



# HL18G-P2B3BL

H18 Sure Sense

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



Ordering information

Type	part no.
HL18G-P2B3BL	1092901

Other models and accessories → [www.sick.com/H18\\_Sure\\_Sense](http://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 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 ... 3 m <sup>1)</sup>	
Sensing range	0.1 m ... 2.5 m <sup>1)</sup>	
Type of light	Visible red light	
Light source	PinPoint LED <sup>2)</sup>	
Light spot size (distance)	60 mm x 120 mm (3 m)	
Wave length	631 nm	
Adjustment	Potentiometer, right	Teach-in
	Potentiometer, left	None
AutoAdapt	✓	
Special applications	Detecting transparent objects	
Special features	Signal strength light bar AutoAdapt	

<sup>1)</sup> Reflector PL80A.

<sup>2)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

## Mechanics/electronics

<b>Supply voltage</b>	10 V DC ... 30 V DC
<b>Ripple</b>	< 5 V <sub>pp</sub> <sup>1)</sup>
<b>Current consumption</b>	≤ 20 mA <sup>2)</sup>
<b>Switching output</b>	PNP
<b>Switching mode</b>	Light switching
<b>Switching output detail</b>	
Switching output Q1	PNP, Light switching
Switching output Q2	Not connected
<b>Output current I<sub>max.</sub></b>	≤ 100 mA
<b>Response time</b>	≤ 0.5 ms <sup>3)</sup>
<b>Switching frequency</b>	1,000 Hz <sup>4)</sup>
<b>Connection type</b>	Cable with connector M8, 3-pin, 150 mm
<b>Cable material</b>	Plastic, PVC
<b>Conductor cross section</b>	0.2 mm <sup>2</sup>
<b>Circuit protection</b>	A <sup>5)</sup> B <sup>6)</sup> D <sup>7)</sup>
<b>Protection class</b>	III
<b>Weight</b>	18 g
<b>Polarisation filter</b>	✓
<b>Housing material</b>	Plastic, VISTAL®
<b>Optics material</b>	Plastic, PMMA
<b>Enclosure rating</b>	IP67 IP69K
<b>Items supplied</b>	Fastening nut (1x), M18, plastic, black, flat
<b>Electromagnetic compatibility (EMC)</b>	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.)
<b>Ambient operating temperature</b>	-40 °C ... +70 °C
<b>Ambient temperature, storage</b>	-40 °C ... +75 °C
<b>UL File No.</b>	E189383

<sup>1)</sup> May not fall below or exceed U<sub>y</sub> tolerances.

<sup>2)</sup> Without signal strength light bar and load.

<sup>3)</sup> Signal transit time with resistive load.

<sup>4)</sup> With light/dark ratio 1:1.

<sup>5)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>6)</sup> B = inputs and output reverse-polarity protected.

<sup>7)</sup> D = outputs overcurrent and short-circuit protected.

## Connection type/pinouts

<b>Connection type</b>	Cable with connector M8, 3-pin, 150 mm
<b>Connection type Detail</b>	
Conductor cross section	0.2 mm <sup>2</sup>
Cable material	Plastic

