



GSE20G-QK112170ZZZ

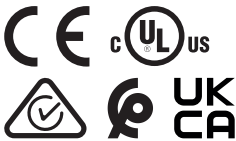
G20

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	part no.
GSE20G-QK112170ZZZ	1120848

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	Visible red 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	630 nm
Average service life	100,000 h at Ta = +25 °C
Adjustment	
Potentiometer	For sensitivity adjustment, 270 °
Display	
LED green	Operating indicatorStatic on: power onStatic off: object present
LED yellow	Status of received light beamStatic on: object not presentStatic off: object present

Safety-related parameters

MTTF _D	524 years
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DC_{avg}	0%
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Electronics

Supply voltage U_B	10 V DC ... 30 V DC ¹⁾
Ripple	< 5 V _{pp}
Usage category	DC-13 (according to EN 60947-1)
Current consumption	≤ 30 mA, without load. At U _B = 24 V
Protection class	III
Digital output	
Number	2 (Complementary)
Type	Push-pull: PNP/NPN
Switching mode	Light/dark switching
Signal voltage PNP HIGH/LOW	V _S - (≤ 3 V) / approx. 0 V
Signal voltage NPN HIGH/LOW	V _S - (≤ 3 V) / approx. 0 V
Output current I _{max}	≤ 100 mA ²⁾
Circuit protection outputs	Reverse polarity protected
	Overcurrent protected
	Short-circuit protected
Response time	≤ 500 μs
Switching frequency	1,000 Hz ³⁾
Pin/Wire assignment, sender	
BN 1	+ (L+)
BU 2	- (M)
BK 3	Test -> MInput, sender off, LOW active
WH 4	-
Pin/Wire assignment, receiver	
BN 1	+ (L+)
BU 2	- (M)
BK 3	QDigital output, light switching, object present → output Q LOW
WH 4	Q̄Digital output, dark switching, object present → output Q̄ HIGH

¹⁾ Limit values.

²⁾ At U_B > 24 V, I max. = 100 mA.

³⁾ With light/dark ratio 1:1.

Mechanics

Housing	Rectangular
Dimensions (W x H x D)	23.5 mm x 74.5 mm x 52.5 mm
Connection	Terminal connection, 4 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
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 ¹⁾
UL File No.	NRKH.E348498 & NRKH7.E348498

¹⁾ The device can cause interference when it is used in a residential environment.

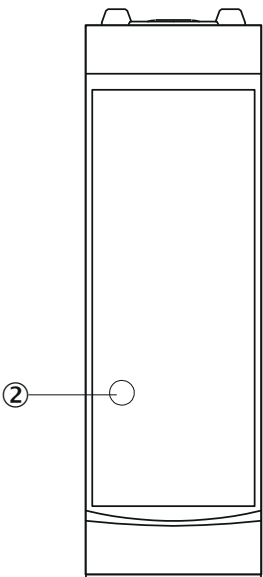
Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China-RoHS	✓
cULus certificate	✓
Photobiological safety (IEC EN 62471)	✓

Classifications

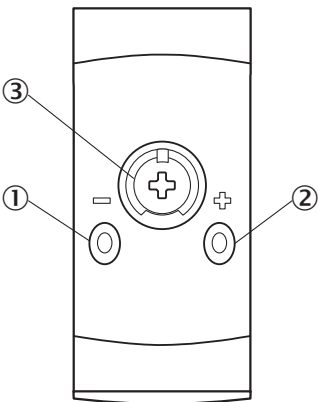
ECLASS 5.0	27270901
ECLASS 5.1.4	27270901
ECLASS 6.0	27270901
ECLASS 6.2	27270901
ECLASS 7.0	27270901
ECLASS 8.0	27270901
ECLASS 8.1	27270901
ECLASS 9.0	27270901
ECLASS 10.0	27270901
ECLASS 11.0	27270901
ECLASS 12.0	27270901
ETIM 5.0	EC002716
ETIM 6.0	EC002716
ETIM 7.0	EC002716
ETIM 8.0	EC002716
UNSPSC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

