



HSE18BL-F4B5BH

H18 Sure Sense

HYBRID PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	Part no.
HSE18BL-F4B5BH	1101630

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 50.1 mm x 31.4 mm
Housing design (light emission)	Hybrid
Thread diameter (housing)	M18
Mounting system type	M18, head/M18, base/side (24.1 ... 25.4 mm)
Housing color	Blue
Sensing range max.	0 m ... 60 m
Sensing range	0 m ... 50 m
Type of light	Visible red light
Light source	Laser ^{1) 2)}
Light spot size (distance)	2 mm (1.5 m)
Wave length	655 nm
Laser class	I
Adjustment	
	Potentiometer, right Sensitivity
	Potentiometer, left Light/dark switching
Special applications	Detecting small objects
Special features	Signal strength light bar

¹⁾ Average service life: 50,000 h at T_U = +25 °C.

²⁾ 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.

Mechanics/electronics

Supply voltage	10 V DC ... 30 V DC
Ripple	$< 5 V_{pp}^{1)}$
Current consumption	$\leq 20 \text{ mA}^{2)}$
Switching output	Push-pull: PNP/NPN
Output function	Complementary
Switching mode	Light/dark switching
Switching output detail	
Switching output Q1	Push-pull: PNP/NPN, Light switching ³⁾
Switching output Q2	Push-pull: PNP/NPN, Dark switching ³⁾
Output current I_{max}	$\leq 100 \text{ mA}$
Response time	$\leq 0.5 \text{ ms}^{4)}$
Switching frequency	$1,000 \text{ Hz}^{5)}$
Connection type	Cable with M12 male connector, 4-pin, 150 mm
Cable material	PVC
Conductor cross section	0.2 mm^2
Circuit protection	A ⁶⁾ B ⁷⁾ D ⁸⁾
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	$-30 \text{ °C} \dots +55 \text{ °C}^{9)}$
Ambient temperature, storage	$-40 \text{ °C} \dots +70 \text{ °C}$
UL File No.	E189383

¹⁾ May not exceed or fall below U_v tolerances.

²⁾ Without signal strength light bar and load.

³⁾ Pin 4 and pin 2: This switching output must not be connected to another output.

⁴⁾ Signal transit time with resistive load.

⁵⁾ With light/dark ratio 1:1.

⁶⁾ A = V_S connections reverse-polarity protected.

⁷⁾ B = inputs and output reverse-polarity protected.

⁸⁾ D = outputs overcurrent and short-circuit protected.

⁹⁾ Below $T_a = -10 \text{ °C}$, sensor must be turned on at $T_a > -10 \text{ °C}$. Sensor cannot be turned on below $T_a = -10 \text{ °C}$.

Classifications

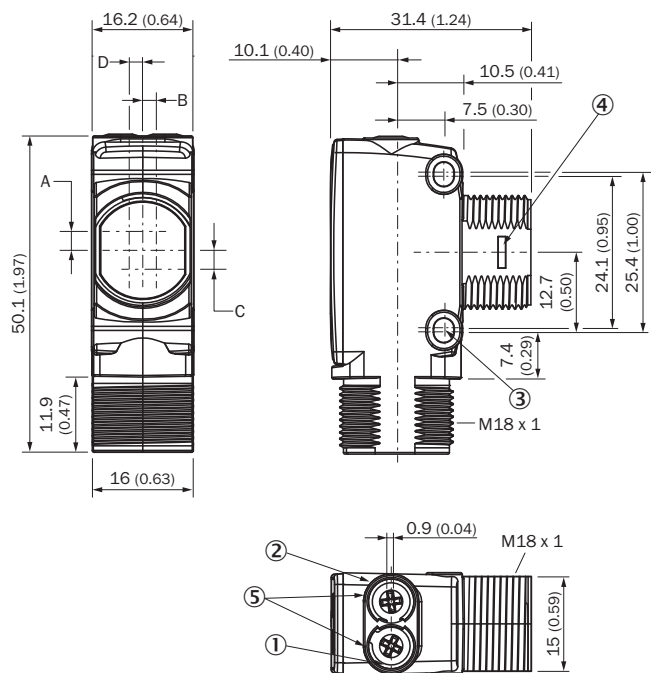
ECLASS 5.0	27270901
ECLASS 5.1.4	27270901
ECLASS 6.0	27270901

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 with M12 male connector, 4-pin, 150 mm	
Connection type Detail		
Conductor cross section	0.2 mm ²	
Cable material	PVC	
Pinouts_{sender}		
BN 1	+ (L+)	
WH 2	Not connected	
BU 3	- (M)	
BK 4	Test _{IN}	
Pinouts_{receiver}		
BN 1	+ (L+)	
WH 2	Q ₂	
BU 3	- (M)	
BK 4	Q ₁	

Dimensional drawing (Dimensions in mm (inch))

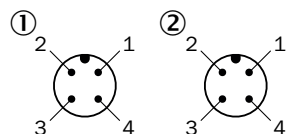


- ① LED indicator yellow: Status of received light beam
- ② LED indicator green: power on
- ③ M3 mounting hole
- ④ Snap Connection for flush ring (sold separately)
- ⑤ Potentiometer (if selected) or LED Indicators

