



# 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](http://www.sick.com/G20)

Detailed technical data

Features

<b>Functional principle</b>	Through-beam photoelectric sensor
<b>Sensing range</b>	
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
<b>Emitted beam</b>	
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)
<b>Key LED figures</b>	
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 Ta = +25 °C
<b>Adjustment</b>	
Potentiometer	For sensitivity adjustment, 270°
<b>Display</b>	
LED green	Operating indicatorStatic on: power onStatic off: object present
LED yellow	Status of received light beamStatic on: object not presentStatic off: object present

## Electronics

<b>Supply voltage U<sub>e</sub></b>		24 V AC/DC ... 240 V AC/DC <sup>1)</sup>
<b>Ripple</b>		< 10 %
<b>Usage category</b>		DC-13 (according to EN 60947-1) AC-15 (according to EN 60947-1)
<b>Current consumption</b>		≤ 10 mA, Without load At 230 V AC/DC ≤ 45 mA, Without load At 24 V AC/DC
<b>Protection class</b>		II
<b>Digital output</b>		
	Number	2 (Complementary)
	Type	Relay, SPDT, electrically isolated <sup>2)</sup>
	Switching mode	Light/dark switching
	Output current I <sub>max</sub>	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 <sup>3)</sup>
<b>Pin/Wire assignment, sender</b>		
	BN 1	L/(+)
	BU 2	N/(-)
<b>Pin/Wire assignment, receiver</b>		
	BN 1	L/(+)
	BU 2	N/(-)
	WH 3	Relay COM
	BK 4	Relay NCRelay output, light switching, object present → output LOW
	GY 5	Relay NORelay output, dark switching, object present → output HIGH

<sup>1)</sup> ± 10 %.

<sup>2)</sup> 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.

<sup>3)</sup> With light/dark ratio 1:1.

## Mechanics

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

## Ambient data

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

<sup>1)</sup> The max. ambient temperature is 50 °C (UL).

<sup>2)</sup> The device can cause interference when it is used in a residential environment.

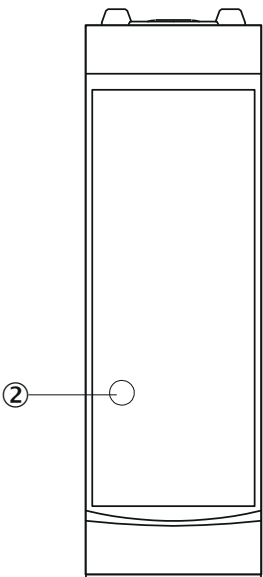
## Certificates

<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓
<b>ACMA declaration of conformity</b>	✓
<b>Moroccan declaration of conformity</b>	✓
<b>China-RoHS</b>	✓
<b>CCC certificate</b>	✓
<b>cRUus certificate</b>	✓
<b>Photobiological safety (IEC EN 62471)</b>	✓

## Classifications

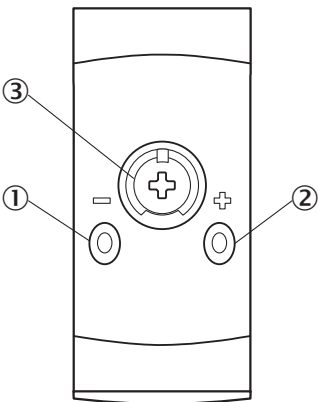
<b>ECLASS 5.0</b>	27270901
<b>ECLASS 5.1.4</b>	27270901
<b>ECLASS 6.0</b>	27270901
<b>ECLASS 6.2</b>	27270901
<b>ECLASS 7.0</b>	27270901
<b>ECLASS 8.0</b>	27270901
<b>ECLASS 8.1</b>	27270901
<b>ECLASS 9.0</b>	27270901
<b>ECLASS 10.0</b>	27270901
<b>ECLASS 11.0</b>	27270901
<b>ECLASS 12.0</b>	27270901
<b>ETIM 5.0</b>	EC002716
<b>ETIM 6.0</b>	EC002716
<b>ETIM 7.0</b>	EC002716
<b>ETIM 8.0</b>	EC002716
<b>UNSPSC 16.0901</b>	39121528

