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DATA SHEET

HTB18L-N4A5BB

H18 Sure Sense
Photoelectric sensors

SICK Sensor Intelligence

PHOTOELECTRIC SENSORS - HTB18L-N4A5BB



Illustration may differ

PHOTOELECTRIC SENSORS

HTB18L-N4A5BB

ORDERING INFORMATION

Type	part no.
HTB18L-N4A5BB	1074782

Further device versions and accessories at www.sick.com/H18_Sure_Sense



DETAILED TECHNICAL DATA

FEATURES

Functional principle	Photoelectric proximity sensor
Functional principle detail	Background suppression
Dimensions (W x H x D)	16.2 mm x 48.5 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.	30 mm ... 300 mm ¹⁾
Sensing range	30 mm ... 250 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 Sensing range Potentiometer, left None
Special applications	Detecting small objects
Special features	Signal strength light bar

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.

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MECHANICS/ELECTRONICS

Supply voltage	10 V DC ... 30 V DC
Ripple	$< 5 \text{ V}_{pp}^{1)}$
Current consumption	$\leq 20 \text{ mA}^{2)}$
Switching output	NPN
Output function	Complementary
Switching mode	Light/dark switching
Switching output detail	Switching output Q1 Switching output Q2 NPN, Light switching NPN, Dark switching
Output current I_{max}	$\leq 100 \text{ mA}$
Response time	$\leq 0.5 \text{ ms}^{3)}$
Switching frequency	$1,000 \text{ Hz}^{4)}$
Connection type	Male connector M12, 4-pin
Cable material	Plastic, PVC
Circuit protection	A⁵⁾ B⁶⁾ D⁷⁾
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	$-30 \text{ °C} \dots +55 \text{ °C}^{8)}$
Ambient temperature, storage	$-40 \text{ °C} \dots +70 \text{ °C}$
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 $T_a = -10 \text{ °C}$, sensor must be turned on at $T_a > -10 \text{ °C}$. Sensor cannot be turned on below $T_a = -10 \text{ °C}$.

SAFETY-RELATED PARAMETERS

MTTF _D	282.7 years
DC _{avg}	0 %

CONNECTION TYPE/PINOUTS

Connection type	Male connector M12, 4-pin
Connection type Detail	

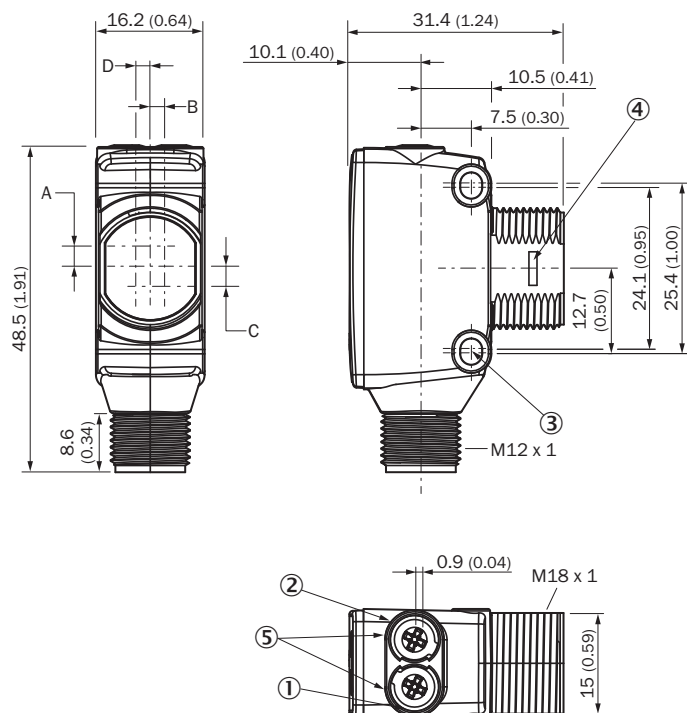
PHOTOELECTRIC SENSORS - HTB18L-N4A5BB

	Cable material	Plastic
Pinouts	BN 1	+ (L+)
	WH 2	Q ₂
	BU 3	- (M)
	BK 4	Q ₁

CERTIFICATES

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

DIMENSIONAL DRAWING



Dimensions in mm (inch)

