Data sheet

HTF18L-N1G5BB

H18 Sure Sense

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	part no.
HTF18L-N1G5BB	1075813

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 [5]
Adjustment	
Potentiometer, right	Sensitivity
Potentiometer, left	None

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

[2] Object with 6% remission factor (based on 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.

[5] Do not intentionally look into the laser beam. Never point the laser beam at people's eyes.

Special applications	Detecting small objects
Special features	Signal strength light bar

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

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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	NPN
Output function	Complementary
Switching mode	Light/dark switching
Switching output detail	
Switching output Q1	NPN, Light switching
Switching output Q2	NPN, 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]

[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.

Ambient temperature, storage	–40 °C ... +70 °C
UL File No.	E189383

[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.

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	
Cable material	Plastic
Conductor cross section	0.2 mm²
Pinouts	
BN	+ (L+)
WH	Q_2
BU	- (M)
BK	Q_1

Certificates

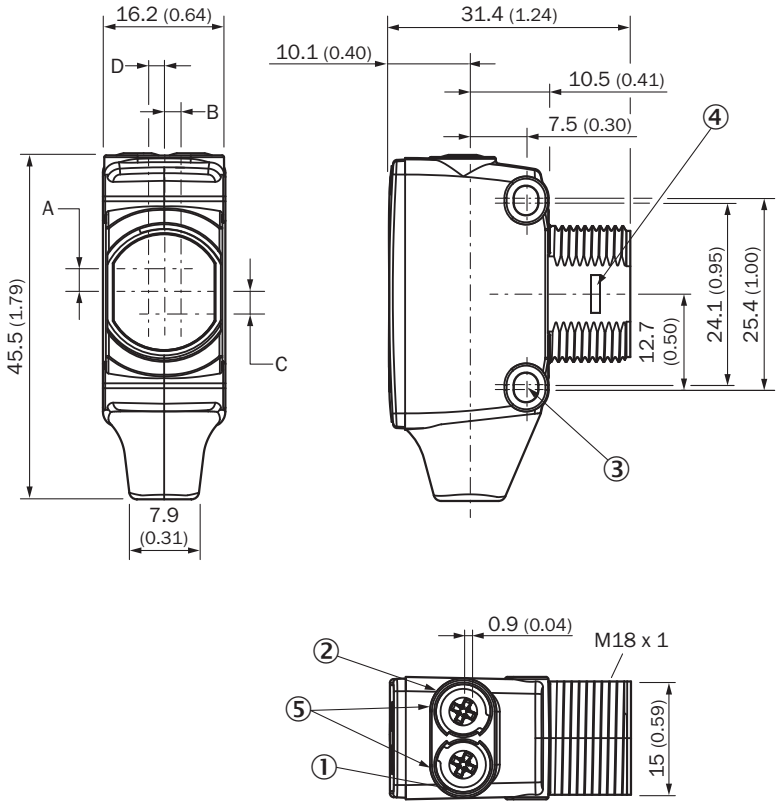
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
cULus certificate	✓

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

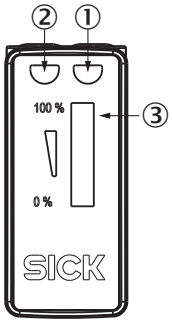
Dimensional drawing



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

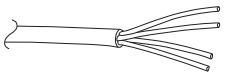
Dimensions in mm (inch)	Receiver		Sender	
–	A	B	C	D
HTB18 / HTF18	- 1.1 (0.04)	1.1 (0.04)	4.7 (0.19)	0.6 (0.02)
HTE18 / HL18 / HSE18	2.5 (0.1)	0.0 (0.0)	4.0 (0.16)	0.0 (0.0)
HTB18L / HTF18L / HL18L / HSE18L	2.5 (0.1)	0.0 (0.0)	3.5 (0.14)	0.0 (0.0)

