



HL18-F3A3BLA00

H18 Sure Sense

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	part no.
HL18-F3A3BLA00	1100053

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

Detailed technical data

Features

Functional principle	Photoelectric retro-reflective sensor
Functional principle detail	With minimum distance to reflector (dual lens system)
Dimensions (W x H x D)	16.2 mm x 44.9 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.	0.03 m ... 6.5 m ¹⁾
Sensing range	0.03 m ... 5 m ¹⁾
Type of light	Visible red light
Light source	PinPoint LED ²⁾
Light spot size (distance)	130 mm x 260 mm (6.5 m)
Wave length	631 nm
Adjustment	
Potentiometer, right	Teach-in
Potentiometer, left	None
Special features	Signal strength light bar

¹⁾ Reflector PL80A.

²⁾ Average service life: 100,000 h at T_U = +25 °C.

Mechanics/electronics

Supply voltage	10 V DC ... 30 V DC
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 M8, 4-pin
Circuit protection	A ⁶⁾ B ⁷⁾ D ⁸⁾
Protection class	III
Weight	18 g
Polarisation filter	✓
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

Connection type/pinouts

Connection type	Male connector M8, 4-pin
Pinouts	
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

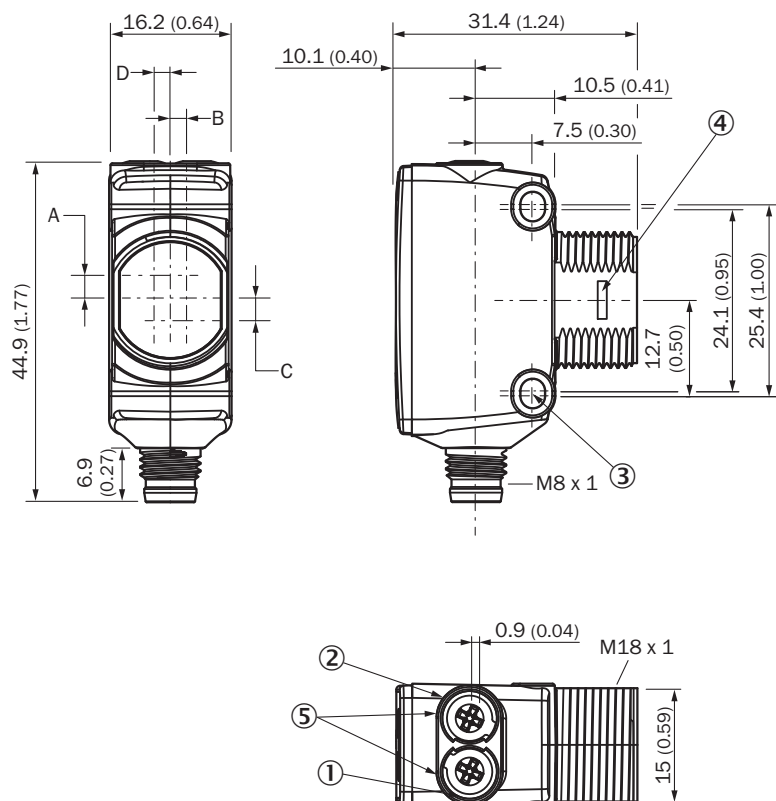
Certificates

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

Classifications

ECLASS 5.0	27270902
ECLASS 5.1.4	27270902
ECLASS 6.0	27270902
ECLASS 6.2	27270902
ECLASS 7.0	27270902
ECLASS 8.0	27270902
ECLASS 8.1	27270902
ECLASS 9.0	27270902
ECLASS 10.0	27270902
ECLASS 11.0	27270902
ECLASS 12.0	27270902
ETIM 5.0	EC002717
ETIM 6.0	EC002717
ETIM 7.0	EC002717
ETIM 8.0	EC002717
UNSPSC 16.0901	39121528

Dimensional drawing

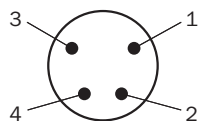


Dimensions in mm (inch)

- 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 seperatly)
- ⑤ Potentiometer (if selected) or LED Indicators

