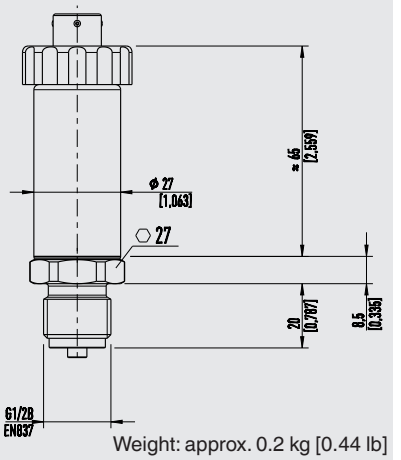
Dimensions in mm [in]

Bayonet connector, MIL-DTL-26482 (4-pin), adjustable



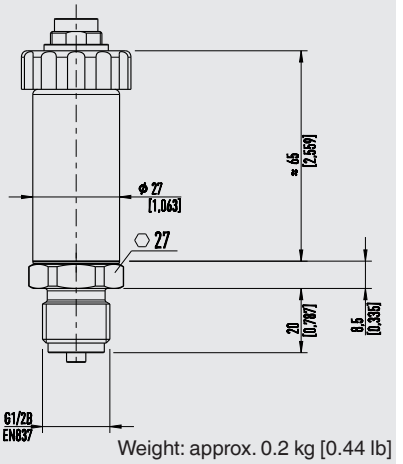
Weight: approx. 0.2 kg [0.44 lb]

Bayonet connector, MIL-DTL-26482 (6-pin), adjustable



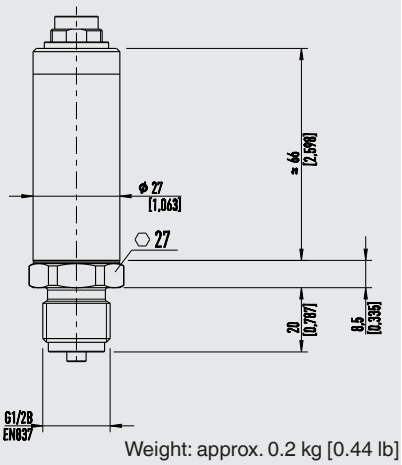
Weight: approx. 0.2 kg [0.44 lb]

Circular connector M16 x 0.75, IEC 61076-2-106 (5-pin), adjustable



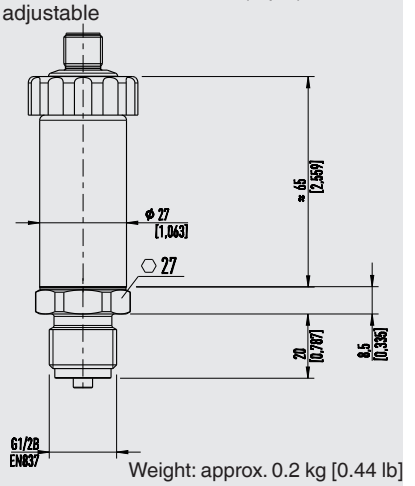
Weight: approx. 0.2 kg [0.44 lb]

Circular connector M16 x 0.75, IEC 61076-2-106 (5-pin), not adjustable



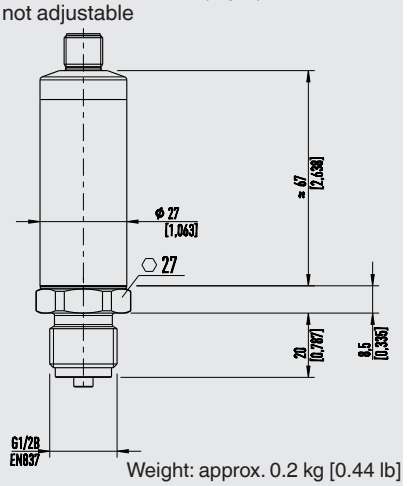
Weight: approx. 0.2 kg [0.44 lb]

