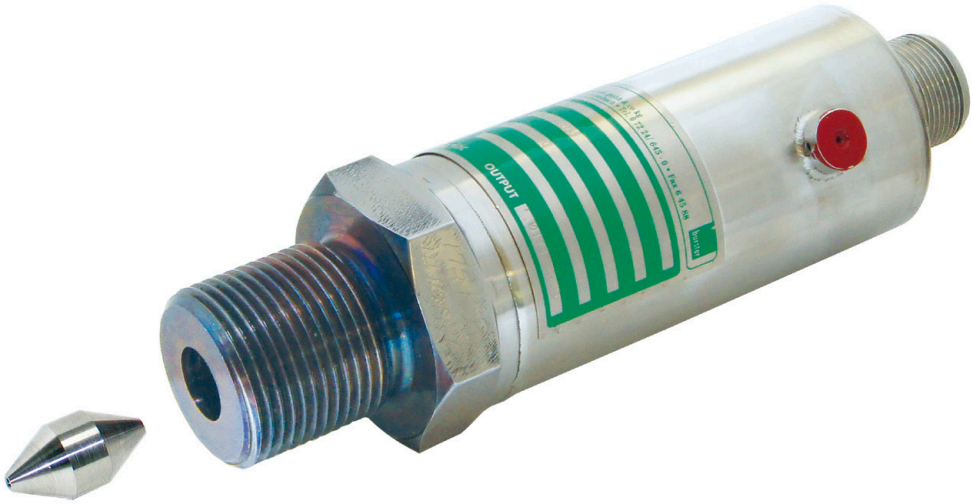
High Pressure Transducer

Model 8270 "A5 - UHP"

Code:	8270 EN
Delivery:	approx. 12 weeks
Warranty:	24 months



- **Measuring ranges between 0 ... 50 kpsi to 0 ... 175 kpsi (0 ... 3.5 kbar to 0 ... 12 kbar)**
- **Accuracy from < 0.5 %**
- **Burst protection through integrated exhaust opening**
- **Robust version**
- **Made of stainless steel**

8270 EN

Application

This transducer is used to measure very high pressures in industry and research. It is robust and accurate. Special stainless steels allow its use even in corrosive liquid or gaseous media.

The transducer can be customized with various options at specific request, such as built-in instrumentation amplifiers or extended temperature-compensated ranges.

Description

The pressure transducer has been designed and built for reliable measurement of high pressures. In the event of a pressure overload of the sensor element, a safety valve (a hole in the outer body wall having a defined resistance) reduces the pressure in a controlled manner. This prevents the body from bursting.

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.

A double-ended sealing cone seals the transducer at its pressure connection. The screw connection must be tightened to the specified torque.

Technical Data

Order Code	Measuring Range		Accuracy * [% F.S.]
8270-3.5	0 ... 50 kpsi	≙ approx. 0 ... 3.5 kbar	< ± 0.5
8270-5	0 ... 75 kpsi	≙ approx. 0 ... 5.0 kbar	< ± 0.5
8270-6.9	0 ... 100 kpsi	≙ approx. 0 ... 6.9 kbar	< ± 0.75
8270-10	0 ... 150 kpsi	≙ approx. 0 ... 10.0 kbar	< ± 1.0
8270-12	0 ... 175 kpsi	≙ approx. 0 ... 12.0 kbar	< ± 1.0

* Combined error consisting of non-linearity, hysteresis and variation

Electrical values

Bridge resistance: foil strain gauges 350 Ω, nominal

Calibration resistor: 59 kΩ ± 0.1 %
The bridge output voltage caused by a shunt of this value is given in the calibration protocol.

Excitation voltage: 10 V DC or AC

Nominal sensitivity: 1 mV/V, nominal

Environmental conditions

Range of operating temperature: - 50 °C ... 120 °C

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

Influence of temperature on zero: ≤ ± 0.01 % F.S./K

Influence of temperature on sensitivity: ≤ ± 0.01 % Rdg./K

Mechanical values

Error of measurement: refer to table

Kind of measurement: against sealed atmoshere

Dead volume: approx. 1 cm^3

Overload: 10 % over capacity

Dynamic load:
recommended 70 % of capacity
possible 100 % of capacity

Burst pressure:
There is no danger of destroying the measurement element. Over pressure is let out by an integrated exhaust opening.