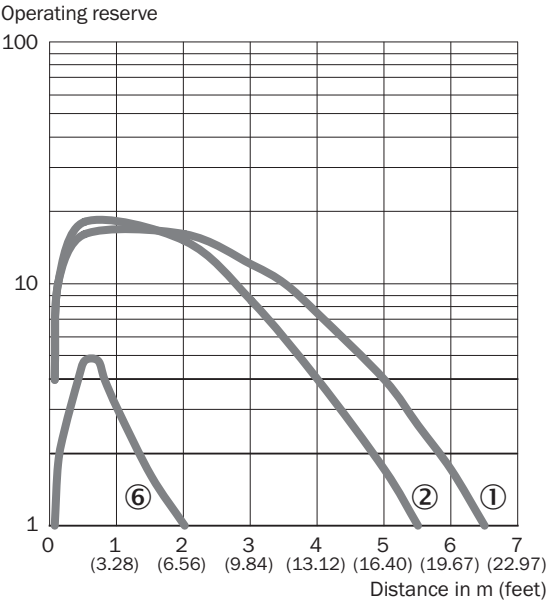
Dimensions in mm (inch)	Receiver		Sender	
	A	B	C	D
HTB18 / HTF18	- 1.1 (0.04)	1.1 (0.04)	4.7 (0.19)	0.6 (0.02)
HTE18 / HL18 / HSE18	2.5 (0.1)	0.0 (0.0)	4.0 (0.16)	0.0 (0.0)
HTB18L / HTF18L / HL18L / HSE18L	2.5 (0.1)	0.0 (0.0)	3.5 (0.14)	0.0 (0.0)

Pinouts, see table Technical data: [Connection type/pinouts](#)



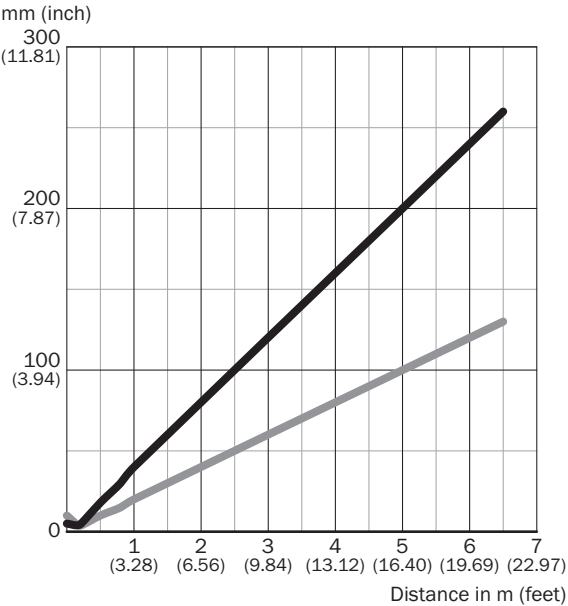
Male connector, M8, 4-pin, uncoded

Characteristic curve



- ① Reflector PL80A
- ② Reflector PL40A
- ⑥ Reflective tape IREF6000 (REF-IRF-56)

Light spot size

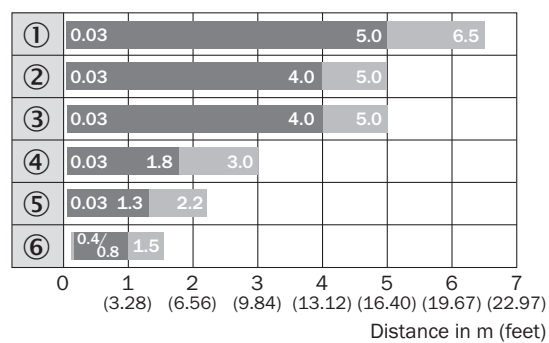


Dimensions in mm (inch)

Sensing range	Horizontal	Vertical
0.5 m (1.64 feet)	18 (0.71)	10 (0.39)
1 m (3.28 feet)	40 (1.57)	20 (0.79)
5 m (16.40 feet)	200 (7.87)	100 (3.94)
6.5 m (21.33 feet)	260 (10.24)	130 (5.12)

- Horizontal
- Vertical

Sensing range diagram



■ Sensing range ■ Sensing range max.

- ① Reflector PL80A
- ② Reflector PL40A
- ③ Reflector P250
- ④ Reflector PL30A, PL31A
- ⑤ Reflector PL20A
- ⑥ Reflective tape IREF6000 (REF-IRF-56)

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