Product data sheet

HL18L-F3A5BLA00

H18 Sure Sense

HYBRID PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	Part no.
HL18L-F3A5BLA00	1100060

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.	0.1 m ... 12 m [1]
Sensing range	0.1 m ... 10 m [1]
Type of light	Visible red light
Light source	Laser [2] [3]
Light spot size (distance)	2 mm (2 m)
Wave length	655 nm
Laser class	1
Adjustment	
Potentiometer, right	Teach-in
Potentiometer, left	None

[1] Reflector PL80A.

[2] Average service life: 50,000 h at T_U = +25 °C.

[3] 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.

Special applications	Detecting small objects
Special features	Signal strength light bar

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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	–30 °C ... +55 °C [9]
Ambient temperature, storage	–40 °C ... +70 °C

[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.

[9] Below Ta = –10 °C, sensor must be turned on at Ta > –10 °C. Sensor cannot be turned on below Ta= –10 °C.

UL File No.	E189383

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Communication interface

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 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

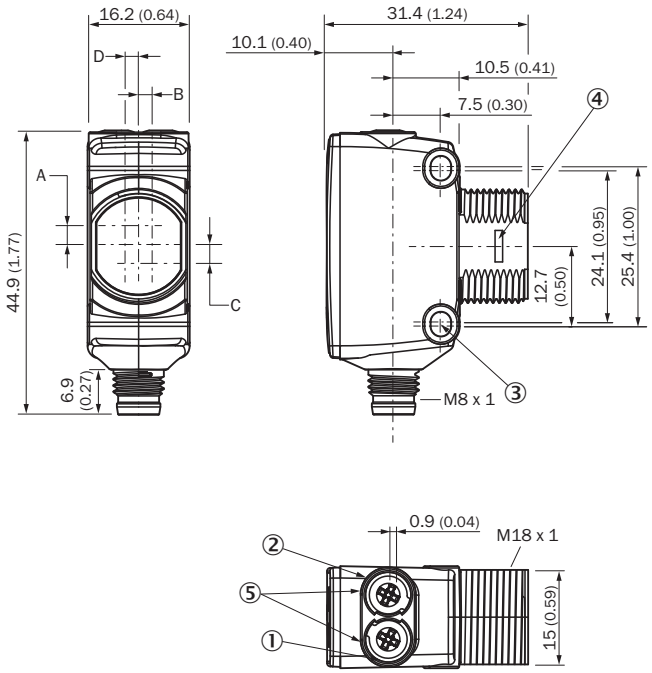
Device status	Yes
Quality of teach	Yes
Quality of run	Yes, Contamination display

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))

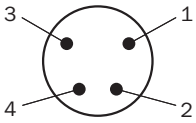


① LED indicator yellow: Status of received light beam
② LED indicator green: power on
③ M3 mounting hole
④ Snap Connection for flush ring (sold seperatly)
⑤ Potentiometer (if selected) or LED Indicators

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)

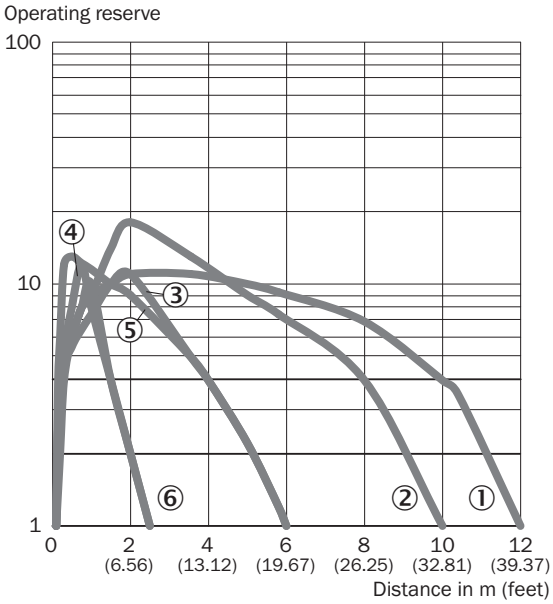
Connection type

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



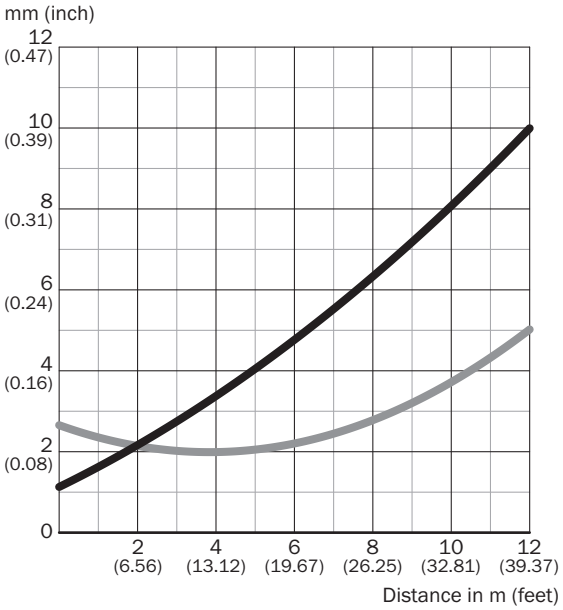
Male connector, M8, 4-pin, uncoded

Characteristic curve



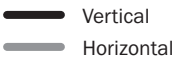
① Reflector PL80A
② Reflector P250F
③ PL10F reflector
④ Reflector PL23 FT
⑤ Reflective tape REF-AC1000
⑥ Reflective tape IREF6000 (REF-IRF-56)

Light spot size

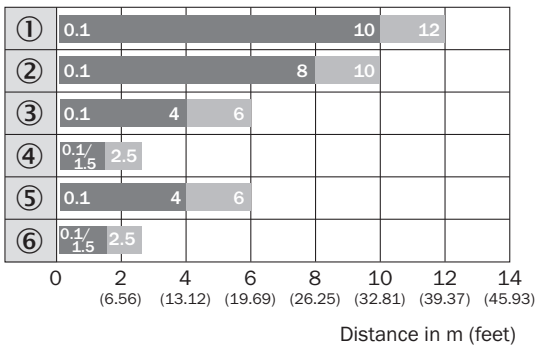


Dimensions in mm (inch)

Sensing range	Vertical	Horizontal
0.2 m (0.57 feet)	1.2 (0.05)	2.65 (0.10)
0.75 m (2.46 feet)	1.8 (0.07)	2.3 (0.09)
5 m (16.40 feet)	4.0 (0.16)	2.2 (0.09)
12 m (39.37 feet)	10.0 (0.39)	5.0 (0.20)



Sensing range diagram



Sensing range Sensing range max.

① Reflector PL80A
② Reflector P250F
③ PL10F reflector
④ Reflector PL23 FT
⑤ Reflective tape REF-AC1000
⑥ Reflective tape IREF6000 (REF-IRF-56)

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