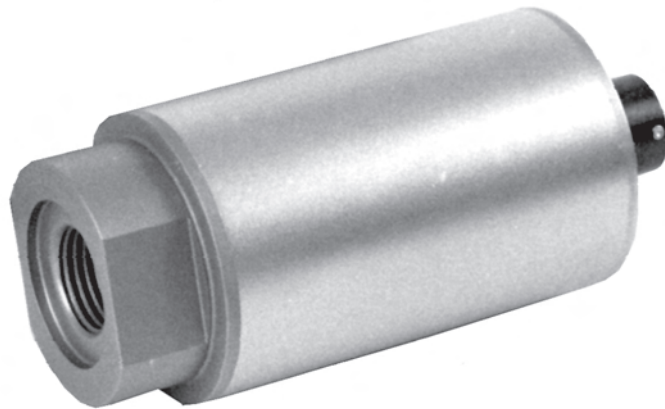


Precision Pressure Transducer

Model 8201N

Code:	8201 N E
Manufacturer:	burster
Delivery:	ex stock/2 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
- Suitable for liquid and gaseous media
- Can be used for dynamic and static measurement
- Made of stainless steel, reliable, sturdy
- Standardized sensitivity to 1.0 mV/V

Application

The precision pressure transducers of this type are of a sturdy and compact construction. They are low-priced and can be supplied to operate in many measuring ranges. Because of their favourable technical data and a high degree of reliability they offer an interesting alternative to pressure measuring applications in all fields of machine construction, process engineering, aeronautics and astronautics.

The pressure transducers are easy to handle and immune to shock loads and vibrations as they are constructed without moving parts. They have a small dead volume. Their design makes them well suitable for both dynamic and static measuring performances, with the media being either liquid or gaseous. Measuring element and transducer housing $\geq 0 \dots 50$ bar are made of one piece of stainless steel. This guarantees absolute impermeability and insensitivity against aggressive media. For pressure transducers with ranges $\leq 0 \dots 20$ bar critical media can cause damages in the area of the sensor body's welding seams. In this case please contact us.

All pressure transducers without an internal amplifier have a standardized sensitivity of 1.0 mV/V. This enables the user to exchange i.e. the transducers in a measuring chain as he likes it and consequently the following electronic has not to be readjusted every time. Differential pressures can be measured with only one signal conditioner as well. Customized design is feasible upon request.

Description

The measuring element of the precision pressure transducer consists in a diaphragm. On its reverse side a strain gage rosette is applied, which is an assembly of 4 active resistance strain gages arranged in a bridge circuit. The pressure measurement is effected against atmosphere, that means the space behind the diaphragm is connected to the surrounding air pressure via a small outlet in the housing. The surrounding atmosphere has to be clean and dry. The medium to be measured is led via the pressure port onto the diaphragm.

As a result of pressure acting on the diaphragm it is deformed and consequently the resistance of the strain gages is changed. By applying a voltage to the strain gage bridge the resistance change is transformed into an output voltage which is directly proportional to the pressure.

Each transducer is available with an internal amplifier, a so-called pressure transmitter with a voltage or a current output. The input of the internal amplifier is shielded against incorrect polarity and the output against voltage surge. The amplifier circuitry is constructed in a way that also low-priced power supply units can be used. The electrical connection is generated by a MJIL-specified housing plug.

The pressure port is formed by an M 16 x 1.5 metric female thread with sealing ring slot, and with the help of adaptors, part of our product range, the pressure port can be changed.

Technical Data

Model	Measuring range	Resonance frequency [kHz]
8201 - 5005 - N021A	0 ... 5 bar	1.5
8201 - 5010 - N021A	0 ... 10 bar	3.0
8201 - 5020 - N021A	0 ... 20 bar	3.5
8201 - 5050 - N021A	0 ... 50 bar	10.0
8201 - 5100 - N021A	0 ... 100 bar	15.0
8201 - 5200 - N021A	0 ... 200 bar	20.0
8201 - 5300 - N021A	0 ... 300 bar	20.0
8201 - 5500 - N021A	0 ... 500 bar	20.0
8201 - 5800 - N021A	0 ... 800 bar	20.0
8201 - 6001 - N021A	0 ... 1000 bar	20.0

Electrical

Bridge resistance: 4 arm 350 Ω foil strain gauge bridge, nominal

Calibration resistor: 100 kΩ
The bridge output voltage resulting from a shunt of this value is shown in the test certificate.

Excitation: recommended 5 V =
maximum 10 V =

Sensitivity: standardized 1.0 mV/V ± 0.25 %

Environmental

Temperature, operating: - 30 °C ... 120 °C

Temperature, compensated: 0 °C ... 70 °C

Temperature effect zero: range ≤ 0 ... 10 bar ± 0.005% F.S./K.
range ≥ 0 ... 20 bar ± 0.01 % Rdg./K.

