

GRSE18S-P233W

GR18

CYLINDRICAL PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Ordering information

| Type | Part no. |
|---------------|----------|
| GRSE18S-P233W | 1059552 |

Other models and accessories → www.sick.com/GR18

Illustration may differ



Detailed technical data

Features

| | |
|--|---|
| Functional principle | Through-beam photoelectric sensor |
| Dimensions (W x H x D) | 18 mm x 18 mm x 38.1 mm |
| Housing design (light emission) | Cylindrical |
| Thread diameter (housing) | M18 x 1 |
| Optical axis | Radial, fully flush |
| Sensing range max. | 0 m ... 15 m |
| Sensing range | 0 m ... 10 m |
| Type of light | Visible red light |
| Light source | PinPoint LED ¹⁾ |
| Light spot size (distance) | Ø 250 mm (10 m) |
| Wave length | 650 nm |
| Adjustment | None |
| Indication | |
| | LED green Operating indicator Static on: power on |
| | LED yellow Status of received light beam Static on: object not present Static off: object present |

¹⁾ Average service life: 100,000 h at T_U = +25 °C.

Mechanics/electronics

| | |
|---|---|
| Supply voltage U_B | 10 V DC ... 30 V DC ¹⁾ |
| Ripple | $< 5 V_{pp}$ ²⁾ |
| Current consumption | 30 mA |
| Switching output | PNP |
| Switching mode | Light switching |
| Signal voltage PNP HIGH/LOW | $V_S - (\leq 3 V)$ / approx. 0 V |
| Output current I_{max} | $\leq 100 mA$ ³⁾ |
| Response time | $< 500 \mu s$ ⁴⁾ |
| Switching frequency | 1,000 Hz ⁵⁾ |
| Connection type | Connector M12, 3-pin |
| Circuit protection | A ⁶⁾ B ⁷⁾ D ⁸⁾ |
| Protection class | III |
| Housing material | Metal, Nickel-plated brass and ABS |
| Optics material | Plastic, PMMA |
| Enclosure rating | IP67 |
| Items supplied | Fastening nuts (4 x) |
| Electromagnetic compatibility (EMC) | EN 60947-5-2 |
| Ambient operating temperature | $-25 \text{ }^\circ\text{C} \dots +55 \text{ }^\circ\text{C}$ ⁹⁾ |
| Ambient temperature, storage | $-40 \text{ }^\circ\text{C} \dots +70 \text{ }^\circ\text{C}$ |
| UL File No. | NRKH.E348498 & NRKH7.E348498 |
| Part number of individual components | 2065208 GRS18S-D233W 2065209 GRE18S-P233W |

¹⁾ Limit values. Operated in short-circuit protected network: max. 8 A.

²⁾ May not fall below or exceed U_V tolerances.

³⁾ At $U_V > 24 V$ or ambient temperature $> 49 \text{ }^\circ\text{C}$, $I_A \text{ max.} = 50 \text{ mA}$.

⁴⁾ Signal transit time with resistive load.

⁵⁾ With light/dark ratio 1:1.

⁶⁾ A = V_S connections reverse-polarity protected.

⁷⁾ B = inputs and output reverse-polarity protected.

⁸⁾ D = outputs overcurrent and short-circuit protected.

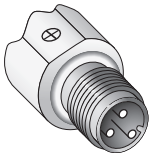
⁹⁾ At $U_V \leq 24V$ and $I_A < 50mA$.

Classifications

| | |
|---------------------|----------|
| ECLASS 5.0 | 27270901 |
| ECLASS 5.1.4 | 27270901 |
| ECLASS 6.0 | 27270901 |
| ECLASS 6.2 | 27270901 |
| ECLASS 7.0 | 27270901 |
| ECLASS 8.0 | 27270901 |
| ECLASS 8.1 | 27270901 |
| ECLASS 9.0 | 27270901 |
| ECLASS 10.0 | 27270901 |

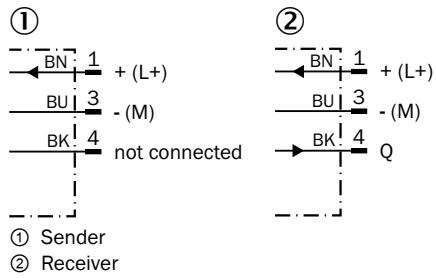
| | |
|-----------------------|----------|
| ECLASS 11.0 | 27270901 |
| ECLASS 12.0 | 27270901 |
| ETIM 5.0 | EC002716 |
| ETIM 6.0 | EC002716 |
| ETIM 7.0 | EC002716 |
| ETIM 8.0 | EC002716 |
| UNSPSC 16.0901 | 39121528 |

