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DATA SHEET

HL18-P4A3AAS06

H18 Sure Sense
Photoelectric sensors

SICK Sensor Intelligence



Illustration may differ

PHOTOELECTRIC SENSORS

HL18-P4A3AAS06

ORDERING INFORMATION

Type	part no.
HL18-P4A3AAS06	1081580

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 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.	0.03 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	None
Potentiometer, left	None
Special features	-

[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	PNP
Output function	Complementary
Switching mode	Light/dark switching
Switching output detail	
Switching output Q1	PNP, Light switching
Switching output Q2	PNP, Dark switching
Output current $I_{max.}$	≤ 100 mA
Response time	≤ 0.5 ms [3]
Switching frequency	1,000 Hz [4]
Connection type	Male connector M12, 4-pin
Cable material	Plastic, PVC
Circuit protection	A [5] B [6] D [7]
Protection class	III
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] May not fall below or exceed U_V tolerances.

[2] Without signal strength light bar and load.

[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.

SAFETY-RELATED PARAMETERS

$MTTF_D$	936.1 years
DC_{avg}	0 %

CONNECTION TYPE/PINOUTS

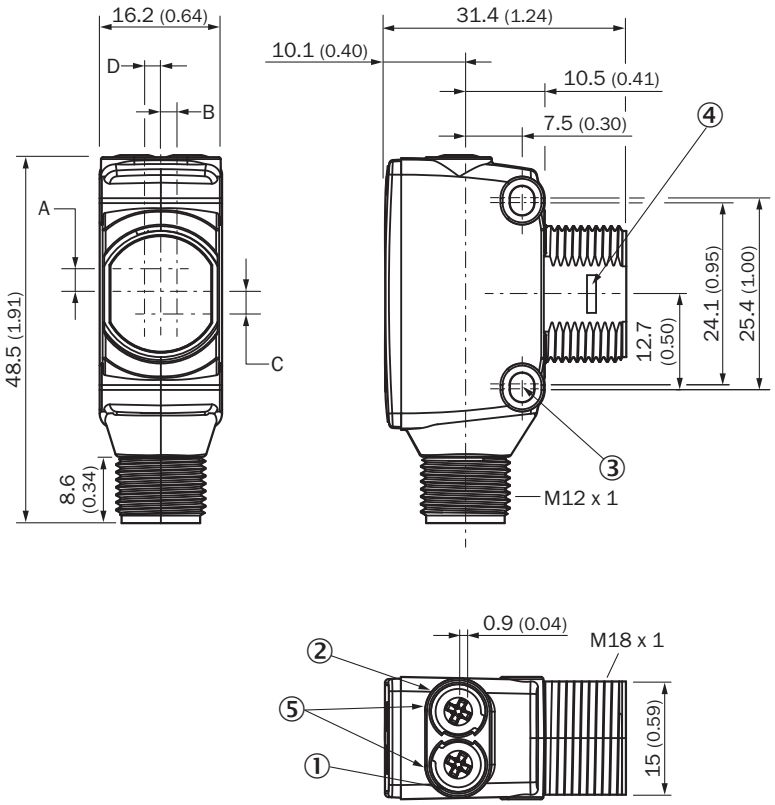
Connection type	Male connector M12, 4-pin
Connection type Detail	

Cable material	Plastic
Pinouts	
BN 1	+ (L+)
WH 2	Q_2
BU 3	- (M)
BK 4	Q_1

CERTIFICATES

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

DIMENSIONAL DRAWING

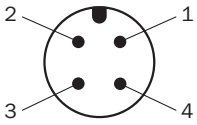


Dimensions in mm (inch)
① LED indicator yellow: Status of received light beam
② LED indicator green: power on
③ M3 mounting hole
④ Snap Connection for flush ring (sold seperatly)
⑤ Potentiometer (if selected) or LED Indicators

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)

