Data sheet

# HTF18-B4A2BH

## H18 Sure Sense

**PHOTOELECTRIC SENSORS**

SICK
Sensor Intelligence.

Illustration may differ

## Ordering information

| Type | part no. |
|---|---|
| HTF18-B4A2BH | 1080327 |

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

## Detailed technical data

### Features

| | |
|---|---|
| **Functional principle** | Photoelectric proximity sensor |
| **Functional principle detail** | Foreground suppression |
| **Dimensions (W x H x D)** | 16.2 mm x 48.5 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.** | 5 mm ... 300 mm [1] |
| **Sensing range** | 5 mm ... 150 mm [2] |
| **Type of light** | Visible red light |
| **Light source** | PinPoint LED [3] |
| **Light spot size (distance)** | 7 mm (300 mm) |
| **Wave length** | 631 nm |
| **Adjustment** | |
| Potentiometer, right | Sensitivity |
| Potentiometer, left | Light/dark switching |
| **Special features** | Signal strength light bar |

[1] Object with 90% remission (based on standard white, DIN 5033).
[2] Object with 6% remission factor (based on standard black, DIN 5033).
[3] Average service life: 100,000 h at $T_U$ = +25 °C.

## Mechanics/electronics

| | |
|---|---|
| **Supply voltage** | 10 V DC ... 30 V DC |
| **Ripple** | < 5 $V_{pp}$ [1] |
| **Current consumption** | ≤ 20 mA [2] |
| **Switching output** | PNP, NPN |
| **Switching mode** | Light switching |
| **Switching output detail** | |
| Switching output Q1 | PNP, Light switching |
| Switching output Q2 | NPN, Light switching |
| **Output current $I_{max.}$** | ≤ 100 mA |
| **Response time** | ≤ 0.5 ms [3] |
| **Switching frequency** | 1,000 Hz [4] |
| **Connection type** | Male connector M12, 4-pin |
| **Cable material** | Plastic, PVC |
| **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 ... +65 °C |
| **Ambient temperature, storage** | –40 °C ... +75 °C |
| **UL File No.** | E189383 |

[1] May not fall below or exceed $U_V$ 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.

## Safety-related parameters

| | |
|---|---|
| **$MTTF_D$** | 523.9 years |
| **$DC_{avg}$** | 0 % |

## Connection type/pinouts

| | |
|---|---|
| **Connection type** | |
| | Male connector M12, 4-pin |
| **Connection type Detail** | |

| | |
|---|---|
| Cable material | Plastic |
| **Pinouts** | |
| BN 1 | + (L+) |
| WH 2 | $Q_2$ |
| BU 3 | - (M) |
| BK 4 | $Q_1$ |

