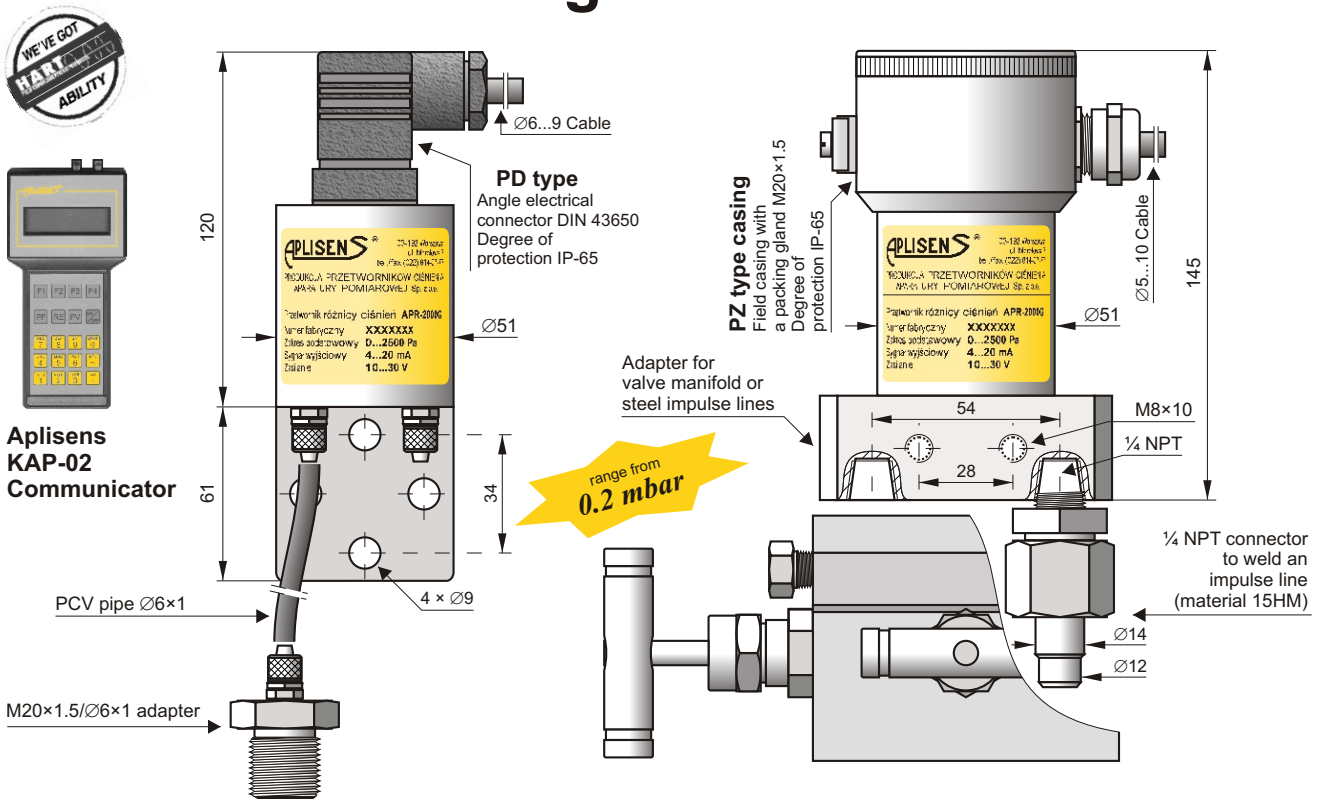


Smart differential pressure transmitter for low ranges APRE-2000G



APRE-2000G Economic Version, process connection with terminal connecting to $\varnothing 6$ pipe (**PCV type**)
An example with **PD type** Electrical Connection

APRE-2000G Industrial Version, **C type** process connector to be mounted along with a valve manifold
An example with **PZ type** Electrical Connection

- ✓ Programmable zero shift and damping ratio
- ✓ Selectable linear or radical conversion characteristic
- ✓ 4...20 mA output signal + HART protocol
- ✓ Accuracy from 0.1%
- ✓ ATEX Intrinsic safety

Application

The APRE-2000G transmitter is applicable to gases, to the measurements of their pressure, underpressure and differential pressure. Typical applications include the measurement of blast pressure, chimney draughts or pressure / underpressure in furnace chambers. The ability to select the radical conversion characteristics enables the transmitter to be used in gas-flow measurement systems using reducing pipes or other impeding elements. The transmitter can withstand overpressure up to 1 bar. The housing of the electronic circuit has the degree of protection IP65.

Configuration, calibration

The following metrological parameters can be configured:

- ◆ The units of pressure,
- ◆ Start and end-points of measuring range, damping time constant,
- ◆ Conversion characteristic (radical, inversion, user's non-linear characteristic).

Ability to calibrate the transmitter with reference to a standard pressure.

Communication

Communication with the transmitter is carried out with a KAP-02 communicator, some other Hart communicators or a PC with an RS-HART converter and RAPORT-01 configuration software.