Pinouts		
	BN 1	+ (L+)
	BU 3	- (M)
	BK 4	Q

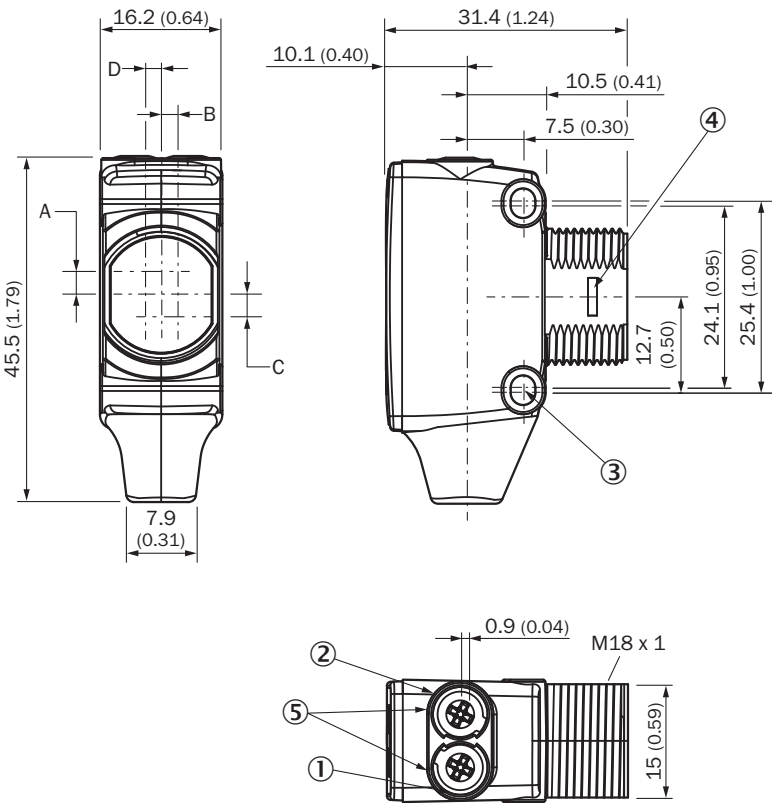
Certificates

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

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

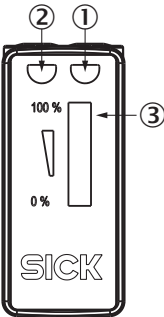
Dimensional drawing



- 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

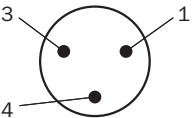
Dimensions in mm (inch)	Receiver		Sender	
	A	B	C	D
HTB18 / HTF18	- 1.1 (0.04)	1.1 (0.04)	4.7 (0.19)	0.6 (0.02)
HTE18 / HL18 / HSE18	2.5 (0.1)	0.0 (0.0)	4.0 (0.16)	0.0 (0.0)
HTB18L / HTF18L / HL18L / HSE18L	2.5 (0.1)	0.0 (0.0)	3.5 (0.14)	0.0 (0.0)

Adjustments



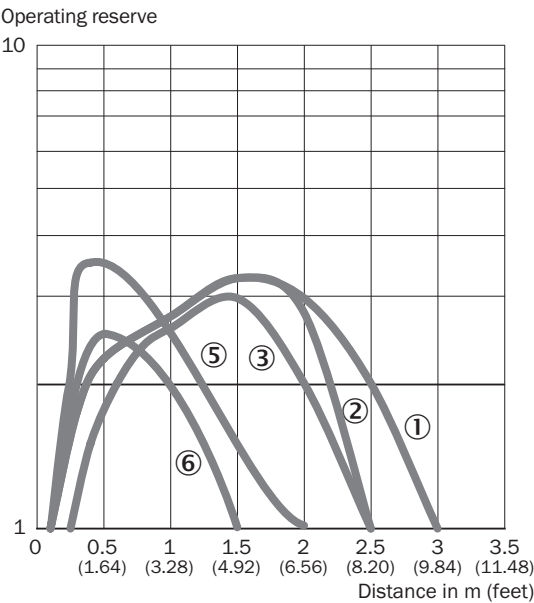
- ① LED indicator yellow: Status of received light beam
- ② LED indicator green: power on
- ③ Signal strength light bar

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



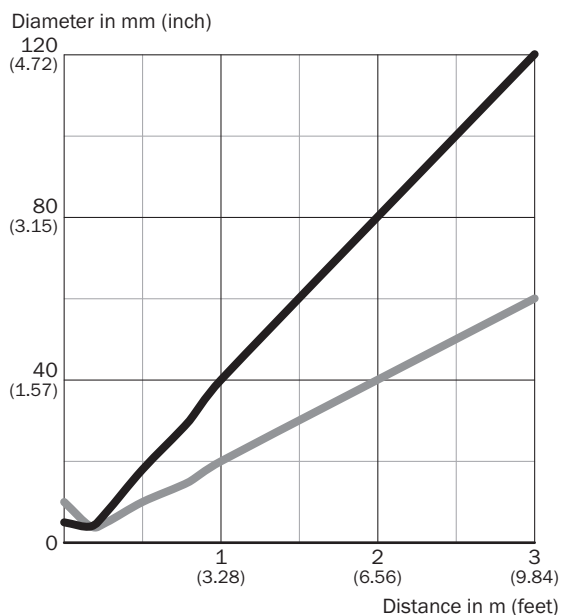
Connector M8, 3-pin

**Characteristic curve**



- ① Reflector PL80A
- ② Reflector PL40A
- ③ Reflector P250F
- ⑤ Reflective tape REF-AC1000
- ⑥ Reflector PL41F

