



HSE18-F4B1BA

H18 Sure Sense

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

| Type | part no. |
|--------------|----------|
| HSE18-F4B1BA | 1083170 |

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 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 m ... 20 m | |
| Sensing range | 0 m ... 15 m | |
| Type of light | Infrared light | |
| Light source | LED ¹⁾ | |
| Light spot size (distance) | 1,400 mm (10 m) | |
| Wave length | 850 nm | |
| Adjustment | | |
| | Potentiometer, right | None |
| | Potentiometer, left | None |
| Special features | Signal strength light bar | |

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

Mechanics/electronics

| | |
|-----------------------|---------------------|
| Supply voltage | 10 V DC ... 30 V DC |
|-----------------------|---------------------|

- ¹⁾ May not fall below or exceed U_V tolerances.
- ²⁾ Without signal strength light bar and load.
- ³⁾ Pin 4 and pin 2: This switching output must not be connected to another output.
- ⁴⁾ Signal transit time with resistive load.
- ⁵⁾ With light/dark ratio 1:1.
- ⁶⁾ A = V_S connections reverse-polarity protected.
- ⁷⁾ B = inputs and output reverse-polarity protected.
- ⁸⁾ D = outputs overcurrent and short-circuit protected.

| | |
|--|--|
| Ripple | < 5 V _{pp} ¹⁾ |
| Current consumption | ≤ 20 mA ²⁾ |
| Switching output | Push-pull: PNP/NPN |
| Output function | Complementary |
| Switching mode | Light/dark switching |
| Switching output detail | |
| Switching output Q1 | Push-pull: PNP/NPN, Light switching ³⁾ |
| Switching output Q2 | Push-pull: PNP/NPN, Dark switching ³⁾ |
| Output current I_{max.} | ≤ 100 mA |
| Response time | ≤ 0.5 ms ⁴⁾ |
| Switching frequency | 1,000 Hz ⁵⁾ |
| Connection type | Cable with M12 male connector, 4-pin, 150 mm |
| Cable material | Plastic, PVC |
| Conductor cross section | 0.2 mm ² |
| Circuit protection | A ⁶⁾ B ⁷⁾ D ⁸⁾ |
| Protection class | III |
| Weight | 18 g |
| 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) Pin 4 and pin 2: This switching output must not be connected to another output.

4) Signal transit time with resistive load.

5) With light/dark ratio 1:1.

6) A = V_S connections reverse-polarity protected.

7) B = inputs and output reverse-polarity protected.

8) D = outputs overcurrent and short-circuit protected.

Connection type/pinouts

| | |
|-------------------------------|--|
| Connection type | Cable with M12 male connector, 4-pin, 150 mm |
| Connection type Detail | |
| Cable material | Plastic |
| Conductor cross section | 0.2 mm ² |

| Pinouts <small>Sender</small> | |
|---------------------------------|----------------|
| BN 1 | + (L+) |
| WH 2 | Not connected |
| BU 3 | - (M) |
| BK 4 | Test IN |
| Pinouts <small>Receiver</small> | |
| BN 1 | + (L+) |
| WH 2 | Q ₂ |
| BU 3 | - (M) |
| BK 4 | 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 | 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

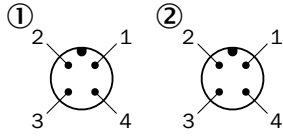
| Dimensions in mm (inch) | Receiver | | Sender | |
|----------------------------------|--------------|------------|------------|------------|
| | A | B | C | D |
| HTB18 / HTF18 | - 1.1 (0.04) | 1.1 (0.04) | 4.7 (0.19) | 0.6 (0.02) |
| HTE18 / HL18 / HSE18 | 2.5 (0.1) | 0.0 (0.0) | 4.0 (0.16) | 0.0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

Adjustments



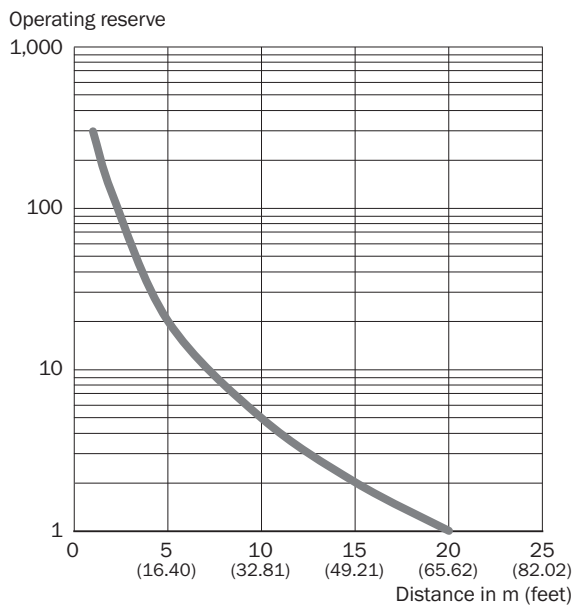
- ① LED indicator yellow: Status of received light beam
- ② LED indicator green: power on
- ③ Signal strength light bar

