Data sheet


# GSE20M-QLRC2170ZZZ

G20

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

Illustration may differ

## Ordering information

| Type | part no. |
|---|---|
| GSE20M-QLRC2170ZZZ | 1120855 |

Other models and accessories ➜ www.sick.com/G20

## Detailed technical data

### Features

| | |
|---|---|
| **Functional principle** | Through-beam photoelectric sensor |
| **Sensing range** | |
| Sensing range min. | 0 m |
| Sensing range max. | 120 m |
| Maximum distance range from receiver to sender (operating reserve 1) | 0 m ... 120 m |
| Recommended distance range from receiver to sender (operating reserve 2) | 0 m ... 85 m |
| **Emitted beam** | |
| Light source | LED |
| Type of light | Infrared light |
| Shape of light spot | Rectangular |
| Light spot size (distance) | Ø 800 mm (20,000 mm) |
| Maximum dispersion of the emitted beam around the standardized transmission axis (squint angle) | < +/- 1.5° (at Ta = +23 °C) |
| **Key LED figures** | |
| Normative reference | EN 62471:2008-09 \| IEC 62471:2006, modified |
| LED risk group marking | Free group |
| Wave length | 850 nm |
| Average service life | 100,000 h at $T_a$ = +25 °C |
| **Adjustment** | |
| Potentiometer | For sensitivity adjustment, 270° |
| **Display** | |
| LED green | Operating indicator<br>Static on: power on |
| LED yellow | Status of received light beam<br>Static on: object not present<br>Static off: object present |

## Electronics

| | |
|---|---|
| **Supply voltage $U_e$** | 24 V AC/DC ... 240 V AC/DC [1] |
| **Ripple** | < 10 % |
| **Usage category** | DC-13 (according to EN 60947-1)<br>AC-15 (according to EN 60947-1) |
| **Current consumption** | ≤ 10 mA, Without load At 230 V AC/DC<br>≤ 45 mA, Without load At 24 V AC/DC |
| **Protection class** | II |
| **Digital output** | |
| Number | 2 (Complementary) |
| Type | Relay, SPDT, electrically isolated [2] |
| Switching mode | Light/dark switching |
| Output current $I_{max.}$ | 4 A@250 V AC, 4 A@24 VDC, 0.11 A@250 V DC |
| | UL: 4 A@250 V AC, general use |
| | 4 A @ 250 V AC, resistive (NO) |
| | 3 A @ 250 V AC, resistive (NC) |
| | 4 A @ 24 V DC, NO, general use |
| | 3 A @ 24 V DC, NC, general use |
| | R300/B300 (NO contacts only) |
| Response time | ≤ 15 ms |
| Switching frequency | 10 Hz [3] |
| **Pin/Wire assignment, sender** | |
| BN 1 | L/(+) |
| BU 2 | N/(-) |
| **Pin/Wire assignment, receiver** | |
| BN 1 | L/(+) |
| BU 2 | N/(-) |
| WH 3 | Relay COM |
| BK 4 | Relay NC<br>Relay output, light switching, object present → output LOW |
| GY 5 | Relay NO<br>Relay output, dark switching, object present → output HIGH |

[1] +- 10 %.

[2] Valid only for devices manufactured before June 18, 2023 with a date code of 2324 or earlier. Suitable arc suppression with inductive or capacitive load. Relay contacts are separated from the supply voltage by a base insulation of 3.2 mm. Depending on the application, additional insulation may be required in the user wiring.

[3] With light/dark ratio 1:1.

## Mechanics

| | |
|---|---|
| **Housing** | Rectangular |
| **Dimensions (W x H x D)** | 23.5 mm x 74.5 mm x 63 mm |
| **Connection** | Terminal connection, 5 terminals |
| **Material** | |
| Housing | Plastic, ABS |
| Front screen | Plastic, PMMA |
| **Weight** | Approx. 171 g |

