



HSE18-A1E1BB

H18 Sure Sense

HYBRID PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	Part no.
HSE18-A1E1BB	1087284

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

Detailed technical data

Features

Functional principle	Through-beam photoelectric sensor				
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.	0 m ... 20 m				
Sensing range	0 m ... 15 m				
Type of light	Infrared light				
Light source	LED ¹⁾				
Light spot size (distance)	1,400 mm (10 m)				
Wave length	850 nm				
Adjustment	<table border="0"> <tr> <td>Potentiometer, right</td> <td>Sensitivity</td> </tr> <tr> <td>Potentiometer, left</td> <td>None</td> </tr> </table>	Potentiometer, right	Sensitivity	Potentiometer, left	None
Potentiometer, right	Sensitivity				
Potentiometer, left	None				
Special features	Signal strength light bar				

¹⁾ Average service life: 100,000 h at T_U = +25 °C.

Mechanics/electronics

Supply voltage	10 V DC ... 30 V DC
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- ¹⁾ May not exceed or fall below 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.

Ripple	< 5 V _{pp} ¹⁾
Current consumption	≤ 20 mA ²⁾
Switching output	PNP, NPN
Switching mode	Dark switching
Switching output detail	
Switching output Q1	PNP, Dark 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, 1,000 mm
Cable material	PVC
Conductor cross section	0.2 mm ²
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	-40 °C ... +70 °C
Ambient temperature, storage	-40 °C ... +75 °C
UL File No.	E189383

1) May not exceed or fall below 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.

Classifications

ECLASS 5.0	27270901
ECLASS 5.1.4	27270901
ECLASS 6.0	27270901
ECLASS 6.2	27270901
ECLASS 7.0	27270901
ECLASS 8.0	27270901
ECLASS 8.1	27270901

ECLASS 9.0	27270901
ECLASS 10.0	27270901
ECLASS 11.0	27270901
ECLASS 12.0	27270901
ETIM 5.0	EC002716
ETIM 6.0	EC002716
ETIM 7.0	EC002716
ETIM 8.0	EC002716
UNSPSC 16.0901	39121528

Connection type/pinouts

Connection type	Cable open end, 1,000 mm
Connection type Detail	
Conductor cross section	0.2 mm ²
Cable material	PVC
Pinouts_{sender}	
BN	+ (L+)
WH	Not connected
BU	- (M)
BK	Test _{IN}
Pinouts_{receiver}	
BN	+ (L+)
WH	Q ₂
BU	- (M)
BK	Q ₁

Dimensional drawing (Dimensions in mm (inch))

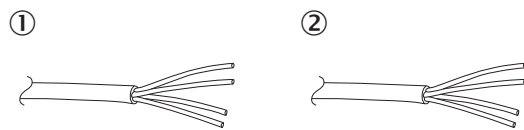


- ① LED indicator yellow: Status of received light beam
- ② LED indicator green: power on
- ③ M3 mounting hole
- ④ Snap Connection for flush ring (sold separately)
- ⑤ Potentiometer (if selected) or LED Indicators

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)