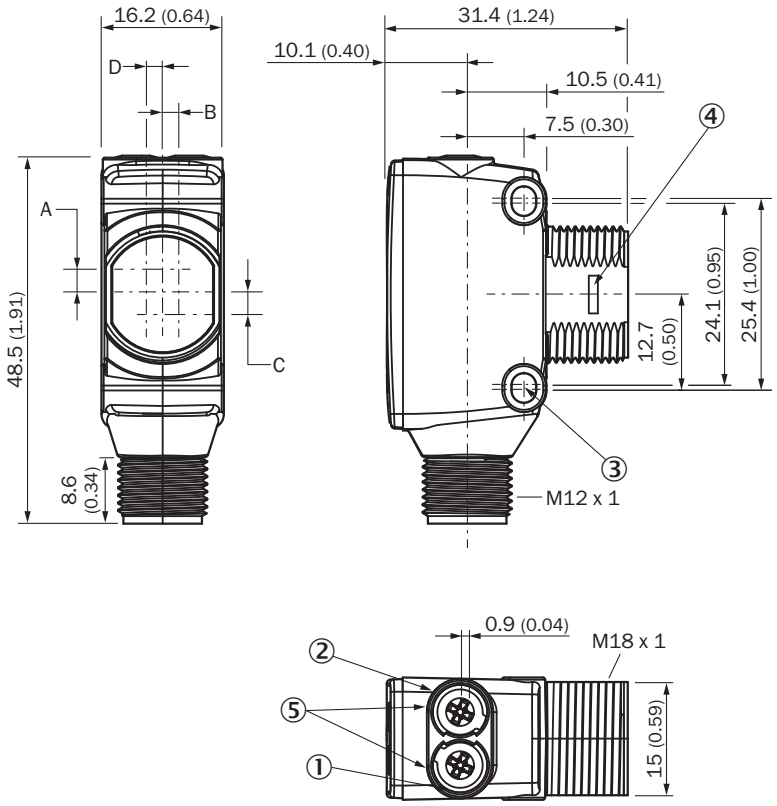
## Certificates

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

## Classifications

| | |
|---|---|
| **ECLASS 5.0** | 27270903 |
| **ECLASS 5.1.4** | 27270903 |
| **ECLASS 6.0** | 27270903 |
| **ECLASS 6.2** | 27270903 |
| **ECLASS 7.0** | 27270903 |
| **ECLASS 8.0** | 27270903 |
| **ECLASS 8.1** | 27270903 |
| **ECLASS 9.0** | 27270903 |
| **ECLASS 10.0** | 27270903 |
| **ECLASS 11.0** | 27270903 |
| **ECLASS 12.0** | 27270903 |
| **ETIM 5.0** | EC002719 |
| **ETIM 6.0** | EC002719 |
| **ETIM 7.0** | EC002719 |
| **ETIM 8.0** | EC002719 |
| **UNSPSC 16.0901** | 39121528 |

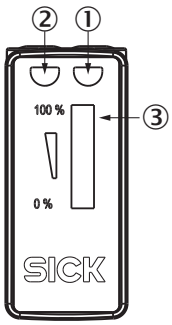
## Dimensional drawing




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

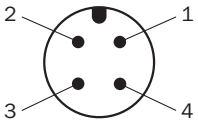
| Dimensions in mm (inch) | Receiver | | Sender | |
|---|---|---|---|---|
| – | A | B | C | D |
| **HTB18 / HTF18** | - 1.1 (0.04) | 1.1 (0.04) | 4.7 (0.19) | 0.6 (0.02) |
| **HTE18 / HL18 / HSE18** | 2.5 (0.1) | 0.0 (0.0) | 4.0 (0.16) | 0.0 (0.0) |
| **HTB18L / HTF18L / HL18L / HSE18L** | 2.5 (0.1)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

## Adjustments



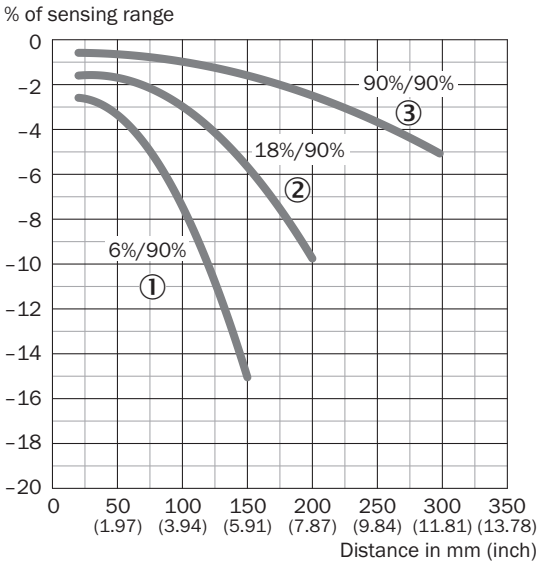
① LED indicator yellow: Status of received light beam
② LED indicator green: power on
③ Signal strength light bar

