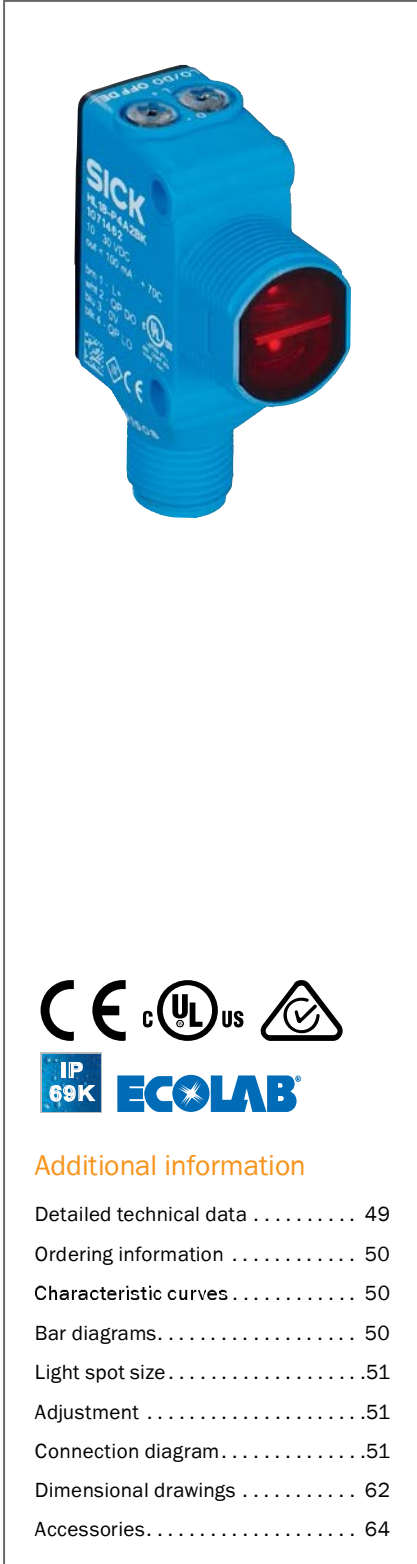




THE SURE WAY TO DETECT ANY OBJECT



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Product description

Designed to streamline your sensor selection, the SureSense retro-reflective sensors with laser optic technology are available with an extensive range of connections and configurations (light / dark switch and time delays) all within

the same hybrid housing style. All of these options are available with a signal strength light bar, which provides immediate feedback to improve alignment and setup speed.

At a glance

- Intuitive signal strength light bar
- VISTAL “tough as steel” housing
- Precise laser light spot
- Long sensing range of 12 m
- Multiple connection and configuration options with identical housing design

Your benefits

- Light bar ensures fast and simple visual-based alignment
- Durability of VISTAL housing reduces replacement costs and downtime
- Precise detection of small objects, features and holes
- Reduce costs by standardizing sensor mounting, accessories and setup procedures

→ www.mysick.com/en/HL18L

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.



Detailed technical data

Features

Sensor principle	Photoelectric retro-reflective sensor
Detection principle	Dual lens
Dimensions (W x H x D)	16.2 mm x 45.5 mm x 31.8 mm (Cable) 16.2 mm x 44.9 mm x 31.8 mm (M8) 16.2 mm x 48.5 mm x 31.8 mm (M12) (depending on type)
Housing design (light emission)	Hybrid
Thread diameter (housing)	M18
Sensing range max. ¹⁾	0.1 m ... 12 m
Sensing range ¹⁾	0.1 m ... 10 m
Type of light	Visible red light
Light source ^{2) 3)}	Laser
Light spot size (distance)	Ø 2 mm (5 m)
Wave length	655 nm
Laser class	I
Adjustment	Potentiometer (depending on type)
Time delay ⁴⁾	On delay / Off delay (depending on type)
Special features	Light/dark switching selection switch Signal strength light bar (depending on type)

