

Pressure sensors  
Pressure switch

PBS-RB250SGESSCD5A0Z



**SICK**  
Sensor Intelligence.

**Model Name** > **PBS-RB250SGESSCD5A0Z**  
**Part No.** > **6038906**



*Illustration may differ*

#### At a glance

- Gauge measurement ranges from 0 ... 1 bar up to 0 ... 600 bar
- No moving parts: No mechanical wear, fatigue-proof, maintenance-free
- Stainless steel membrane
- Various programmable switching functions
- Digital outputs PNP or NPN, Analog output signal 4 ... 20 mA or 0 ... 10 V
- Min/max pressure memory
- Password protection
- Selection of different pressure units for the display
- IO-Link optional

#### Your benefits

- Quick and easy setup and operation due to three large pushbuttons and clear display
- Perfect display readability and optimal cable routing due to rotatable housing
- No compromises: Individual solutions through a variety of configurations
- Universal application due to fully welded, highly durable stainless steel membrane
- Saves space and costs: no adapters required due to broad range of standard process connections
- Highly reliable due to application of proven technologies and high-quality materials, water resistance according to IP 65 and IP 67 as well as excellent overpressure safety
- Ultimate system availability: IO-Link enables fast, reliable parameter setting when changing over products



#### Features

Pressure type:	Gauge pressure
Measuring range:	0 bar ... 250 bar
Process temperature:	-20 °C ... +85 °C
Display:	14-segment-LED, blue, 4-digits, height 9 mm, electronically turnable by 180°, Update: 1,000, 500, 200, 100 ms (adjustable), Accuracy: ≤ 1 % of span ± 1 digit
Output signal:	2 x PNP + 4 mA ... 20 mA
Rotatable housing:	Display against housing with electrical connection: 330 °, Housing against process connection: 320 °
Gauge pressure:	0 bar ... 1 bar up to bar ... 600 bar
Absolute pressure:	0 bar ... 1 bar up to 0 bar ... 25 bar
Compound pressure:	-1 bar ... 0 bar up to -1 bar ... +24 bar
Zero point adjustment:	Max. + 3 % of span

Medium: Liquid and gaseous media

## Performance

Accuracy:	$\leq \pm 1$ % of span, (Including non-linearity, hysteresis, zero point and full scale error (corresponds to error of measurement according to IEC 61298-2))
Non-linearity:	$\leq \pm 0.5$ % (of span (Best Fit Straight Line, BFSL) according to IEC 61298-2)
Setting accuracy of switching outputs:	$\leq \pm 0.5$ % of span
Response time:	3 ms
Long-term drift/one-year stability:	$\leq 0.2$ % of span according to IEC 61298-2
Temperature coefficient in rated temperature range:	Mean TC of span $\leq 0.2$ % of span / 10 K, Mean TC of zero: $\leq 0.2$ % of span / 10 K
Rated temperature range:	0 °C ... +80 °C
Service life:	Minimum 100 Mio. life cycles

## Mechanics/electronics

Process connection:	G ½ B according to EN 837
Wetted parts:	Pressure connection: stainless steel 316L, Pressure sensor: stainless steel 316L (for measurement ranges from 0 bar ... 10 bar rel stainless steel 13-8 PH)
Seal:	Copper
Pressure port:	Standard
Housing material:	Display window: PC, Plastic head: PC + ABS, Buttons: TPE-E, Lower body: stainless steel 304
Enclosure rating:	IP 67
Electrical connection:	Round connector M12 x 1, 5-pin, IP 67
Power consumption:	45 mA (for configurations without analog output signal), 70 mA (for configurations with analog output signal)
Electrical safety:	Short-circuit protection: QA, Q1, Q2 towards M, Protection class: III, Overvoltage protection: 40 V DC, Reverse polarity protection: L+ towards M
Protection class III:	✓
Weight sensor:	Ca. 200 g
Internal transmission fluid:	Silicone oil (only with pressure ranges < 0 bar ... 10 bar and $\leq 0$ bar abs ... 25 bar abs)
Total current consumption:	Max. 350 mA / 570 mA (incl. switching current)
Isolation voltage:	500 V DC
CE-conformity:	Pressure equipment directive: This instrument is a pressure accessory as defined by the directive 97/23/EC, EMC directive: 2004/108/EC, EN 61326-2-3

## Ambient data

Storage temperature:	-20 °C ... +80 °C
Ambient temperature:	-20 °C ... +80 °C
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)
Relative humidity:	$\leq 90$ %

## Connection type

M12 x 1, 4-pin

2 switching outputs/  
1 switching output + 1 analog output



L<sup>+</sup> = 1, M = 3, Q<sub>1</sub> = 4, Q<sub>A</sub> = 2  
C/Q<sub>1</sub> = 4, Q<sub>2</sub> = 2

M12 x 1, 5-pin

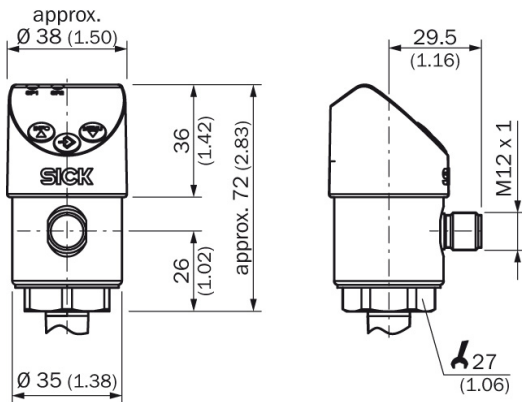
2 switching outputs + 1 analog output



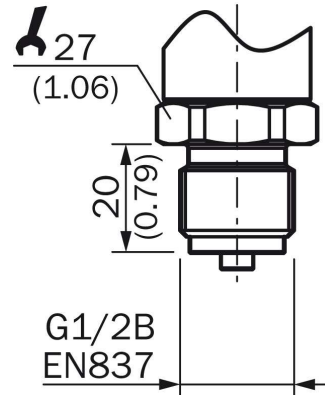
L<sup>+</sup> = 1, M = 3, Q<sub>1</sub> = 4, Q<sub>2</sub> = 2, Q<sub>A</sub> = 5  
C/Q<sub>1</sub> = 4

- |1| L<sup>+</sup>: Positive supply connection
- |2| M: Negative supply connection
- |3| Q<sub>1</sub>: Switching output 1
- |4| C/Q<sub>1</sub>: With IO-Link: Communication/ switching output 1
- |5| Q<sub>2</sub>: Switching output 2
- |6| Q<sub>A</sub>: Analog output

## Dimensional drawing housing



## Dimensional drawing process connection



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