## Pinouts, see table Technical data: Connection type/pinouts



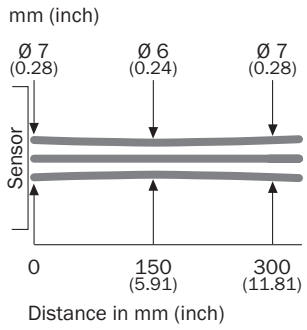

M12 male connector, 4-pin, A-coding

## Characteristic curve

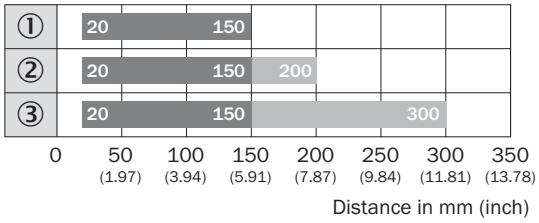



① Sensing range on black, 6% remission factor
② Sensing range on gray, 18% remission factor
③ Sensing range on white, 90% remission factor

## Light spot size

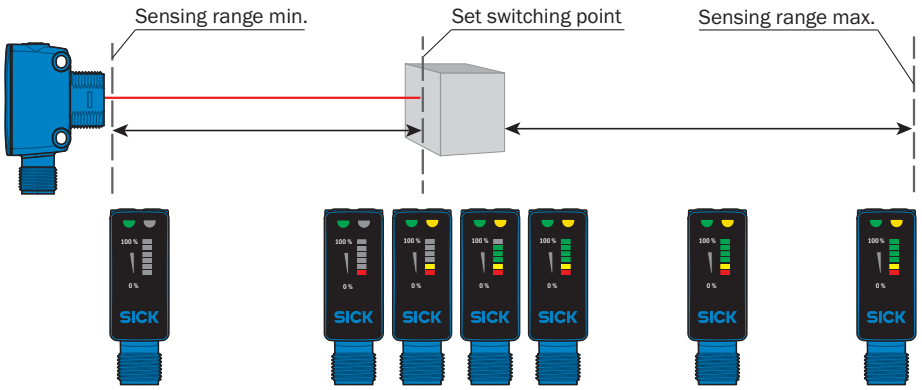


## Sensing range diagram




① Sensing range on black, 6% remission factor
② Sensing range on gray, 18% remission factor
③ Sensing range on white, 90% remission factor

## Functions




## Recommended accessories

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

| | Brief description | Type | part no. |
|---|---|---|---|
| Mounting systems | | | |
| | • **Description:** Mounting bracket for M18 sensors<br>• **Material:** Steel<br>• **Details:** Steel, zinc coated<br>• **Items supplied:** Without mounting hardware<br>• **Suitable for:** GR18, V180-2, V18, W15, Z1, Z2 | BEF-WN-M18 | 5308446 |
| | • **Description:** Plate N11N for universal clamp bracket<br>• **Material:** Stainless steel<br>• **Details:** Stainless steel 1.4571 (sheet), Stainless steel 1.4408 (clamp)<br>• **Items supplied:** Universal clamp (5322627), mounting hardware<br>• **Usable for:** DeltaPac, Glare, WTD20E | BEF-KHS-N11N | 2071081 |

| | Brief description | Type | part no. |
|---|---|---|---|
| connectors and cables | | | |
| | • **Connection type head A:** Female connector, M12, 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:** Uncontaminated zones, Zones with chemicals | YF2A14-050VB3XLEAX | 2096235 |
| | • **Description:** Unshielded<br>• **Connection type head A:** Male connector, M12, 4-pin, straight, A-coded<br>• **Connection systems:** Screw-type terminals<br>• **Permitted cross-section:** ≤ 0.75 mm² | STE-1204-G | 6009932 |
| | • **Connection type head A:** Female connector, M12, 4-pin, straight, A-coded<br>• **Connection type head B:** Flying leads<br>• **Signal type:** Sensor/actuator cable<br>• **Cable:** 5 m, 4-wire, PUR, halogen-free<br>• **Description:** Sensor/actuator cable, unshielded<br>• **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.”**

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