

# 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.

**Technical Data**

Absolute Model 8262	Order Code Against Atmosphere Model 8263	Measuring Range		Resonance Frequency [kHz]
-	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 Ω ± 1.5 %  
 Calibration resistor: 59 kΩ ± 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 mV/V ± 0.2 %

**Environmental conditions**

Range of operating temperature: - 50 °C ... 120 °C  
 Nominal temperature range: 15 °C ... 70 °C  
 Influence of temperature on zero: ± 0.0027 % F.S./K  
 Influence of temperature on sensitivity: ± 0.0027 % Rdg./K

**Mechanical values**

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

**Kind of measurement:**

model 8262  
 measuring range ≥ 0 ... 750 psi absolute measurement against sealed atmosphere  
 measuring range ≤ 0 ... 1000 psi 1 bar (sealed) against atmosphere

model 8263  
 against atmosphere

Dead volume: 2.79 cm<sup>3</sup>  
 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 ≤ 0 ... 1500 psi external thread 1/4 - 18 NPT  
 measuring range ≥ 0 ... 2000 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:**

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

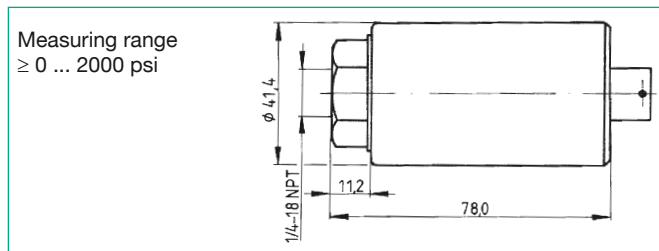
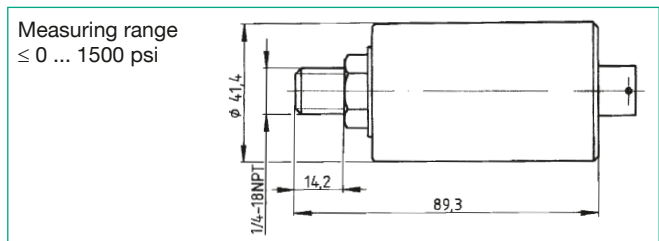
**Dimensions:**

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