# HSE18-M1G2AA

## H18 Sure Sense

**PHOTOELECTRIC SENSORS**

**SICK**
Sensor Intelligence.

# HSE18-M1G2AA | H18 Sure Sense
## PHOTOELECTRIC SENSORS

## Ordering information

| Type | part no. |
|------|----------|
| HSE18-M1G2AA | 1080500 |

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

Illustration may differ

## Detailed technical data

### Features

| | |
|------|------|
| **Functional principle** | Through-beam photoelectric sensor |
| **Dimensions (W x H x D)** | 16.2 mm x 45.5 mm x 34.4 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 m ... 25 m |
| **Sensing range** | 0 m ... 20 m |
| **Type of light** | Visible red light |
| **Light source** | PinPoint LED [1] |
| **Light spot size (distance)** | 400 mm x 200 mm (10 m) |
| **Wave length** | 631 nm |
| **Adjustment** | |
| Potentiometer, right | None |
| Potentiometer, left | None |
| **Special features** | - |

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

### Mechanics/electronics

| | |
|------|------|
| **Supply voltage** | 21.6 V DC ... 250 V DC, 96 V AC ... 250 V AC [1] |

[1] From $T_u$ 60 °C, max. supply voltage = 120 V.

[2] Without load. The output load and sensor must use the same power source.

[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: 250 V AC, overvoltage category 2.

| | |
|---|---|
| **Current consumption** | ≤ 10 mA [2] |
| **Switching output** | MOSFET |
| **Switching mode** | Dark switching |
| **Switching output detail** | |
| Switching output Q1 | MOSFET, 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 mm² |
| **Circuit protection** | A [5]<br>B [6]<br>D [7] |
| **Protection class** | II [8] |
| **Weight** | 18 g |
| **Housing material** | Plastic, VISTAL® |
| **Optics material** | Plastic, PMMA |
| **Enclosure rating** | IP67<br>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] From T$_u$ 60 °C, max. supply voltage = 120 V.

[2] Without load. The output load and sensor must use the same power source.

[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: 250 V AC, overvoltage category 2.

## Connection type/pinouts

| | |
|---|---|
| **Connection type** | Cable open end, 2 m |
| **Connection type Detail** | |
| Conductor cross section | 0.2 mm² |
| Cable material | Plastic |
| **Pinouts $_{Sender}$** | |
| BN | L1 |
| BU | N |
| **Pinouts $_{Receiver}$** | |
| BN | L1 |

| | | |
|---|---|---|
| BU | N | |
| BK | Q | |

## Certificates

| | |
|---|---|
| **EU declaration of conformity** | ✓ |
| **UK declaration of conformity** | ✓ |
| **ACMA declaration of conformity** | ✓ |
| **Moroccan declaration of conformity** | ✓ |
| **China-RoHS** | ✓ |

## Classifications

| | |
|---|---|
| **ECLASS 5.0** | 27270901 |
| **ECLASS 5.1.4** | 27270901 |
| **ECLASS 6.0** | 27270901 |
| **ECLASS 6.2** | 27270901 |
| **ECLASS 7.0** | 27270901 |
| **ECLASS 8.0** | 27270901 |
| **ECLASS 8.1** | 27270901 |
| **ECLASS 9.0** | 27270901 |
| **ECLASS 10.0** | 27270901 |
| **ECLASS 11.0** | 27270901 |
| **ECLASS 12.0** | 27270901 |
| **ETIM 5.0** | EC002716 |
| **ETIM 6.0** | EC002716 |
| **ETIM 7.0** | EC002716 |
| **ETIM 8.0** | EC002716 |
| **UNSPSC 16.0901** | 39121528 |

## Dimensional drawing
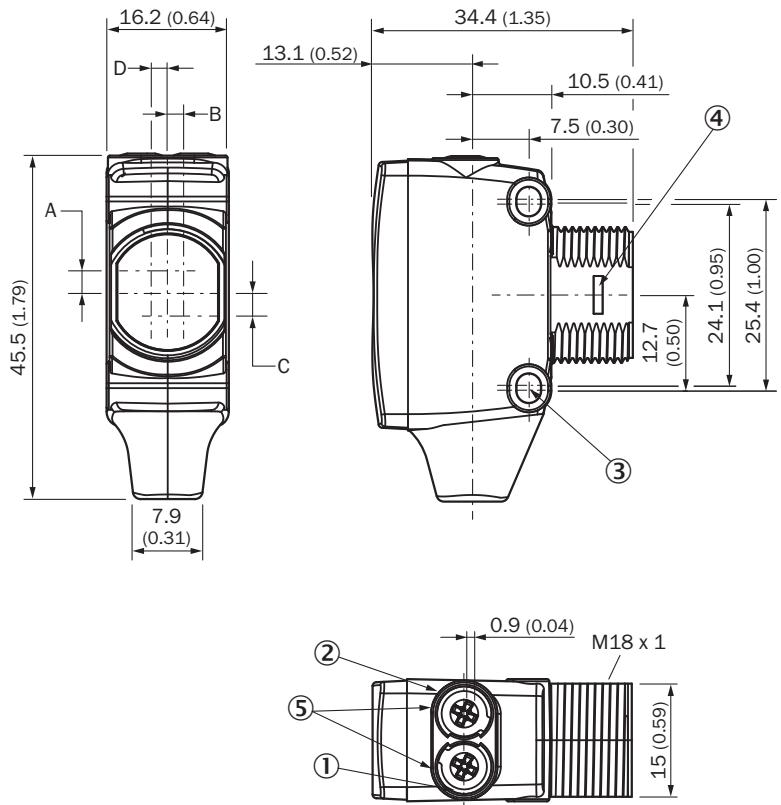
Dimensions in mm (inch)

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) |

## Pinouts, see table Technical data: <b>Connection type/pinouts</b>
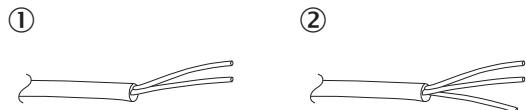
① sender
② receiver