Additionally, the data interchange with the transmitter enables the users to identify the transmitter, read the currently measured pressure difference value, output current and percentage of measuring range.

Installation

The economical version can be mounted on any stable construction using the assembly fixture with $\varnothing 9$ opening. The transmitter's connection shanks have terminals to be connected to the elastic $\varnothing 6 \times 1$ impulse line. Where the pulse comes through a metal pipe, we suggest an M20x1.5 adapter for a $\varnothing 6 \times 1$ fitting using.

The transmitter with a C type connector should be mounted on a 3- or 5-valve manifold. We recommend the use of our pre-assembled transmitters with VM type valves (page 52).

Operating guidelines

The transmitter should be mounted in a vertical position. The impulse lines should be connected in such a way that any condensed liquids could flow off away from the device.

Where there is a significant difference in height between the place where the transmitter is mounted and the place where the pulse is taken, the measurement may vary with the temperature of the impulse line. Connecting a compensating pipe close to the impulse line, from the transmitter's reference connection shank to the height at which the impulse is taken can minimise this effect.

To prevent dust from entering the measuring cells, the impulse lines should be attached with care, with particular attention to the tightness of the connections between the impulse lines and the transmitter.

Measuring ranges

Nominal measuring range (FSO)	Minimum set range	Overpressure limit	Static pressure limit
0...25 mbar (0...2500Pa)	1 mbar (100Pa)	1 bar	350 mbar
-2.5...2.5 mbar (-250...250Pa)	0.2 mbar (20Pa)	350 mbar	350 mbar
-7...7 mbar (-700...700Pa)	1 mbar (100Pa)	350 mbar	350 mbar
-25...25 mbar (-2500...2500Pa)	5 mbar (500Pa)	1 bar	1 bar
-100...100 mbar (-10...10kPa)	20 mbar (2kPa)	1 bar	1 bar

Metrological parameters

Nominal range	0...25 mbar	-2.5...2.5 mbar	-7...7 mbar	-25...25 mbar	-100...100 mbar
Accuracy	≤ ±0.075%	≤ ±0.16%	≤ ±0.1%	≤ ±0.1%	≤ ±0.075%
Set range	0...2.5 mbar	-0.5...0.5 mbar	-0.5...0.5 mbar	-2.5...2.5 mbar	-10...10 mbar
Accuracy	≤ ±0.4%	≤ ±1%	≤ ±1.6%	≤ ±0.4%	≤ ±0.4%

Thermal error ≤ ±0.1% (FSO) / 10°C
max ±0.4% (FSO) for the whole compensation range

Time constant 0.3 s

Error due to supply voltage changes 0.002% (FSO) / V

Thermal compensation range -10...70°C

Additional electronic damping 0...30 s

Electrical parameters

Power supply 10.5...36 V DC (EEx 12...28 V DC)

Output signal 4...20 mA two wire transmission

Resistance required for communication 250...1100 Ω

$$\text{Load resistance } R[\Omega] \leq \frac{U_{\text{sup}}[\text{V}] - 10.5\text{V}}{0.02\text{A}} \cdot 0.85$$

Operating conditions

Operating temperature range (ambient temp.) -25...85°C

Materials: casing – 0H18N9 (304ss),
adapters: C – 316Ti, M20×1.5/Ø6×1 – brass,
valve manifold – H17 N14M2 (316ss)

Ordering procedure

APRE-2000G / / / ÷ / / / ÷ / / / /

Special versions: EEx

Nominal measuring range

Type of Electrical Connection: PD, PZ

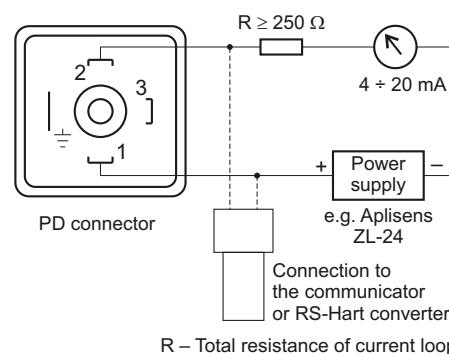
Start of set range – in relation to 4 mA output

End of set range – in relation to 20 mA output

Process connection: PCV type or C type

Additional equipment: adapter M20×1.5/Ø6×1,
¼ NPT connector, VM-3 or VM-5 type valve manifold

Electrical diagram



The transmitter's electrical connections should be performed with twisted cable. The place for the communicator should be assigned before the communicator installation.

Example 1: APRE-2000G transmitter / nominal measuring range -7...7 mbar / Field casing / set range -0.5...1 mbar / PCV type process connection. Two additional M20×1.5/Ø6×1 adapters.

APRE-2000G / -7 ÷ 7 mbar / PZ / -0.5 ÷ 1 mbar / PCV / + two M20×1.5/Ø6×1 adapters

Example 2: APRE-2000G transmitter / nominal measuring range 0...25mbar / Angle electrical connector / set range 0...2.5 mbar / type C process connection. Additional VM-3 three-valve manifold.

APRE-2000G / 0 ÷ 25 mbar / PD / 0 ÷ 2.5 mbar / C / + valve VM-3