display and adjustment elements



② LED yellow

display and adjustment elements

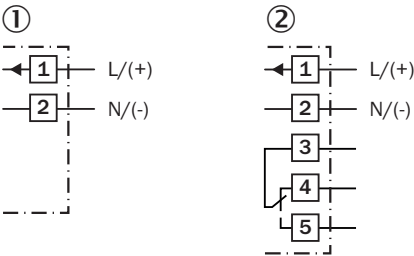


- ① LED green
- ② LED yellow
- ③ Potentiometer

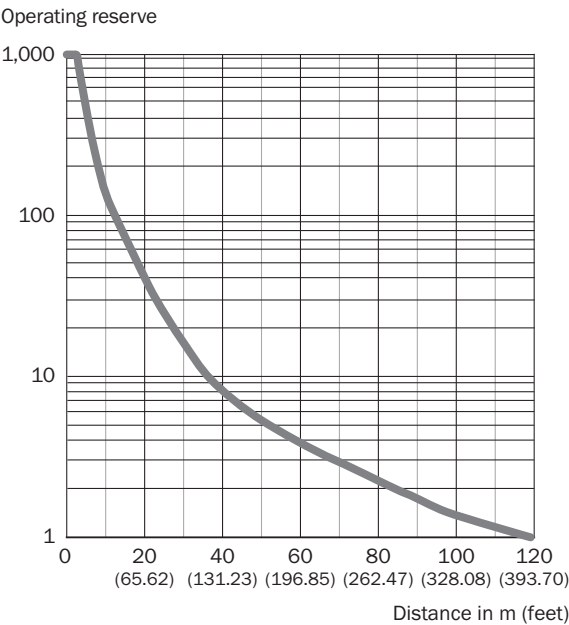
Connection type



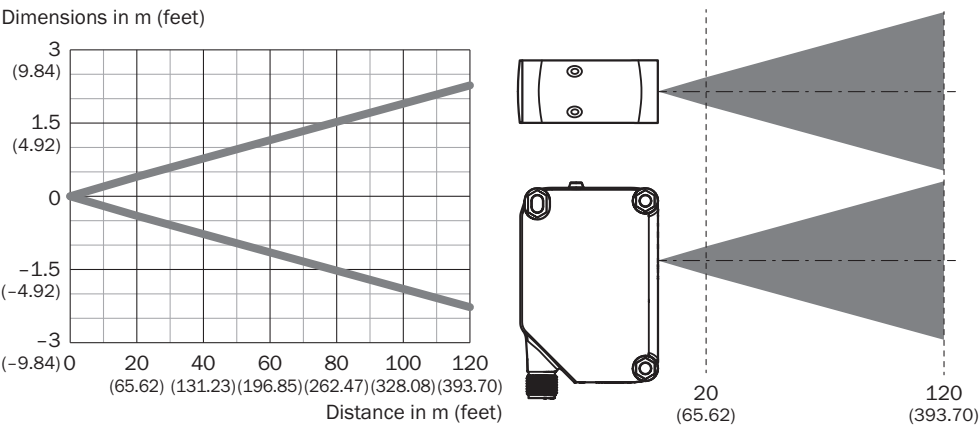
Connection diagram Cd-587



Characteristic curve



Light spot size



The diagram shows a 120m race track. A horizontal bar represents the track, divided into segments. The segments are labeled with distances: 0, 40, 80, and 120. Below the bar, the distances are given in meters and feet: 0, 40 (131.23), 80 (262.47), and 120 (393.70). The track is labeled "Distance in m (feet)". Below the track, two points A and B are marked. A horizontal line segment labeled "D" connects point A to a vertical dashed line at the 80m mark. A horizontal line segment labeled "C" connects point A to point B at the 120m mark.

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

Technical drawing of the SICK S3000 sensor, showing front and side views with dimensions in mm and inches.

**Front View Dimensions:**

- Overall width: 63 (2.48)
- Distance from top edge to center of mounting holes: 41.2 (1.62)
- Distance between mounting holes: 63.9 (2.52)
- Distance from bottom edge to center of mounting holes: 74.5 (2.93)
- Distance from left edge to center of mounting holes: 54.8 (2.16)
- Distance from right edge to center of mounting holes: 5.3 (0.21)
- Distance from top edge to center of mounting holes (alternative): 43.2 (1.70)
- Distance from bottom edge to center of mounting holes (alternative): 4.8 (0.19)
- Mounting hole diameter:  $\varnothing 4.3$  (0.17)
- Mounting hole offset: 2.15 (0.08)
- Mounting hole offset (alternative): 2.3 (0.09)

**Side View Dimensions:**

- Overall height: 53.1 (2.09)
- Distance from top edge to center of mounting holes: 23.5 (0.93)
- Distance from bottom edge to center of mounting holes: 18 (0.71)
- Distance from left edge to center of mounting holes: 5 (0.20)


**Labels:**

- ①: Mounting hole
- ②: Sensor body
- ③: Mounting bracket
- ④: SICK logo

- ① display and adjustment elements
- ② Center of optical axis, sender
- ③ Center of optical axis, receiver
- ④ Fixing hole  $\varnothing 4.3$  mm, both sides for hexagon nut M4

Recommended accessories

Other models and accessories → [www.sick.com/G20](http://www.sick.com/G20)

	Brief description	Type	part no.
Mounting systems			
	<ul style="list-style-type: none"><li>• <b>Description:</b> Mounting bracket</li><li>• <b>Material:</b> Stainless steel</li><li>• <b>Details:</b> Stainless steel V2A (1.4301)</li><li>• <b>Items supplied:</b> 2 screws, 2 nuts, 2 circlips, 2 washers for mounting the sensor</li><li>• <b>Suitable for:</b> W280-2, G20</li></ul>	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:

Contacts and other locations –[www.sick.com](http://www.sick.com)