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DATA SHEET

PBS-RB250SR1SS0FMA0G

PBS
Pressure sensors

SICK Sensor Intelligence



Illustration may differ

PRESSURE SENSORS

PBS-RB250SR1SS0FMA0G

ORDERING INFORMATION

Type	part no.
PBS-RB250SR1SS0FMA0G	6053026

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

DETAILED TECHNICAL DATA

FEATURES

Medium	Liquid, gaseous
Pressure type	Gauge pressure
Pressure unit	bar
Measuring range	0 bar ... 250 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	2 x NPN
Rotatable housing	Display against housing with electrical connection: 330 ° Housing against process connection: 320 °
Display	14-segment-LED, blue, 4-digits, height 9 mm, electronically turnable by 180° Accuracy: ≤ 1 % of span ± 1 digit Update: 1,000, 500, 200, 100 ms (adjustable)
Specialty	Free from oil and grease

MECHANICS/ELECTRONICS

Communication interface	-
Process connection	R ¼ (ISO 7)
Wetted parts	Process connection: 316L stainless steel 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	3.5 mm Standard
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) 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 Overvoltage protection: 40 V DC Short-circuit protection: Q_A, Q_1, Q_2 towards M 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	Without seal
Enclosure rating	IP67
Protection class III	✓
MTTF	349 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 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.

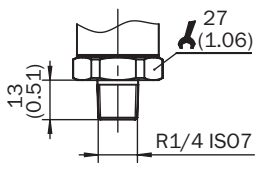
AMBIENT DATA

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

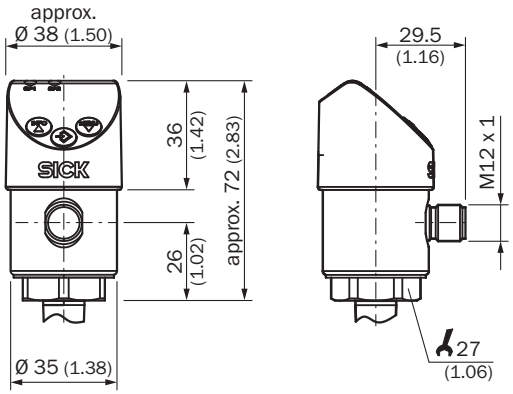
EU declaration of conformity	✓
China RoHS	✓
cULus certificate	✓

DIMENSIONAL DRAWING R ¼ (ISO 7)



Dimensions in mm (inch)

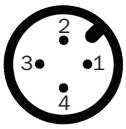
DIMENSIONAL DRAWING



Dimensions in mm (inch)

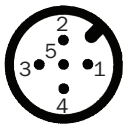
CONNECTION TYPE

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/6053026

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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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