Circular connector M12 x 1, IEC 61076-2-101 A-COD (4-pin), adjustable



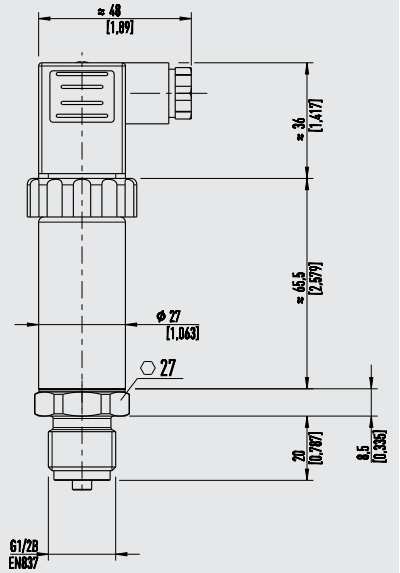
Weight: approx. 0.2 kg [0.44 lb]

Circular connector M12 x 1, IEC 61076-2-101 A-COD (4-pin), not adjustable



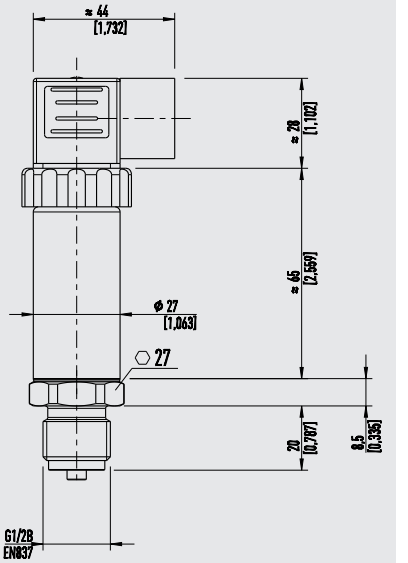
Weight: approx. 0.2 kg [0.44 lb]

Angular connector, DIN EN 175301-803 A PG 9, adjustable



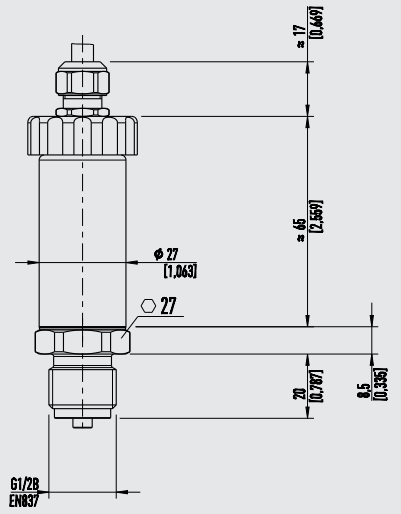
Weight: approx. 0.2 kg [0.44 lb]

Angular connector, DIN EN 175301-803 A ½ NPT, adjustable



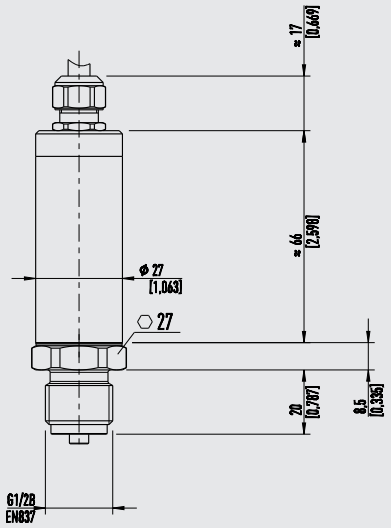
Weight: approx. 0.2 kg [0.44 lb]

Cable outlet IP67, adjustable



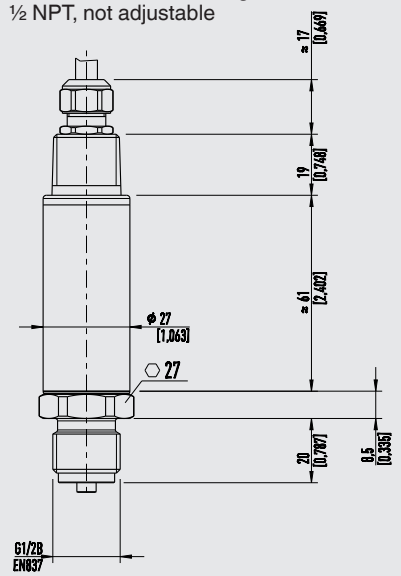
Weight: approx. 0.25 kg [0.55 lb]

