

# High Pressure Transducer

## Model 8221

Code:	8221 EN
Delivery:	ex stock
Warranty:	24 months

CAD data 2D/3D for this sensor:  
Download directly at [www.traceparts.com](http://www.traceparts.com)  
Info: refer to data sheet 80-CAD-EN



- Measuring ranges from 0 ... 1000 bar to 0 ... 5000 bar
- Accuracy < 0.5 %
- Suitable for liquid and gaseous media
- Qualified for dynamic measurements
- Made of stainless steel
- Standardized sensitivity 2.0 mV/V

### Application

This transducer for high pressure is designed for universal use. The features of this unit are good accuracy, high reliability, ruggedness and excellent long-term stability.

It works with a metal-coated strain gauge sensor element connected as full bridge and providing a standardized output signal.

The unit is suitable for dynamic and static measurements on liquid and gaseous media. The range of application for this pressure transducer are laboratories, production field, industrial processing, automatic operation, marine engineering or aviation industry.

Especially to be mentioned is the proven and mature technology of this sensor resulting in a simple and user-friendly operation.

### Description

The unit is built from rugged electronic components and ultrasonic tested material. This helps to avoid mechanical faults and enhances the reliability and versatility of the product in industrial use. The measuring element is produced from one piece of solid steel. This enforces the operating reliability because the media do not touch welding seams. The connection between transducer body and pressure connector is done by electron beam welding to save the good physical property of stainless steel.

To ensure the versatility of the transmitter without recalibration of the following electronics, the output signal is standardized to 2.0 mV/V. Internal amplifiers for 4 ... 20 mA, 0 ... 5 V or 0 ... 10 V are available. The output is protected against polarity reversal and short circuits.

For a simple calibration or to test the following electronics, the high pressure transducer is fitted with an internal shunt resistor.

**Technical Data**

Order Code	Measuring Range
8221-6001	0 ... 1000 bar
8221-6002	0 ... 2000 bar
8221-6003	0 ... 3500 bar
8221-6005	0 ... 5000 bar

**Electrical values**

Bridge resistance: metal-coated strain gauge 350 Ω, nominal  
 Calibration resistor: integrated in sensor;  
 Activated by bridging pin E and F. The resulting bridge output voltage is shown in the test certificate 80 % F.S. ± 1 %  
 Excitation voltage: maximum 10 V DC or AC  
 Nominal sensitivity: 1,0 mV/V ± 1 %  
 Insulation resistance: > 1000 MΩ at 50 V DC

**Environmental conditions**

Range of operating temperature: - 30 °C ... 120 °C  
 Nominal temperature range: 0 °C ... 80 °C  
 Influence of temperature on zero: ± 0.02 % F.S./K  
 Influence of temperature on sensitivity: ± 0.02 % Rdg./K

**Mechanical values**

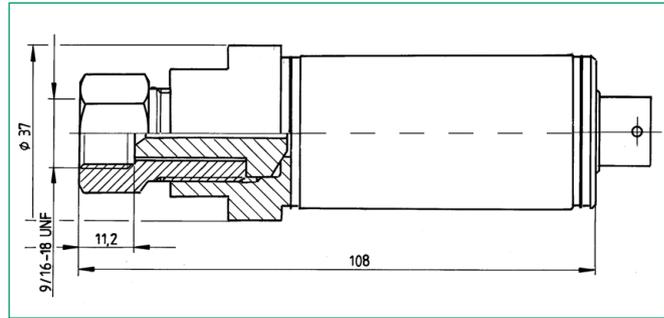
Accuracy: < 0.5 % F.S.  
 Kind of measurement: against atmosphere  
 Measuring range: refer to table  
 Dead volume: 74 mm<sup>3</sup>  
 Overload: 100 % over capacity or maximum 6 kbar  
 Burst pressure: 200 % over capacity or maximum 6 kbar  
 Resonance frequency: all measuring ranges 2 kHz  
 Dynamic performance recommended: 70 % of capacity  
 maximum: 100 % of capacity  
 Material:  
 Measuring element stainless steel 15-5PH (similar 1.4545)  
 Housing AISI 304  
 Pressure port: autoclave F-250-C; internal thread 9/16 -18 UNF  
 Torque assembling: max. 100 Nm  
 Sealing: by metallic cone  
 Electrical connection:  
 6 pin bayonet model connector VPT07RA 10-6PT2  
 Protection class: acc. to EN 60529 IP65  
 Wiring (standard):  
 pin A output signal positive  
 pin B output signal negative  
 pin C excitation voltage positive  
 pin D with bridge to pin E excitation voltage negative  
 pins E + F connected calibration shunt active  
 Mating connector: model 9945  
 Souriau 851-06E-C-1-6S included in scope of delivery  
 Dimensions: see technical drawing  
 Weight: approx. 350 g

**Technical Data of the Internal Amplifier**

Excitation: current output 10 ... 30 V DC  
 voltage output 15 ... 30 V DC  
 Protection against short-circuit and polarity: yes  
 Power input: current output max. 20 mA  
 voltage output max. 40 mA  
 Permissible load: current output see diagram  
 voltage output max. 1 mA  
 Maximum response time (0 ... 90 % v.E.):  
 current voltage 8 ms  
 voltage output 4 ms  
 Operating temperature: - 30 °C ... 85 °C  
 Nominal temperature ranges: 0 °C ... 70 °C

Wiring code:  
 Current output voltage output  
 pin A connection, positive output signal positive  
 pin B connection, negative output signal negative  
 pin C not connected excitation voltage positive  
 pin D not connected excitation voltage negative  
 pins E+F calibration shunt calibration shunt

**Dimensional drawing model 8221**



The CAD drawing (3D/2D) for this sensor can be imported online directly into your CAD system.

Download via [www.burster.com](http://www.burster.com) or directly [www.traceparts.com](http://www.traceparts.com). For further information about the burster traceparts cooperation refer to data sheet 80-CAD-EN.

**Order Information**

High Pressure Transducer, measuring range 0 ... 5000 bar refer to table (Please mention options with corresponding short terms) **Model 8221-6005**

**Accessories**

Connecting cable with connector to sensor, bending radius > 5 mm; PVC insulation, shielded, standard length 3 m  
 to 9162 in desktop housing for sensors without amplifier or with amplifier V106 and V107, with calibration jump **99141-545G-0150030**  
 to all other desktop devices for sensor without amplifier **99141-545H-0160030**  
 to 9180 in desktop version for sensors with amplifier V103 **99141-545L-0150030**  
 with open, color-coded and tinned cable ends **99545-000G-0160030**  
 to 9235 or 9310 **99209-545B-0160030**

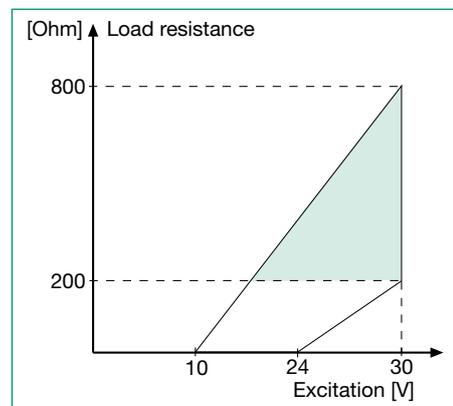
**Test and Calibration Certificate**

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

**Options**

Internal amplifier with current output 4 ... 20 mA, 2 wire **...- V103**  
 Internal amplifier with voltage output 0 ... 5 V **...- V106**  
 Internal amplifier with voltage output 0 ... 10 V **...- V107**

The diagram shows the optimal relation of load and excitation voltage of the amplifier with open V103 (current output).



**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...**