¹⁾ PL80A

²⁾ Average service life: 50,000 h at T_U = +25 °C

³⁾ CLASS 1 LASER PRODUCT EN60825-1:2008-05; IEC60825-1:2007-03; Maximum pulse power < 2,5 mW, Pulse length: 4 µs, Wavelength: 650 ... 670 nm; Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007

⁴⁾ Adjustable: 0 ... 2 s

Mechanics/electronics

Supply voltage ^{1) 2)}	10 V DC ... 30 V DC
Ripple ³⁾	< 5 V _{pp}
Power consumption ⁴⁾	≤ 20 mA
Output type	PNP NPN PNP and NPN PUSH/PULL (depending on type)
Switching mode	Light switching Dark switching Light/dark switching (complementary) (depending on type)
Output current I_{max.}	≤ 100 mA
Response time ⁵⁾	≤ 0.5 ms
Switching frequency ⁶⁾	1,000 Hz
Connection type	Cable, 4-wire ⁷⁾ Male M8, 4-pin Male M12, 4-pin Cable with male M8, 3-pin Cable with male M8, 4-pin Cable with male M12, 4-pin (depending on type)
Circuit protection	A ⁸⁾ , B ⁹⁾ , D ¹⁰⁾
Protection class ¹¹⁾	III

Weight	18 g
Polarisation filter	✓
Housing material	VISTAL
Optics material	PMMA
Enclosure rating	IP 67, IP 69K
Ambient operating temperature ¹²⁾	-30 °C ... +55 °C
Ambient storage temperature	-40 °C ... +75 °C

- ¹⁾ Above T_a 45 °C, max. voltage = 24V and max. current = 50 mA.
- ²⁾ Limit values when operated in short-circuit protected network: max. ϵ A.
- ³⁾ May not exceed or fall below U_v tolerances.
- ⁴⁾ Without signal strength light bar and load.
- ⁵⁾ Signal transit time with resistive load.
- ⁶⁾ With light/dark ratio 1:1.
- ⁷⁾ Do not bend below 0 °C.
- ⁸⁾ A = V_s connections reverse-polarity protected.
- ⁹⁾ B = inputs and output reverse-polarity protected.
- ¹⁰⁾ D = outputs overcurrent and short-circuit protected.
- ¹¹⁾ Reference voltage: 50 VDC.
- ¹²⁾ Below Ta = -10 °C, sensor must be turned on at Ta > -10 °C. Sensor cannot be turned on below Ta= -10 °C.

Ordering information

Products with the technical data listed above are available even if that specific part number is not defined in this document. See type code ordering matrix and availability rules on → page 10 for all possible combination of sensors that are available. Contact your local SICK sales representative or look on → www.mysick.com/en/HL18L to request information on a part number not shown in this document.

HL18L, DC, Signal strength light bar

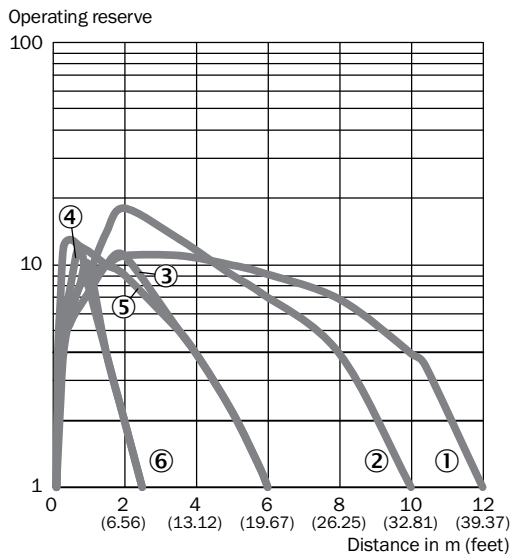
- **Polarisation filter:** ✓
- **Laser class:** I
- **Switching mode:** Light/dark switching (Q1 = light switching,) (Q2 = dark switching.)