Cable outlet IP68, cable gland, not adjustable



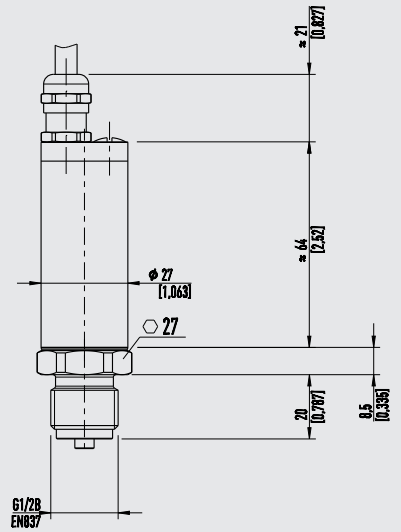
Weight: approx. 0.25 kg [0.55 lb]

Cable outlet IP68, cable gland conduit ½ NPT, not adjustable



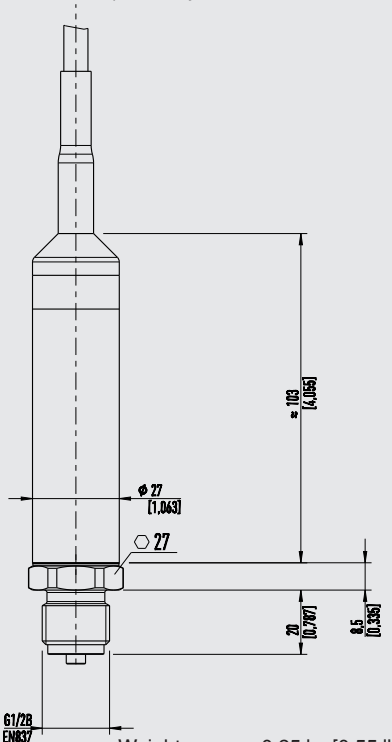
Weight: approx. 0.25 kg [0.55 lb]

Cable outlet IP68, cable gland, adjustable



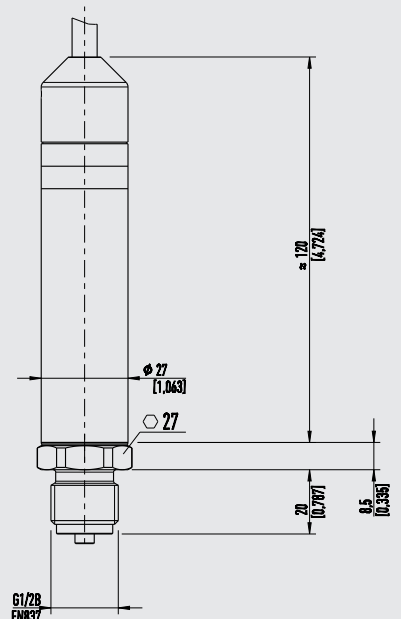
Weight: approx. 0.25 kg [0.55 lb]

Cable outlet IP68 PUR, (permanent use in the medium), not adjustable



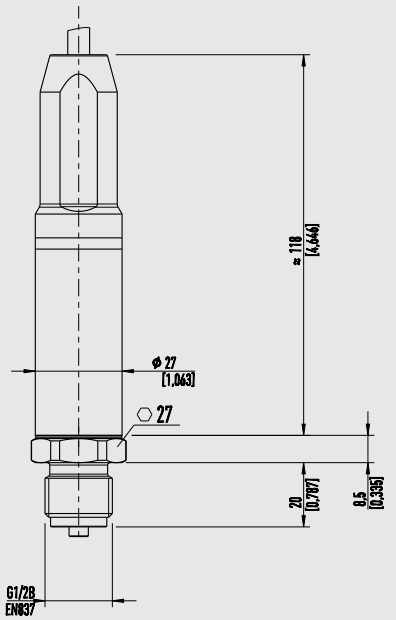
Weight: approx. 0.25 kg [0.55 lb]

