



DATA SHEET

HL18-L5B3AA

H18 Sure Sense
Photoelectric sensors

SICK

Sensor Intelligence



Illustration may differ

PHOTOELECTRIC SENSORS

HL18-L5B3AA

ORDERING INFORMATION

Type	part no.
HL18-L5B3AA	1077629

Further device versions and accessories at 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 45.5 mm x 34.4 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 Potentiometer, left
Special features	-

¹⁾ Reflector PL80A.
²⁾ Average service life: 100,000 h at T_u = +25 °C.

MECHANICS/ELECTRONICS

Supply voltage	21.6 V DC ... 250 V DC, 96 V AC ... 250 V AC ¹⁾
Current consumption	≤ 10 mA ²⁾
Switching output	MOSFET
Switching mode	Light switching
Switching output detail	Switching output Q1 MOSFET, Light switching
Output current I _{max}	≤ 100 mA
Response time	≤ 0.5 ms ³⁾
Switching frequency	1,000 Hz ⁴⁾
Connection type	Cable with male connector, micro (1/2"-20), 4-pin, 150 mm
Cable material	Plastic, PVC
Conductor cross section	0.2 mm ²
Circuit protection	A ⁵⁾ B ⁶⁾ D ⁷⁾
Protection class	II ⁸⁾
Weight	18 g
Polarizing 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⁾ From T_g 60 °C, max. supply voltage = 120 V.

²⁾ Without load. The output load and sensor must use the same power source.

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.

⁸⁾ Reference voltage: 250 V AC, overvoltage category 2.

SAFETY-RELATED PARAMETERS

MTTF _D	499.9 years
DC _{avg}	0 %

CONNECTION TYPE/PINOUTS

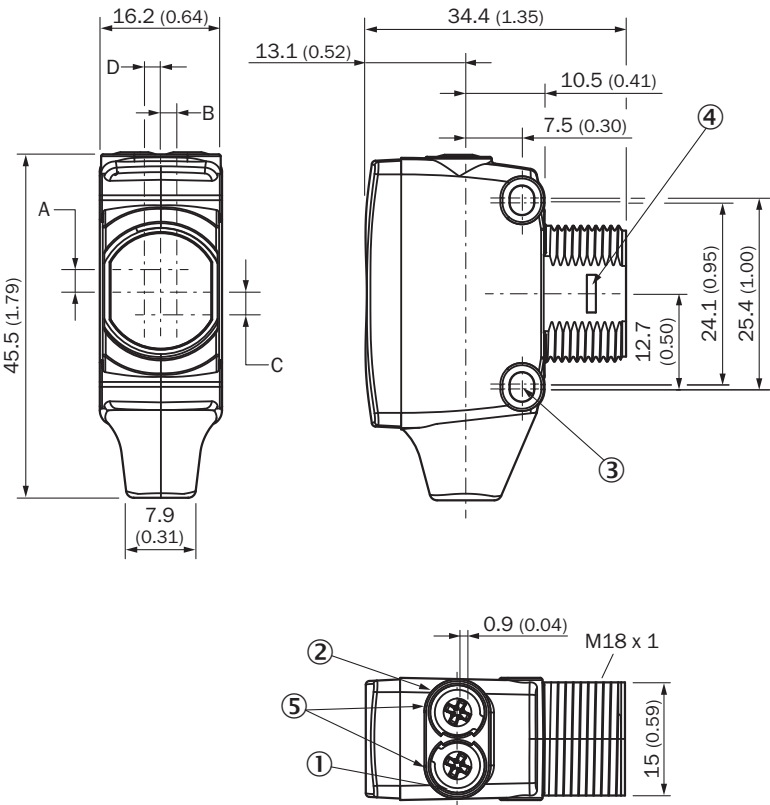
Connection type	Cable with male connector, micro (1/2"-20), 4-pin, 150 mm
Connection type Detail	Cable material Plastic

Conductor cross section		0.2 mm ²
Pinouts	RD/BK 1	L1
	WH/RD 2	N
	RD 3	Q
	GN/YE 4	Not connected

