



HL18G-P1G3AL

H18 Sure Sense

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Ordering information

| Type | part no. |
|--------------|----------|
| HL18G-P1G3AL | 1071038 |

Other models and accessories → www.sick.com/H18_Sure_Sense

Illustration may differ



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 ¹⁾ |
| Sensing range | 0.1 m ... 2.5 m ¹⁾ |
| Type of light | Visible red light |
| Light source | PinPoint LED ²⁾ |
| 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 | AutoAdapt |

¹⁾ Reflector PL80A.

²⁾ Average service life: 100,000 h at $T_U = +25^\circ\text{C}$.

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 | Cable open end, 2 m |
| Cable material | Plastic, PVC |
| Conductor cross section | 0.2 mm ² |
| Circuit protection | A ⁵⁾ B ⁶⁾ D ⁷⁾ |
| Protection class | III |
| Weight | 18 g |
| Polarisation 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_y 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 | Cable open end, 2 m | |
| Connection type Detail | | |
| Conductor cross section | 0.2 mm ² | |
| Cable material | Plastic | |
| Pinouts | BN | +(L+) |
| | WH | Q ₂ |
| | BU | - (M) |
| | BK | Q ₁ |

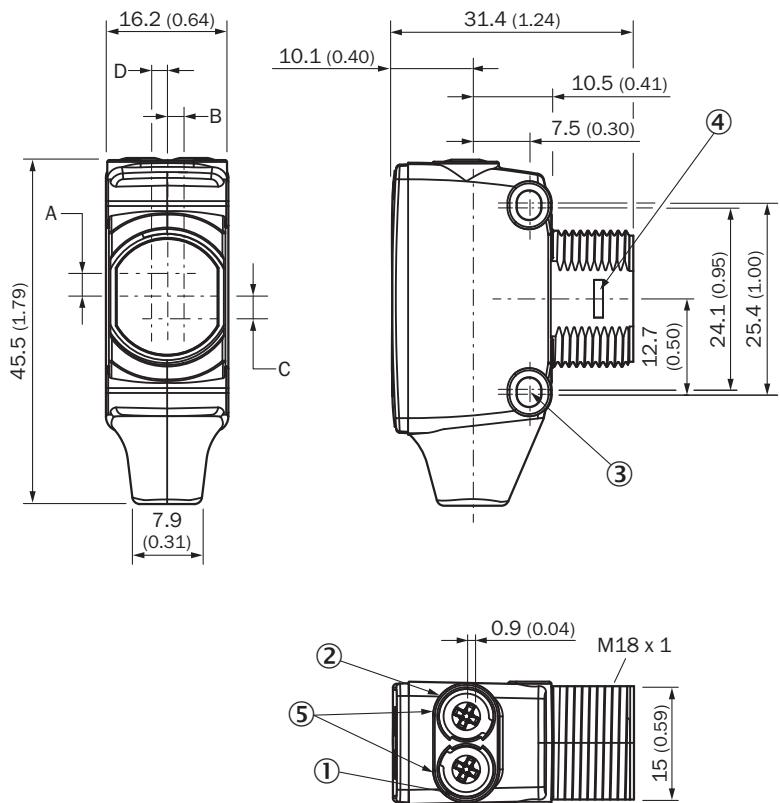
Certificates

| | |
|---|---|
| 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 |

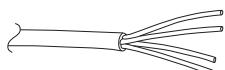
Dimensional drawing



Dimensions in mm (inch)

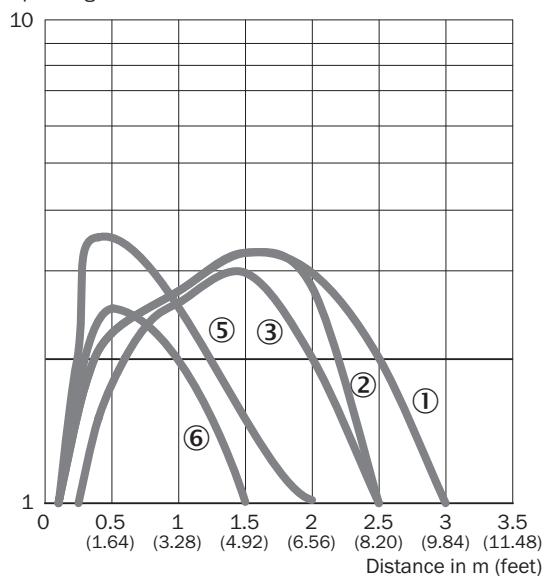
- ① LED indicator yellow: Status of received light beam
- ② LED indicator green: power on
- ③ M3 mounting hole
- ④ Snap Connection for flush ring (sold separately)
- ⑤ Potentiometer (if selected) or LED Indicators

