Online data sheet



GRTB18-N1131V

GR18 Inox

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ

Ordering information

Type	Part no.
GRTB18-N1131V	1085938

Other models and accessories ➜ www.sick.com/GR18_Inox

Detailed technical data

Features

Sensor/ detection principle	Photoelectric proximity sensor, Background suppression
Housing design (light emission)	Cylindrical, straight
Housing length	73.5 mm
Thread length	49.3 mm
Thread diameter (housing)	M18 x 1
Optical axis	Axial
Sensing range max.	3 mm ... 100 mm [1]
Sensing range	15 mm ... 100 mm [1]
Type of light	Visible red light
Light source	PinPoint LED [2]
Light spot size (distance)	Ø 7 mm (100 mm)
Wave length	650 nm
Adjustment	None

[1] Object with 90 % reflectance (referred to standard white, DIN 5033).

[2] Average service life: 100,000 h at T_U = +25 °C.

Mechanics/electronics

Supply voltage	10 V DC ... 30 V DC [1]
Ripple	± 5 V_{pp} [2]
Power consumption	≤ 30 mA
Switching output	NPN
Output function	Complementary
Switching mode	Light/dark switching [3]
Signal voltage NPN HIGH/LOW	Approx. V_S / ≤ 3 V
Output current $I_{max.}$	100 mA [4]
Response time	< 500 µs [5]
Switching frequency	± 1,000 Hz [6]
Connection type	Cable, 4-wire, 2 m [7]
Cable material	PVC
Conductor cross-section	0.14 mm²
Cable diameter	4.8 mm
Circuit protection	A [8] B [9] D [10]
Protection class	III
Weight	175 g
Housing material	Stainless steel, Stainless steel V4A (1.4404, 316L)
Optics material	Plastic, PMMA
Tightening torque, max.	90 Nm
Enclosure rating	IP67 IP68 [11] IP69K [12]
Items supplied	Fastening nuts (2 x)
EMC	EN 60947-5-2
Ambient operating temperature	–25 °C ... +55 °C [13]
Ambient storage temperature	–30 °C ... +75 °C
UL File No.	E348498

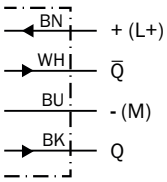
[1] Limit values when operated in short-circuit protected network: max. 8 A.
[2] May not exceed or fall below U_V tolerances.
[3] Q = light switching; $\bar{Q}$ = dark switching.
[4] At Uv > 24 V or ambient temperature > 49 °C, IA max. = 50 mA.
[5] Signal transit time with resistive load.
[6] With light/dark ratio 1:1.
[7] Do not bend below 0 °C.
[8] A = V_S connections reverse-polarity protected.
[9] B = inputs and output reverse-polarity protected.
[10] D = outputs overcurrent and short-circuit protected.
[11] According to EN 60529 (10 m water depth / 24 h).
[12] According to ISO 20653:2013-03.
[13] At U_V <=24V and I_A<50mA.

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
ETIM 5.0	EC002719
ETIM 6.0	EC002719
UNSPSC 16.0901	39121528

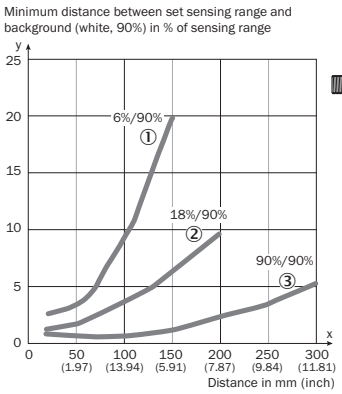
Connection diagram

Cd-094

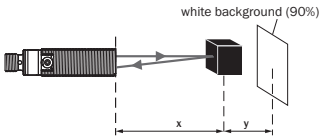


Characteristic curve

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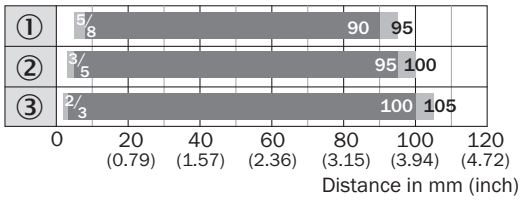
① Sensing range on black, 6 % remission
② Sensing range on gray, 18 % remission
③ Sensing range on white, 90 % remission



Example:
Sensing range on black, 6%
x = 100 mm, y = (10% of 100 mm) =10 mm

Sensing range diagram

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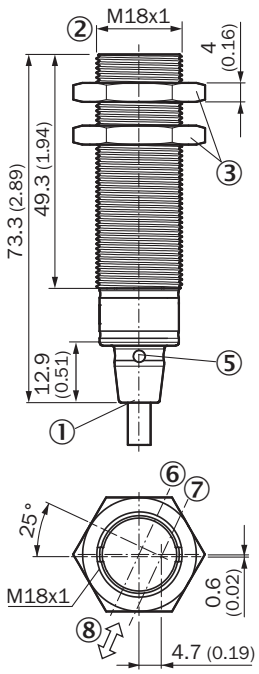


Sensing range Sensing range max.

① Sensing range on black, 6% remission
② Sensing range on gray, 18 % remission
③ Sensing range on white, 90% remission

Dimensional drawing (Dimensions in mm (inch))

GRTB18 Inox, cable, straight



① Connection
② Threaded mounting hole M18 x 1
③ Fastening nuts (2 x); width across 24, stainless steel
⑤ LED indicator (4 x)
⑥ Optical axis receiver
⑦ Optical axis sender
⑧ Standard direction

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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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