Data sheet

# PBT-RP100SGESESAMA0Z

PBT

PRESSURE SENSORS

SICK
Sensor Intelligence.

Illustration may differ

## Ordering information

| Type | part no. |
|---|---|
| PBT-RP100SGESESAMA0Z | 6065718 |

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

## Detailed technical data

### Features

| | |
|---|---|
| **Medium** | Liquid, gaseous |
| **Pressure type** | Gauge pressure |
| **Pressure unit** | psi |
| **Measuring range** | 0 psi ... 100 psi |
| **Process temperature** | –30 °C ... +100 °C |
| **Maximum ohmic load $R_A$** | 4 mA ... 20 mA, 2-wire ($R_A \leq (L^+ - 8\ V) / 0.02\ A$ [Ohm]), 0 V ... 10 V, 3-wire ($R_A$ > 10 kOhm), 0 V ... 5 V, 3-wire ($R_A$ > 5 kOhm) |
| **Output signal** | 4 mA ... 20 mA, 2-wire |

### Mechanics/electronics

| | |
|---|---|
| **Communication interface** | - |
| **Process connection** | G ½ B (EN 837) |
| **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** | Standard |
| **Housing material** | Stainless steel |
| **Connection type** | M12 round connector x 1, 4-pin |
| **Supply voltage** | 8 V DC ... 30 V DC [1] |
| **Power consumption** | Signal current (max. 25 mA) for current output<br>Max. 8 mA for voltage output signal |
| **Electrical safety** | Overvoltage protection: 32 V DC, 36 V DC with 4 mA ... 20 mA<br>Short-circuit protection: $Q_A$ towards M<br>Reverse polarity protection: $L^+$ to M<br>Protection class: III |
| **Isolation voltage** | 500 V DC |
| **Weight sensor** | Approx. 80 g |

[1] The pressure transmitter must be supplied with power by a limited energy circuit compliant with 9.3 of UL/EN/IEC 601010-1 or LPS to UL/EN/IEC 60950-1 or Class 2 to UL 1310/UL1585 (NEC or CEC). The power supply must be suitable for operation above 2,000 m if the pressure transmitter is used above this altitude.

[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.

| | |
|---|---|
| **Seal** | Stainless steel |
| **Enclosure rating** | IP67 [2] |
| **Protection class III** | ✓ |
| **MTTF** | 815 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) |
| **Overvoltage protection** | 36 V DC |

[1] The pressure transmitter must be supplied with power by a limited energy circuit compliant with 9.3 of UL/EN/IEC 601010-1 or LPS to UL/EN/IEC 60950-1 or Class 2 to UL 1310/UL1585 (NEC or CEC). The power supply must be suitable for operation above 2,000 m if the pressure transmitter is used above this altitude.
[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.

## Performance

| | |
|---|---|
| **Non-linearity** | ≤ ± 0.5 %, of the span |
| **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)) |
| **Adjustment accuracy of zero signal** | ≤ 0.5 % of span typ., ≤ 0.8 % of span max. (with non-linerarity 0.5 %) |
| **Hysteresis** | ≤ 0.16 % of the span |
| **Non-repeatability** | ≤ 0.1 % of the span |
| **Response time** | < 4 ms |
| **Signal noise** | ≤ 0.3 % of the span |
| **Long-term drift/one-year stability** | ≤ 0.1 % of span to IEC 61298-2 |
| **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. |
| **Reference conditions** | Reference conditions: According to IEC 61298-1 |

## Ambient data

| | |
|---|---|
| **Ambient temperature, operation** | 0 °C ... +80 °C |
| **Storage temperature** | –40 °C ... +70 °C |
| **Relative humidity** | 45 % ... 75 % |
| **Shock load** | 500 g according to IEC 60068-2-27 (mechanical shock) |
| **Vibration load** | 10 g according to IEC 60068-2-6 (vibration under resonance)<br>20 g optional |