Pinouts, see table [Technical data: Connection type/pinouts](#)

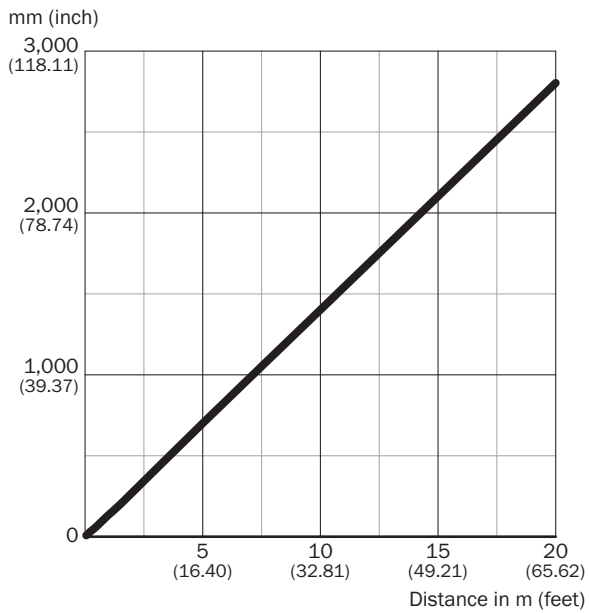


- ① sender
- ② receiver

Characteristic curve Infrared light



Light spot size Infrared light

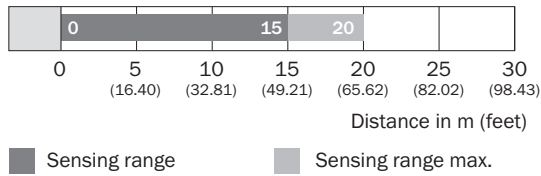


Dimensions in mm (inch)

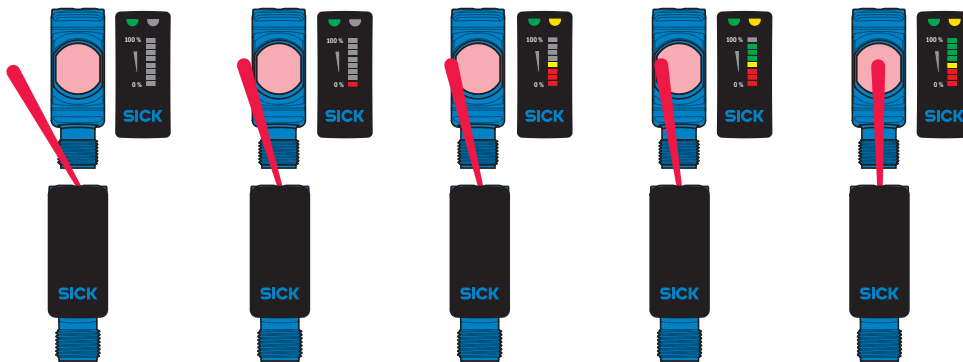
| Sensing range | Diameter |
|-------------------|----------------|
| 0.5 m (1.64 feet) | 65 (0.21) |
| 1 m (3.28 feet) | 135 (5.31) |
| 5 m (16.40 feet) | 700 (27.56) |
| 20 m (65.62 feet) | 2,800 (110.24) |

— Diameter

Sensing range diagram



Functions



Recommended accessories

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

| | Brief description | Type | part no. |
|--|--|--------------------|----------|
| Mounting systems | | | |
|  | <ul style="list-style-type: none"> Description: Mounting bracket for M18 sensors Material: Steel Details: Steel, zinc coated Items supplied: Without mounting hardware Suitable for: GR18, V180-2, V18, W15, Z1, Z2 | BEF-WN-M18 | 5308446 |
|  | <ul style="list-style-type: none"> Description: Plate N11N for universal clamp bracket Material: Stainless steel Details: Stainless steel 1.4571 (sheet), Stainless steel 1.4408 (clamp) Items supplied: Universal clamp (5322627), mounting hardware Usable for: DeltaPac, Glare, WTD20E | BEF-KHS-N11N | 2071081 |
| connectors and cables | | | |
|  | <ul style="list-style-type: none"> Description: Sensor/actuator cable, unshielded Connection type head A: Female connector, M12, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 4-wire, PVC Application: Uncontaminated zones, Zones with chemicals | YF2A14-050VB3XLEAX | 2096235 |
|  | <ul style="list-style-type: none"> Description: Unshielded Connection type head A: Male connector, M12, 4-pin, straight, A-coded Connection systems: Screw-type terminals Permitted cross-section: ≤ 0.75 mm² | STE-1204-G | 6009932 |
|  | <ul style="list-style-type: none"> Description: Sensor/actuator cable, unshielded Connection type head A: Female connector, M12, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 4-wire, PUR, halogen-free Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation | YF2A14-050UB3XLEAX | 2095608 |

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