

**burster**

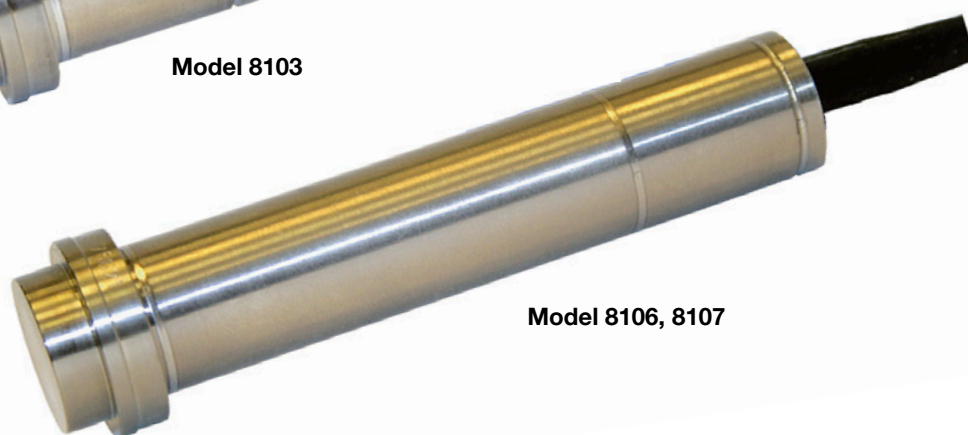
# Pressure Transducer/Pressure Transmitters

Models 8103, 8106, 8107

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



Model 8103



Model 8106, 8107

- 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



8103 EN -2

**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  $\Omega$   $\pm$  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	$\geq$ 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:  $\pm$  25 %

Cut-off frequency: (-3 dB) 7 Hz

Load resistor: at 24 V excitation max. 500  $\Omega$ **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	$< \pm 0.04$ % F.S./K
measuring range	$\geq$ 0 ... 10 bar	$< \pm 0.02$ % F.S./K

Influence of temperature on sensitivity:  $< \pm 0.02$  % F.S./K**Mechanical values**Total error consisting of non-linearity, hysteresis and variation  $< \pm 0.5$  % F.S.

Kind of measurement:

measuring range	$\leq$ 0 ... 20 bar	against atmosphere
measuring range	$\geq$ 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.

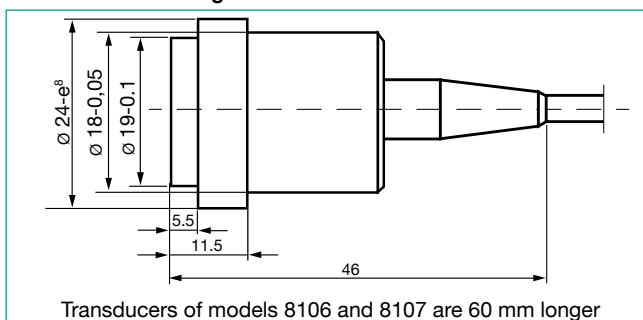
Mounting torque: 2 Nm

Electrical connection:

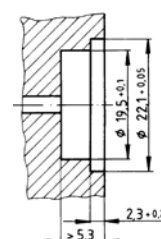
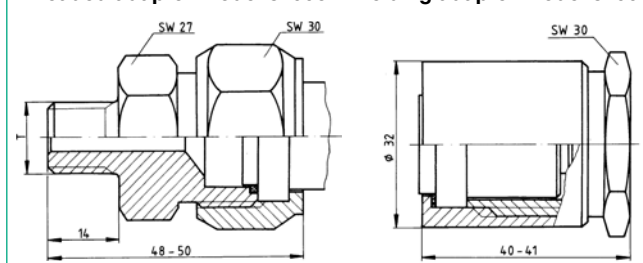
models 8103, 8106	shielded, Teflon isolated cable, color-coded with open ends for soldering, bending radius $> 10$ mm, length 2 m
model 8107	6 pin bayonett plug-in connector Souriau 851-07A-10-6P

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...**