High Precision Pressure Transducer

For absolute pressure measurement
Model 8262
For relative pressure measurement
Model 8263

- 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
- Very low sensitivity to temperature
- Very high operating temperature range
- Output 0 ... 10 V or 4 ... 20 mA available (optional)
- Protection class IP67

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.

Range of applications:
- Process monitoring
- Aerospace engineering
- Research and science
- Reference measurements on calibration equipment

Description
The high precision, extraordinary temperature compensation and high reliability are achieved through extremely precise manufacturing and calibration.

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. There are two types of transducers for different measuring modes:

8262: Measurement of absolute pressure with respect to enclosed vacuum or, for measurement ranges of 500 psi and up, with respect to a permanently enclosed atmosphere (sealed gauge).

8263: Relative pressure sensors for measuring the pressure with respect to the atmosphere (true gauge). In this type, contact is made to the surrounding air pressure by means of a second membrane made of stainless steel. This allows the sensor to be used in harsh industrial environments as well, without the sensor element being attacked.

A special connecting cable is available to let you benefit from the burster TEDS electronic data sheet (memory chip fitted in the plug and containing sensor-specific data).
Technical Data

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Measuring Range</th>
<th>Resonance-Frequency [kHz]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 8262</td>
<td>Calibrated to 1500 psi</td>
<td>1.6</td>
</tr>
<tr>
<td>Model 8263</td>
<td>Calibrated to 2000 psi</td>
<td>2.1</td>
</tr>
</tbody>
</table>

Electrical values

Bridge resistance: Foil strain gauges; input and output resistance 350 Ω ± 1.5 %

Calibration resistor: 59 kΩ ± 1.0 %

The output voltage caused by a shunt of this value is given in the calibration protocol.

Excitation voltage: 10 V DC

Nominal sensitivity: 2.0 mV/V ± 0.2 %

Environmental conditions

Range of operating temperature: -70 °C ... 120 °C

Nominal temperature range: 15 °C ... 70 °C

Influence of temperature on zero: ± 0.0015 % F.S./K

Influence of temperature on sensitivity: ± 0.0015 % F.S./K

Mechanical values

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

Kind of measurement:

model 8262

measuring range ≤ 300 psi absolute measurement

measuring range ≥ 500 psi against sealed atmosphere (sealed gauge)

model 8263

gauge/relative pressure measurement

Dead volume: 2.8 cm³

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 ≤ 1500 psi external thread 1/4 - 18 NPT

measuring range ≥ 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

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

Protection class acc. EN 60529:

IP67

Technical Data with Internal Amplifier

<table>
<thead>
<tr>
<th>Voltage output</th>
<th>Current output</th>
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</thead>
<tbody>
<tr>
<td>0 ... 10 V</td>
<td>4 ... 20 mA</td>
</tr>
</tbody>
</table>

Excitation voltage: 15 ... 28 V

Current consumption max. 40 mA

Current consumption max. 65 mA

Connection technology: 4 wire

Load impedance: 500 Ω

Measuring rate: 3 kHz

Range of operating temperature: -40 °C ... 85 °C

Wiring Code

Pin | without Amplifier | Voltage output | Current output |
---|-------------------|---------------|---------------|
A  | excitation +      | excitation +   |               |
B  | signal -         | Signal -       | calc. resistor |
C  | excitation -     | excitation -   |               |
D  | signal +         | signal +       | calc. resistor |
E  | signal +         | calc. resistor  |               |
F  | signal +         | calc. resistor  |               |

Order Code

Refer to table, mention options with corresponding short terms.

Accessories

Connecting cable for transducers without amplifier, complete with connector and mating connector (socket), 6 wires, shielded, bending radius > 5 mm, PVC isolation, standard length 3 m to burster evaluation electronics with 12 pin connector Model 9911

for open, color coded and tinned cable ends

Model 9986

with open, color coded and tinned cable ends

Model 99545-000D-0160030

Model 99229-545D-0160030

Mating connector (is included in scope of delivery) Model 9945

Test and Calibration Certificate

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

Options

Internal measurement amplifier with voltage output 0 ... 5 V DC

Internal measurement amplifier with voltage output 0 ... 10 V DC

Internal measurement amplifier with voltage output 4 ... 20 mA

Dakks Calibration Certificate

According to guideline DKD-R 6-1 with 21 points in 10 % increments, for raising and falling pressure.

Order Code 82DKD-82XX

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 82WKS-82XX