

High Precision Pressure Transducer

For measurement of absolute pressure

Model 8262 "Super TJE"

For measurement against atmosphere

Model 8263 "Super TJE"

Code:	8262 EN
Delivery:	12 weeks
Warranty:	24 months



- Measuring ranges between 0 ... 10 psi to 0 ... 7500 psi (0 ... 0.7 bar to 0 ... 500 bar)
- Accuracy < 0.05 %
- For dynamic and static measurements
- Suitable for liquid and gaseous media
- Made of stainless steel
- Output 0 ... 5 V or 4 ... 20 mA available

Application

High-precision pressure transducers of this type are a very attractive and economic solution for making extremely accurate pressure measurements for users from all fields of engineering. Thanks to their excellent long-term stability, reliability and rugged construction, these pressure transducers are suitable for use in both research and production, in mechanical engineering, industrial processes, aerospace engineering and many other applications.

These high-precision pressure transducers can be used for static and dynamic measurements on gaseous and liquid media. Being made of stainless steel they are also suitable for measurements on corrosive media. Critical media may result in damage around the welded seams inside the transducer. Please discuss this with us.

Description

Particular care was taken in the manufacture and calibration of the 8262 and 8263 high-precision pressure transducers to guarantee high accuracy, exceptional temperature compensation and high reliability. The dual-wall construction of the transducer body delivers excellent thermal insulation. In addition to the careful fabrication and calibration, these pressure transducers feature a „symmetric“ bridge, i.e. the input and output resistors have been balanced to $350 \Omega \pm 1.5\%$.

The medium to be measured is conducted via the pressure connector into a sealed chamber where it acts on a diaphragm. This diaphragm is connected to the sensor element, a double bending beam, via a rod. Four film strain gauges connected in a Wheatstone bridge are applied to the sensor element to convert the physical variable (pressure) into an electrical variable.

There are two models of transducer for different measuring modes: pressure transducers for measuring the absolute pressure and pressure transducers for measuring the pressure with respect to atmospheric pressure. Absolute pressure sensors contain a vacuum in the chamber behind the diaphragm, or, for measuring ranges of 0 ... 750 psi and above, a permanently sealed atmosphere. For the „true gauge“ sensors measuring the pressure with respect to atmospheric pressure, contact with the surrounding atmospheric pressure is made via a second diaphragm, also made of stainless steel. This allows the sensor to be used in harsh industrial environments as well, without the sensor element being attacked.

8262 EN

Technical Data

Absolute Model 8262	Order Code		Measuring Range		Resonance Frequency [kHz]
	Against Atmosphere	Model 8263			
-	8263-10		0 ... 10 psi	△ 0 ... 0.7 bar	0.8
8262-15	8263-15		0 ... 15 psi	△ 0 ... 1.0 bar	1.1
8262-25	8263-25		0 ... 25 psi	△ 0 ... 1.7 bar	1.7
8262-50	8263-50		0 ... 50 psi	△ 0 ... 3.4 bar	1.9
8262-75	8263-75		0 ... 75 psi	△ 0 ... 5.2 bar	2.5
8262-100	8263-100		0 ... 100 psi	△ 0 ... 6.9 bar	3.2
8262-150	8263-150		0 ... 150 psi	△ 0 ... 10.3 bar	4.0
8262-200	8263-200		0 ... 200 psi	△ 0 ... 13.8 bar	5.5
8262-300	8263-300		0 ... 300 psi	△ 0 ... 20.7 bar	7.2
8262-500	8263-500		0 ... 500 psi	△ 0 ... 34.5 bar	8.0
8262-750	8263-750		0 ... 750 psi	△ 0 ... 51.7 bar	12.0
8262-1000	8263-1000		0 ... 1000 psi	△ 0 ... 68.9 bar	17.0
8262-1500	8263-1500		0 ... 1500 psi	△ 0 ... 103.4 bar	20.0
8262-2000	8263-2000		0 ... 2000 psi	△ 0 ... 137.8 bar	35.0
8262-3000	8263-3000		0 ... 3000 psi	△ 0 ... 206.7 bar	40.0
8262-5000	8263-5000		0 ... 5000 psi	△ 0 ... 344.5 bar	40.0
8262-7500	8263-7500		0 ... 7500 psi	△ 0 ... 516.8 bar	80.0