## Light spot size

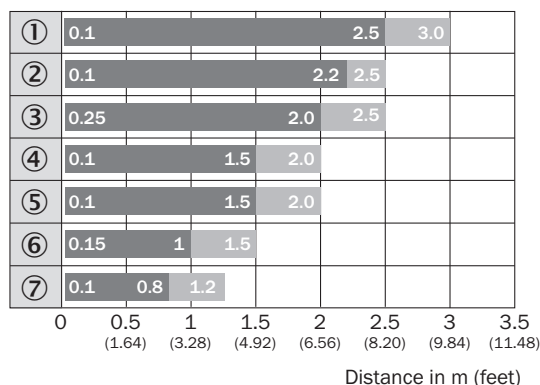


### Dimensions in mm (inch)

Sensing range	Vertical	Horizontal
<b>0.5 m</b> <b>(1.64 feet)</b>	18 (0.71)	10 (0.39)
<b>0.8 m</b> <b>(2.62 feet)</b>	30 (1.18)	15 (0.59)
<b>1 m</b> <b>(3.28 feet)</b>	40 (1.57)	20 (0.79)
<b>3 m</b> <b>(9.84 feet)</b>	120 (4.72)	60 (2.36)

— Vertical  
— Horizontal

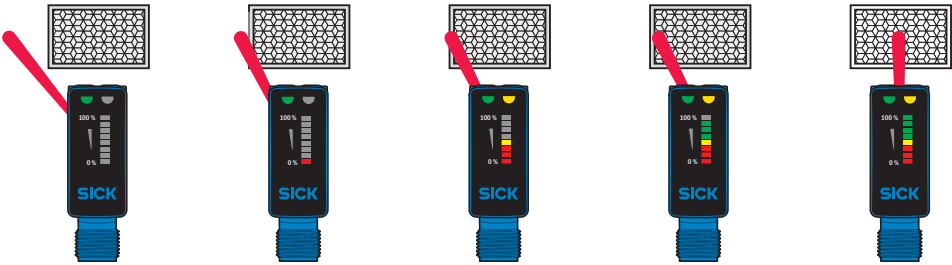
## Sensing range diagram



■ Sensing range    ■ Sensing range max.



- ① Reflector PL80A
- ② Reflector PL40A
- ③ Reflector P250F
- ④ Reflector PL30A, PL31A
- ⑤ Reflective tape REF-AC1000
- ⑥ Reflector PL41F
- ⑦ Reflector PL20A

Functions



Recommended accessories

Other models and accessories → [www.sick.com/H18\\_Sure\\_Sense](http://www.sick.com/H18_Sure_Sense)

	Brief description	Type	part no.
reflectors and optics			
	<ul style="list-style-type: none"><li>• <b>Description:</b> Reflector with microprismatic reflex tape REF-AC1000, suitable for laser sensors, see alignment note</li><li>• <b>Dimensions:</b> 29 mm 45 mm</li><li>• <b>Ambient operating temperature:</b> -30 °C ... +60 °C</li></ul>	P41F	5315128
connectors and cables			
	<ul style="list-style-type: none"><li>• <b>Connection type head A:</b> Female connector, M8, 3-pin, straight, A-coded</li><li>• <b>Connection type head B:</b> Flying leads</li><li>• <b>Signal type:</b> Sensor/actuator cable</li><li>• <b>Cable:</b> 5 m, 3-wire, PVC</li><li>• <b>Description:</b> Sensor/actuator cable, unshielded</li><li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li></ul>	YF8U13-050VA1XLEAX	2095884
	<ul style="list-style-type: none"><li>• <b>Connection type head A:</b> Male connector, M8, 3-pin, straight, A-coded</li><li>• <b>Description:</b> Unshielded</li><li>• <b>Connection systems:</b> Screw-type terminals</li><li>• <b>Permitted cross-section:</b> 0.14 mm² ... 0.5 mm²</li></ul>	STE-0803-G	6037322



## 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](http://www.sick.com)