Cable outlet IP68 FEP, (permanent use in the medium), not adjustable



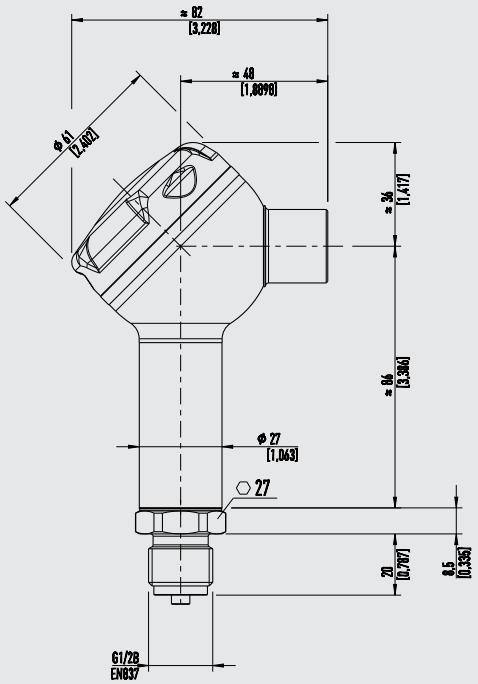
Weight: approx. 0.3 kg [0.66 lb]

Cable outlet IP67 with protective cap, not adjustable



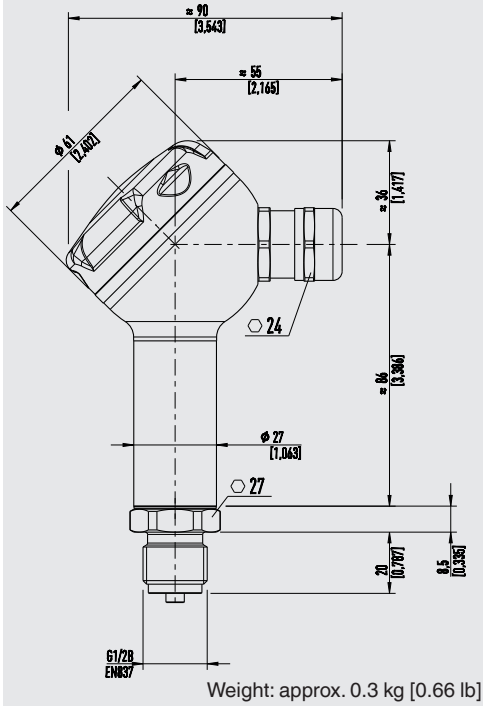
Weight: approx. 0.25 kg [0.55 lb]

Field case, conduit ½ NPT-I, adjustable



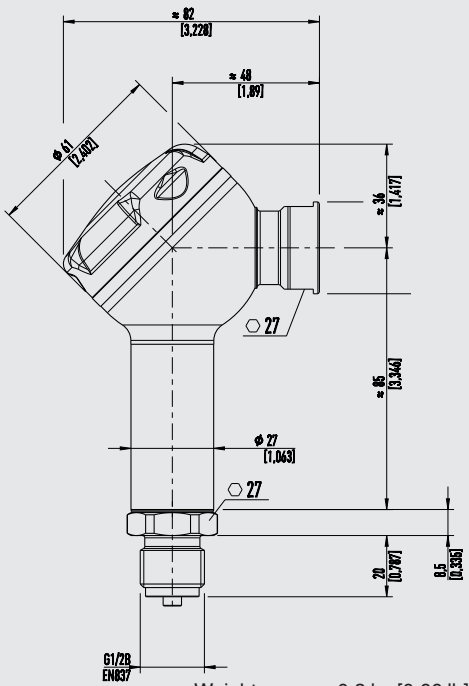
Weight: approx. 0.3 kg [0.66 lb]