Temperature effect span: range ≤ 0 ... 10 bar ± 0.005% F.S./K.
range ≥ 0 ... 20 bar ± 0.01 % Rdg./K.

Mechanical

Accuracy: The combined value for non-linearity, hysteresis and non-repeatability < ± 0.25 % F.S.

Mode of measuring: Pressure measurement against atmosphere

Dead volume: range ≤ 0 ... 10 bar 5.8 cm³
range ≥ 0 ... 20 bar 2.5 cm³

Change in volume: negligibly small

Overload safe: range ≤ 0 ... 300 bar 50 % over capacity
range ≥ 0 ... 500 bar 25 % over capacity

Overload burst: range ≤ 0 ... 500 bar >100 % over capacity
range 0 ... 1000 bar > 50 % over capacity

Dynamic performance: range ≤ 0 ... 10 bar recommended 50 % over capacity
maximum 70 % over capacity
range ≥ 0 ... 20 bar recommended 70 % over capacity
maximum 100 % over capacity

Design: Diaphragm type pressure transducer with hermetically sealed pressure chamber

Material: stainless steel; 1.4542

Pressure port: female thread M 16 x 1.5

Sealing: Sealing of the transducer is ensured by the thrust- and O-ring which is part of delivery. For applications there is also a teflon-coated VITON® O-ring with thrust ring available. see accessories

Torque assembling: max. 3 Nm

Electrical connection: 6-pin bayonet type connector Souriau 851 07A 10 - 6

Wiring code: pins A + B + excitation (positive)
pins C + D - excitation (negative)
pin E - signal output (negative)
pin F + signal output (positive)

Dimensions: see technical drawing

Weight: approx. 420 g ... 650 g

Protection class: acc. EN 60529 IP 54

Mating plug: Model 9945
Souriau 851-06E-C-10-6S or Amphenol 62-GB-16F-10-6S (part of delivery)

Optionen

Option 33 internal amplifier for voltage output 0 ... 5V

Option 37 internal amplifier for current output 0 ... 20 mA

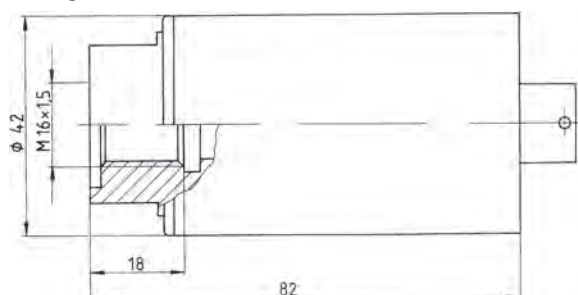
Option 39 internal amplifier for current output 4 ... 20 mA

Options

Option DKD DKD calibration acc. to national standard DKD-R 6-1 for 21 points by 10% increment up and down.

Option WKS WKS factory calibration for 11 points by 20% increment up and down, each point done twice.
See data sheet Pressure Calibration.

Scale drawing



Technical Data of the Internal Amplifiers

Excitation: 15 ... 30 V

Power consumption: voltage output max. 40 mA
current output max. 65 mA

Circuitry: 3-wire

Impedance at current output: 200 Ω (15 V) ... 800 Ω (ab 24 V)

Maximum frequency: (- 3 dB) 1 kHz

Temperature, operating: 0 °C ... 60 °C

Output impedance: 18 Ω

Wiring code: pin A + excitation (positive)
pin B mass
pin C mass
pin D + output signal (positive)
pins E + F no connection

Dimensions: Transducers with internal amplifier and with range ≤ 0 ... 10 bar are 50 mm longer
range ≥ 0 ... 20 bar are 15 mm longer

Accessories

Thread adaptor, material 1.4571 for following connecting threads

Model 8281 male thread M 16 x 1.5

Model 8283 male thread G 1/2" A

Model 8285 male thread R 1/4" *

Model 8286 male thread M 20 x 1.5

Model 82822 male thread 3/4 - 16 UNF

Model 82825 male thread M 14 x 1.5

Model 82827 female thread 3/4 - 16 UNF

Model 82829 female thread 1/4 - 18 NPT *

* for use up to 500 bar only

Model 82911 standard sealing ring set (part of delivery)

Model 82910 PTFE-sealing ring set for critical applications
teflon-coated VITON® thrust- and O-ring

Connecting Cables

for transducers without amplifier, completely with coupler plug and socket coupler, 6 wire, shielded, bending radius > 5 mm, PVC isolation, standard length of 3 m.

Model 9911 to all burster displays in table version

Model 99545-564C-0100030 to process indicator 9162

Model 9986 with open, color-coded and tinned wire endings

Model 99545-000D-0160030 with open, color-coded and tinned wire endings,
for sensors with internal amplifier

Other cable lengths or customized cables upon request.

Customized models

Concerning the pressure transducers model 8201 the customer has the possibility to order other than the standardized plugs, cables and connector assignments. Please do not hesitate to contact us.