



Illustration may differ



Ordering information

Type	Part no.
GTB20M-QK111160ZZZ	1119844

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

Detailed technical data

Features

Functional principle	Photoelectric proximity sensor
Functional principle detail	Background suppression
Sensing range	
Sensing range min.	0.005 m
Sensing range max.	3 m
Adjustable switching threshold for background suppression	0.1 m ... 3 m
Reference object	Object with 90% remission factor (complies with standard white according to DIN 5033)
Minimum distance between set sensing range and background (black 6% / white 90%)	200 mm, at a distance of 1000 mm
Emitted beam	
Light source	LED
Type of light	Infrared light
Shape of light spot	Rectangular
Light spot size (distance)	Ø 28 mm (500 mm)
Maximum dispersion of the emitted beam around the standardized transmission axis (squint angle)	< +/- 1.5° (at T _a = +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 setting the sensing range, 7 rotations
Indication	

LED green	Operating indicator Static on: power on
LED yellow	Status of received light beam Static on: object present Static off: object not present

Electrical data

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
Signal voltage PNP HIGH/LOW	$V_S - (\leq 3 \text{ V}) / \text{approx. } 0 \text{ V}$
Signal voltage NPN HIGH/LOW	$V_S - (\leq 3 \text{ V}) / \text{approx. } 0 \text{ V}$
Output current I_{max}	≤ 100 mA ²⁾
Circuit protection outputs	Reverse polarity protected Overcurrent protected Short-circuit protected
Response time	≤ 1.67 ms
Switching frequency	300 Hz ³⁾
Pin/Wire assignment	
BN 1	+ (L+)
WH 2	\bar{Q} Digital output, dark switching, object present → output \bar{Q} LOW
BU 3	- (M)
BK 4	Q Digital output, light switching, object present → output Q HIGH

¹⁾ Limit values U_B connections, reverse polarity protected.

²⁾ At $U_B > 24$ V, $I_{\text{max}} = 100$ mA.

³⁾ With light/dark ratio 1:1.

Mechanical data

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

Ambient data

Enclosure rating	IP67 (EN 60529)
Ambient operating temperature	-30 °C ... +60 °C
Ambient temperature, storage	-40 °C ... +70 °C

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

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.

Classifications

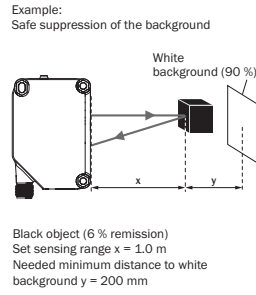
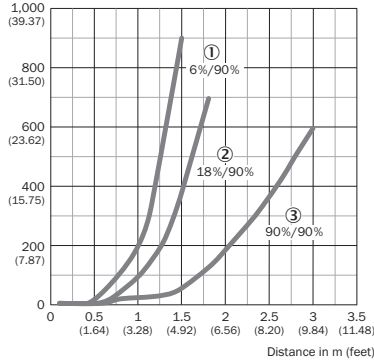
eCl@ss 5.0	27270904
eCl@ss 5.1.4	27270904
eCl@ss 6.0	27270904
eCl@ss 6.2	27270904
eCl@ss 7.0	27270904
eCl@ss 8.0	27270904
eCl@ss 8.1	27270904
eCl@ss 9.0	27270904
eCl@ss 10.0	27270904
eCl@ss 11.0	27270904
eCl@ss 12.0	27270903
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719
ETIM 8.0	EC002719
UNSPSC 16.0901	39121528

Connection type



Characteristic curve

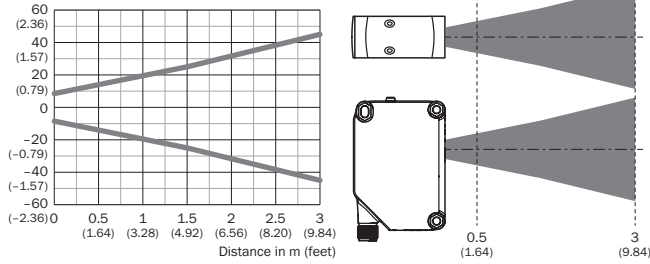
Minimum distance in mm (y) between the set sensing range (x) and white background (90 % remission)



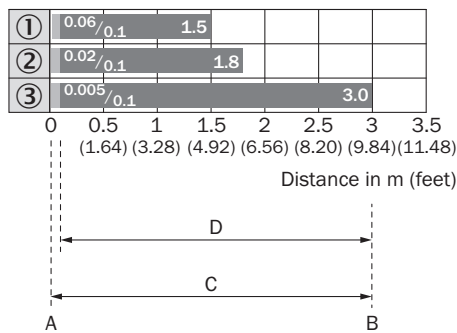
- ① Black object, 6% remission factor
- ② Gray object, 18% remission factor
- ③ White object, 90% remission factor

Light spot size

Dimensions in mm (inch)

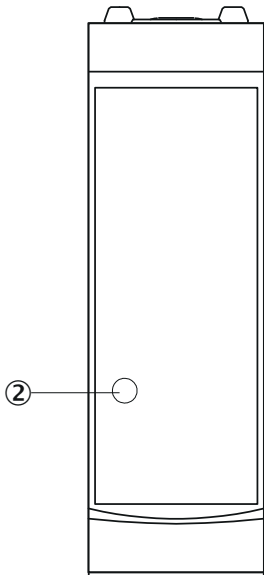


Sensing range diagram



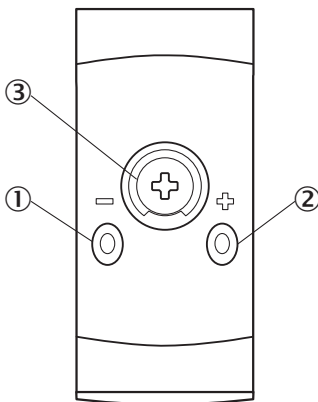
Adjustments

Display and adjustment elements



② LED yellow

Display and adjustment elements

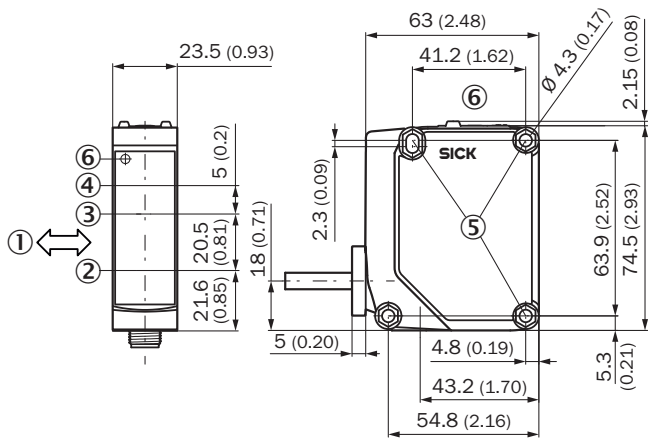


① LED green

② LED yellow

③ Potentiometer


Dimensional drawing (Dimensions in mm (inch))



- ① Standard direction of the material being detected
- ② Center of optical axis, sender
- ③ Center of optical axis, receiver (close range)
- ④ Center of optical axis, receiver (far range)
- ⑤ Fixing hole \varnothing 4.3 mm, both sides for hexagon nut M4
- ⑥ Display and adjustment elements

Recommended accessories

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

	Brief description	Type	Part no.
Mounting brackets and plates			
	Mounting bracket, Stainless steel V2A (1.4301), 2 screws, 2 nuts, 2 circlips, 2 washers for mounting the sensor	BEF-W280	5313885

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