



HTF18L-P4A5BB

H18 Sure Sense

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Ordering information

Type	part no.
HTF18L-P4A5BB	1075810

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

Illustration may differ



Detailed technical data

Features

Functional principle	Photoelectric proximity sensor
Functional principle detail	Foreground 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.	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	I 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 $T_U = +25^\circ\text{C}$.

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

- 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 μ s, 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.

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	Male connector M12, 4-pin
Cable material	Plastic, PVC
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_y 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.

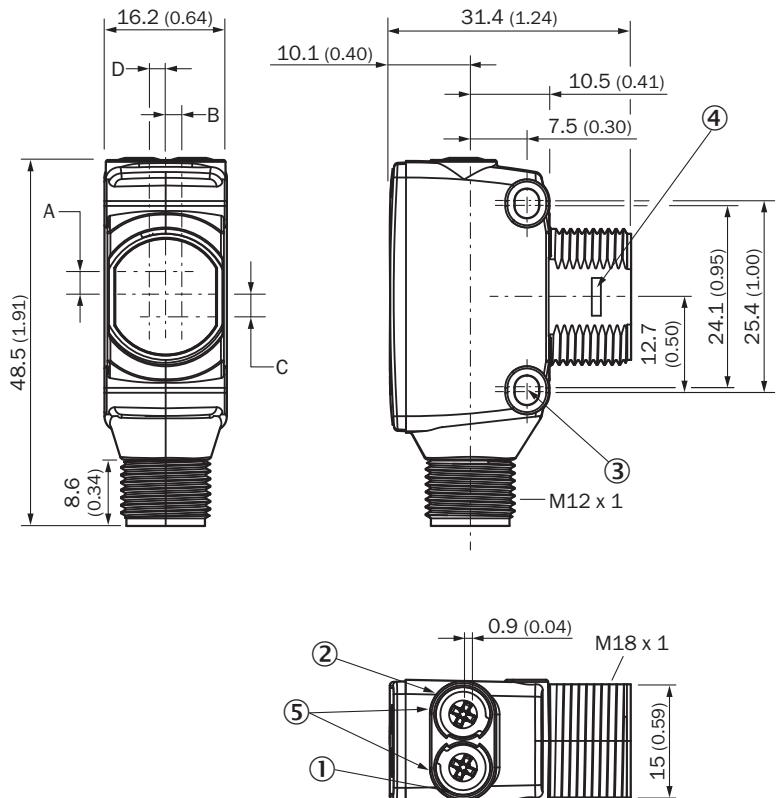
7) D = outputs overcurrent and short-circuit protected.

8) Below $T_a = -10$ °C, sensor must be turned on at $T_a > -10$ °C. Sensor cannot be turned on below $T_a = -10$ °C.

UL File No.	E189383								
<p>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 °C, sensor must be turned on at T_a > -10 °C. Sensor cannot be turned on below T_a = -10 °C.</p>									
Safety-related parameters									
MTTF_D	282.7 years								
DC_{avg}	0 %								
Connection type/pinouts									
Connection type	Male connector M12, 4-pin								
Connection type Detail	Cable material Plastic								
Pinouts	<table> <tr> <td>BN 1</td><td>+(L+)</td></tr> <tr> <td>WH 2</td><td>Q₂</td></tr> <tr> <td>BU 3</td><td>-(M)</td></tr> <tr> <td>BK 4</td><td>Q₁</td></tr> </table>	BN 1	+(L+)	WH 2	Q ₂	BU 3	-(M)	BK 4	Q ₁
BN 1	+(L+)								
WH 2	Q ₂								
BU 3	-(M)								
BK 4	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								
Certificates									
EU declaration of conformity	✓								
UK declaration of conformity	✓								

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

Dimensional drawing

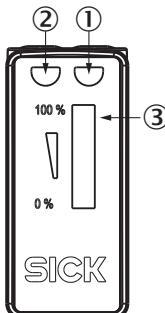


Dimensions in mm (inch)

- 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)
HTB18L / HTF18L / HL18L / HSE18L	2.5 (0.1)	0.0 (0.0)	3.5 (0.14)	0.0 (0.0)