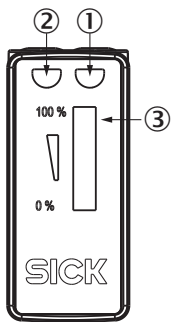
Connection type

Pinouts, see Technical details: **Connection type/pinouts**



- ① Sender
- ② Receiver

Adjustments possible

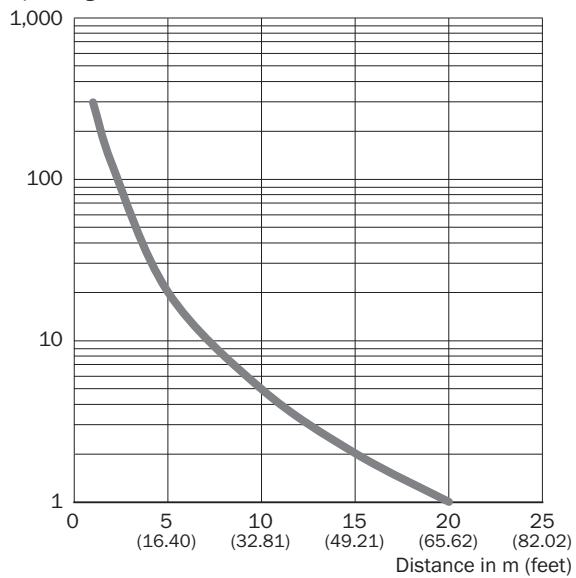


- ① LED indicator yellow: Status of received light beam
- ② LED indicator green: power on
- ③ Signal strength light bar

Characteristic curve

Infrared light

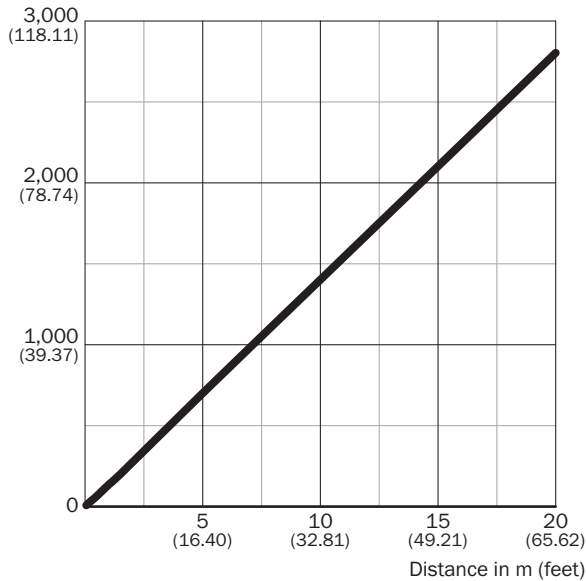
Operating reserve



Light spot size

Infrared light

mm (inch)

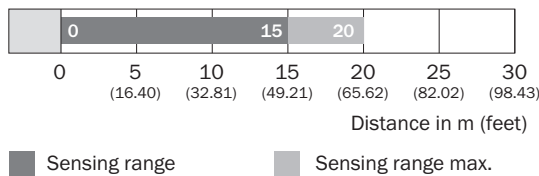


Dimensions in mm (inch)

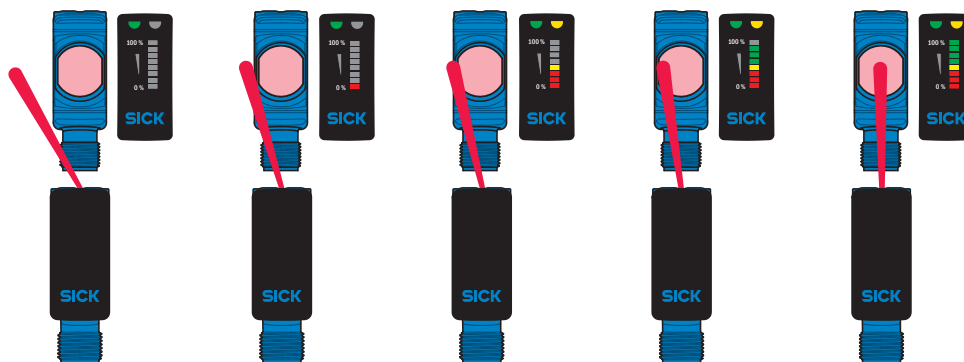
Sensing range	Diameter
0.5 m (1.64 feet)	65 (0.21)
1 m (3.28 feet)	135 (5.31)
5 m (16.40 feet)	700 (27.56)
20 m (65.62 feet)	2,800 (110.24)

— Diameter

Sensing range diagram



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.”

WORLDWIDE PRESENCE:

Contacts and other locations –www.sick.com