CERTIFICATES

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓

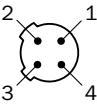
DIMENSIONAL DRAWING



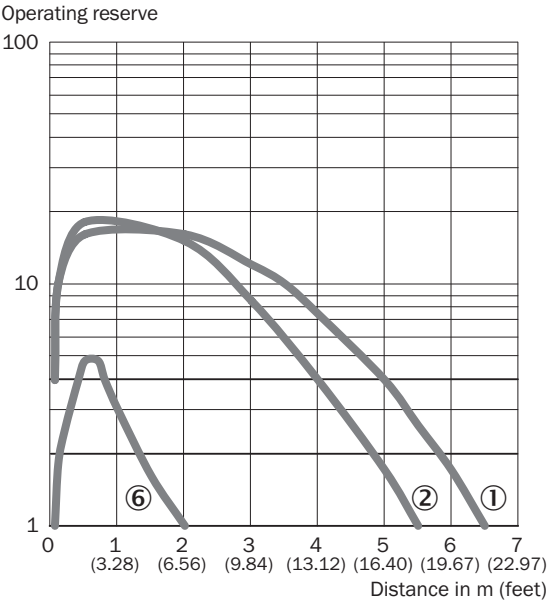
- Dimensions in mm (inch)
- ① LED indicator yellow: Status of received light beam
 - ② LED indicator green: power on
 - ③ M3 mounting hole
 - ④ Snap Connection for flush ring (sold seperatly)
 - ⑤ Potentiometer (if selected) or LED Indicators

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)	

PINOUTS, SEE TABLE TECHNICAL DATA: CONNECTION TYPE/PINOUTS

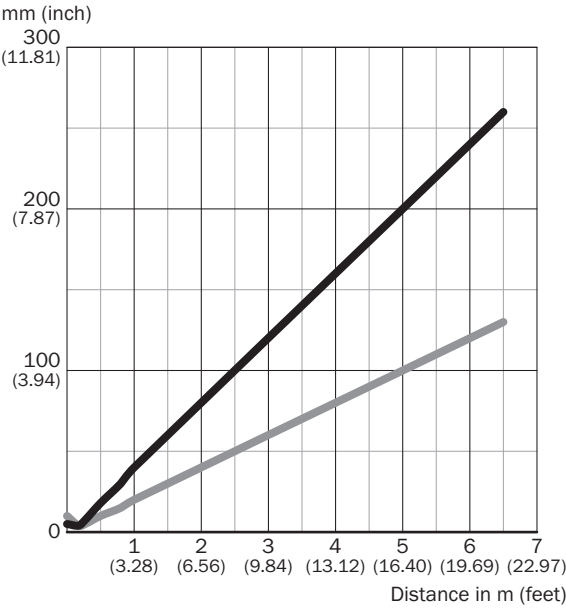


CHARACTERISTIC CURVE



- ① Reflector PL80A
- ② Reflector PL40A
- ③ Reflective tape IREF6000 (REF-IRF-56)

LIGHT SPOT SIZE

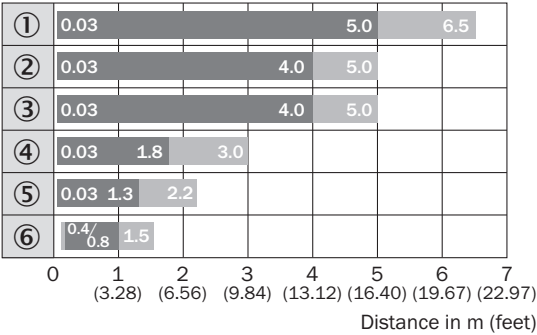


Dimensions in mm (inch)

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)

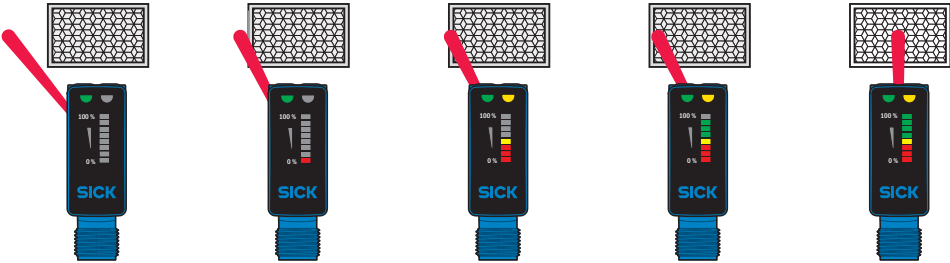
— Horizontal
— Vertical

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)

FUNCTIONS



Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/1077629



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SICK AT A GLANCE

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SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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