Connection type



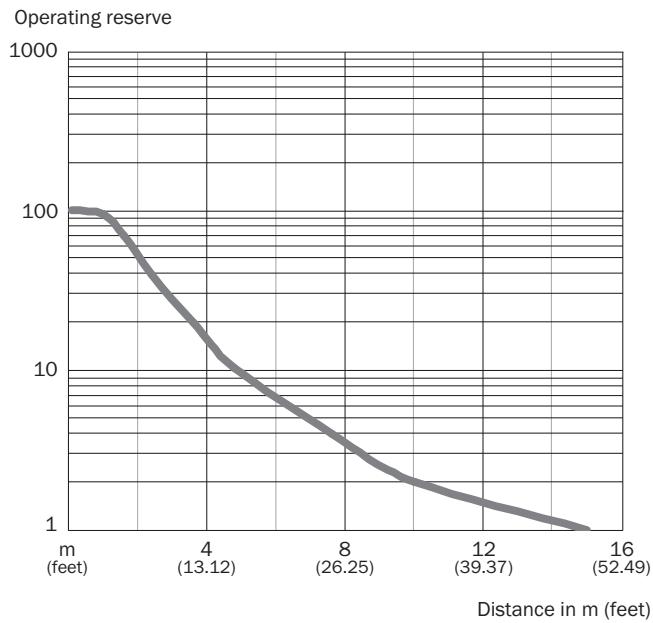
Connection diagram

Cd-051



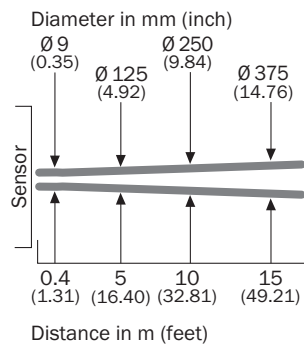
Characteristic curve

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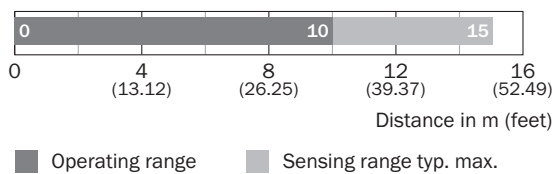
Light spot size

GRSE18, red light



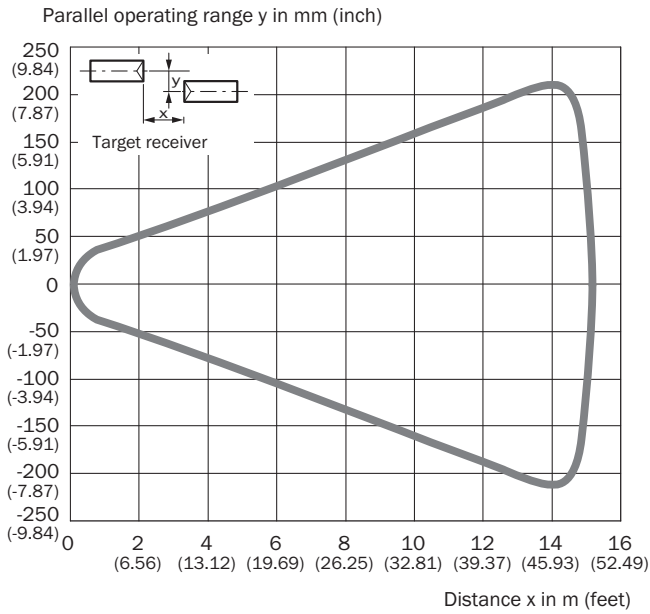
Sensing range diagram

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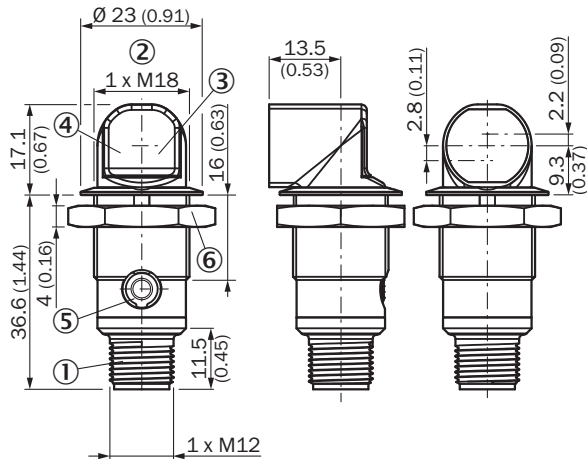
Response range

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Dimensional drawing (Dimensions in mm (inch))



GR18S, metal, connector, angled, fully flush



- ① Connector M12, 3-pin
- ② Threaded mounting hole M18 x 1
- ③ LED indicator yellow
- ④ LED indicator green
- ⑤ Dummy plug
- ⑥ Fastening nut; 24 mm hex, metal

Recommended accessories

Other models and accessories → www.sick.com/GR18

| | Brief description | Type | Part no. |
|---|---|--------------|----------|
| Mounting brackets and plates | | | |
|  | Mounting bracket for M18 sensors, steel, zinc coated, without mounting hardware | BEF-WN-M18 | 5308446 |
| Other mounting accessories | | | |
|  | Mounting tool for "fully flush" variants | BEF-TO-GR18S | 4072132 |

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