



## **CSS-WBFA54118AA10Z**

CSS/CSX High Speed

**COLOR SENSORS**

**SICK**  
Sensor Intelligence.



Illustration may differ



## Ordering information

| Type               | part no. |
|--------------------|----------|
| CSS-WBFA54118AA10Z | 1120169  |

Other models and accessories → [www.sick.com/CSS\\_CSX\\_High\\_Speed](http://www.sick.com/CSS_CSX_High_Speed)

## Detailed technical data

## Features

|                                      |  |
|--------------------------------------|--|
| <b>Dimensions (W x H x D)</b>        | 26 mm x 62 mm x 47.5 mm  |
| <b>Sensing distance</b>              | 60 mm  |
| <b>Sensing distance tolerance</b>    | ± 9 mm   |
| <b>Housing design</b>                | S housing  |
| <b>Light source</b>                  | LED, RGB <sup>1)</sup>   |
| <b>LED risk group marking</b>        | 1  |
| <b>Wave length</b>                   | 460 nm, 530 nm, 625 nm   |
| <b>Light emission</b>                | Long side of housing   |
| <b>Light spot size</b>               | Ø 12 mm  |
| <b>Light spot direction</b>          | Round, large   |
| <b>Teach-in mode</b>                 | Single value teach-in<br>Multi value teach-in                                |
| <b>Color mode</b>                    | C (Color)<br>C + I (Color + Illumination)                                    |
| <b>Output mode</b>                   | 4 colors in standard mode/best fit mode<br>15 colors in coded mode           |
| <b>Adjustment of the sensitivity</b> | Continuous: 0 ... 999  |
| <b>Available job banks</b>           | 4  |
| <b>Output (channel)</b>              | 4 x hardware switching outputs<br>24 x virtual switching outputs via IO-Link |

<sup>1)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

|                       |      |
|-----------------------|------|
| Parameter presettings | None |
|-----------------------|------|

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

## Mechanics/electronics

|                                  |  |
|----------------------------------|--|
| Supply voltage                   | 10.8 V DC ... 28.8 V DC <sup>1)</sup>  |
| Ripple                           | $\leq 5$ V <sub>pp</sub> <sup>2)</sup>   |
| Current consumption              | < 120 mA <sup>3)</sup>   |
| Switching frequency              | 13.8 kHz   |
| Response time                    | 36 µs  |
| Jitter                           | 18 µs  |
| Switching output                 | Push-pull: PNP/NPN   |
| Switching output (voltage)       | Push-pull: PNP/NPN HIGH = U <sub>V</sub> - 3 V/LOW $\leq$ 3 V  |
| Output current I <sub>max.</sub> | 100 mA <sup>4)</sup>   |
| Input, teach-in (ET)             | Teach: U = 10 V ... < V <sub>S</sub>   |
| Input, blanking input (AT)       | Blanked: U = 10 V ... < U <sub>V</sub>   |
| Retention time (ET)              | 3 s, non-volatile memory   |
| Connection type                  | Male connector M12, 8-pin  |
| Protection class                 | III  |
| Circuit protection               | U <sub>V</sub> connections, reverse polarity protected<br>Output Q short-circuit protected<br>Interference pulse suppression |
| Enclosure rating                 | IP67   |
| Weight                           | 68 g   |
| Housing material                 | VISTAL®  |
| Optics material                  | Glass  |

1) Limit values: DC 12 V (-10 %) ... DC 24 V (+20 %). Operation in short-circuit protected network max. 8 A.

2) May not fall below or exceed U<sub>V</sub> tolerances.

3) Without load.

4) Total current of all Outputs.