Field case, cable gland, adjustable



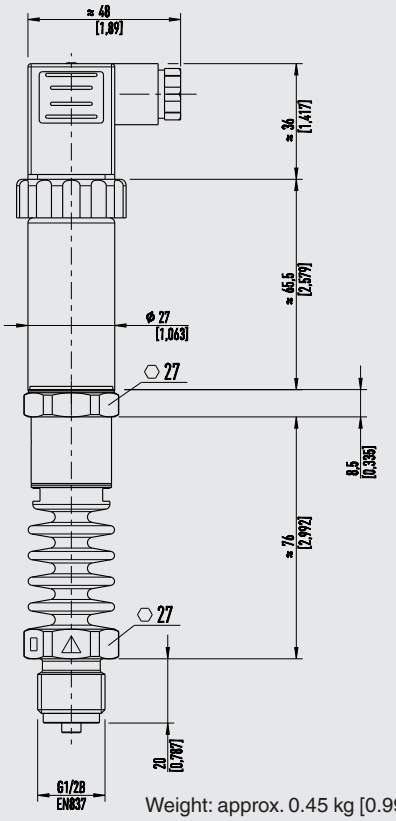
Weight: approx. 0.3 kg [0.66 lb]

Field case, conduit M20 x 1.5-I, adjustable



Weight: approx. 0.3 kg [0.66 lb]

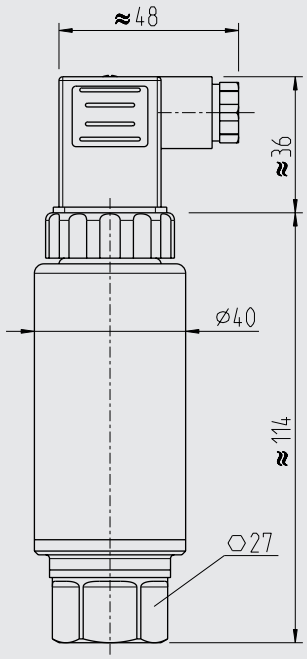
IS-3 for optional medium temperature ranges
-40 ... +150 °C [-40 ... 302 °F] and -40 ... +200 °C [-40 ... +392 °F]



Weight: approx. 0.45 kg [0.99 lb]

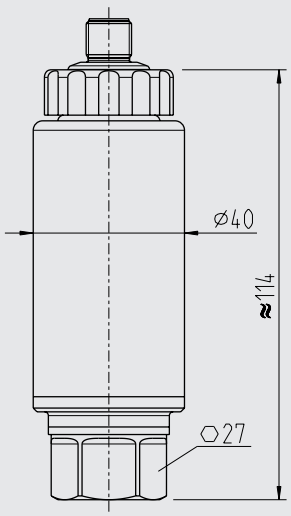
Pressure transmitters in high-pressure version

Angular connector,
DIN EN 175301-803 A PG 9, Adjustable



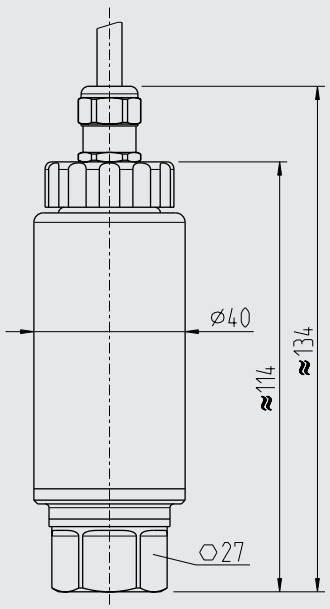
Weight: approx. 0.3 kg [0.66 lb]

