Online data sheet



HL18-P1G3BA

SureSense

HYBRID PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ

Ordering information

Type	Part no.
HL18-P1G3BA	1071757

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

Detailed technical data

Features

Sensor/ detection principle	Photoelectric retro-reflective sensor, Dual lens
Dimensions (W x H x D)	16.2 mm x 45.5 mm x 31.8 mm
Housing design (light emission)	Hybrid
Thread diameter (housing)	M18
Mounting system type	M18, nose / 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	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]
Power 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	Cable open end, 2,000 mm
Cable material	PVC
Conductor cross-section	0.2 mm²
Circuit protection	A, B, D [5] [6] [7]
Protection class	III [8]
Weight	18 g
Polarisation filter	✓
Housing material	Plastic, VISTAL®
Optics material	Plastic, PMMA
Enclosure rating	IP67, IP69K
Items supplied	Mounting nut (1x), M18, plastic, black, flat
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 storage temperature	–40 °C ... +75 °C
UL File No.	E189383

[1] May not exceed or fall below 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.
[8] Reference voltage: 50 V DC.

Safety-related parameters

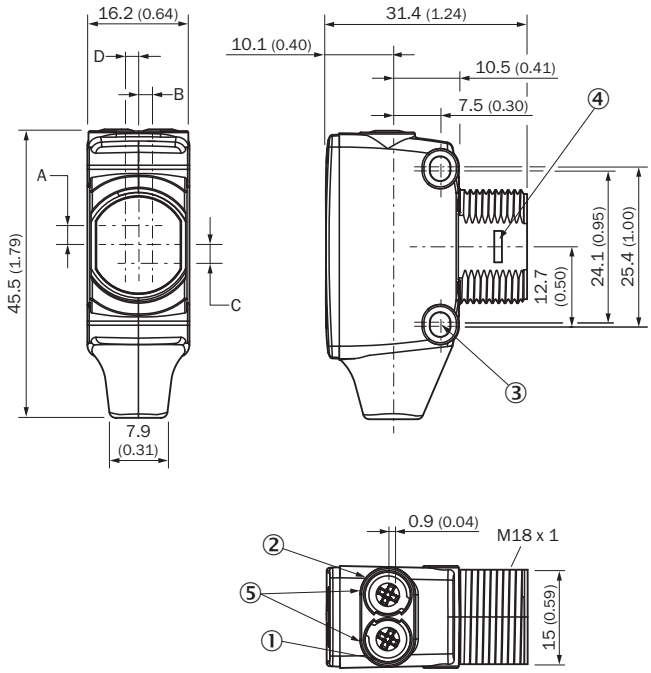
$MTTF_D$	730.1 years
DC_{avg}	0%

Classifications

ECl@ss 5.0	27270904

ECl@ss 5.1.4	27270904
ECl@ss 6.0	27270904
ECl@ss 6.2	27270904
ECl@ss 7.0	27270904
ECl@ss 8.0	27270904
ECl@ss 8.1	27270904
ECl@ss 9.0	27270904
ETIM 5.0	EC002719
ETIM 6.0	EC002719
UNSPSC 16.0901	39121528

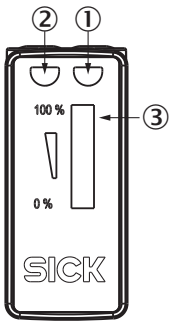
Dimensional drawing (Dimensions in mm (inch))



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)

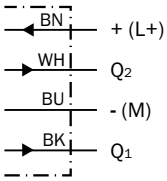
Adjustments possible



① LED indicator yellow: Status of received light beam
② LED indicator green: power on
③ Signal strength light bar

