

Pressure transmitter for general industrial applications Model A-10



Applications

- Machine building
- Machine tools
- Measurement and control technology
- Hydraulics and pneumatics
- Pumps and compressors

Special features

- Measuring ranges from 0 ... 1 bar to 0 ... 600 bar
- Non-linearity 0.25 % or 0.5 %
- Output signal 4 ... 20 mA, 0 ... 10 V, 0 ... 5 V and others
- Electrical connection: Angular connector form A and C, connector M12 x 1, cable outlet 2 m
- Process connection G 1/4 A DIN 3852-E, 1/4 NPT and others



Pressure transmitter model A-10

Description

The A-10 pressure transmitter for general industrial applications is not only notable for its compact design, but it also offers excellent quality at an extremely competitive price.

The user can choose between a non-linearity of 0.25 % and 0.5 %. A free test certificate provides information on the measuring points recorded during manufacture.

The A-10 is set up for worldwide use through the international cULus and GOST certification. The various pressure units and process connections required for particular operating conditions are available at short notice.

Measuring ranges

| Relative pressure | | | | | | | | |
|-------------------|-----------|------------|------------|------------|------------|------------|-------------|-----------|
| bar | 0 ... 1 | 0 ... 1.6 | 0 ... 2.5 | 0 ... 4 | 0 ... 6 | 0 ... 10 | 0 ... 16 | 0 ... 25 |
| | 0 ... 40 | 0 ... 60 | 0 ... 100 | 0 ... 160 | 0 ... 250 | 0 ... 400 | 0 ... 600 | |
| psi | 0 ... 15 | 0 ... 25 | 0 ... 30 | 0 ... 50 | 0 ... 100 | 0 ... 160 | 0 ... 200 | 0 ... 300 |
| | 0 ... 500 | 0 ... 1000 | 0 ... 1500 | 0 ... 2000 | 0 ... 3000 | 0 ... 5000 | 0 ... 10000 | |

| Absolute pressure | | | | | | | | |
|-------------------|----------|-----------|-----------|----------|-----------|-----------|-----------|-----------|
| bar | 0 ... 1 | 0 ... 1.6 | 0 ... 2.5 | 0 ... 4 | 0 ... 6 | 0 ... 10 | 0 ... 16 | 0 ... 25 |
| psi | 0 ... 15 | 0 ... 25 | 0 ... 30 | 0 ... 50 | 0 ... 100 | 0 ... 150 | 0 ... 200 | 0 ... 300 |

| Vacuum and +/- measuring range | | | | | | | |
|--------------------------------|------------------|------------------|-----------------|-----------------|------------------|------------------|--|
| bar | -1 ... 0 | -1 ... 0.6 | -1 ... 1.5 | -1 ... 3 | -1 ... 5 | -1 ... 9 | |
| | -1 ... 15 | -1 ... 24 | | | | | |
| psi | -30 inHG ... 0 | -30 inHG ... 15 | -30 inHG ... 30 | -30 inHG ... 60 | -30 inHG ... 100 | -30 inHG ... 160 | |
| | -30 inHG ... 200 | -30 inHG ... 300 | | | | | |

The given measuring ranges are also available in kg/cm², MPa and kPa.
Other measuring ranges available on request

Overpressure safety: 2-fold
Vacuum resistance: from 10 bar

Output signal

| Signal type | Value |
|----------------------|---|
| Current (2-wire) | 4 ... 20 mA |
| Voltage (3-wire) | DC 0 ... 10 V DC 0 ... 5 V DC 1 ... 5 V DC 0.5 ... 4.5 V |
| Ratiometric (3-wire) | DC 0.5 ... 4.5 V |

Other output signals available on request

Load in Ω

Current (2-wire): ≤ (power supply - 8 V) / 0.02 A
Voltage (3-wire): > U_{max} / 1 mA
Ratiometric (3-wire): > 4.5k

Power supply

Supply voltage ²⁾

| | Current | Voltage | DC 0 ... 10 V | Ratiometric |
|----------|-----------------------------|---------------|----------------|---------------|
| Standard | DC 8 ... 30 V | DC 8 ... 30 V | DC 14 ... 30 V | DC 5 V ± 10 % |
| Option | DC 8 ... 35 V ¹⁾ | DC 8 ... 35 V | DC 14 ... 35 V | - |

Total current consumption

Current output: Signal current, maximum 25 mA
Voltage output: 8 mA

¹⁾ Not possible with non-linearity 0.25 % BFSL

²⁾ The power supply for the pressure transmitter must be made via an energy-limited electrical circuit in accordance with section 9.3 of UL/EN/IEC 61010-1 or an LPS to UL/EN/IEC 60950-1 or class 2 in accordance with UL1310/UL1585 (NEC or CEC). The power supply must be suitable for operation above 2,000 m should the pressure transmitter be used at this altitude.

