Data sheet

GSE20G-1IRC217GZZZ

G20

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	part no.
GSE20G-1IRC217GZZZ	1139792

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 T_a = +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

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) AC-15 (according to EN 60947-1)
Current consumption	≤ 10 mA, Without load At 230 V AC/DC ≤ 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]
Time functions	Deactivated (factory setting), switch-on delay, off delay, ON and OFF delay
Delay time	Adjustable via time delay selector switch, 0 ms ... 10,000 ms, 0 ms (factory setting)
Pin/Wire assignment, sender	
BN	L/(+)
BU	N/(-)
Pin/Wire assignment, receiver	
BN	L/(+)
BU	N/(-)
WH	Relay COM
BK	Relay NCRelay output, light switching, object present → output LOW
GY	Relay NORelay 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	Cable, 5-wire, 2 m
Connection detail	
Deep-freeze property	Do not bend below 0 °C

Conductor size	0.32 mm²
Cable diameter	Ø 5 mm
Length of cable (L)	2 m
Material	
Housing	Plastic, ABS
Front screen	Plastic, PMMA
Cable	Plastic, PVC
Weight	Approx. 395 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
UL File No.	NRKH.E348498 & NRKH7.E348498

[1] The max. ambient temperature is 50 °C (UL).

Certificates

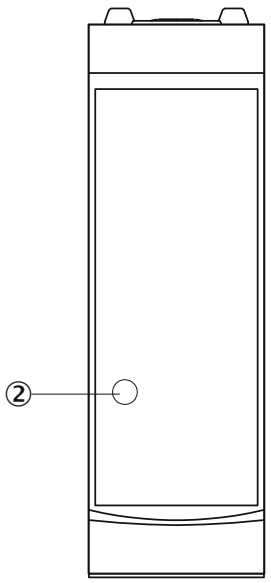
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China-RoHS	✓
CCC certificate	✓
cULus certificate	✓
Photobiological safety (IEC EN 62471)	✓

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

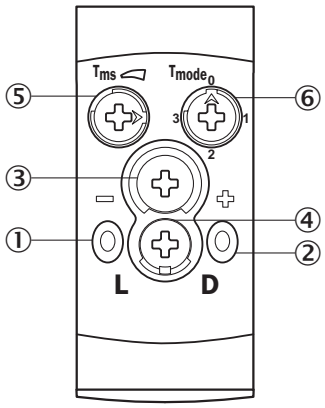
ETIM 5.0	EC002716
ETIM 6.0	EC002716
ETIM 7.0	EC002716
ETIM 8.0	EC002716
UNSPSC 16.0901	39121528

display and adjustment elements



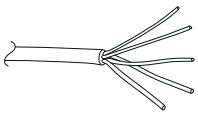
② LED yellow

display and adjustment elements

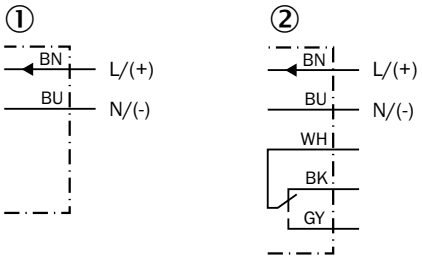


① LED green
② LED yellow
③ Potentiometer 1
④ operating mode switch
⑤ Potentiometer 2
⑥ Potentiometer 3