Electrical values

Bridge resistance: Foil strain gauges; input and output resistance
 $350 \Omega \pm 1.5 \%$
 Calibration resistor: $59 \text{ k}\Omega \pm 0.1 \%$
 The output voltage caused by a shunt of this value is given in the calibration protocol.
 Excitation voltage: 10 V DC or AC
 Nominal sensitivity: standardized $2.0 \text{ mV/V} \pm 0.2 \%$

Environmental conditions

Range of operating temperature: $-50 \text{ }^\circ\text{C} \dots 120 \text{ }^\circ\text{C}$
 Nominal temperature range: $15 \text{ }^\circ\text{C} \dots 70 \text{ }^\circ\text{C}$
 Influence of temperature on zero: $\pm 0.0027 \%$ F.S./K
 Influence of temperature on sensitivity: $\pm 0.0027 \%$ Rdg./K

Mechanical values

Combined error consisting of non-linearity, hysteresis and variation:
 $< \pm 0.05 \%$ F.S.

Kind of measurement:

model 8262
 measuring range $\geq 0 \dots 750 \text{ psi}$ absolute measurement
 measuring range $\leq 0 \dots 1000 \text{ psi}$ against sealed atmosphere

model 8263
 against atmosphere
 1 bar (sealed)

Dead volume: 2.79 cm^3
 Volume change: negligibly small
 Overload: 50 % over capacity
 Burst pressure: 200 % over capacity
 Dynamic load:
 recommended 70 % of capacity
 possible 100 % of capacity

Design:

Pressure transducer with hermetically sealed measurement chamber, diaphragm and housing are welded.

Material: stainless steel 17 - 4 PH (similar to material 1.4542)

Pressure connection:

measuring range $\leq 0 \dots 1500 \text{ psi}$ external thread 1/4 - 18 NPT
 measuring range $\geq 0 \dots 2000 \text{ psi}$ internal thread 1/4 - 18 NPT

Sealing: self-sealing, conic thread at sensor's side

Electrical connection:

6 pin bayonet plug in connector, Souriau 851-07A-10-6P

Wiring (standard):

Pins A + B	excitation voltage	positive
Pins C + D	excitation voltage	negative
Pin E	output signal	negative
Pin F	output signal	positive

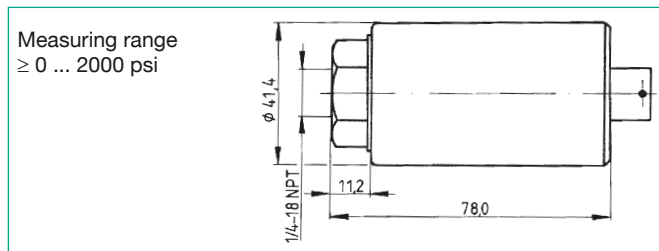
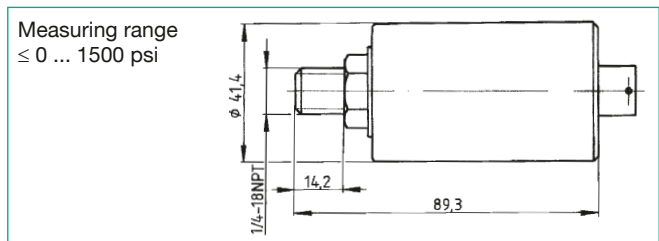
Mating connector:

model 9945
 Souriau 851-06E-C-1-6S or Amphenol 62 GB-16F-10-6S
 included in scope of delivery

Dimensions: refer to dimensional drawing

Weight: approx. 360 g

Dimensional drawing models 8262 and 8263



Transducers model 8263 with measuring range 0 ... 10 psi and 0 ... 15 psi have a diameter of 50.8 mm.

Transducers with internal measurement amplifier are 28.5 mm longer.

Order Code

Refer to table, mention options with corresponding short terms.

Accessories

Connecting cable for transducers with bridge output, complete with connector and mating connector (socket), 6 wires, shielded, bending radius > 5 mm, PVC isolation, standard length 3 m

for burster evaluation electronics (desktop versions)
 with 12 pin connector **Model 9911**

with open, color coded and tinned cable ends **Model 9986**

Options

Option **...-x1xxxxxx**
 Internal measurement amplifier with voltage output 0 ... 5 V DC
 technical data refer to data sheet 83-IMV

Option **...-x4xxxxxx**
 Internal measurement amplifier with current output 4 ... 20 mA
 technical data refer to data sheet 83-IMV