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DATA SHEET

# PBS2-RB250SF2FSDNMA0Z

PBS plus
Pressure sensors

SICK Sensor Intelligence




Illustration may differ

## PRESSURE SENSORS

# PBS2-RB250SF2FSDN-MA0Z

### ORDERING INFORMATION

| Type | part no. |
|---|---|
| PBS2-RB250SF2FSDNMA0Z | 6074005 |

Further device versions and accessories at www.sick.com/PBS_plus

## DETAILED TECHNICAL DATA

### FEATURES

| | |
|---|---|
| Medium | Liquid, gaseous |
| Pressure type | Gauge pressure |
| Pressure unit | bar<br>psi |
| Measuring range | 0 bar ... 250 bar<br>0 psi ... 3,626 psi |
| Process temperature | –20 °C ... +85 °C |
| Maximum ohmic load $R_A$ | 4 mA ... 20 mA ($R_A$ ≤ 0.5 kOhm), 0 V ... 10 V, 3-wire ($R_A$ > 10 kOhm) |
| Zero point adjustment | Max. + 3 % of span |
| Output signal | IO-Link/PNP/NPN + 4 mA ... 20 mA / 0 V ... 10 V |
| Rotatable housing | Display against housing with electrical connection: 330 °<br>Housing against process connection: 320 ° |
| Display | 14-Segment LED, red, 4-digit, character height 9 mm, can be rotated electronically by 180°<br>Update: 1,000, 500, 200, 100 ms (adjustable) |

### MECHANICS/ELECTRONICS

| | |
|---|---|
| Communication interface | IO-Link |
| Communication Interface detail | IO-Link V1.1 |
| Process connection | G ½ B flush mounted |

[1] NBR seal installed, FPM/FKM seal included.

[2] Enclosure rating IP per IEC 60529. The enclosure rating classes specified only apply when connected with female connectors that provide the corresponding enclosure rating.

[3] Available on request for process connections G ¼ A according to DIN 3852-E, ¼" NPT.

| | |
|---|---|
| Wetted parts | Process connection: 316L stainless steel<br>Measuring chamber: stainless steel 316L |
| Internal transmission fluid | Silicone oil (only with pressure ranges < 0 bar ... 10 bar and ≤ 0 bar abs ... 25 bar abs) |
| Pressure port | Front-flush membrane |
| Housing material | Lower body: stainless steel 304, Plastic head: PC + ABS, Buttons: TPE-E, Display window: PC |
| Connection type | M12 round connector x 1, 4-pin |
| Supply voltage | 15 V DC ... 35 V DC |
| Power consumption | 45 mA (for configurations without analog output signal)<br>70 mA (for configurations with analog output signal) |
| Total current consumption | Max. 600 mA (including switching current) |
| Electrical safety | Protection class: III<br>Overvoltage protection: 40 V DC<br>Short-circuit protection: $Q_A$, $Q_1$, $Q_2$ towards M<br>Reverse polarity protection: $L^+$ to M |
| Isolation voltage | 500 V DC |
| CE-conformity | EMC Directive: 2014/30 / EU (EN 61326-1:2013; EN 61326-2-3:2013) |
| Ex-approvals | Pressure equipment directive: 2014/68 / EU, Hazardous materials (RoHS): 2011/65 / EU (EN 50581:2012) |
| Weight sensor | Approx. 220 g |
| Seal | NBR [1] |
| Enclosure rating | IP67 [2] |
| Protection class III | ✓ |
| MTTF | 104 years |
| Pressure peak dampening | Through integrated pressure port 0.6 mm or 0.3 mm for process connection G ¼ according to DIN 3852-E (0.3 mm at and above 10 bar) [3] |

[1] NBR seal installed, FPM/FKM seal included.

[2] Enclosure rating IP per IEC 60529. The enclosure rating classes specified only apply when connected with female connectors that provide the corresponding enclosure rating.

