

Miniature Pressure Transducer

Model 81530

Code:	81530 EN
Delivery:	ex stock
Warranty:	24 months



- Measuring ranges between 0 ... 1 bar and 0 ... 1000 bar
- Flush-mounted diaphragm
- Temperature range up to 200 °C
- Suitable for static and dynamic measurements
- Made of stainless steel
- Reliable and robust
- Protection class IP68

Application

This transducer is really versatile thanks to its flush-mounted front diaphragm and small size. Whether used for measurements in the food industry or engineering sector, it is equally at home in high-viscosity fluids as it is in corrosive liquids and gases. Its excellent dynamic response means that the transducer can also measure very rapid changes in pressure.

Areas of use:

- ▶ Plastics industry
- ▶ Aerospace engineering
- ▶ Chemicals industry
- ▶ Test station construction
- ▶ Biotechnology

Description

The diaphragm, body and bayonet connector form a single unit in this miniature pressure transducer. The thin diaphragm fabricated from a single piece with clamping ring, and the connector, are welded to the sensor body to provide a hermetic seal. Pressures are measured with respect to a sealed atmosphere of approximately 1 bar as reference pressure (kind of measurement: absolute pressure measurements).

The screw thread of the pressure transducer ends in an O-ring groove, sealed by a rubber, plastic or metal O-ring according to the pressure range and medium.

Technical Data

Order Code	Measuring Range	Nominal Sensitivity*	Influence of Temperature to zero [% F.S./K]	Influence of Temperature to Sensitivity [% Rdg./K]
81530-1	0 ... 1 bar	0.3 mV/V	< ± 0.18	< ± 0.24
81530-2	0 ... 2 bar	0.6 mV/V	< ± 0.10	< ± 0.14
81530-5	0 ... 5 bar	1.5 mV/V	< ± 0.04	< ± 0.05
81530-10	0 ... 10 bar	1.5 mV/V	< ± 0.02	< ± 0.04
81530-20	0 ... 20 bar	1.5 mV/V	< ± 0.02	< ± 0.04
81530-50	0 ... 50 bar	1.5 mV/V	< ± 0.02	< ± 0.04
81530-100	0 ... 100 bar	1.5 mV/V	< ± 0.02	< ± 0.04
81530-200	0 ... 200 bar	1.5 mV/V	< ± 0.02	< ± 0.04
81530-500	0 ... 500 bar	1.5 mV/V	< ± 0.02	< ± 0.04
81530-1000	0 ... 1000 bar	1.5 mV/V	< ± 0.02	< ± 0.04

* Deviations from the stated value are possible. Please refer to the calibration protocol for more accurate values.

Electrical values

Output resistance: foil strain gauge 350 Ω, nominal
 Excitation voltage: 5 VDC or AC
 Output signal: refer to table

Environmental conditions

Limit temperature range: -55 °C ... 200 °C
 Nominal temperature range: 15 °C ... 150 °C
 Influence of temperature on zero: refer to table
 Influence of temperature on sensitivity: refer to table

Mechanical values

Kind of measurement: absolute (reference 1 bar)

Error of non-linearity and hysteresis:
 measuring range ≤ 0 ... 5 bar < ± 1.3 % F.S.
 measuring range ≥ 0 ... 10 bar < ± 1.0 % F.S.

Error of variation:
 measuring range ≤ 0 ... 5 bar < ± 0.3 % F.S.
 measuring range ≥ 0 ... 10 bar < ± 0.1 % F.S.

Change in volume: negligibly small

Overload: 50 % over capacity
 Burst pressure: 400 % over capacity

Natural Frequency:
 measuring range 0 ... 5 bar approx. 35 kHz
 measuring range 0 ... 50 bar approx. 100 kHz
 measuring range 0 ... 500 bar approx. 200 kHz

Dynamic performance:
 recommended 70 % of capacity
 maximum 100 % of capacity

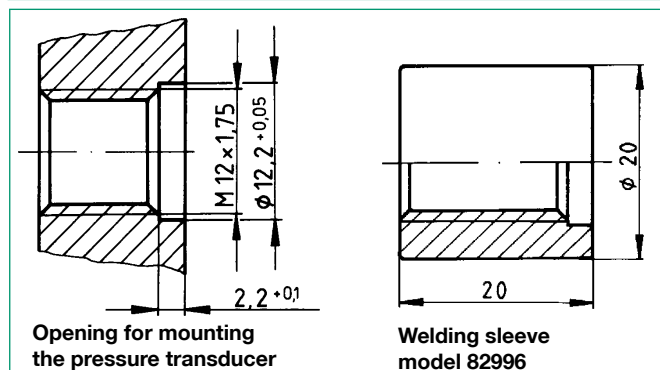
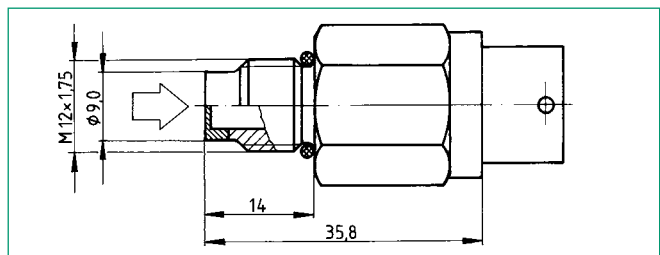
Design: flush-mounted, welded diaphragm
 Material: stainless steel 17-4 PH (like 1.4542)
 Pressure connection: external thread M 12 x 1,75
 Mounting torque: max. 5 Nm
 Wrench size: 19 mm

Electrical connection:
 6 pin bayonet plug-in connector Souriau 851 07A 10 - 6P

Mating connector: model 9945
 Amphenol 62 GB-16F-10-6S or Souriau 851-06E-C-10-6S
 usable up to 120 °C, included in scope of delivery

Dimensions: see scale drawing
 Weight: approx. 40 g
 Protection class acc. to EN 60529: IP68
 Wiring code:

Pin	Function
A	excitation +
B	
C	excitation -
D	
E	signal -
F	signal +

Dimensional drawing model 81530

Accessories

Welding sleeve with O-ring nut, material 17 - 4 PH, length 20 mm **Model 82996**

Mating connector usable up to 175 °C, 6 pin socket with strain relief **Model 9900-V544**

Connecting cable usable up to 175 °C for burster desktop devices with 12 pin connector, length 3 m **Model 9990**

Connection cable (standard) for connection to burster desktop devices **Model 9911**

Connecting cable usable up to 175 °C, open, color coded and tinned cable ends, length 3 m **Model 99544-000A-0170030**

O-ring 12.8 x 1.8, usable up to 200 °C, 1 exemplar is included in scope of delivery **Model 81530-Z001**

Test and Calibration Certificate

Included in delivery, et al. with specification of zero output, sensitivity and shunt calibration factor.

Factory Calibration Certificate (WKS)

Calibration of a pressure transducer separately as well as connected to an indicator. Standard is a certificate with 11 points, starting at zero, running up and down in 20% increments and covering the complete measuring range. Special calibrations on request. Calculation of costs by base price plus additional costs per point.

Order Code 81WKS-81XX