High Precision Pressure Transducer

Series 8201
Version N

Code:	8201 N EN
Delivery:	ex stock/3 weeks
Warranty:	24 months

- **Measuring ranges from 0 ... 5 bar to 0 ... 1000 bar**
- **Accuracy < 0.25 %**
- **Output 0 ... 5 V, 0 ... 20 mA or 4 ... 20 mA available**
- **For liquid and gaseous media**
- **Can be used for dynamic and static measurements**
- **Made of stainless steel, reliable, sturdy**

8201 N EN

Application

Model number 8201 precision pressure sensors are robust, economical, and are available in standard measuring ranges. Their good technical specification and high reliability make them optimum for measuring pressure in all fields of machine construction, process technology, as well as in measurement and control technology.

The pressure transducers are easy to handle and immune to shock loads and vibrations as they are designed without moving parts.

All pressure transducers without an internal amplifier have a standardized output signal of 1.0 mV/V. This enables the user to change a transducer in a measuring chain as liked without following readjustment of the electronic.

Customized designs are available on request.

Aeras of application are:
- ► Hydraulic or pneumatic machines
- ► Mechanical engineering
- ► Plant control and monitoring

Description

The measuring element of the precision pressure transducer consists of a diaphragm. On its reverse side a strain gauge rosette is applied, which is an assembly of 4 active strain gauges arranged in a bridge circuit. The pressure is measured against atmosphere, that means the space behind the diaphragm is connected to the surrounding atmosphere (relative) via a small outlet in the housing.

Each transducer is available with an internal amplifier, a so-called pressure transmitter, with voltage or current output. The input of the internal amplifier is immune against polarity reversal and the output is immune against over-voltage.

Technical Data

Order Code (see Order Code)	Measuring Range	Resonance frequency [kHz]
8201-5005-xxxx	0 ... 5 bar	1.5
8201-5010-xxxx	0 ... 10 bar	3.0
8201-5020-xxxx	0 ... 20 bar	3.5
8201-5050-xxxx	0 ... 50 bar	10.0
8201-5100-xxxx	0 ... 100 bar	15.0
8201-5200-xxxx	0 ... 200 bar	20.0
8201-5300-xxxx	0 ... 300 bar	20.0
8201-5500-xxxx	0 ... 500 bar	20.0
8201-5800-xxxx	0 ... 800 bar	20.0
8201-6001-xxxx	0 ... 1000 bar	20.0

Electrical values

Bridge resistance:
full bridge circuit of foil strain gauges 350 Ω, nominal
Calibration resistor: 100 kΩ
The bridge output voltage resulting from a shunt of this value is shown in the test certificate.
Excitation voltage: recommended 5 V DC
maximum 10 V DC
Nominal sensitivity: standardized; 1.0 mV/V ± 0.25 %

Environmental conditions

Range of operating temperature: - 30 °C ... 120 °C
Nominal temperature range: 0 °C ... 70 °C
Influence of temp. on zero: measuring range ≤ 10 bar ± 0.005 % F.S./K
measuring range ≥ 20 bar ± 0.01 % F.S./K
Influence of temp. on sensitivity: measuring range ≤ 10 bar ± 0.005 % F.S./K
measuring range ≥ 20 bar ± 0.01 % F.S./K

