

burster

Pressure Transducer/Pressure Transmitters

Models 8103, 8106, 8107

| | |
|-----------|-------------|
| Code: | 8103 EN |
| Delivery: | 2 - 3 weeks |
| Warranty: | 24 months |



- Measuring ranges between 0 ... 5 bar and 0 ... 1000 bar
- Accuracy < 0.5 %
- Flush mounted diaphragm
- Made of titanium
- Output 4 ... 20 mA available
- Not magnetic

Application

These transducers can be used anywhere thanks to their small size. The construction principle of a flush front diaphragm means they are particularly suitable for applications in which a dead volume is unacceptable, or only a very small dead volume can be tolerated.

Another suitable use is in environments where the nature of the medium makes a measurement chamber unsuitable e.g. in the food industry or chemical engineering. With a choice of threaded and welded adapters available, the range of applications can be widened still further.

Description

These pressure transducers are made entirely of titanium. The diaphragm used as the sensor element is fashioned from the solid material, and strain gauges are applied to its inner face. These convert the displacement of the diaphragm into a change in electrical resistance, which can be amplified, measured and processed by built-in or external electronic circuitry.

The transducers come in a choice of measuring ranges: the gauge sensor (measurements with respect to atmospheric pressure) is available in ranges up to 0 ... 20 bar, and the sealed sensor (measurements with respect to a sealed atmosphere) for the 0 ... 50 bar range upwards.

Their outstanding properties include excellent resistance to corrosion, extremely small hysteresis and superb long-term stability plus value for money and high dynamic load performance of up to 10^8 load changes.

8103 EN

Technical Data

| Order Code | * Measuring Range | Resonance Frequency [kHz] |
|------------|-------------------|---------------------------|
| 8103-5 | 0 ... 5 bar | 28 |
| 8103-10 | 0 ... 10 bar | 28 |
| 8103-20 | 0 ... 20 bar | 36 |
| 8103-50 | 0 ... 50 bar | 54 |
| 8103-100 | 0 ... 100 bar | 77 |
| 8103-200 | 0 ... 200 bar | 108 |
| 8103-500 | 0 ... 500 bar | 160 |
| 8103-1000 | 0 ... 1000 bar | 229 |

* 0 ... 2 bar only for models 8106 and 8107

Electrical values model 8103

Bridge resistance: foil strain gauge 1000 Ω ± 0.5 %
 Excitation voltage: 5 V, max. 10 V DC or AC
 Nominal sensitivity:
 measuring range 0 ... 5 bar 1 mV/V, nominal
 measuring range ≥ 0 ... 10 bar 2 mV/V, nominal

Electrical values models 8106 and 8107

Excitation voltage: 14 V ... 30 V
 Current consumption: 70 mA, max.
 Connection technology: 2 wire
 Adjustable range of amplification: 75 % ... 125 %
 Adjustable range of zero: ± 25 %
 Cut-off frequency: (-3 dB) 7 Hz
 Load resistor: at 24 V excitation max. 500 Ω

Environmental conditions

Range of operating temperature and nominal temperature:
 model 8103 - 55 °C ... 150 °C
 models 8106, 8107 - 25 °C ... 85 °C
 Influence of temperature on zero:
 measuring range 0 ... 5 bar < ± 0.04 % F.S./K
 measuring range ≥ 0 ... 10 bar < ± 0.02 % F.S./K
 Influence of temperature on sensitivity: < ± 0.02 % F.S./K

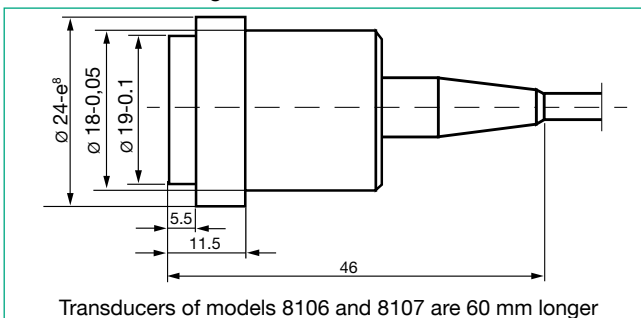
Mechanical values

Total error consisting of non-linearity, hysteresis and variation < ± 0.5 % F.S.
 Kind of measurement:
 measuring range ≤ 0 ... 20 bar against atmosphere
 measuring range ≥ 0 ... 50 bar against sealed atmosphere
 Measuring ranges: refer to table
 Overload: 300 % over capacity
 Dynamic performance:
 recommended 70 % of capacity
 maximum 100 % of capacity
 Design: pressure transducer with flush mounted diaphragm
 Material: diaphragm and housing made of titanium grade 5 (Material 3.7165)
 Pressure connector: refer to accessories, threaded and welding adapter
 Sealing:
 The sealing of the transducer is made by an O-ring 18.77 x 1.78 (Shore 90), which is included in scope of delivery. The use of a support ring is recommended for dynamic pressures of above 200 bar.

Mounting torque: 2 Nm
 Electrical connection:
 models 8103, 8106 shielded, Teflon isolated cable, color-coded with open ends for soldering, bending radius > 10 mm, length 2 m
 model 8107 6 pin bayonett plug-in connector Souriau 851-07A-10-6P

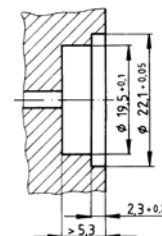
Wiring code:
 model 8103 red excitation voltage positive
 blue excitation voltage negative
 green signal output positive
 yellow signal output negative
 models 8106, 8107 A / red connection positive
 B / black connection negative

Dimensional drawing

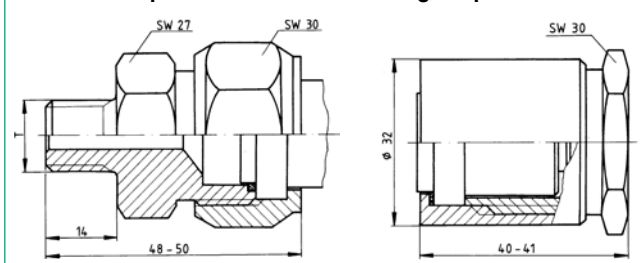


Transducers of models 8106 and 8107 are 60 mm longer

Opening for mounting



Threaded adapter model 82993 Welding adapter model 82997



Mating connector: model 9945 Souriau 851-06E-C-10-6S or Amphenol 62 GB-16F-10-6S included in scope of delivery of model 8107
 Dimensions: see dimensional drawing
 Weight: model 8103 40 g
 models 8106, 8107 100 g
 Protection class: acc. to EN 60529 model 8103 IP67
 models 8106, 8107 IP65

Order Information

Pressure transducer with cable connection **Model 8103-...**
 Pressure transducer with cable connection and internal amplifier for 4 ... 20 mA **Model 8106-...**
 Pressure transducer with plug-in connection and internal amplifier for 4 ... 20 mA **Model 8107-...**
 Mention measuring range in bar

Accessories

Threaded adapter with O-ring, material Sandviken 1802 (SIS 2382) with connecting thread T = 1/4", refer to drawing **Model 82993**
 Welding adapter with O-ring, material 1.4057, refer to drawing **Model 82997**
 O-ring, Shore 90 A, Nitril Butadin **Model 8103-Z001**
 Support ring made of polycarbonat **Model 8103-Z002**
 O-ring PTFE (Teflon) **Model 8103-Z004**
 Mounting of a connector to the transducer cable **Model 99004**

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-81...