display and adjustment elements



② LED yellow

display and adjustment elements

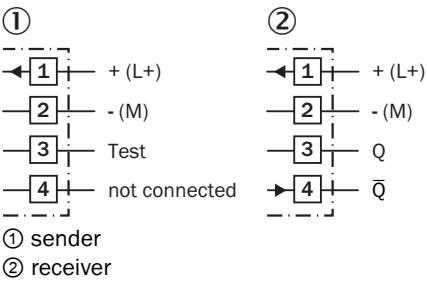


- ① LED green
- ② LED yellow
- ③ Potentiometer

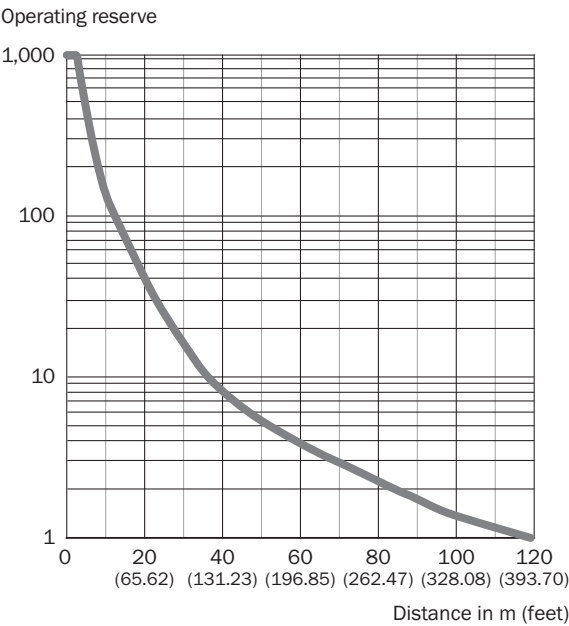
Connection type



Connection diagram Cd-584



Characteristic curve



Light spot size

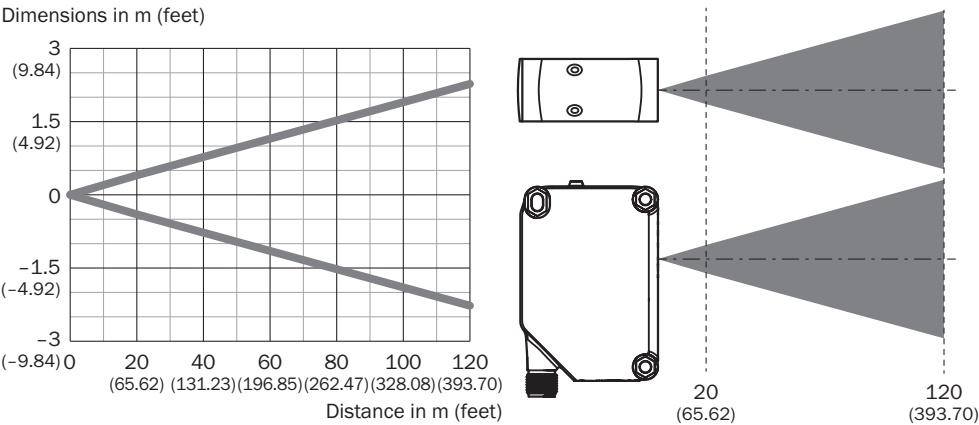


Diagram illustrating the layout of a 120m race track with three lanes. The track is divided into three equal lanes, each 40m wide. The total length of the track is 120m. The diagram shows the start line at 0m and the end line at 120m. The distance from the start line to the end of Lane 1 is 40m, to the end of Lane 2 is 80m, and to the end of Lane 3 is 120m. The distance from the start line to the end of Lane 1 is labeled D, and the distance from the start line to the end of Lane 3 is labeled C.

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)
- Mounting hole offset (alternative): 5 (0.20)

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)


Labels:

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

④ Fixing hole \varnothing 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			
	<ul style="list-style-type: none">• Description: Mounting bracket• Material: Stainless steel• Details: Stainless steel V2A (1.4301)• Items supplied: 2 screws, 2 nuts, 2 circlips, 2 washers for mounting the sensor• 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:

Contacts and other locations –www.sick.com