Material:
measuring range ≤ 0 ... 100 kpsi: stainless steel 17-4 PH (similar to material 1.4542)
measuring range ≥ 0 ... 150 kpsi: stainless steel Carpender Custom 455

Pressure connection:
measuring range ≤ 0 ... 100 kpsi: external thread 3/4 - 16 UNF
measuring range ≥ 0 ... 150 kpsi: external thread 1 1/4 - 12 UNF

Mounting torque: 150 Nm, greased

Sealing: sealed by a double ended sealing cone in the pressure connection (the cone is included in scope of delivery).

Electrical connection: 6 pin screw connector GS 02-14S-6P-251

Wiring (standard):

pins	A + B	excitation voltage	positive
pins	C + D	excitation voltage	negative
pin	E	output signal	negative
pin	F	output signal	positive

Connector: Model 9946
Amphenol MS 3106A - 14S - 6S included in scope of delivery

Dimensions: refer to dimensional drawing

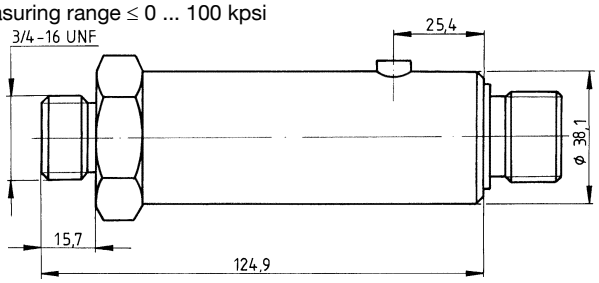
Weight:
measuring range ≤ 0 ... 100 kpsi: approx. 460 g
measuring range ≥ 0 ... 150 kpsi: approx. 1040 g

Order Information

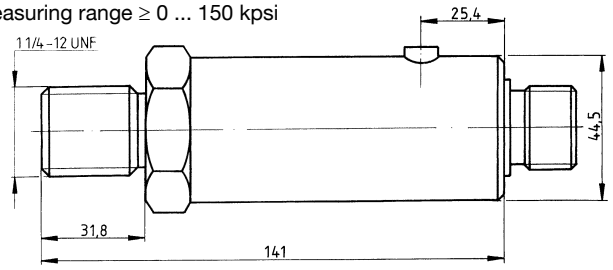
High pressure transducer measuring range 0 ...5000 bar, refer to table.
please mention additional options. **Model 8270-5**

Dimensional drawing model 8270

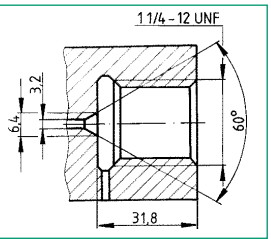
Measuring range ≤ 0 ... 100 kpsi



Measuring range ≥ 0 ... 150 kpsi



Mounting opening of measuring range ≥ 0 ... 150 kpsi



Accessories

Connecting cable for transducers with bridge output, complete with connector and socket, 6 pin, shielded, bending radius > 5 mm, PVC insulated, length 3 m

for burster evaluation electronics, desktop version with 12 pin connector **Model 9912**

with open, color coded and tinned cable ends **Model 99546-000A-0150030**

Measurement amplifiers or process controllers like modular amplifier model 9243, process indicator model 9163 or model 9180 **refer to section 9 of the catalog**

Test and Calibration Certificate

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

Options

Extension of the nominal temperature range to 20 °C ... 120 °C **...-VxFxxxxx**

Integrated measurement amplifier with voltage output 0 ... 5 V DC **...-V1xxxxxx**
technical data refer to data sheet 83-IMV

Integrated measurement amplifier with current output 4 ... 20 mA **...-V4xxxxxx**
technical data refer to data sheet 83-IMV

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-82...

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