Data sheet




# PBS-RB040SF2FSNCMA0Z

## PBS

**PRESSURE SENSORS**

SICK
Sensor Intelligence.




Illustration may differ

## Ordering information

| Type | part no. |
|---|---|
| PBS-RB040SF2FSNCMA0Z | 6053383 |

Other models and accessories → www.sick.com/PBS

## Detailed technical data

### Features

| | |
|---|---|
| **Medium** | Liquid, gaseous |
| **Pressure type** | Gauge pressure |
| **Pressure unit** | bar |
| **Measuring range** | 0 bar ... 40 bar |
| **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** | 1 x PNP + 0 V ... 10 V |
| **Rotatable housing** | Display against housing with electrical connection: 330 °<br>Housing against process connection: 320 ° |
| **Display** | 14-segment-LED, blue, 4-digits, height 9 mm, electronically turnable by 180°<br>Accuracy: ≤ 1 % of span ± 1 digit<br>Update: 1,000, 500, 200, 100 ms (adjustable) |

### Mechanics/electronics

| | |
|---|---|
| **Communication interface** | - |
| **Process connection** | G ½ B flush mounted |
| **Wetted parts** | Pressure Connection: stainless steel 316L<br>Pressure sensor: stainless steel 316L (for measurement ranges from 0 bar ... 10 bar rel stainless steel 13-8 PH) |
| **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) |

[1] Available upon request for process connections G ¼ A according to DIN 3852-E, ¼ " NPT, R ¼ according to ISO 7, and 7/16"-20 UNF.

| | |
|---|---|
| **Total current consumption** | Max. 350 mA / 570 mA (incl. 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: 2004/108/EC, EN 61326-2-3 |
| **Weight sensor** | Approx. 200 g |
| **Seal** | NBR |
| **Enclosure rating** | IP67 |
| **Protection class III** | ✓ |
| **MTTF** | 333 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) [1)] |

[1)] Available upon request for process connections G ¼ A according to DIN 3852-E, ¼ " NPT, R ¼ according to ISO 7, and 7/16"-20 UNF.

## Performance

| | |
|---|---|
| **Non-linearity** | ≤ ± 0.5 %, of span (Best Fit Straight Line, BFSL) according to IEC 61298-2 |
| **Accuracy** | ≤ ± 1 %, 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** | 3 ms |
| **Long-term drift/one-year stability** | ≤ 0.2 % of span to IEC 61298-2 |
| **Temperature coefficient in rated temperature range** | Mean TC of zero point: ≤ 0.2% of span / 10 K<br>Mean TC of span ≤ 0.2 % of 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 ... +80 °C |
| **Relative humidity** | ≤ 90 % |
| **Shock load** | 50 g according to IEC 60068-2-27 (mechanical shock) |
| **Vibration load** | 10 g according to IEC 60068-2-6 (vibration under resonance) |

## Certificates

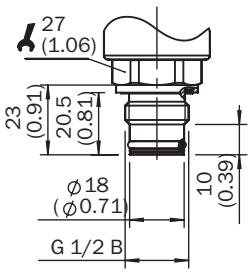
| | |
|---|---|
| **EU declaration of conformity** | ✓ |
| **China-RoHS** | ✓ |
| **cULus certificate** | ✓ |

## Classifications

| | |
|---|---|
| **ECLASS 5.0** | 27200620 |
| **ECLASS 5.1.4** | 27200620 |
| **ECLASS 6.0** | 27200620 |
| **ECLASS 6.2** | 27200620 |

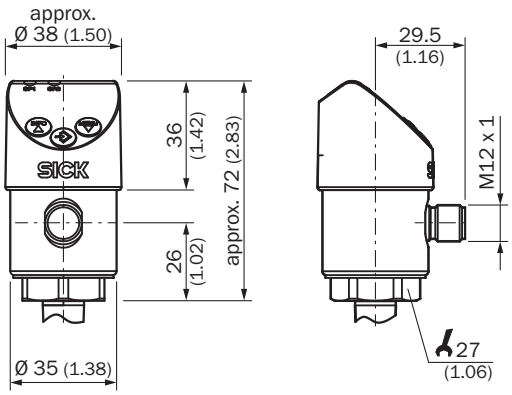
| | |
|---|---|
| **ECLASS 7.0** | 27200620 |
| **ECLASS 8.0** | 27200620 |
| **ECLASS 8.1** | 27200620 |
| **ECLASS 9.0** | 27200620 |
| **ECLASS 10.0** | 27200620 |
| **ECLASS 11.0** | 27200620 |
| **ECLASS 12.0** | 27200620 |
| **ETIM 5.0** | EC000243 |
| **ETIM 6.0** | EC000243 |
| **ETIM 7.0** | EC000243 |
| **ETIM 8.0** | EC000243 |
| **UNSPSC 16.0901** | 41112409 |

## Dimensional drawing G ½ B flush mounted




Dimensions in mm (inch)

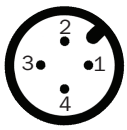
## Dimensional drawing




Dimensions in mm (inch)

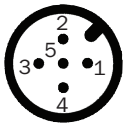
## Connection type

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

## Recommended accessories

Other models and accessories ➜ www.sick.com/PBS

| | Brief description | Type | part no. |
|---|---|---|---|
| Mounting systems | | | |
|  | • **Description:** Mounting bracket for simple and stable wall mounting of pressure sensors with 27 mm hexagon<br>• **Material:** Aluminum<br>• **Details:** Aluminum | BEF-FL-ALUPBS-HLDR | 5322501 |

# SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

**For us, that is “Sensor Intelligence.”**

# WORLDWIDE PRESENCE:

Contacts and other locations –www.sick.com