Adjustments

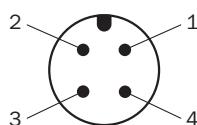


① LED indicator yellow: Status of received light beam

② LED indicator green: power on

③ Signal strength light bar

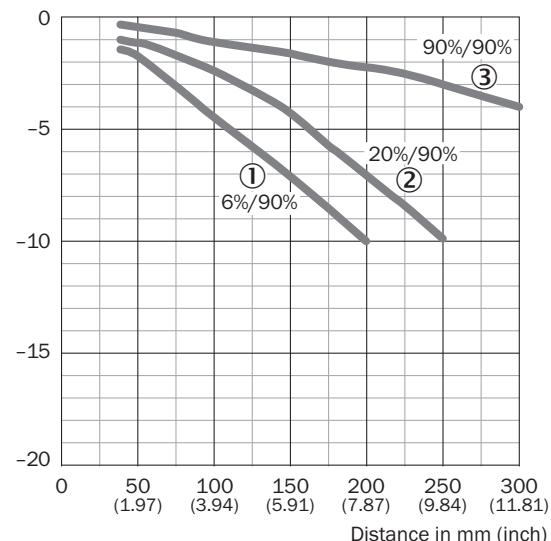
Pinouts, see table Technical data: Connection type/pinouts



M12 male connector, 4-pin, A-coding

Characteristic curve

% of sensing range

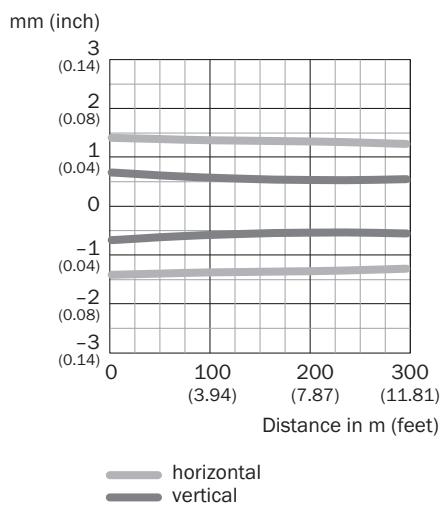


① Sensing range on black, 6% remission factor

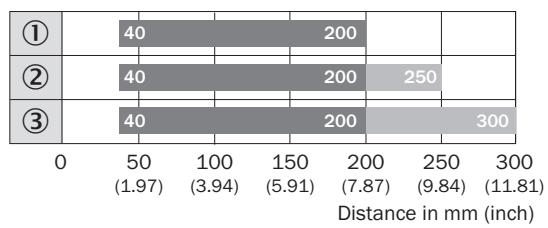
② sensing range to gray, 20% remission factor

③ Sensing range on white, 90% remission factor

Light spot size



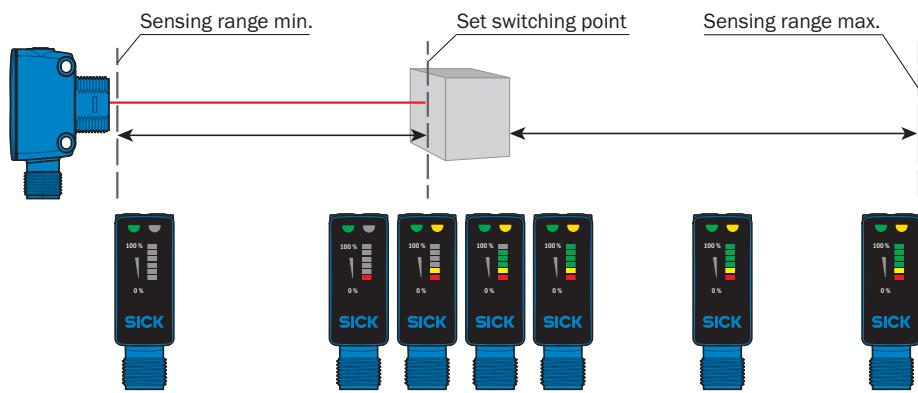
Sensing range diagram



█ 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			
	<ul style="list-style-type: none"> 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
	<ul style="list-style-type: none"> Description: Plate N11N for universal clamp bracket Material: Stainless steel Details: Stainless steel 1.4571 (sheet), Stainless steel 1.4408 (clamp) Items supplied: Universal clamp (5322627), mounting hardware Usable for: DeltaPac, Glare, WTD20E 	BEF-KHS-N11N	2071081
connectors and cables			
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 4-wire, PVC Description: Sensor/actuator cable, unshielded Application: Zones with chemicals, Uncontaminated zones 	YF2A14-050VB3XLEAX	2096235
	<ul style="list-style-type: none"> Connection type head A: Male connector, M12, 4-pin, straight, A-coded Description: Unshielded Connection systems: Screw-type terminals Permitted cross-section: ≤ 0.75 mm² 	STE-1204-G	6009932
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 4-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation 	YF2A14-050UB3XLEAX	2095608

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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Contacts and other locations www.sick.com