



# IDAC 102

## Piezoelectric Pressure Sensor

### Special characteristics

- ▶ High output signal
- ▶ Internal heat-conducting elements for high thermal capacity
- ▶ High linearity across the whole pressure and temperature range
- ▶ High temperature resistance (400 °C / 752 °F)
- ▶ Constant sensitivity across the entire service life

### Description

The many-sided sensor was developed for dynamic and quasistatic pressure monitoring up to 250 bar. The sensor element with Crystal Match™ technology enables exceptional signal detection across the entire temperature range. The monocrystalline GaPO<sub>4</sub> sensor element allows constant sensitivity and thus ensures excellent performance at high temperatures.

### Applications

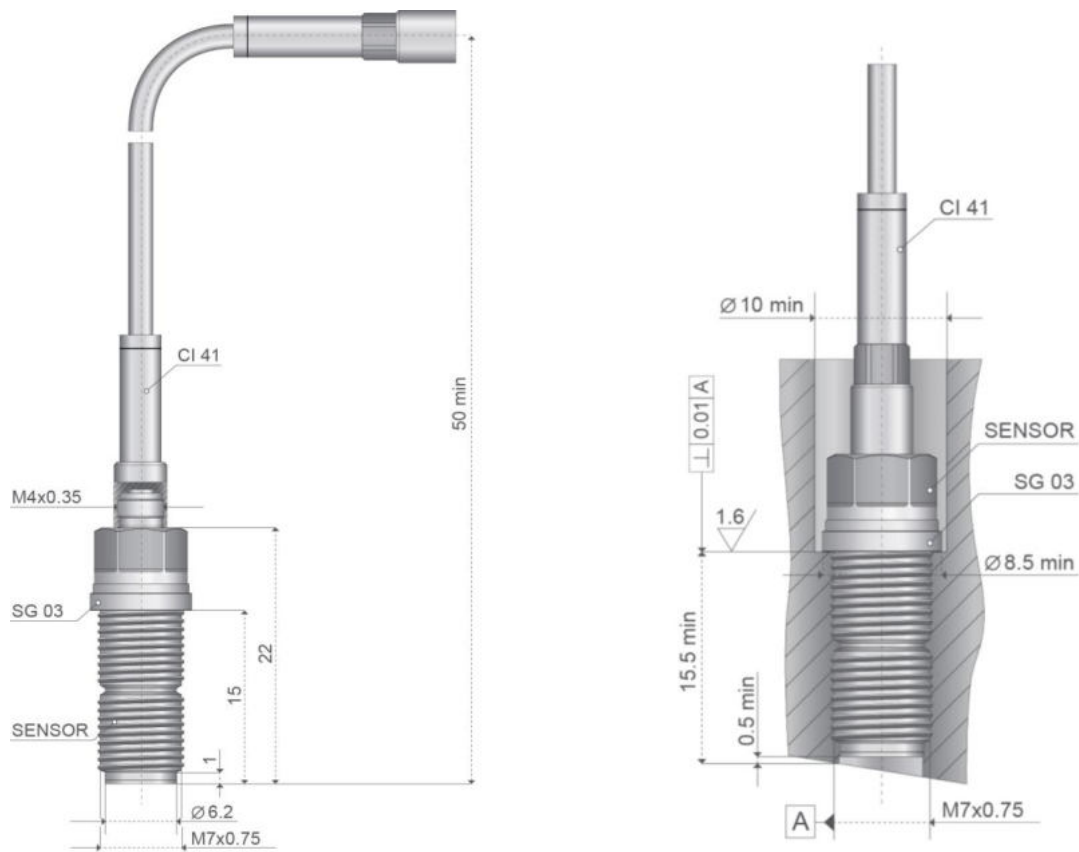
All-round sensor

Pumps, compressors, water turbines

### Technical Data

|                          |                                       |   |
|--------------------------|---------------------------------------|---|
| Functional principle     | Piezoelectric                         |   |
| Sensor element           | GaPO <sub>4</sub> (Gallium phosphate) |   |
| Nominal pressure range   | [bar]                                 | 0 ... 250 (0 ... 3625 psi)  |
| Overload                 | [bar]                                 | 300 (4350 psi)  |
| Sensitivity              | [pC/bar]                              | 35 (2.4 pC/psi)   |
| Linearity                | [%/FSO]                               | ≤ ± 0.3 (0 ... 250 bar, 0 ... 3625 psi)                                 |
| Operating temperature    | [°C]                                  | -40 ... 400 (-40 ... 752 °F)  |
| Sensitivity coefficient  | [°C <sup>-1</sup> ]                   | -1.5*10 <sup>-5</sup>   |
| Insulation resistance    | [Ω]                                   | > 10 <sup>13</sup> (25 °C / 77 °F), > 10 <sup>9</sup> (400 °C / 752 °F) |
| Acceleration sensitivity | (typ.)                                | axial: ≤ 2 mbar/g (0.03 psi/g)      radial: ≤ 0.2 mbar/g (0.003 psi/g)  |
| Natural frequency        | [kHz]                                 | 85  |
| Capacitance (nominal)    | [pF]                                  | 8   |
| Tightening torque        | [Nm]                                  | 3   |
| Housing material         | Stainless steel, hermetically welded  |   |

## Dimensions in mm and mounting



The sensor can be screwed directly into the object to be measured. The sensor rear side ( $\varnothing 8.45$  mm) seals the sensor in the mounting hole. Rapid changes in pressure are best detected when the volume in front of the membrane is kept as small as possible.

All cables can be removed.

Teflon piezo input cable (1 m) and 1 x seal ring are included in the scope of supply.

## Accessories

| Name                          | quantity | BDS-order number |
|-------------------------------|----------|------------------|
| Piezo Input cable Teflon      | 2 m      | BDV4712          |
| Piezo Input cable Teflon      | 3 m      | BDV5041          |
| Piezo Input cable steel braid | 1 m      | BDV2444          |
| Piezo Input cable steel braid | 2 m      | BDV2446          |
| Piezo Input cable steel braid | 3 m      | BDV4954          |
| Piezo Input cable Viton       | 1 m      | BDV4707          |
| Piezo Input cable Viton       | 2 m      | BDV4708          |
| Piezo Input cable Viton       | 3 m      | BDV5806          |
| M4/0.35 to BNC coupling       | piece    | BDU2077          |