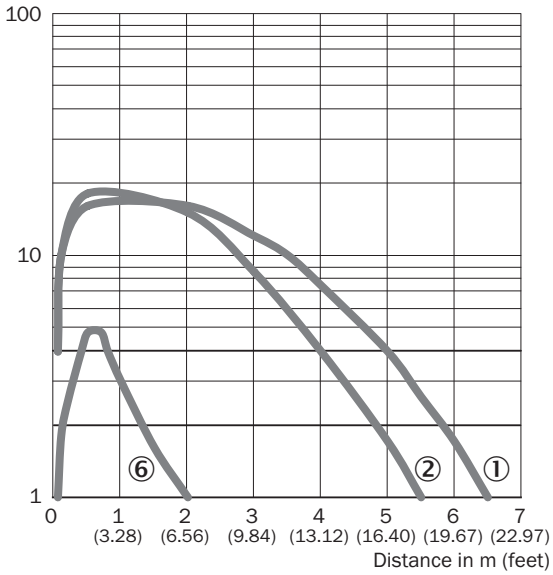
Connection diagram

Cd-297



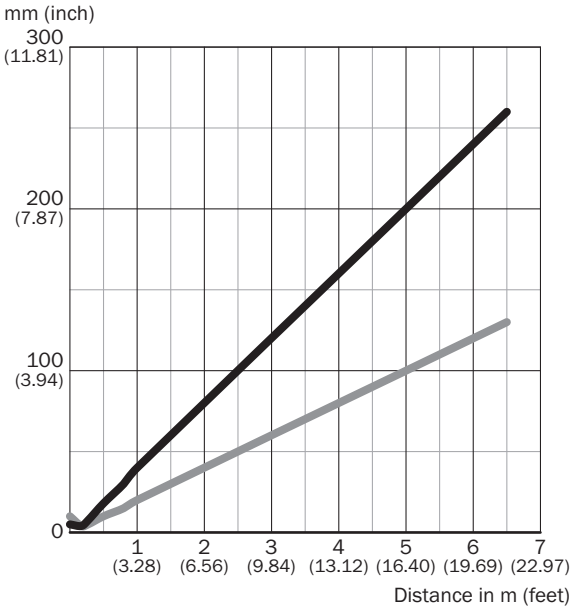
Characteristic curve

Operating reserve



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

Light spot size

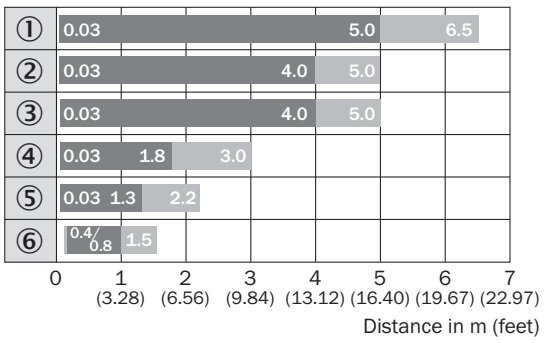


Dimensions in mm (inch)

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

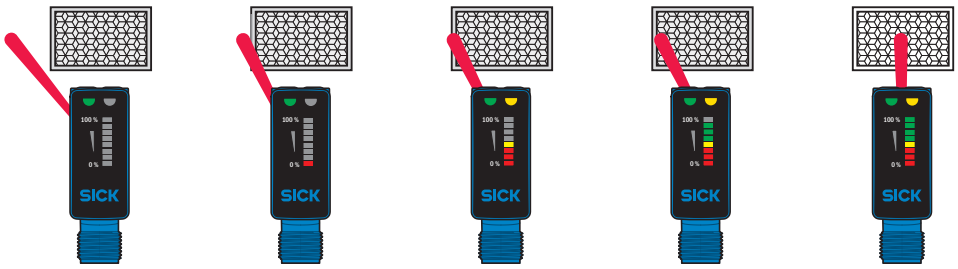
Sensing range diagram



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)

Functions



Recommended accessories

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

	Brief description	Type	Part no.
Mounting brackets and plates			
	Universal mounting bracket for reflectors, steel, zinc coated	BEF-WN-REFX	2064574
Reflectors			
	Rectangular, screw connection, 47 mm x 47 mm, PMMA/ABS, Screw-on, 2 hole mounting	P250	5304812

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