## Classifications

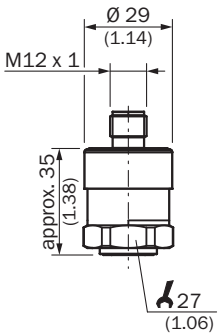
| | |
|---|---|
| **ECLASS 5.0** | 27200614 |
| **ECLASS 5.1.4** | 27200614 |
| **ECLASS 6.0** | 27200614 |
| **ECLASS 6.2** | 27200614 |
| **ECLASS 7.0** | 27200614 |
| **ECLASS 8.0** | 27200614 |
| **ECLASS 8.1** | 27200614 |
| **ECLASS 9.0** | 27200614 |
| **ECLASS 10.0** | 27200614 |
| **ECLASS 11.0** | 27200614 |

| | |
|---|---|
| **ECLASS 12.0** | 27200614 |
| **ETIM 5.0** | EC011478 |
| **ETIM 6.0** | EC011478 |
| **ETIM 7.0** | EC011478 |
| **ETIM 8.0** | EC011478 |
| **UNSPSC 16.0901** | 41112410 |

## Certificates

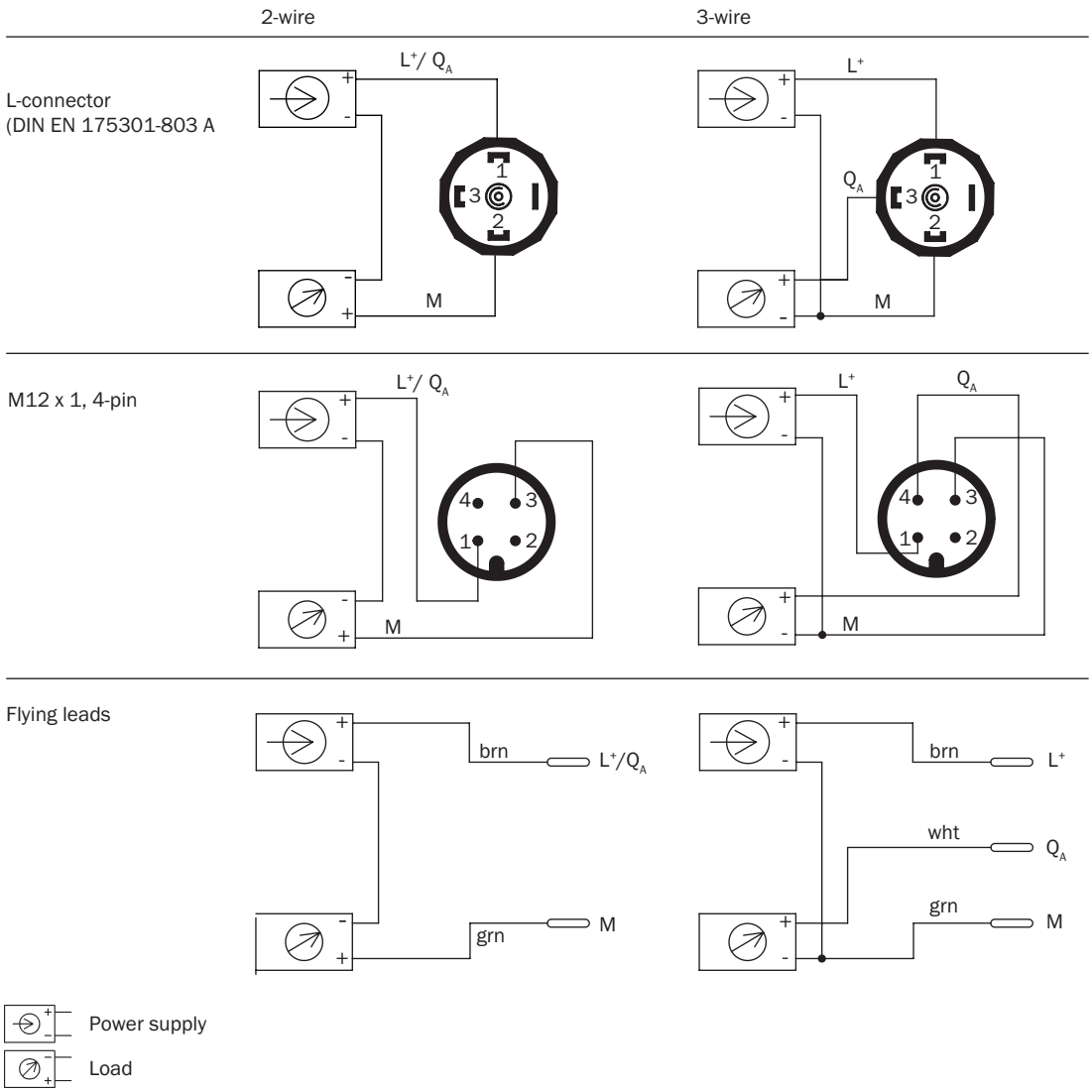
| | |
|---|---|
| **EU declaration of conformity** | ✓ |
| **UK declaration of conformity** | ✓ |
| **China RoHS** | ✓ |
| **cULus certificate** | ✓ |