## Ambient data

| | |
|---|---|
| **Enclosure rating** | IP67 (EN 60529) |
| **Ambient operating temperature** | –30 °C ... +60 °C [1] |
| **Ambient temperature, storage** | –40 °C ... +70 °C |
| **Typ. Ambient light immunity** | Sunlight: ≤ 20,000 lx |
| **Shock resistance** | 30 g, 11 ms (3 positive and 3 negative shocks along X, Y, Z axes, 18 total shocks (EN60068-2-27)) |
| **Vibration resistance** | 10 Hz ... 1,000 Hz (Amplitude 1 mm, 3 x 30 min (EN60068-2-6)) |
| **Air humidity** | 35 % ... 95 %, relative humidity (no condensation) |
| **Electromagnetic compatibility (EMC)** | EN 60947-5-2, EN 61000-6-3 [2] |
| **UL File No.** | NRKH.E348498 & NRKH7.E348498 |

[1] The max. ambient temperature is 50 °C (UL).
[2] The device can cause interference when it is used in a residential environment.

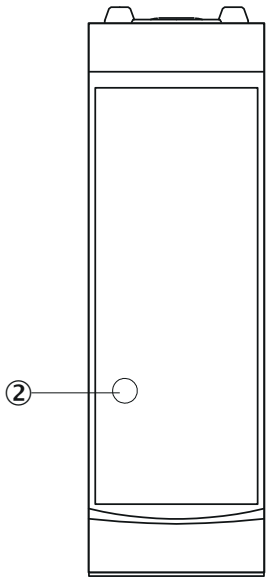
## Certificates

| | |
|---|---|
| **EU declaration of conformity** | ✓ |
| **UK declaration of conformity** | ✓ |
| **ACMA declaration of conformity** | ✓ |
| **Moroccan declaration of conformity** | ✓ |
| **CCC certificate** | ✓ |
| **Photobiological safety (IEC EN 62471)** | ✓ |

## Classifications

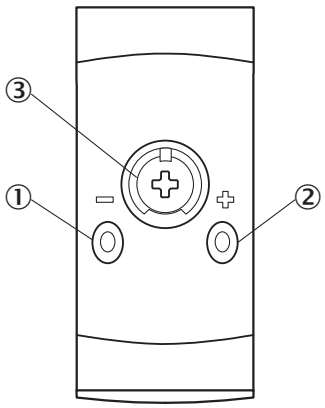
| | |
|---|---|
| **ECLASS 5.0** | 27270901 |
| **ECLASS 5.1.4** | 27270901 |
| **ECLASS 6.0** | 27270901 |
| **ECLASS 6.2** | 27270901 |
| **ECLASS 7.0** | 27270901 |
| **ECLASS 8.0** | 27270901 |
| **ECLASS 8.1** | 27270901 |
| **ECLASS 9.0** | 27270901 |
| **ECLASS 10.0** | 27270901 |
| **ECLASS 11.0** | 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 |

