HSE18-P4A1BA

SureSense

CYLINDRICAL PHOTOELECTRIC SENSORS

Illustration may differ

Ordering information

Type	Part no.
HSE18-P4A1BA	1074762

Other models and accessories ➜ www.sick.com/SureSense

Detailed technical data

Features

Sensor/ detection 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
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)	Ø 1,400 mm (10 m)
Wave length	850 nm
Adjustment	None
Special features	Signal strength light bar

[1] Average service life: 100,000 h at T_U = +25 °C.

Mechanics/electronics

Supply voltage	10 V DC ... 30 V DC [1]
Ripple	< 5 V_{pp} [2]
Power consumption	20 mA [3]
Switching output	PNP [4]
Output function	Complementary
Switching mode	Light/dark switching [4]
Output current $I_{max.}$	≤ 100 mA
Response time	≤ 0.5 ms [5]
Switching frequency	1,000 Hz [6]
Connection type	Male connector M12, 4-pin
Circuit protection	A [7] B [8] D [9]
Protection class	III [10]
Weight	18 g
Housing material	Plastic, VISTAL®
Optics material	Plastic, PMMA
Enclosure rating	IP67 IP69K
EMC	EN 60947-5-2 [11]
Ambient operating temperature	–40 °C ... +70 °C
Ambient storage temperature	–40 °C ... +75 °C
UL File No.	E189383

[1] Limit values when operated in short-circuit protected network: max. 8 A.

[2] May not exceed or fall below U_v tolerances.

[3] Without signal strength light bar and load.

[4] Q1 = light switching; Q2 = dark switching.

[5] Signal transit time with resistive load.

[6] With light/dark ratio 1:1.

[7] A = V_S connections reverse-polarity protected.

[8] B = inputs and output reverse-polarity protected.

[9] D = outputs overcurrent and short-circuit protected.

[10] Reference voltage: 50 V DC.

[11] 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.
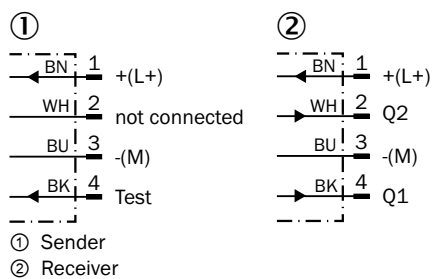
Classifications

ECl@ss 5.0	27270901
ECl@ss 5.1.4	27270901
ECl@ss 6.0	27270901
ECl@ss 6.2	27270901
ECl@ss 7.0	27270901
ECl@ss 8.0	27270901
ECl@ss 8.1	27270901

ECI@ss 9.0	27270901
ETIM 5.0	EC002716
ETIM 6.0	EC002716
UNSPSC 16.0901	39121528

Connection diagram

Cd-330

①
BN	1	+(L+)
WH	2	not connected
BU	3	-(M)
BK	4	Test

②
BN	1	+(L+)
WH	2	Q2
BU	3	-(M)
BK	4	Q1

① Sender
② Receiver

Characteristic curve

Infrared light

Operating reserve

Distance in m (feet)
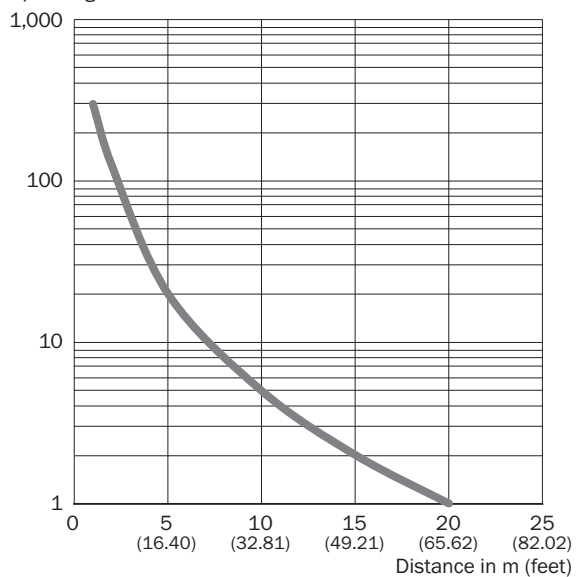
Light spot size

Infrared light
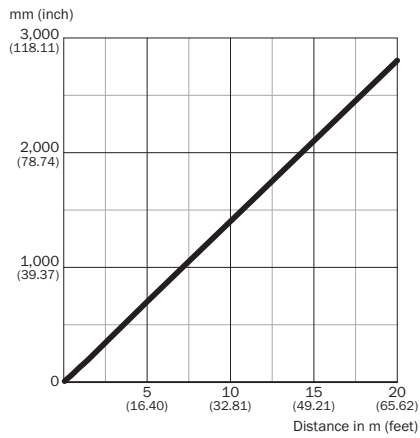
Sensing range	Diameter
0.5 m (1.64 feet)	65 (0.21)
1 m (3.28 feet)	135 (5.31)
5 m (16.40 feet)	700 (27.56)
20 m (65.62 feet)	2,800 (110.24)