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)

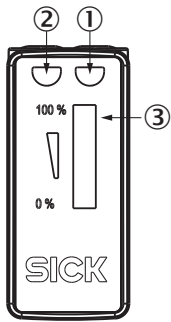
Connection type

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



- ① Sender
- ② Receiver

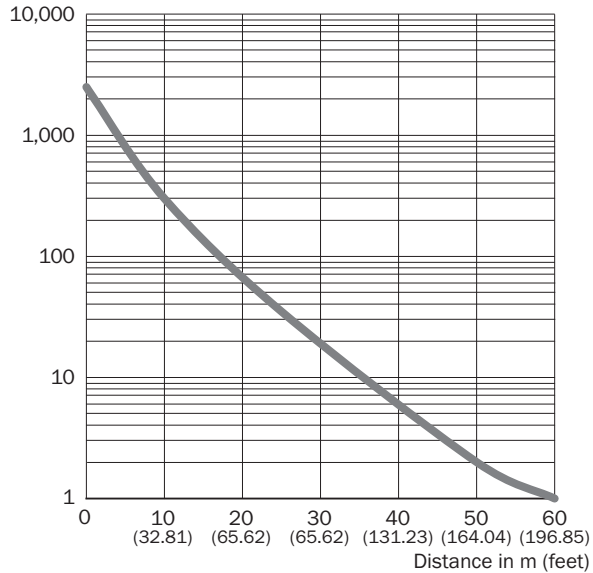
Adjustments possible



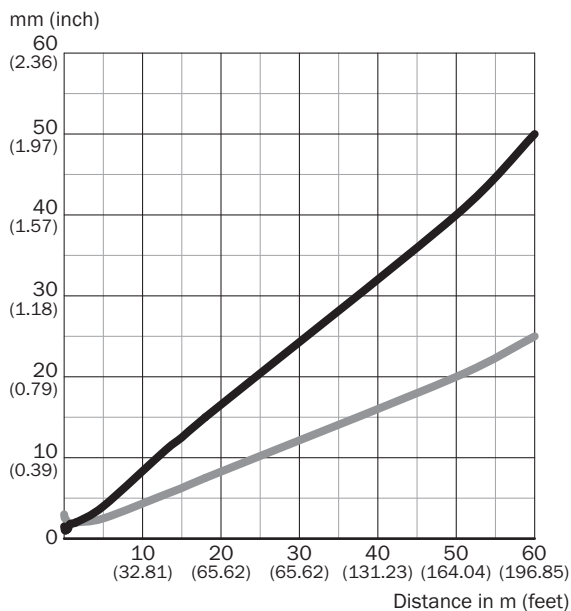
- ① LED indicator yellow: Status of received light beam
- ② LED indicator green: power on
- ③ Signal strength light bar

Characteristic curve

Operating reserve



Light spot size

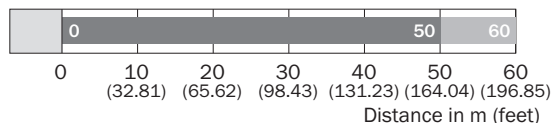


Dimensions in mm (inch)

Sensing range	Vertical	Horizontal
0.3 m (0.98 feet)	1.2 (0.05)	2.2 (0.09)
1.5 m (4.92 feet)	2.0 (0.08)	2.0 (0.08)
18 m (59.06 feet)	15.0 (0.59)	7.5 (0.30)
60 m (196.85 feet)	50.0 (1.97)	25.0 (0.98)

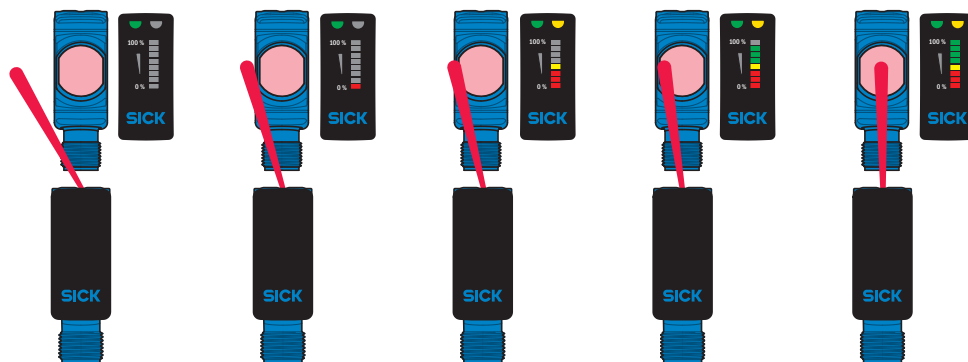
— Vertical
— Horizontal

Sensing range diagram





■ Sensing range ■ Sensing range max.

Functions



Recommended accessories

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

	Brief description	Type	Part no.
Plug connectors and cables			
	<ul style="list-style-type: none"> • Connection type head A: Male connector, M12, 4-pin, straight • Description: Unshielded • Connection systems: Screw-type terminals • Permitted cross-section: ≤ 0.75 mm² 	STE-1204-G	6009932
Others			
	<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 	YF2A14-050VB3XLEAX	2096235

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