## display and adjustment elements




② LED yellow

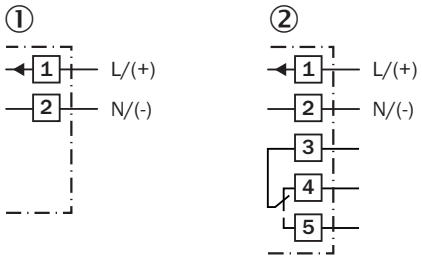
## display and adjustment elements



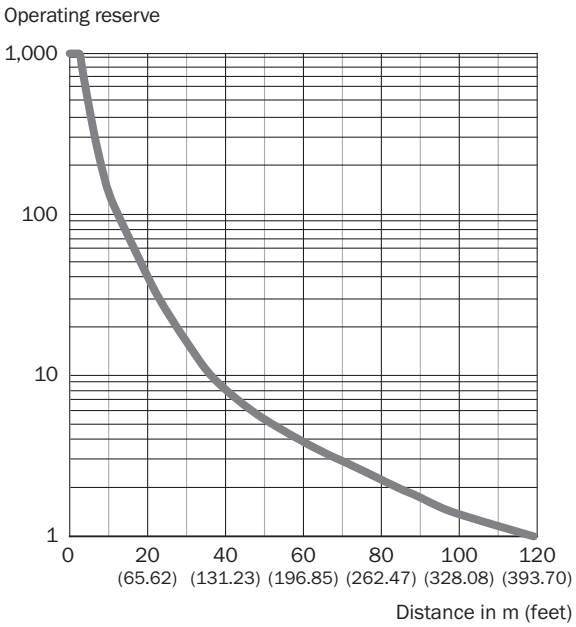

① LED green
② LED yellow
③ Potentiometer

## Connection type

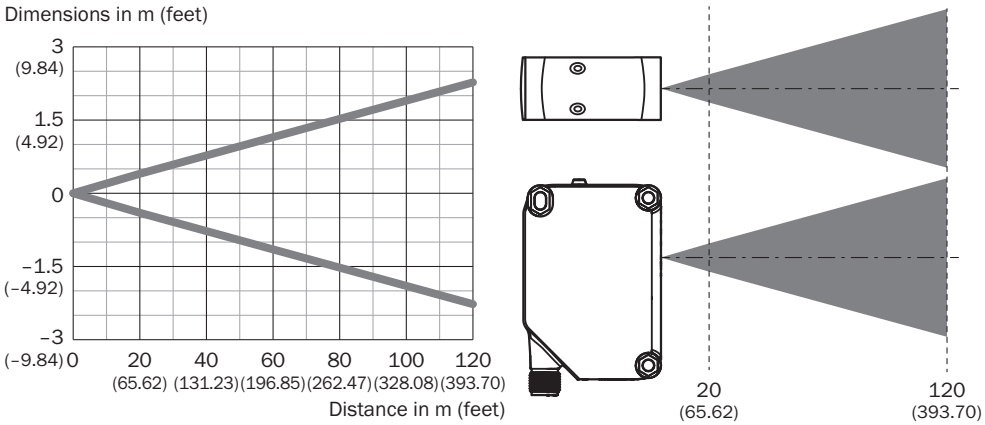
## Connection diagram Cd-587



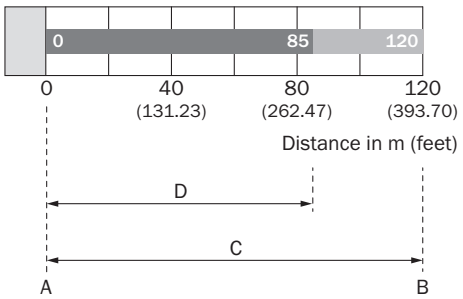

## Characteristic curve




## Light spot size

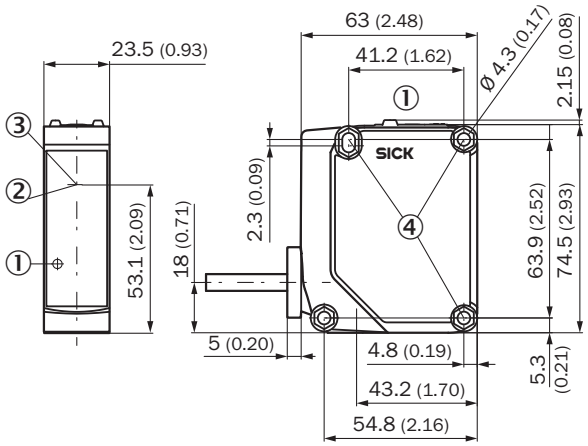


## Sensing range diagram




| | |
|---|---|
| A | Sensing range min. in mm |
| B | Sensing range max. in mm |
| C | Maximum distance range from receiver to sender |
| D | Recommended distance range from receiver to sender |

## Dimensional drawing




Dimensions in mm (inch)
① display and adjustment elements
② Center of optical axis, sender
③ Center of optical axis, receiver
④ Fixing hole ø 4.3 mm, both sides for hexagon nut M4

## Recommended accessories

Other models and accessories ➜ www.sick.com/G20

| | Brief description | Type | part no. |
|---|---|---|---|
| Mounting systems | | | |
|  | • **Description:** Mounting bracket<br>• **Material:** Stainless steel<br>• **Details:** Stainless steel V2A (1.4301)<br>• **Items supplied:** 2 screws, 2 nuts, 2 circlips, 2 washers for mounting the sensor<br>• **Suitable for:** W280-2, G20 | BEF-W280 | 5313885 |

# 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:

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