## Dimensional drawing Housing with circular connector M12 x 1, IP67




Dimensions in mm (inch)

## Connection type




## Recommended accessories

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

| | 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 |

| | Brief description | Type | part no. |
|---|---|---|---|
| connectors and cables | | | |
| | • **Description:** Sensor/actuator cable, unshielded<br>• **Connection type head A:** Female connector, M12, 4-pin, straight, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 15 m, 4-wire, PUR, halogen-free<br>• **Application:** Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | YF2A14-150UB3XLEAX | 2095610 |
| | • **Description:** Sensor/actuator cable, unshielded<br>• **Connection type head A:** Female connector, M12, 4-pin, straight, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 20 m, 4-wire, PUR, halogen-free<br>• **Application:** Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | YF2A14-200UB3XLEAX | 2095611 |
| | • **Description:** Sensor/actuator cable, unshielded<br>• **Connection type head A:** Female connector, M12, 4-pin, straight, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 25 m, 4-wire, PUR, halogen-free<br>• **Application:** Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | YF2A14-250UB3XLEAX | 2095615 |
| | • **Description:** Sensor/actuator cable, unshielded<br>• **Connection type head A:** Female connector, M12, 4-pin, angled, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 15 m, 4-wire, PUR, halogen-free<br>• **Application:** Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | YG2A14-150UB3XLEAX | 2095769 |
| | • **Description:** Sensor/actuator cable, unshielded<br>• **Connection type head A:** Female connector, M12, 4-pin, angled, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 20 m, 4-wire, PUR, halogen-free<br>• **Application:** Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | YG2A14-200UB3XLEAX | 2095770 |
| | • **Description:** Sensor/actuator cable, unshielded<br>• **Connection type head A:** Female connector, M12, 4-pin, angled, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 25 m, 4-wire, PUR, halogen-free<br>• **Application:** Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | YG2A14-250UB3XLEAX | 2095771 |
| | • **Description:** Sensor/actuator cable, unshielded<br>• **Connection type head A:** Female connector, M12, 4-pin, straight, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 10 m, 4-wire, PVC<br>• **Application:** Uncontaminated zones, Zones with chemicals | YF2A14-100VB3XLEAX | 2096236 |
| | • **Description:** Sensor/actuator cable, unshielded<br>• **Connection type head A:** Female connector, M12, 4-pin, straight, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 5 m, 4-wire, PVC<br>• **Application:** Uncontaminated zones, Zones with chemicals | YF2A14-050VB3XLEAX | 2096235 |
| | • **Description:** Sensor/actuator cable, unshielded<br>• **Connection type head A:** Female connector, M12, 4-pin, angled, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 2 m, 4-wire, PVC<br>• **Application:** Uncontaminated zones, Zones with chemicals | YG2A14-020VB3XLEAX | 2095895 |
| | • **Description:** Sensor/actuator cable, unshielded<br>• **Connection type head A:** Female connector, M12, 4-pin, straight, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 15 m, 4-wire, PVC<br>• **Application:** Uncontaminated zones, Zones with chemicals | YF2A14-150VB3XLEAX | 2096237 |
| | • **Description:** Sensor/actuator cable, unshielded<br>• **Connection type head A:** Female connector, M12, 4-pin, straight, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 20 m, 4-wire, PVC | YF2A14-200VB3XLEAX | 2096238 |