## Communication interface

|                        |  |
|------------------------|--|
| IO-Link                | ✓, IO-Link   |
| VendorID               | 26   |
| DeviceID HEX           | 80028E   |
| DeviceID DEC           | 8389262  |
| Process data structure | Bit 0 = switching signal Q <sub>L1</sub><br>Bit 1 = empty<br>Bit 2 = Quality of Run Alarm<br>Bit 3 ... 5 = Emission Color<br>Bit 6 ... 15 = Measurement Value Emission Color |
| Digital output         | Q <sub>1</sub> ... Q <sub>4</sub>  |
| Number                 | 4  |
| Digital input          | I <sub>n1</sub> , I <sub>n2</sub>  |
| Number                 | 2  |

## Ambient data

|                                      |  |
|--------------------------------------|--|
| <b>Ambient operating temperature</b> | -20 °C ... +60 °C                        |
| <b>Ambient temperature, storage</b>  | -25 °C ... +75 °C                        |
| <b>Shock load</b>                    | According to IEC 60068-2-27 (30 g/11 ms) |
| <b>UL File No.</b>                   | E181493                                  |

## Connection type/pinouts

|                        |                                  |
|------------------------|----------------------------------|
| <b>Connection type</b> | Male connector M12, 8-pin        |
| <b>Pinouts</b>         |                                  |
| WH 1                   | Q <sub>L1</sub> /IN <sub>1</sub> |
| BN 2                   | +(L+)                            |
| GN 3                   | Q <sub>L1</sub> /C               |
| YE 4                   | Q <sub>L2</sub>                  |
| GY 5                   | IN <sub>2</sub>                  |
| PK 6                   | Q <sub>L3</sub>                  |
| BU 7                   | - (M)                            |
| RD 8                   | Q <sub>L4</sub>                  |

## Certificates

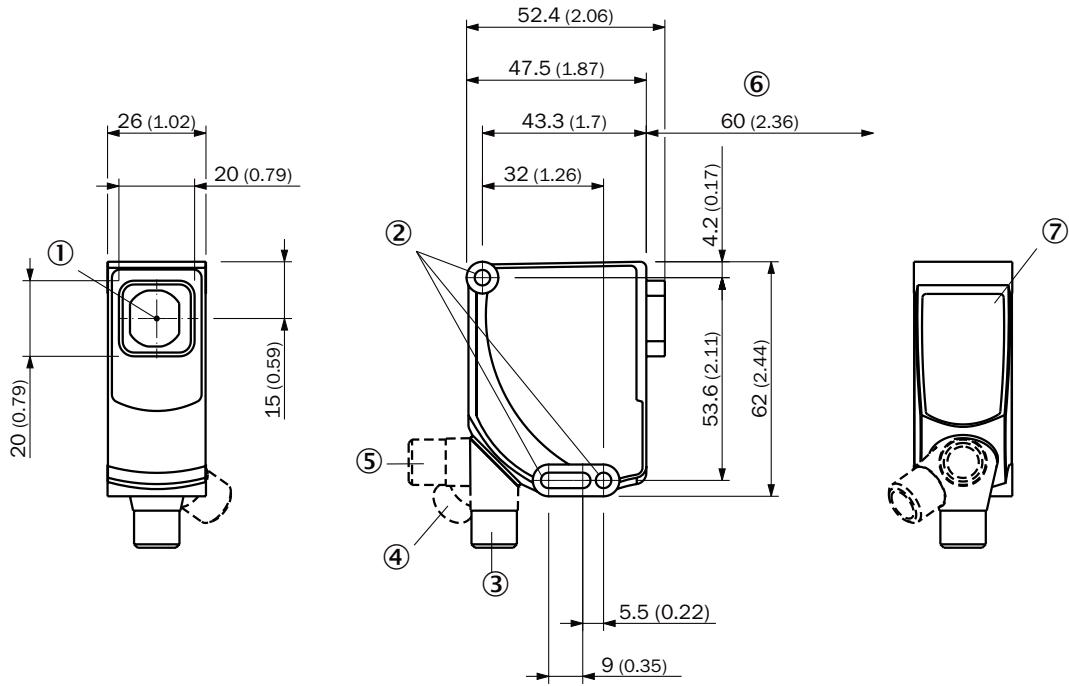
|  |   |
|--|---|
| <b>EU declaration of conformity</b>          | ✓ |
| <b>UK declaration of conformity</b>          | ✓ |
| <b>ACMA declaration of conformity</b>        | ✓ |
| <b>Moroccan declaration of conformity</b>    | ✓ |
| <b>China-RoHS</b>                            | ✓ |
| <b>cULus certificate</b>                     | ✓ |
| <b>IO-Link</b>                               | ✓ |
| <b>Photobiological safety (IEC EN 62471)</b> | ✓ |