Dimensions in mm (inch)

—— Diameter

Sensing range diagram
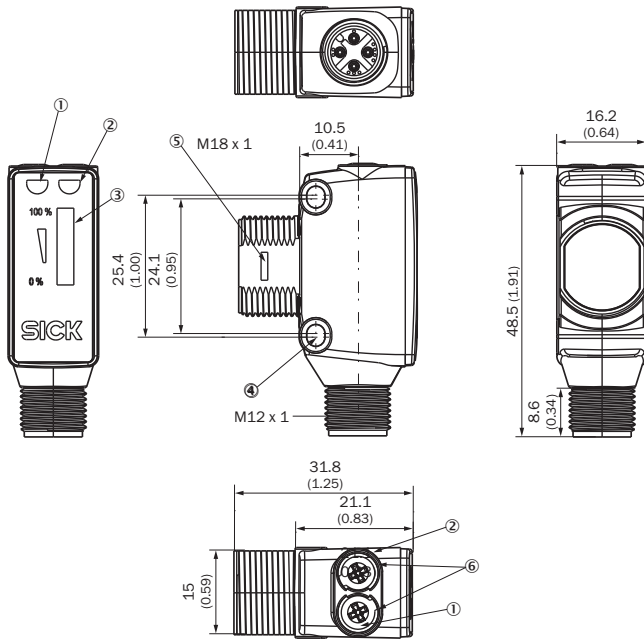

■ Sensing range   ■ Sensing range max.
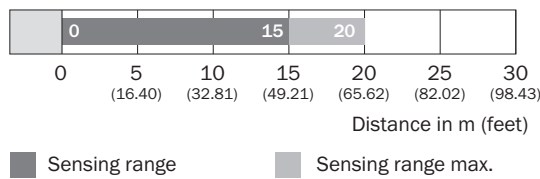
Functions
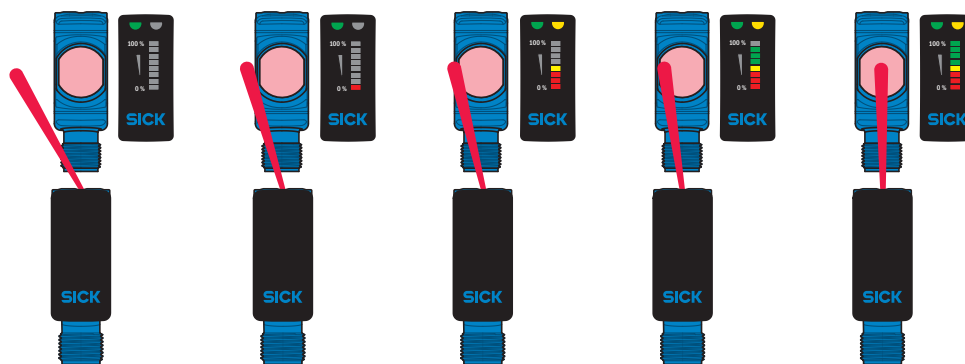
Dimensional drawing (Dimensions in mm (inch))

H18, DC, male connector M12

10.5 (0.41)
M18 x 1
M12 x 1
16.2 (0.64)
48.5 (1.91)
8.6 (0.34)
25.4 (1.00)
24.1 (0.95)
31.8 (1.25)
21.1 (0.83)
15 (0.59)

① LED indicator green: power on
② LED indicator yellow: Status of received light beam
③ Signal strength light bar
④ M3 mounting hole
⑤ Snap Connection for flush ring (sold seperately)
⑥ Potentiometer (if selected) or LED Indicators

Recommended accessories

Other models and accessories ➜ www.sick.com/SureSense

	Brief description	Type	Part no.
Mounting brackets and plates			
	Mounting plate for M18 sensors, steel, zinc coated, without mounting hardware	BEF-WG-M18	5321870
	Mounting bracket for M18 sensors, steel, zinc coated, without mounting hardware	BEF-WN-M18	5308446
	Bottom M18 mounting bracket SureSense sensors	MB-M18-H18	2085820
Other mounting accessories			
	Spherical bearing M18	Ball holder	4057409
	Mounting bracket	MB-BS18MM-M4	2049694
Terminal and alignment brackets			
	Clamping block for round sensors M18, without fixed stop, plastic (PA12), glass-fiber reinforced, mounting hardware included	BEF-KH-M18	2051481

Brief description	Type	Part no.
Plug connectors and cables		
Head A: female connector, M12, 4-pin, straight Head B: Flying leads Cable: PVC, unshielded, 2 m	DOL-1204-G02M	6009382
Head A: female connector, M12, 4-pin, straight Head B: Flying leads Cable: PVC, unshielded, 5 m	DOL-1204-G05M	6009866
Head A: female connector, M12, 4-pin, angled Head B: Flying leads Cable: PVC, unshielded, 2 m	DOL-1204-W02M	6009383
Head A: female connector, M12, 4-pin, angled Head B: Flying leads Cable: PVC, unshielded, 5 m	DOL-1204-W05M	6009867

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."

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