Circular connector M12 x 1,
IEC 61076-2-101 A-COD (4-pin), Adjustable



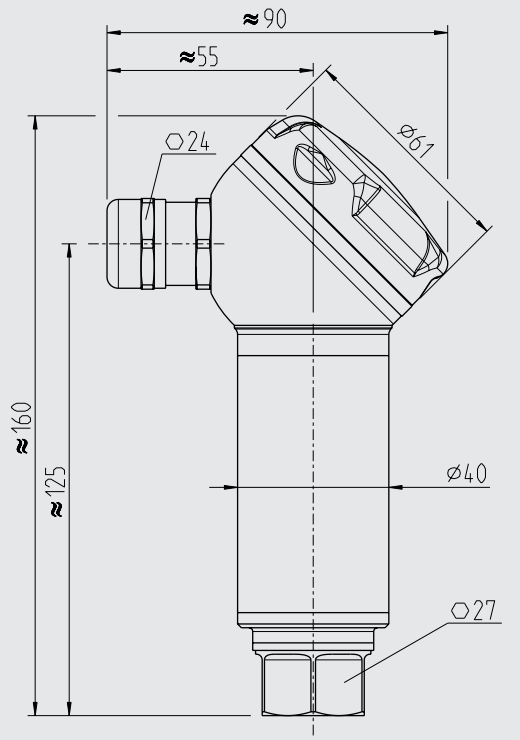
Weight: approx. 0.3 kg [0.66 lb]

Cable outlet IP67, Adjustable



Weight: approx. 0.3 kg [0.66 lb]

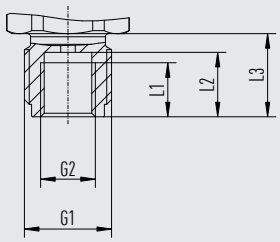
Field case, Cable gland, Adjustable



Weight: approx. 0.45 kg [0.99 lb]

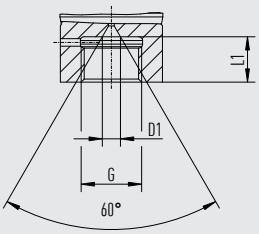
Process connections

-



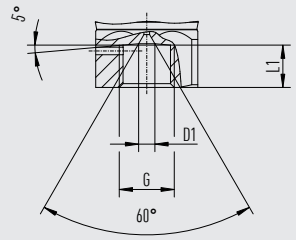
G1	G2	L1	L2	L3
G ½ B	**G ¼ I**	13 [0.51]	15.5 [0.61]	20 [0.79]

Sealing cone



G	L1	D1
M16 x 1.5	12 [0.47]	4.8 [0.189]
M20 x 1.5	15 [0.59]	

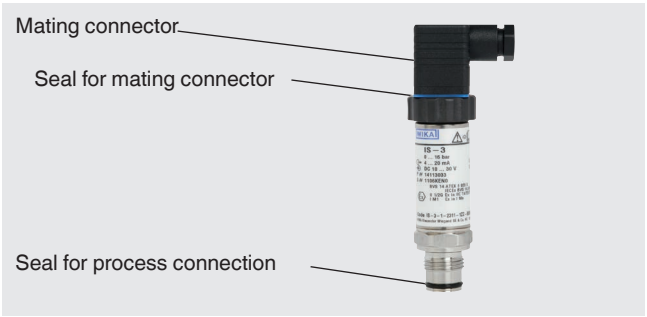
Sealing cone



G	L1	D1
9/16 UNF	11.2 [0.44]	4.3 [0.17]

→ For further information on process connections, see technical information IN 00.14.

Accessories and spare parts



Designation		Order number
Mating connector (for ignition protection type Ex ia)		
Angular connector DIN EN 175301-803 A	Metric, with 2 m moulded cable	11225793
	Metric, with 5 m moulded cable	11250186
Circular connector M12 x 1, 4-pin, straight	IP67, for self-assembly / without cable	2421262
Circular connector M12 x 1, 4-pin, angled	IP67, for self-assembly / without cable	2421270
Seals for mating connector		
Angular connector DIN 175301-803 A	Blue (WIKA)	1576240
	Brown (neutral)	11437902
Seals for process connection		
G ¼ B, EN 837	Copper	11250810
	Stainless steel	11250844
G ½ B, EN 837	Copper	11250861
	Stainless steel	11251042
M20 x 1.5, DIN 16288	Copper	11250861
	Stainless steel	11251042
G ¼ A	NBR	1537857
	FKM	1576534
G ½ A	NBR	1039067
	FKM	1039075
Welding socket		
G ½ B, flush		1192299
G 1 B, flush		1192264
G 1 B, hygienic flush		14145179

Ordering information

Model / Measuring range / Accuracy / Process connection / Seal / Electrical connection / Temperature range of medium

Standard articles

Configurator

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