Adjustments



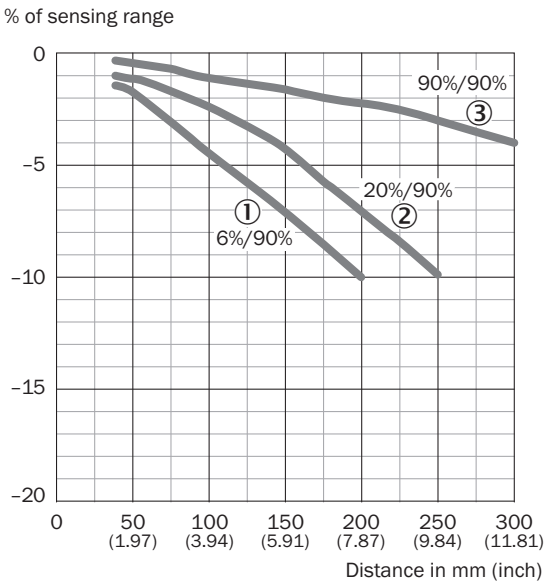
① LED indicator yellow: Status of received light beam
② LED indicator green: power on
③ Signal strength light bar

Pinouts, see table Technical data: Connection type/pinouts



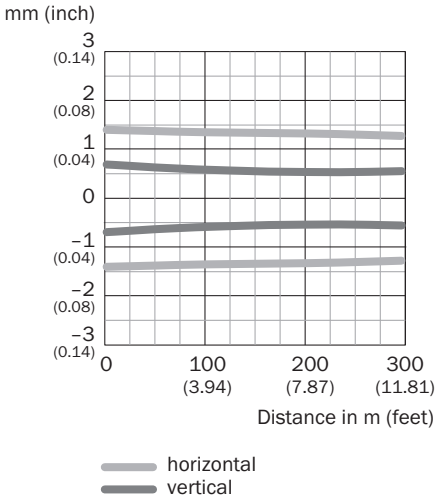
Cable with flying leads, 4-wire, AWG 26, 0.15 mm²

Characteristic curve

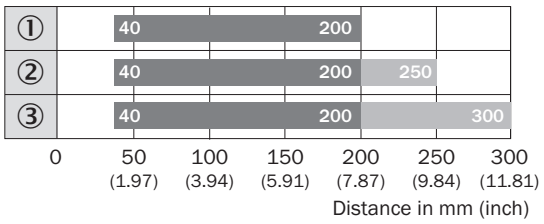


① Sensing range on black, 6% remission factor
② sensing range to gray, 20% remission factor
③ Sensing range on white, 90% remission factor

Light spot size



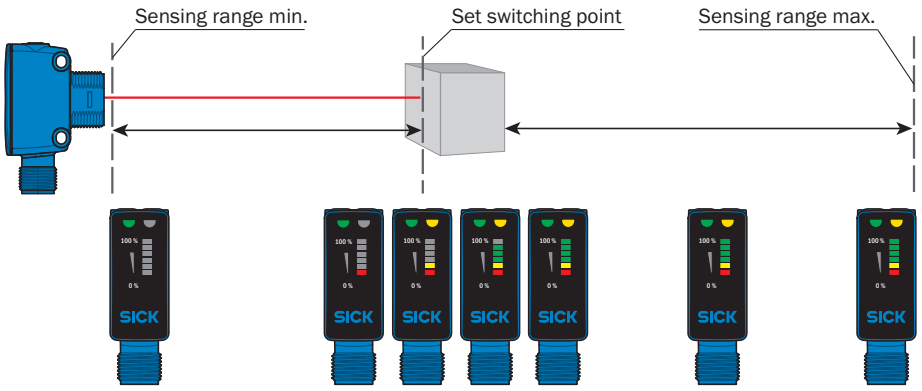
Sensing range diagram



Sensing range Sensing range max.

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

Functions



Recommended accessories

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

	Brief description	Type	part no.
Mounting systems			
	• **Description:** Mounting bracket for M18 sensors • **Material:** Steel • **Details:** Steel, zinc coated • **Items supplied:** Without mounting hardware • **Suitable for:** GR18, V180-2, V18, W15, Z1, Z2	BEF-WN-M18	5308446

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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