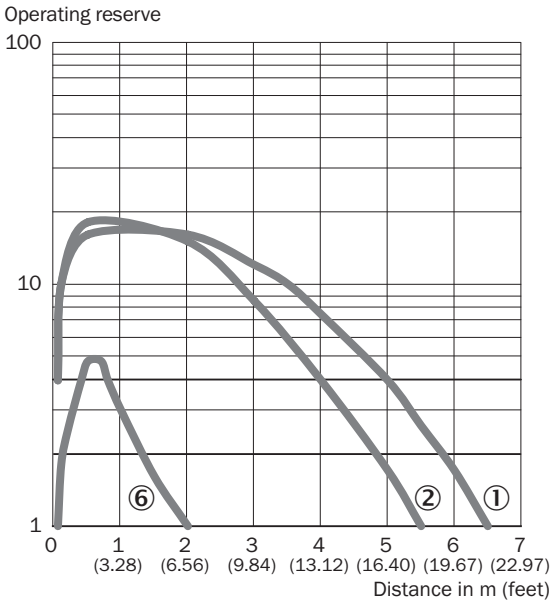
Dimensions in mm (inch)	Receiver		Sender	
HTB18L / HTF18L / HL18L / HSE18L	2.5 (0.1)	0.0 (0.0)	3.5 (0.14)	0.0 (0.0)

PINOUTS, SEE TABLE TECHNICAL DATA: CONNECTION TYPE/PINOUTS



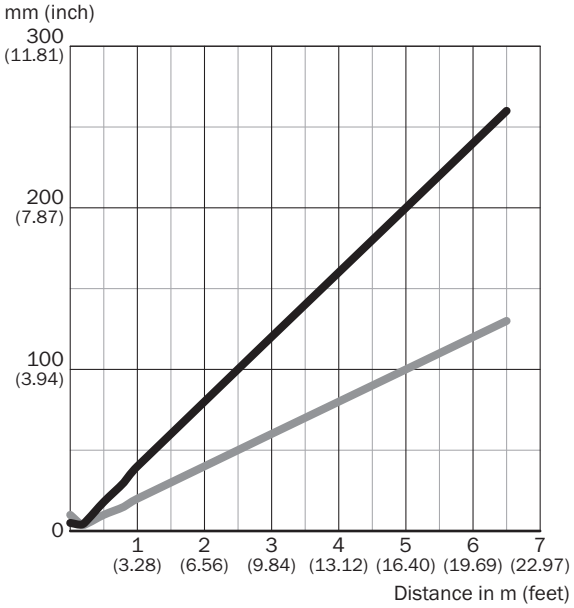
M12 male connector, 4-pin, A-coding

CHARACTERISTIC CURVE



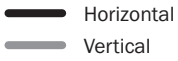
① Reflector PL80A
② Reflector PL40A
⑥ Reflective tape IREF6000 (REF-IRF-56)

LIGHT SPOT SIZE

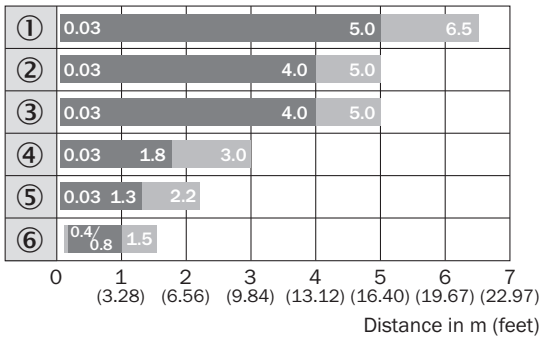


Dimensions in mm (inch)

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)

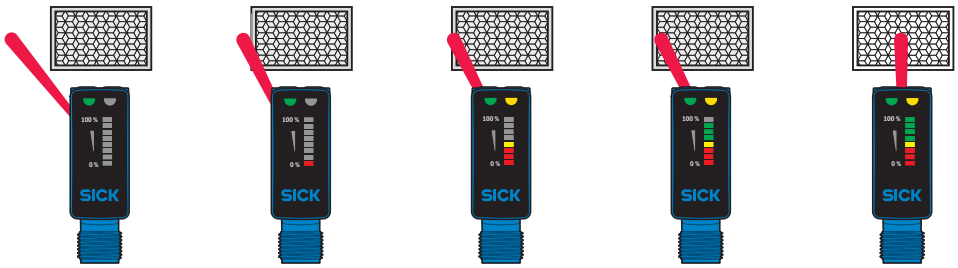


SENSING RANGE DIAGRAM



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/1081580



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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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