## Classifications

|                     |          |
|---------------------|----------|
| <b>ECLASS 5.0</b>   | 27270907 |
| <b>ECLASS 5.1.4</b> | 27270907 |
| <b>ECLASS 6.0</b>   | 27270907 |
| <b>ECLASS 6.2</b>   | 27270907 |
| <b>ECLASS 7.0</b>   | 27270907 |
| <b>ECLASS 8.0</b>   | 27270907 |
| <b>ECLASS 8.1</b>   | 27270907 |
| <b>ECLASS 9.0</b>   | 27270907 |
| <b>ECLASS 10.0</b>  | 27270907 |
| <b>ECLASS 11.0</b>  | 27270907 |
| <b>ECLASS 12.0</b>  | 27270907 |
| <b>ETIM 5.0</b>     | EC001817 |
| <b>ETIM 6.0</b>     | EC001817 |
| <b>ETIM 7.0</b>     | EC001817 |

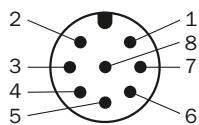
|                |          |
|----------------|----------|
| ETIM 8.0       | EC001817 |
| UNSPSC 16.0901 | 39121528 |

## Dimensional drawing, sensor



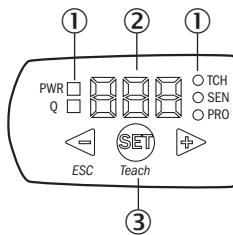
Dimensions in mm (inch)

- ① Optical axis
- ② fixing hole
- ③ M12 male connector, delivery state
- ④ M12 male connector, end stop right
- ⑤ M12 male connector, end stop left
- ⑥ Sensing distance
- ⑦ display and adjustment elements

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

Connector M12, 8-pin, A-coded

## display and adjustment elements



① LEDs (status display)

② 7-segment display

③ Plus/minus button

## Recommended accessories

Other models and accessories → [www.sick.com/CSS\\_CSX\\_High\\_Speed](http://www.sick.com/CSS_CSX_High_Speed)

|                       | Brief description  | Type               | part no. |
|-----------------------|--|--------------------|----------|
| connectors and cables |  |                    |          |
|                       | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 8-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 5 m, 8-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul> | YF2A18-050UA5XLEAX | 2095653  |
| Mounting systems      |  |                    |          |
|                       | <ul style="list-style-type: none"> <li><b>Description:</b> Plate K for universal clamp bracket</li> <li><b>Material:</b> Steel</li> <li><b>Details:</b> Steel, zinc coated</li> <li><b>Items supplied:</b> Universal clamp (2022726), mounting hardware</li> <li><b>Usable for:</b> W11-2, W12-3, W14-2, W18-3, W23-2, W24-2, W27-3, W30, W32, W34, W36, PL50A, PL80A, P250, UC12, LUT3, KT2, KT5-2, KT8, CS8, DT2, DS30, DS40, W12-2 Laser, W16, W26, KT5</li> </ul>        | BEF-KHS-K01        | 2022718  |
|                       | <ul style="list-style-type: none"> <li><b>Description:</b> Adaptation of CSS High Resolution and CSS High Speed to third party hole pattern</li> <li><b>Material:</b> Aluminum</li> <li><b>Details:</b> Aluminum</li> <li><b>Items supplied:</b> Mounting hardware for the sensor included</li> </ul>  | BEF-AP-CSS         | 2137662  |

## 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](http://www.sick.com)