



HSE18-F4A1BLA00

H18 Sure Sense

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Ordering information

Type	part no.
HSE18-F4A1BLA00	1100062

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

Illustration may differ



Detailed technical data

Features

Functional principle	Through-beam photoelectric sensor
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.	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	
Potentiometer, right	Teach-in
Potentiometer, left	None
Special features	Signal strength light bar

¹⁾ Average service life: 100,000 h at $T_U = +25^\circ\text{C}$.

Mechanics/electronics

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

Ripple	< 5 V _{pp} ¹⁾
Current consumption	≤ 20 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.}	≤ 100 mA
Response time	≤ 0.5 ms ⁴⁾
Switching frequency	1,000 Hz ⁵⁾
Connection type	Male connector M12, 4-pin
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	-40 °C ... +70 °C
Ambient temperature, storage	-40 °C ... +75 °C
UL File No.	E189383

1) May not fall below or exceed U_y 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.

Interfaces

IO-Link	✓, V1.1
Data transmission rate	38,4 kbit/s (COM2)
Cycle time	2.3 ms
Process data length	16 Bit
Process data structure A	Bit 0 = switching signal Q _{L1} Bit 1 = switching signal Q _{L2} Bit 2 ... 15 = empty
Process data structure B	Bit 0 = switching signal Q _{L1} Bit 2 ... 6 = empty

	Bit 7 = measuring value Bit 8 ... 14 = empty Bit 15 = measuring value
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Connection type/pinouts

Connection type	Male connector M12, 4-pin
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/C}

Diagnosis

Device status	Yes
Quality of teach	Yes
Quality of run	Yes, Contamination display

Certificates

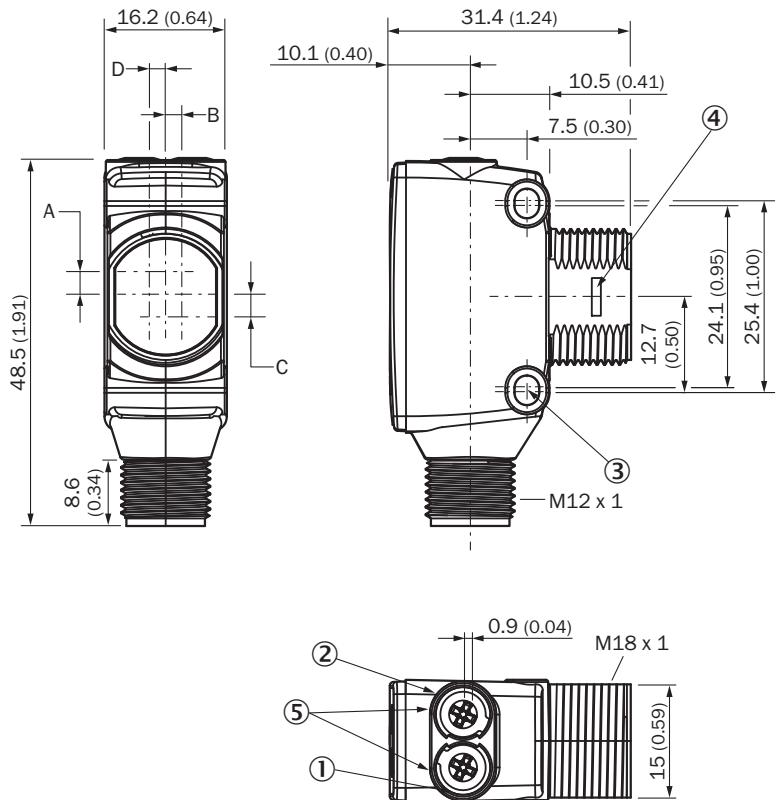
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China-RoHS	✓
cULus certificate	✓

Classifications

ECLASS 5.0	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

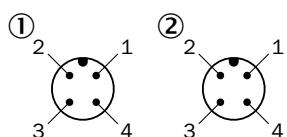
Dimensional drawing



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

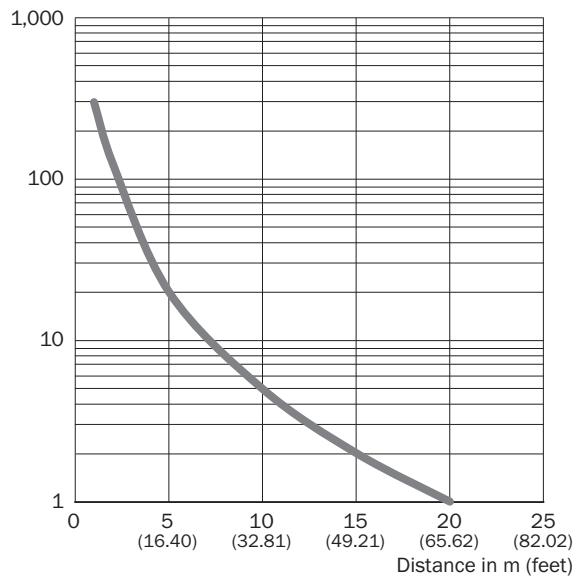
Dimensions in mm (inch)	Receiver		Sender	
-	A	B	C	D
HTB18 / HTF18	- 1.1 (0.04)	1.1 (0.04)	4.7 (0.19)	0.6 (0.02)
HTE18 / HL18 / HSE18	2.5 (0.1)	0.0 (0.0)	4.0 (0.16)	0.0 (0.0)
HTB18L / HTF18L / HL18L / HSE18L	2.5 (0.1)	0.0 (0.0)	3.5 (0.14)	0.0 (0.0)

Pinouts, see table Technical data: **Connection type/pinouts**

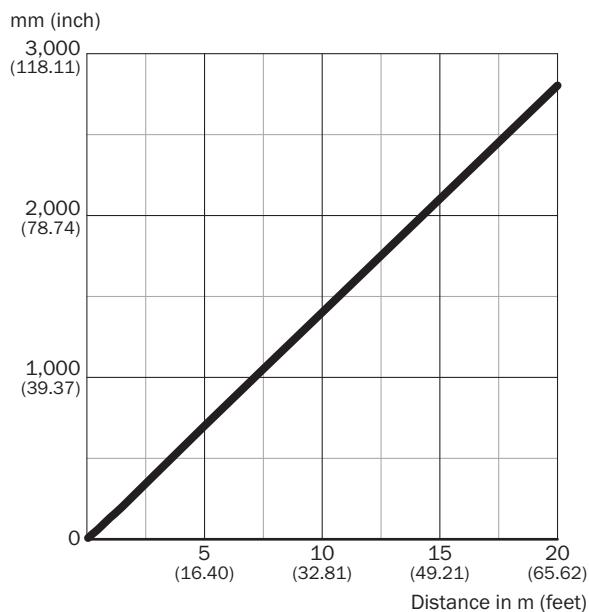
- ① sender
- ② receiver

Characteristic curve Infrared light

Operating reserve



Light spot size Infrared light

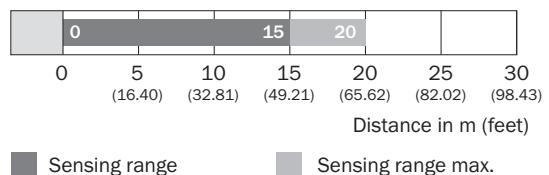


Dimensions in mm (inch)

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



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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.

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