| | Brief description | Type | part no. |
|---|---|---|---|
| | • **Application:** Uncontaminated zones, Zones with chemicals | | |
| | • **Description:** Sensor/actuator cable, unshielded<br>• **Connection type head A:** Female connector, M12, 4-pin, straight, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 10 m, 4-wire, PUR, halogen-free<br>• **Application:** Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | YF2A14-100UB3XLEAX | 2095609 |
| | • **Description:** Sensor/actuator cable, unshielded<br>• **Connection type head A:** Female connector, M12, 4-pin, angled, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 2 m, 4-wire, PUR, halogen-free<br>• **Application:** Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | YG2A14-020UB3XLEAX | 2095766 |
| | • **Description:** Sensor/actuator cable, unshielded<br>• **Connection type head A:** Female connector, M12, 4-pin, angled, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 5 m, 4-wire, PUR, halogen-free<br>• **Application:** Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | YG2A14-050UB3XLEAX | 2095767 |
| | • **Description:** Sensor/actuator cable, unshielded<br>• **Connection type head A:** Female connector, M12, 4-pin, angled, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 10 m, 4-wire, PUR, halogen-free<br>• **Application:** Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | YG2A14-100UB3XLEAX | 2095768 |
| | • **Description:** Sensor/actuator cable, unshielded<br>• **Connection type head A:** Female connector, M12, 4-pin, straight, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 2 m, 4-wire, PUR, halogen-free<br>• **Application:** Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | YF2A14-020UB3XLEAX | 2095607 |
| | • **Description:** Sensor/actuator cable, unshielded<br>• **Connection type head A:** Female connector, M12, 4-pin, straight, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 2 m, 4-wire, PVC<br>• **Application:** Uncontaminated zones, Zones with chemicals | YF2A14-020VB3XLEAX | 2096234 |
| | • **Description:** Sensor/actuator cable, unshielded<br>• **Connection type head A:** Female connector, M12, 4-pin, angled, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 10 m, 4-wire, PVC<br>• **Application:** Uncontaminated zones, Zones with chemicals | YG2A14-100VB3XLEAX | 2095898 |
| | • **Description:** Sensor/actuator cable, unshielded<br>• **Connection type head A:** Female connector, M12, 4-pin, angled, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 15 m, 4-wire, PVC<br>• **Application:** Uncontaminated zones, Zones with chemicals | YG2A14-150VB3XLEAX | 2096213 |
| | • **Description:** Sensor/actuator cable, unshielded<br>• **Connection type head A:** Female connector, M12, 4-pin, angled, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 20 m, 4-wire, PVC<br>• **Application:** Uncontaminated zones, Zones with chemicals | YG2A14-200VB3XLEAX | 2096214 |
| | • **Description:** Sensor/actuator cable, unshielded<br>• **Connection type head A:** Female connector, M12, 4-pin, angled, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 5 m, 4-wire, PVC<br>• **Application:** Uncontaminated zones, Zones with chemicals | YG2A14-050VB3XLEAX | 2095897 |
| | • **Description:** Sensor/actuator cable, unshielded<br>• **Connection type head A:** Female connector, M12, 4-pin, straight, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 0.6 m, 4-wire, PUR, halogen-free | YF2A14-C60UB3XLEAX | 2145654 |