Accuracy

| | |
|------------------------------------|-------------------|
| Non-repeatability: | ≤ 0.1 % of span |
| Long-term drift (per IEC 61298-2): | ≤ ± 0.1 % of span |
| Signal noise: | ≤ ± 0.3 % of span |
| Settling time: | < 4 ms |
| Temperature error at 0 ... 80 °C | |
| ■ Typical: | 1 % of span |
| ■ Maximum: | 2.5 % of span |

Non-linearity per BFSL (IEC 61298-2)

| | |
|-----------------|--------------------|
| Standard | ≤ ± 0.5 % of span |
| Option | ≤ ± 0.25 % of span |

Standard

| | |
|--|-------------------|
| Measuring deviation of the zero signal | |
| ■ Typical | ≤ ± 0.5 % of span |
| ■ Maximum | ≤ ± 0.8 % of span |
| Accuracy at room temperature ³⁾ : | ≤ ± 1 % of span |

3) Including non-linearity, hysteresis, zero offset and end value deviation (corresponds to measured error per IEC 61298-2). Calibrated in vertical mounting position with process connection facing downwards.

Option

| | |
|--|--|
| Measuring deviation of the zero signal | |
| ■ Typical | ≤ ± 0.15 % of span |
| ■ Maximum | ≤ ± 0.4 % of span |
| Accuracy at room temperature ³⁾ : | ≤ ± 0.5 % of span, ≤ ± 0.6 % of span (at 0 ... 5 V) |

Reference conditions (per IEC 61298-1)

| | |
|-----------------------|-------------------------------------|
| Temperature: | 15 ... 25 °C |
| Atmospheric pressure: | 950 ... 1050 mbar |
| Humidity: | 45 ... 75 % relative |
| Nominal position: | process connection lower mount (LM) |
| Power supply: | DC 24 V |
| Load: | see output signals |
| Mounting position: | as required |

Operating conditions

Mechanics

| | |
|-----------------------|---|
| Vibration resistance: | 10 g (IEC 60068-2-27, under resonance) 20 g available on request |
| Shock resistance: | 500 g (IEC 60068-2-6, mechanical) |
| Service life: | 10 million load cycles |

Temperatures

| Permissible temperature range | | | |
|-------------------------------|-----------------|-----------------|-----------------|
| | Medium | Ambient | Storage |
| Standard | 0 ... +80 °C | 0 ... +80 °C | -20 ... +80 °C |
| Option | -30 ... +100 °C | -30 ... +100 °C | -30 ... +100 °C |

Process connections

Connections

| Standard | Thread |
|--------------------------|-----------------------|
| EN 837 | G 1/8 B ¹⁾ |
| | G 1/4 B |
| | G 1/4 female |
| | G 3/8 B |
| | G 1/2 B |
| DIN 3852-E ²⁾ | G 1/4 A |
| | G 1/2 A |
| | M14 x 1.5 |
| ANSI/ASME B1.20.1 | 1/8 NPT ¹⁾ |
| | 1/4 NPT |
| | 1/4 NPT female |
| | 1/2 NPT |
| - | M20 x 1.5 |
| ISO 7 | R 1/4 |
| | R 3/8 |
| | R 1/2 |
| KS | PT 1/4 |
| UNF ^{2) 3)} | 7/16-20 BOSS O-ring |
| | 9/16-18 BOSS O-ring |

1) Maximum measuring range 400 bar.

2) Maximum overpressure safety 600 bar

3) Maximum permissible temperature -10 ... +100 °C

Sealings

| | EN 837 | DIN 3852-E | UNF BOSS |
|-----------------|-----------------|------------|----------|
| Standard | Cu | NBR | FKM |
| Option | Stainless steel | FKM | - |

The sealings listed under "Standard" are included in the delivery.

All process connections are available, as standard, with an entry bore of diameter 3.5 mm.

Optional diameters for:

- G 1/4 A DIN 3852-E: Ø 6 mm, Ø 0.6 mm, Ø 0.3 mm
- 1/4 NPT: Ø 6 mm, Ø 0.6 mm, Ø 0.3 mm

Electrical connections

Specifications

| Description | Ingress protection | Wire cross-section | Cable diameter | Cable material |
|---|--------------------|---------------------------------|----------------|----------------|
| Angular connector DIN 175301-803 A | | | | |
| ■ with mating connector | IP 65 | up to max. 1.5 mm ² | 6 ... 8 mm | - |
| ■ with solid laid cable | IP 65 | 3 x 0.75 mm ² | 6 mm | PUR |
| Angular connector DIN 175301-803 C | | | | |
| ■ with mating connector | IP 65 | up to max. 0.75 mm ² | 4.5 ... 6 mm | - |
| ■ with solid laid cable | IP 65 | 4 x 0.75 mm ² | 5.9 mm | PUR |
| Circular connector M12 x 1 (4-pin) | | | | |
| ■ without mating connector | IP 67 | - | - | - |
| ■ straight with solid laid cable | IP 67 | 3 x 0.34 mm ² | 4.4 mm | PUR |
| ■ angled with solid laid cable | IP 67 | 3 x 0.34 mm ² | 4.4 mm | PUR |
| Cable outlet unshielded | IP 67 | 3 x 0.34 mm ² | 4 mm | PUR |

The stated ingress protection (per IEC 60529) only applies when plugged in using mating connectors that have the appropriate ingress protection.

Mating connectors (with and without cable) are also separately available as accessories.

Cable lengths of 2 m or 5 m are available.

Electrical safety

Short-circuit resistance: S₊ vs. 0V

Reverse polarity protection: UB vs. 0V

Insulation voltage: DC 500 V