[3] Available on request for process connections G ¼ A according to DIN 3852-E, ¼" NPT.

## PERFORMANCE

| | |
|---|---|
| Non-linearity | ≤ ± 0.25 %, of span (Best Fit Straight Line, BFSL) according to IEC 61298-2 |
| Accuracy | ≤ ± 0.5 %, of the span (including non-linearity, hysteresis, zero point and full scale error (corresponds to error of measurement as per IEC 61298-2)) |
| Setting accuracy of switching outputs | ≤ ± 0.5 % of span |
| Response time | ≤ 5 ms |
| Long-term drift/one-year stability | ≤ ± 0.1 % of span to IEC 61298-2<br>≤ 0.2 % of the span according to IEC 61298-2 for measuring range ≤ 0.6 bar or flush-mounted membrane (0 psi ... 10 psi) |
| Temperature coefficient in rated temperature range | Average TC of the zero point: ≤± 0.16% of the span / 10 K<br>Average TC of the span ≤± 0.16% of the span / 10 K |
| Rated temperature range | 0 °C ... +80 °C |
| Service life | Minimum 100 Mio. load cycles |
| Temperature error | ≤ ± 1.0% of the range, typ., ≤ ± 2.5% of the range max. |

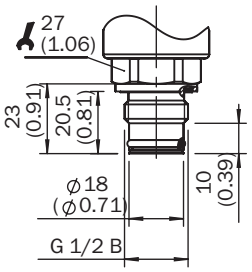
## AMBIENT DATA

| | |
|---|---|
| Ambient temperature, operation | –20 °C ... +80 °C |
| Storage temperature | –20 °C ... +70 °C |
| Relative humidity | ≤ 75 % |
| Shock load | 50 g, 6 ms according to IEC 60068-2-27 (mechanical shock) |
| Vibration load | 20 g, 10 Hz ... 2,000 Hz (IEC 60068-2-6, at resonance) |

## CERTIFICATES

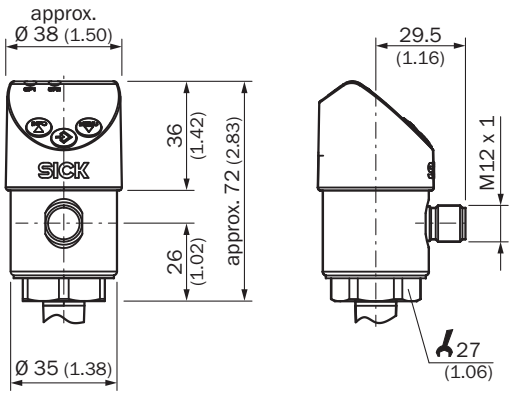
| | |
|---|---|
| EU declaration of conformity | ✓ |
| UK declaration of conformity | ✓ |
| China RoHS | ✓ |
| China Compulsory Product Certification (CCC) exempt | ✓ |
| cULus certificate | ✓ |
| IO-Link certificate | ✓ |
| Information according to Art. 3 of Data Act (Regulation EU 2023/2854) | ✓ |

## DIMENSIONAL DRAWING G ½ B FLUSH MOUNTED




Dimensions in mm (inch)

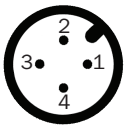
## DIMENSIONAL DRAWING




Dimensions in mm (inch)

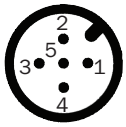
## CONNECTION TYPE

M12 x 1, 4-pin — 2 switching outputs/ 1 switching output + 1 analog output




$L^+ = 1,\ M = 3,\ Q_1 = 4,\ Q_2 = 2$
$C/Q_1 = 4,\ Q_A = 2$

M12 x 1, 5-pin — 2 switching outputs + 1 analog output




$L^+ = 1,\ M = 3,\ Q_1 = 4,\ Q_2 = 2,\ Q_A = 5$
$C/Q_1 = 4$

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/6074005

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# SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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