## Characteristic curve Red light

Operating reserve



Distance in m (feet)
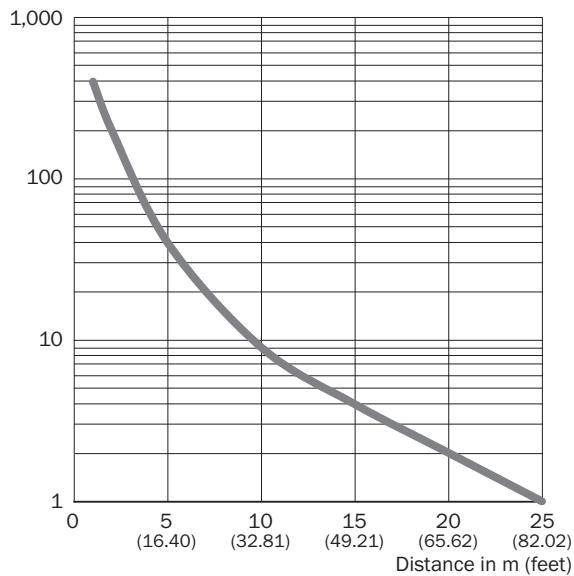
## Light spot size Red light

mm (inch)



Distance in m (feet)

— Horizontal
— Vertical
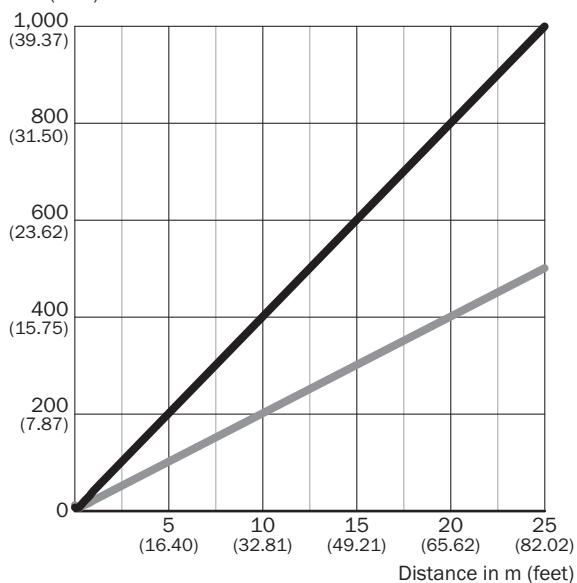
**Dimensions in mm (inch)**

| Sensing range | Horizontal | Vertical |
|---|---|---|
| **0.5 m**<br>**(1.64 feet)** | 18<br>(0.71) | 10<br>(0.39) |
| **1 m**<br>**(3.28 feet)** | 40<br>(1.57) | 20<br>(0.79) |
| **6.5 m**<br>**(21.33 feet)** | 260<br>(10.24) | 130<br>(5.12) |
| **25 m**<br>**(82.02 feet)** | 1,000<br>(39.37) | 500<br>(19.67) |

## Sensing range diagram



| | |
|---|---|
| Sensing range | Sensing range max. |

Distance in m (feet)
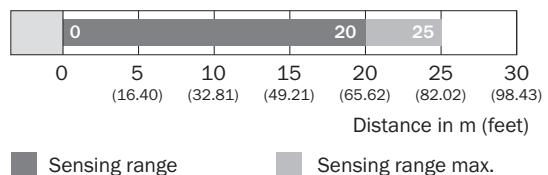
## Functions
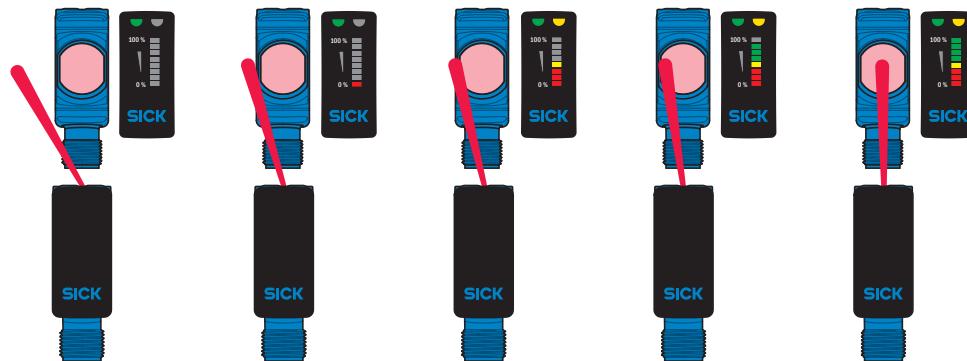
## SICK AT A GLANCE

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**

SICK AG   |   Waldkirch   |   Germany   |   www.sick.com