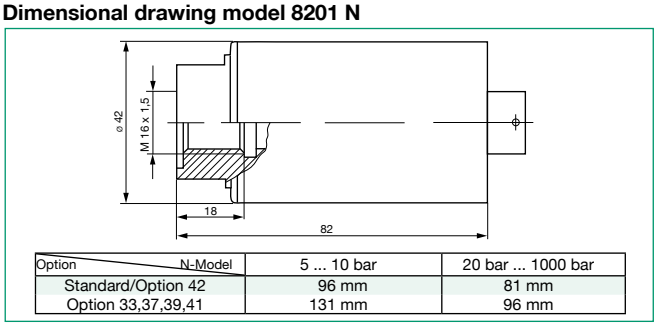
Mechanical values

Measurement accuracy: Combined error consisting of non-linearity, hysteresis and variation: < ± 0.25 % F.S., as specified at BSFL
Kind of measurement:
pressure measurement against atmosphere (relative)
Dead volume: measuring range ≤ 10 bar 5.8 cm³
measuring range ≥ 20 bar 2.5 cm³
Volume change: negligibly small
Overload: measuring range ≤ 300 bar 50 % over capacity
measuring range ≥ 500 bar 50 % over capacity
Burst pressure: measuring range ≤ 500 bar >100 % over capacity
measuring range 1000 bar > 50 % over capacity
Dynamic performance:
measuring range ≤ 10 bar recommended 50 % of capacity
maximum 70 % of capacity
measuring range ≥ 20 bar recommended 70 % of capacity
maximum 100 % of capacity
Design: Diaphragm pressure transducer with hermetically sealed pressure chamber (without internal sealing elements).
Material: stainless steel; 1.4548.9
Pressure connection: internal thread M 16 x 1.5
Sealing: Support ring and O-ring, is included in scope of delivery
Mounting torque: max. 3 Nm
Electrical connection:
6 pin bayonet connector Souriau 851 07A 10 - 6 P
Dimensions: refer to dimensional drawing
General tolerance for length measurement acc. to ISO 2768-f
Weight: approx. 420 g ... 650 g
Protection class: acc. to EN 60529 IP65
Mating connector:
Amphenol 62-GB-16F-10-6S or Souriau 851-06E-C-10-6S

Technical Data of the Internal Amplifier

	Voltage output	Current output
Excitation voltage	15 ... 30 V DC	
Current consumption	max. 40 mA	max. 65 mA
Connection technology	3 wire	
Load impedance	-	< 200 Ω + 40 Ω/V (U_{Ref} -15 V DC)
Nominal temperature range	0 °C ... 60 °C	
Range of operating temperature	0 °C ... 60 °C	
Cut-off frequency	(- 3 dB) 1 kHz	
Protection against short-circuit and polarity	yes	
Zero offset and span setting	± 0.25 % F.S.	

Dimensional drawing model 8201 N



Option / N-Model	5 ... 10 bar	20 bar ... 1000 bar
Standard/Option 42	96 mm	81 mm
Option 33,37,39,41	131 mm	96 mm

The CAD drawing (3D/2D) for this sensor can be imported online directly into your CAD system.
Download via www.burster.com or directly at www.traceparts.com. For further information about the burster traceparts cooperation refer to data sheet 80-CAD-EN.

Wiring Code

Pin	without Amplifier	Voltage output	Current output
A	excitation +	excitation +	excitation +
B		signal - and	signal - and
C	excitation -	excitation -	excitation -
D		signal +	signal +
E	signal -	NC	NC
F	signal +	NC	NC

Accessories

Thread adaptor, material 1.4571 for following connecting threads

External thread M 16 x 1,5 **Model 8281**
External thread G 1/2" A **Model 8283**
External thread R 1/4" (max. 500 bar) **Model 8285**
Internal thread R 1/4" - 18 NPT (max. 500 bar) **Model 82829**
Standard sealing ring set (included in scope of delivery) **Model 82911**
TFE sealing ring set for critical applications; Teflon-coated Viton® thrust and O-ring **Model 82910**
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.

Connecting Cables

for sensors without amplifier, 6 wire, shielded PVC isolated cable, bending radius > 5 mm, length of 3 m
to burster desktop indicators with 12 pin connection **Model 9911**
to SENSORMASTER 9163 **Model 99209-545D-0160030**
with open, color coded and tinned cable ends **Model 9986**
for transducers with internal amplifier; with open, color coded and tinned cable ends **Model 99545-000D-0160030**

Other cable lengths or customized cables on request.

Order Code

High precision pressure transducer 8201-XXXX-N□1A

without amplifier	02
integrated amplifier with voltage output 0 ... 5 V	33
integrated amplifier with current output 0 ... 20 mA	37
integrated amplifier with current output 4 ... 20 mA	39

Order Information

Precision pressure transducer, range 0 ... 100 bar, with internal amplifier for 0 ... 5 V **8201-5200-H331A**

DAkkS Calibration Certificate

According to standard DKD-R 6-1 for 21 points in 10 %-steps up and down. **Order Code 82DKD-XX**

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