| | Brief description | Type | part no. |
|---|---|---|---|
| | • **Application:** Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | | |
| | • **Description:** Sensor/actuator cable, unshielded<br>• **Connection type head A:** Female connector, M12, 4-pin, straight, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 1 m, 4-wire, PUR, halogen-free<br>• **Application:** Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | YF2A14-010UB3XLEAX | 2145655 |
| | • **Description:** Sensor/actuator cable, unshielded<br>• **Connection type head A:** Female connector, M12, 4-pin, straight, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 3 m, 4-wire, PUR, halogen-free<br>• **Application:** Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | YF2A14-030UB3XLEAX | 2145656 |
| | • **Description:** Sensor/actuator cable, unshielded<br>• **Connection type head A:** Female connector, M12, 4-pin, angled, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 0.6 m, 4-wire, PUR, halogen-free<br>• **Application:** Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | YG2A14-C60UB3XLEAX | 2145657 |
| | • **Description:** Sensor/actuator cable, unshielded<br>• **Connection type head A:** Female connector, M12, 4-pin, angled, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 1 m, 4-wire, PUR, halogen-free<br>• **Application:** Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | YG2A14-010UB3XLEAX | 2145658 |
| | • **Description:** Sensor/actuator cable, unshielded<br>• **Connection type head A:** Female connector, M12, 4-pin, angled, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 0.6 m, 4-wire, PVC<br>• **Application:** Uncontaminated zones, Zones with chemicals | YG2A14-C60VB3XLEAX | 2145709 |
| | • **Description:** Sensor/actuator cable, unshielded<br>• **Connection type head A:** Female connector, M12, 4-pin, angled, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 1 m, 4-wire, PVC<br>• **Application:** Uncontaminated zones, Zones with chemicals | YG2A14-010VB3XLEAX | 2145710 |
| | • **Description:** Sensor/actuator cable, unshielded<br>• **Connection type head A:** Female connector, M12, 4-pin, straight, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 0.6 m, 4-wire, PVC<br>• **Application:** Uncontaminated zones, Zones with chemicals | YF2A14-C60VB3XLEAX | 2145707 |
| | • **Description:** Sensor/actuator cable, unshielded<br>• **Connection type head A:** Female connector, M12, 4-pin, straight, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 1 m, 4-wire, PVC<br>• **Application:** Uncontaminated zones, Zones with chemicals | YF2A14-010VB3XLEAX | 2145708 |
| | • **Description:** Sensor/actuator cable, unshielded<br>• **Connection type head A:** Female connector, M12, 4-pin, angled, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 30 m, 4-wire, PUR, halogen-free<br>• **Application:** Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | YG2A14-300UB3XLEAX | 2154444 |

| | Brief description | Type | part no. |
|---|---|---|---|
| device protection and care | | | |
| | • **Description:** Cooling element, extension of the process temperature up to 200 °C. Maximum ambient temperature 30 °C. Max. process pressure 200 bar. Not suitable for pressure measurement in steam. Outer thread G 1/2, inner thread G 1/2.<br>• **Material:** Stainless steel<br>• **Items supplied:** Incl. 2 stainless steel gaskets (1.4571)<br>• **Usable for:** PBS, PBS plus, PFT-2 | BEF-CE-G12G12-200C | 5324394 |
| | • **Description:** Cooling element, extension of the process temperature up to 200 °C. Maximum ambient temperature 30 °C. Max. process pressure 200 bar. Not suitable for pressure measurement in steam. Outer thread G 1/4, inner thread G 1/2.<br>• **Material:** Stainless steel<br>• **Items supplied:** Incl. 2 stainless steel gaskets (1.4571)<br>• **Usable for:** PBS, PBS plus, PFT-2 | BEF-CE-G12G14-200C | 5336706 |
| | • **Description:** Cooling element, extension of the process temperature up to 150 °C. Maximum ambient temperature 30 °C. Max. process pressure 200 bar. Not suitable for pressure measurement in steam. Outer thread G 1/4, inner thread G 1/2.<br>• **Material:** Stainless steel<br>• **Items supplied:** Incl. 2 stainless steel gaskets (1.4571)<br>• **Usable for:** PBS, PBS plus, PFT-2 | BEF-CE-G12G14-150C | 5332155 |

# 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