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Product data sheet




# HSE18-P3A2BB

## H18 Sure Sense

**HYBRID PHOTOELECTRIC SENSORS**

SICK
Sensor Intelligence.

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# HSE18-P3A2BB | H18 Sure Sense

HYBRID PHOTOELECTRIC SENSORS



Illustration may differ

## Ordering information

| Type | Part no. |
|---|---|
| HSE18-P3A2BB | 1080543 |

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

## Detailed technical data

### Features

| | |
|---|---|
| **Functional principle** | Through-beam photoelectric sensor |
| **Dimensions (W x H x D)** | 16.2 mm x 44.9 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 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 | Sensitivity |
| Potentiometer, left | None |
| **Special features** | Signal strength light bar |

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

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## 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** | Male connector M8, 4-pin |
| **Circuit protection** | A [5]<br>B [6]<br>D [7] |
| **Protection class** | III |
| **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] 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.

## 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 |

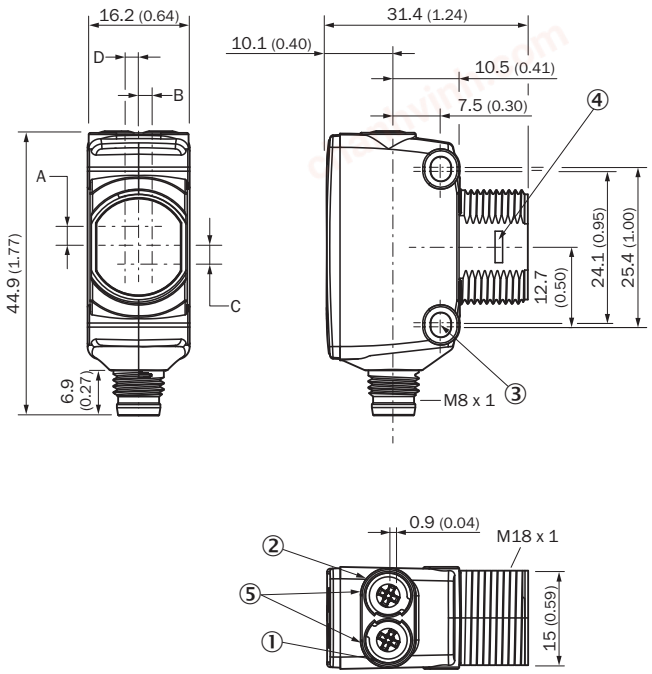
## Connection/Pin assignment

| | |
|---|---|
| **Connection type** | Male connector M8, 4-pin |
| **Pin assignment** $_{sender}$ | |
| BN 1 | + (L+) |
| WH 2 | Not connected |
| BU 3 | - (M) |
| BK 4 | Test $_{IN}$ |
| **Pin assignment** $_{receiver}$ | |
| BN 1 | + (L+) |
| WH 2 | $Q_2$ |
| BU 3 | - (M) |
| BK 4 | $Q_1$ |

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## Dimensional drawing (Dimensions in mm (inch))

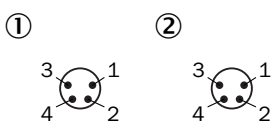



① LED indicator yellow: Status of received light beam
② LED indicator green: power on
③ M3 mounting hole
④ Snap Connection for flush ring (sold seperatly)
⑤ Potentiometer (if selected) or LED Indicators

