Product data sheet

HTF18L-P1G5BB

H18 Sure Sense

HYBRID PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	Part no.
HTF18L-P1G5BB	1075812

Other models and accessories ➜ www.sick.com/H18_Sure_Sense

Detailed technical data

Features

Functional principle	Photoelectric proximity sensor
Functional principle detail	Foreground suppression
Dimensions (W x H x D)	16.2 mm x 45.5 mm x 31.8 mm
Housing design (light emission)	Hybrid
Thread diameter (housing)	M18
Mounting system type	M18, head/side (24.1 ... 25.4 mm)
Housing color	Blue
Sensing range max.	40 mm ... 300 mm [1]
Sensing range	40 mm ... 200 mm [2]
Type of light	Visible red light
Light source	Laser [3] [4]
Light spot size (distance)	2 mm (120 mm)
Wave length	655 nm
Laser class	1
Adjustment	
Potentiometer, right	Sensitivity
Potentiometer, left	None
Special applications	Detecting small objects

[1] Object with 90% remission (based on standard white, DIN 5033).

[2] Object with 6 % reflectance (referred to standard black, DIN 5033).

[3] Average service life: 50,000 h at T_U = +25 °C.

[4] CLASS 1 LASER PRODUCT EN60825-1:2014, IEC60825-1:2014, Maximum pulse power < 2,5 mW, Pulse length: 4 µs, Wavelength: 650 ... 670 nm, Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007.

Special features	Signal strength light bar

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Mechanics/electronics

Supply voltage	10 V DC ... 30 V DC
Ripple	< 5 V_{pp} [1]
Current consumption	≤ 20 mA [2]
Switching output	PNP
Output function	Complementary
Switching mode	Light/dark switching
Switching output detail	
Switching output Q1	PNP, Light switching
Switching output Q2	PNP, Dark switching
Output current $I_{max.}$	≤ 100 mA
Response time	≤ 0.5 ms [3]
Switching frequency	1,000 Hz [4]
Connection type	Cable open end, 2,000 mm
Cable material	Plastic, PVC
Conductor cross section	0.2 mm²
Circuit protection	A [5] B [6] D [7]
Protection class	III
Weight	18 g
Housing material	Plastic, VISTAL®
Optics material	Plastic, PMMA
Enclosure rating	IP67 IP69K
Items supplied	Fastening nut (1x), M18, plastic, black, flat
Electromagnetic compatibility (EMC)	EN 60947-5-2 (The sensor complies with the Radio Safety Requirements (EMC) for the industrial sector (Radio Safety Class A). It may cause radio interference if used in a residential area.)
Ambient operating temperature	–30 °C ... +55 °C [8]
Ambient temperature, storage	–40 °C ... +70 °C

[1] May not fall below or exceed U_V tolerances.
[2] Without signal strength light bar and load.
[3] Signal transit time with resistive load.
[4] With light/dark ratio 1:1.
[5] A = V_S connections reverse-polarity protected.
[6] B = inputs and output reverse-polarity protected.
[7] D = outputs overcurrent and short-circuit protected.
[8] Below Ta = –10 °C, sensor must be turned on at Ta > –10 °C. Sensor cannot be turned on below Ta= –10 °C.

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Safety-related parameters

$MTTF_D$	282.7 years
DC_{avg}	0 %

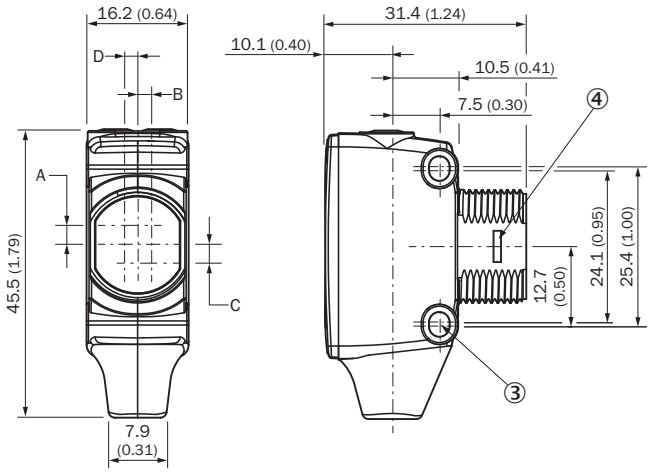
Connection type/pinouts

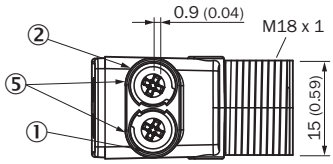
Connection type	Cable open end, 2,000 mm
Connection type Detail	
Conductor cross section	0.2 mm²
Cable material	Plastic
Pinouts	
BN	+ (L+)
WH	Q_2
BU	- (M)
BK	Q_1

Classifications

ECLASS 5.0	27270903
ECLASS 5.1.4	27270903
ECLASS 6.0	27270903
ECLASS 6.2	27270903
ECLASS 7.0	27270903
ECLASS 8.0	27270903
ECLASS 8.1	27270903
ECLASS 9.0	27270903
ECLASS 10.0	27270903
ECLASS 11.0	27270903
ECLASS 12.0	27270903
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719
ETIM 8.0	EC002719
UNSPSC 16.0901	39121528