Sensing range max. ¹⁾	Output type	Connection	Connection diagram	Type	Part no.
0.1 m ... 12 m	NPN	Cable, 4-wire, 2 m	Cd-297	HL18L-N1G5BA	1074775
	PNP			HL18L-P1G5BA	1071027
	NPN	M12, 4-pin PVC	Cd-243	HL18L-N4A5BA	1074774
	PNP			HL18L-P4A5BA	1071025

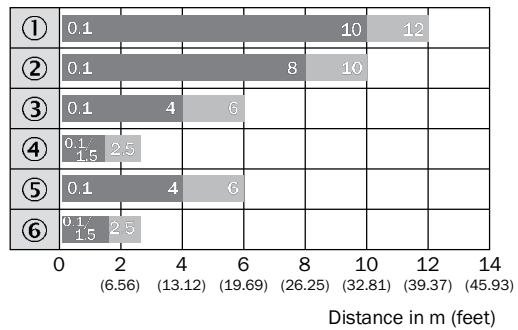
¹⁾ PL80A.

Characteristic curves

Operating reserve

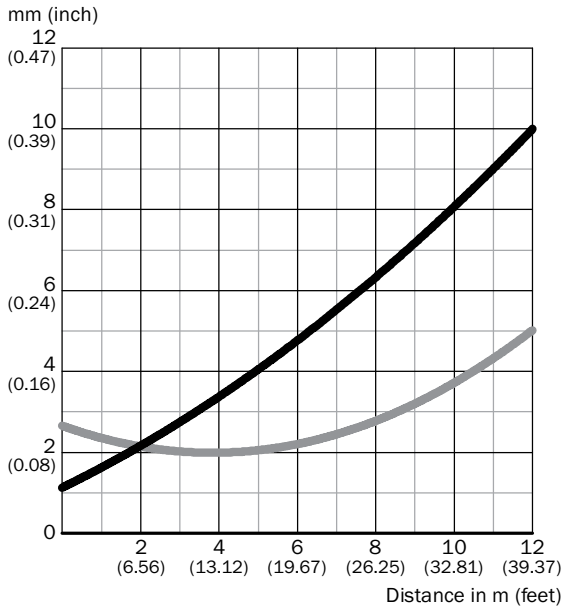


Bar diagrams



- ① PL80A
- ② P250F
- ③ PL10F
- ④ PL23 FT
- ⑤ AC 1000
- ⑥ IREF6000 (REF-IRF-56)

Light spot size

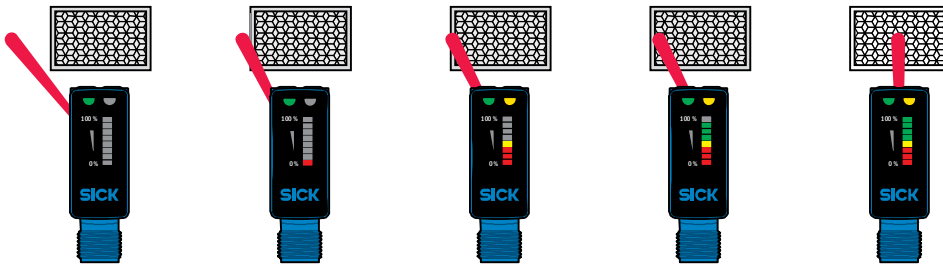


Dimensions in mm (inch)

Sensing range	Vertical	Horizontal
0.2 m (0.57 feet)	1.2 (0.05)	2.65 (0.10)
0.75 m (2.46 feet)	1.8 (0.07)	2.3 (0.09)
5 m (16.40 feet)	4.0 (0.16)	2.2 (0.09)
12 m (39.37 feet)	10.0 (0.39)	5.0 (0.20)

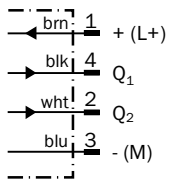
— Vertical
— Horizontal

Adjustment



Connection diagram

Cd-243



Cd-297