Connection type Cable, 5-wire



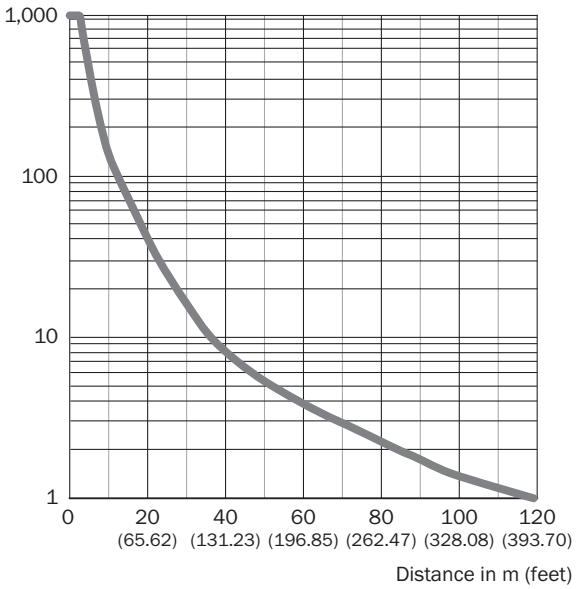
Connection diagram Cd-580



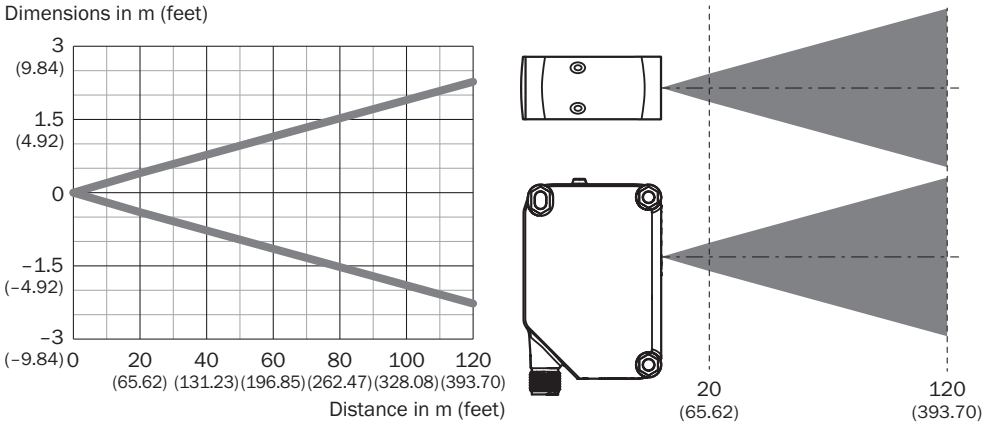
① sender
② receiver

Characteristic curve

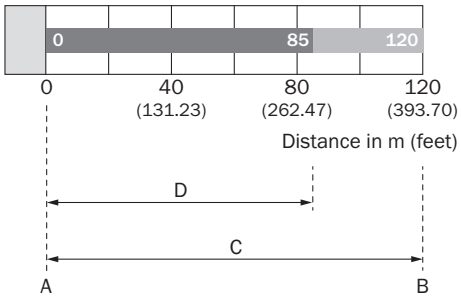
Operating reserve



Light spot size

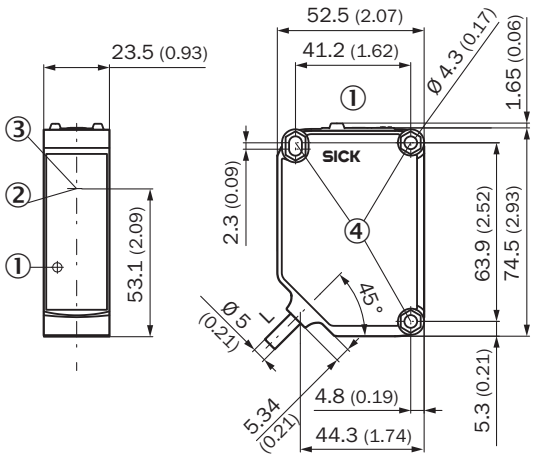


Sensing range diagram



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)
For length of cable (L), see technical data
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 • **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
connectors and cables			
	• **Connection type head A:** Male connector, M12, 5-pin, straight, A-coded • **Description:** Unshielded • **Connection systems:** Screw-type terminals • **Permitted cross-section:** ≤ 0.75 mm² • **Note:** For field bus technology	STE-1205-G	6022083

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.”

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