Dimensional drawing (Dimensions in mm (inch))

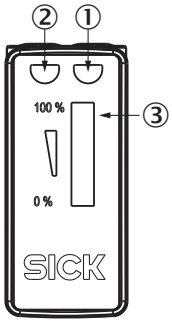




① LED indicator yellow: Status of received light beam
② LED indicator green: power on
③ M3 mounting hole
④ Snap Connection for flush ring (sold seperatly)
⑤ Potentiometer (if selected) or LED Indicators

Dimensions in mm (inch)	Receiver		Sender	
	A	B	C	D
HTB18 / HTF18	- 1.1 (0.04)	1.1 (0.04)	4.7 (0.19)	0.6 (0.02)
HTE18 / HL18 / HSE18	2.5 (0.1)	0.0 (0.0)	4.0 (0.16)	0.0 (0.0)
HTB18L / HTF18L / HL18L / HSE18L	2.5 (0.1)	0.0 (0.0)	3.5 (0.14)	0.0 (0.0)

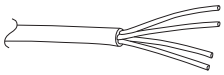
Adjustments



① LED indicator yellow: Status of received light beam
② LED indicator green: power on
③ Signal strength light bar

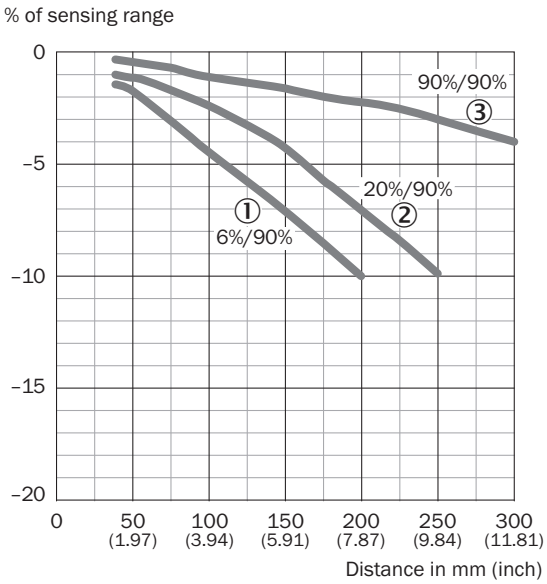
Connection type

Pinouts, see table Technical data: **Connection type/pinouts**



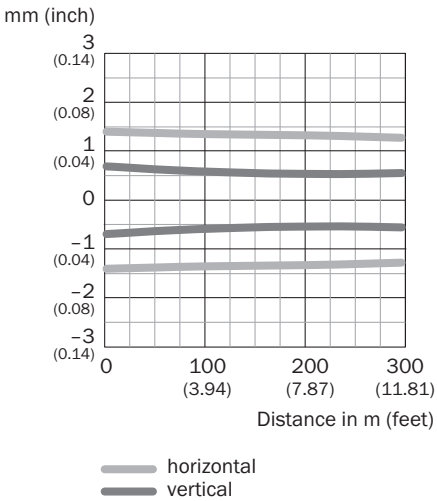
Cable with flying leads, 4-wire, AWG26 0.15 mm²

Characteristic curve

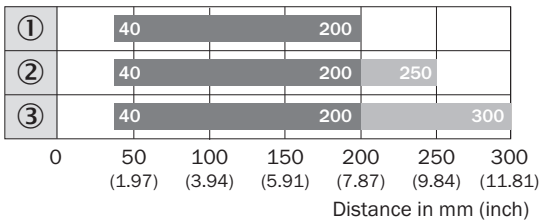


① Sensing range on black, 6% remission factor
② Sensing range on gray, 20 % remission
③ Sensing range on white, 90% remission factor

Light spot size



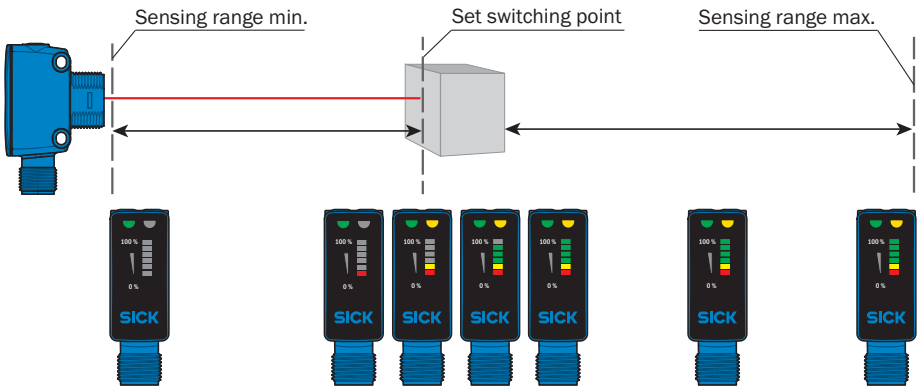
Sensing range diagram



Sensing range Sensing range max.

① Sensing range on black, 6% remission factor
② Sensing range on gray, 20 % remission
③ Sensing range on white, 90% remission factor

Functions



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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