| 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) |

Pinouts, see table Technical data: **Connection type/pinouts**Cable with flying leads, 4-wire, AWG26 0.15 mm²

Characteristic curve

Operating reserve



① Reflector PL80A

② Reflector PL40A

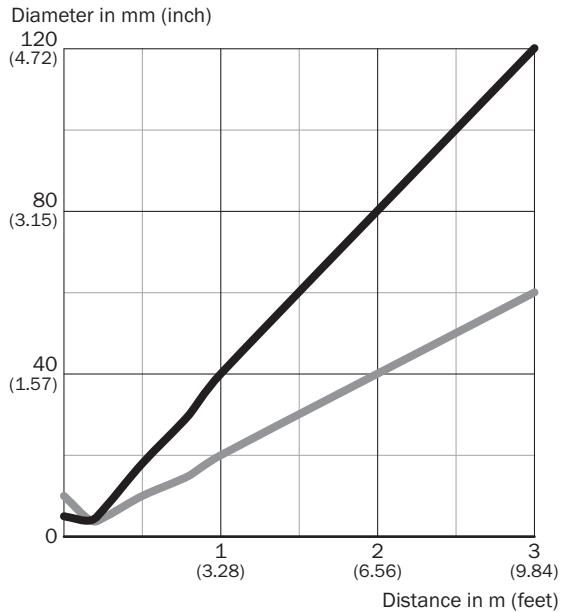
③ Reflector P250F

④ Reflective tape REF-AC1000

⑤ Reflective tape REF-AC1000

⑥ Reflector PL41F

Light spot size

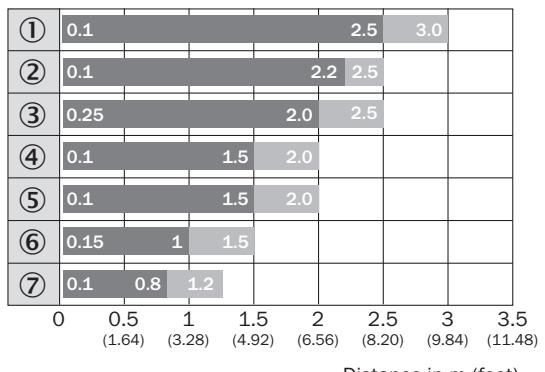


Dimensions in mm (inch)

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

— Vertical
— Horizontal

Sensing range diagram

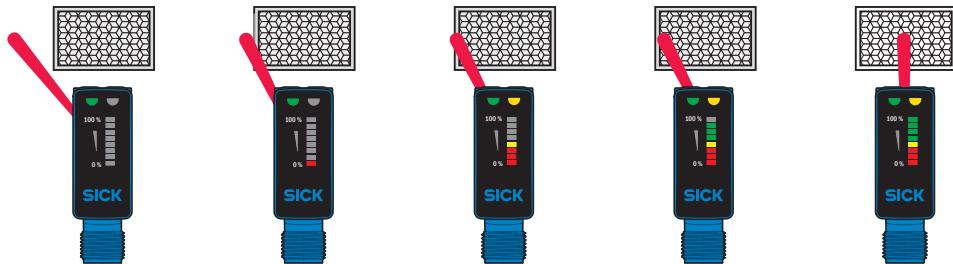


Distance in m (feet)

■ 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

| | Brief description | Type | part no. |
|-----------------------|---|------|----------|
| reflectors and optics |  <ul style="list-style-type: none">• Description: Reflector with microprismatic reflex tape REF-AC1000, suitable for laser sensors, see alignment note• Dimensions: 29 mm 45 mm• Ambient operating temperature: -30 °C ... +60 °C | P41F | 5315128 |

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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