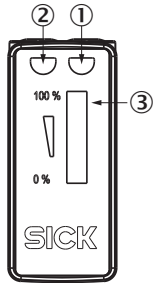
- ① LED indicator yellow: Status of received light beam
- ② LED indicator green: power on
- ③ M3 mounting hole
- ④ Snap Connection for flush ring (sold separately)
- ⑤ Potentiometer (if selected) or LED Indicators

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)

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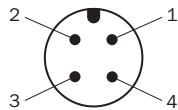
Dimensions in mm (inch)	Receiver		Sender	
HTB18L / HTF18L / HL18L / HSE18L	2.5 (0.1)	0.0 (0.0)	3.5 (0.14)	0.0 (0.0)

ADJUSTMENTS



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

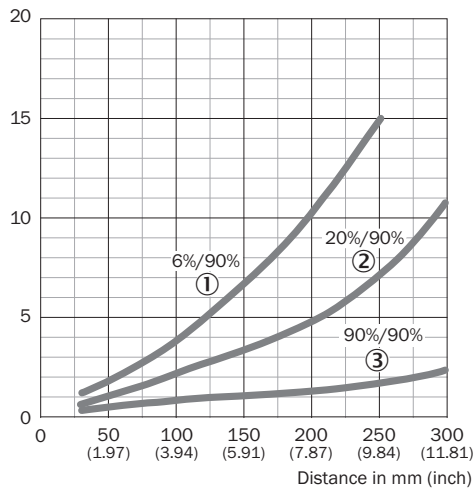
PINOUTS, SEE TABLE TECHNICAL DATA: CONNECTION TYPE/PINOUTS



M12 male connector, 4-pin, A-coding

CHARACTERISTIC CURVE

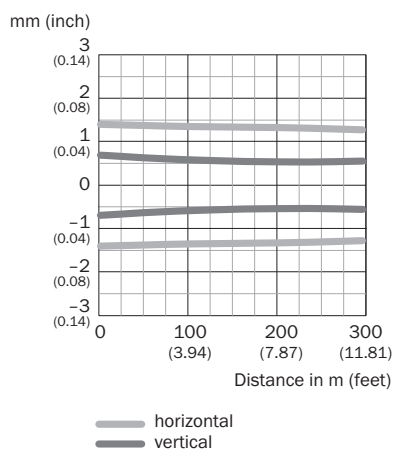
% of sensing range



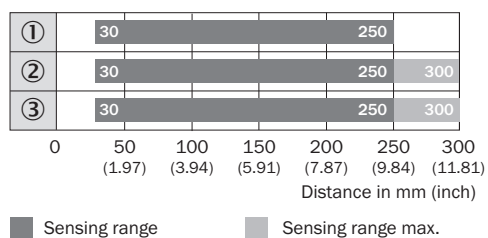
- ① Sensing range on black, 6% remission factor
- ② sensing range to gray, 20% remission factor
- ③ Sensing range on white, 90% remission factor

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LIGHT SPOT SIZE

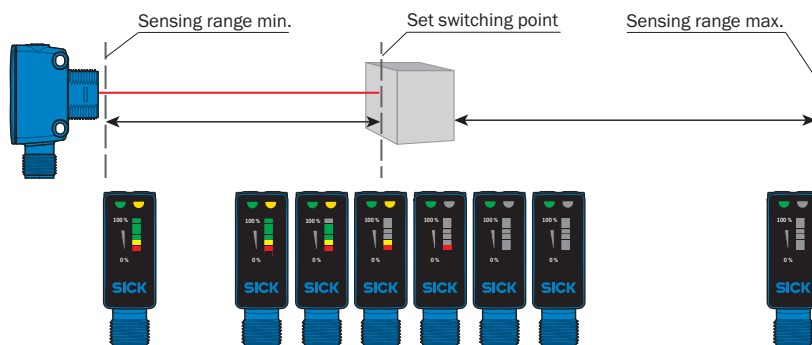


SENSING RANGE DIAGRAM



- 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



Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/1074782





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