| 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) |

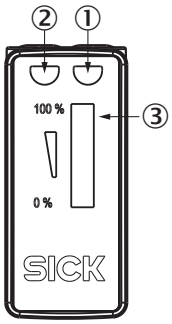
## Connection type

See table: **Connection/pin assignment**




① Sender
② Receiver

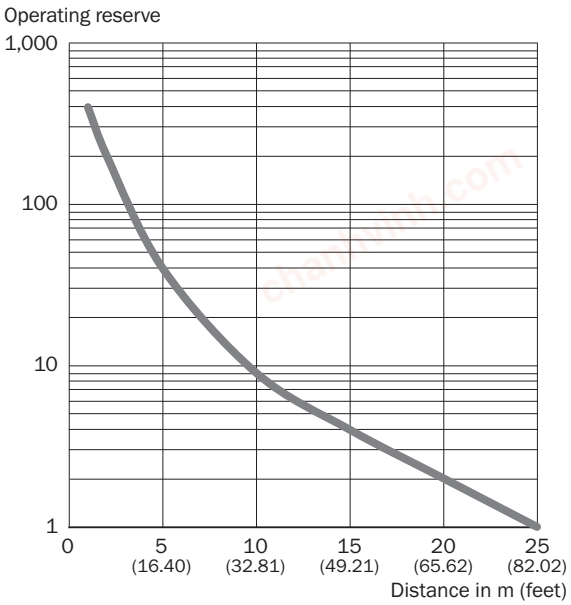
## Adjustments possible




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

## Characteristic curve

Red light

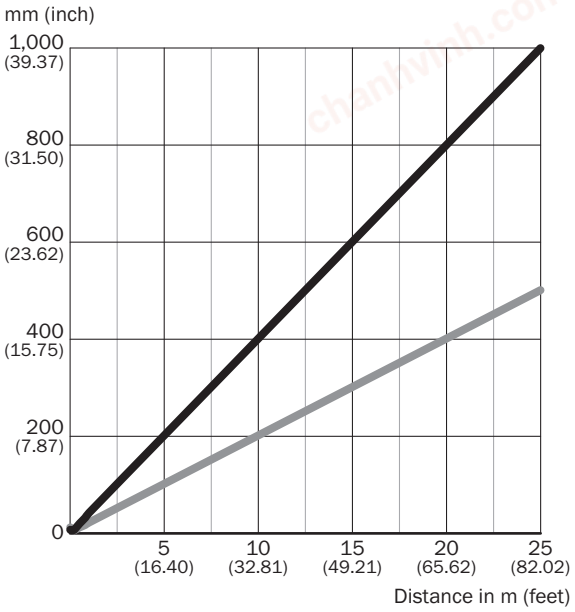


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## Light spot size

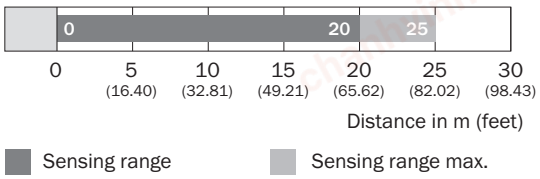
Red light



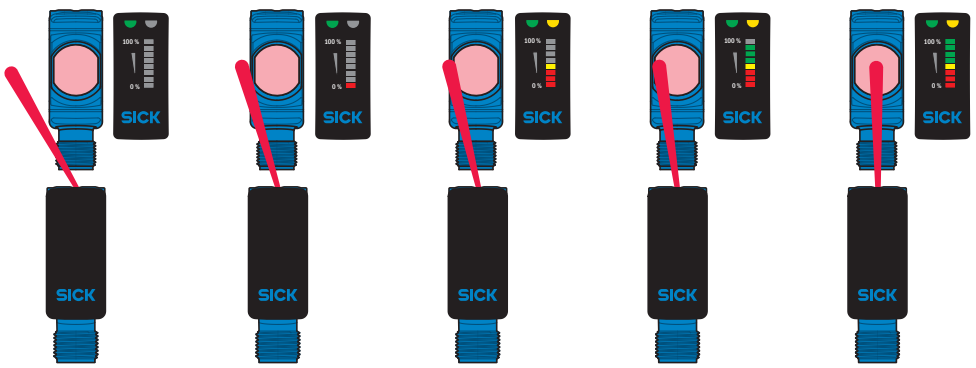

**Dimensions in mm (inch)**

| 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) |
| **6.5 m (21.33 feet)** | 260 (10.24) | 130 (5.12) |
| **25 m (82.02 feet)** | 1,000 (39.37) | 500 (19.67) |

## Sensing range diagram




## Functions



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## Recommended accessories

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

| | Brief description | Type | Part no. |
|---|---|---|---|
| Plug connectors and cables | | | |
|  | • **Connection type head A:** Female connector, M8, 4-pin, straight, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 5 m, 4-wire, PVC<br>• **Description:** Sensor/actuator cable, unshielded<br>• **Application:** Zones with chemicals | YF8U14-050VA3XLEAX | 2095889 |
|  | • **Connection type head A:** Male connector, M8, 4-pin, straight<br>• **Description:** Unshielded<br>• **Connection systems:** Screw-type terminals<br>• **Permitted cross-section:** 0.14 mm² ... 0.5 mm² | STE-0804-G | 6037323 |

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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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