



CSM-WP1B7A1P

CSM

COLOR SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

| Type | Part no. |
|--------------|----------|
| CSM-WP1B7A1P | 1122738 |

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

Detailed technical data

Features

| | |
|-----------------------------------|---|
| Dimensions (W x H x D) | 12 mm x 31.5 mm x 21 mm |
| Sensing distance | ≤ 15 mm |
| Sensing distance tolerance | ± 4 mm |
| Housing design | Small |
| Light source | LED, RGB ¹⁾ |
| Wave length | 640 nm, 525 nm, 470 nm |
| Light spot size | 4.9 mm x 10.1 mm |
| Light spot direction | Vertical |
| Adjustment | Teach-in button, cable, IO-Link |
| Teach-in mode | Teach-in static/dynamic ET: Teach-in dynamic |

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

Mechanics/electronics

| | |
|----------------------------|-----------------------------------|
| Supply voltage | 12 V DC ... 24 V DC ¹⁾ |
| Ripple | < 5 V _{pp} ²⁾ |
| Current consumption | < 50 mA ³⁾ |

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

²⁾ May not exceed or fall below U_v tolerances.

³⁾ Without load.

⁴⁾ With light/dark ratio 1:1.

⁵⁾ Signal transit time with resistive load.

⁶⁾ At supply voltage > 24 V, I_{max} = 50 mA. I_{max} is consumption count of all Q_n.

| | |
|---|---|
| Switching frequency | 1.7 kHz ⁴⁾ |
| Response time | 300 µs ⁵⁾ |
| Jitter | 150 µs |
| Switching output | PNP |
| Switching output (voltage) | PNP: HIGH = $U_V \leq 2 \text{ V}$ / LOW approx. 0 V |
| Switching mode | Light/dark switching |
| Output (channel) | 8 colors via IO-Link |
| Output current I_{\max} | < 100 mA ⁶⁾ |
| Connection type | Male connector M8, 4-pin |
| Protection class | III |
| Circuit protection | U_V connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression |
| Enclosure rating | IP67 |
| Weight | Approx. 20 g |
| Housing material | Plastic, ABS |
| Optics material | Plastic, PMMA |

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

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⁴⁾ With light/dark ratio 1:1.

⁵⁾ Signal transit time with resistive load.

⁶⁾ At supply voltage > 24 V, $I_{\max} = 50 \text{ mA}$. I_{\max} is consumption count of all Q_n .

Communication interface

| | |
|---------------------------------|--|
| IO-Link | ✓, V1.1 |
| Data transmission rate | 38,4 kbit/s (COM2) |
| Cycle time | 2.3 ms |
| VendorID | 26 |
| DeviceID HEX | 800071 |
| DeviceID DEC | 8388721 |
| Process data length | 16 Bit |
| Process data structure A | Bit 0 = switching signal Q_{L1} Bit 1 = switching signal Q_{L2} Bit 2 = Quality of Run Alarm Bit 3 ... 5 = Emission Color Bit 6 ... 15 = Measurement Value RGB |
| Process data structure B | Bit 0 = switching signal Q_{L1} Bit 1 = switching signal Q_{L2} Bit 2 = switching signal Q_{L3} Bit 3 = switching signal Q_{L4} Bit 4 = switching signal Q_{L5} Bit 5 = switching signal Q_{L6} Bit 6 = switching signal Q_{L7} Bit 7 = switching signal Q_{L8} Bit 9 ... 15 = empty |
| Digital output | Q_1, Q_2 |
| Number | 2 |

Ambient data

| | |
|--------------------------------------|------------------------------|
| Ambient operating temperature | -10 °C ... +55 °C |
| Ambient temperature, storage | -20 °C ... +75 °C |
| Shock load | According to IEC 60068 |
| UL File No. | NRKH.E348498 & NRKH7.E348498 |

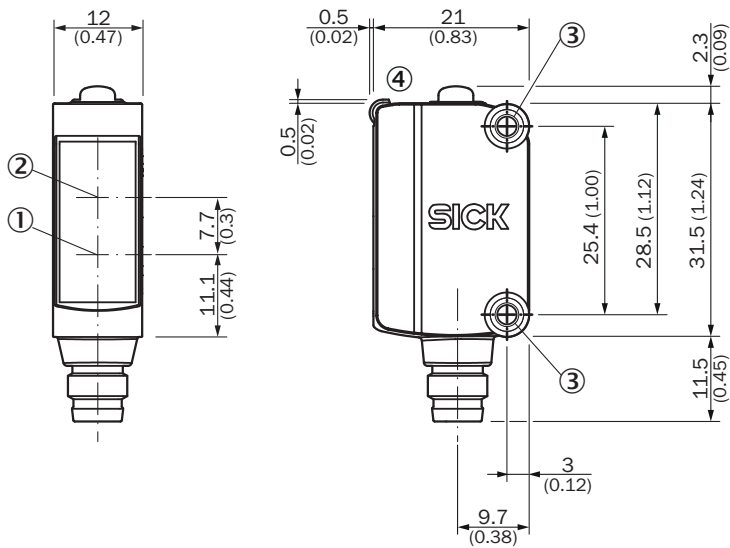
Classifications

| | |
|-----------------------|----------|
| ECLASS 5.0 | 27270907 |
| ECLASS 5.1.4 | 27270907 |
| ECLASS 6.0 | 27270907 |
| ECLASS 6.2 | 27270907 |
| ECLASS 7.0 | 27270907 |
| ECLASS 8.0 | 27270907 |
| ECLASS 8.1 | 27270907 |
| ECLASS 9.0 | 27270907 |
| ECLASS 10.0 | 27270907 |
| ECLASS 11.0 | 27270907 |
| ECLASS 12.0 | 27270907 |
| ETIM 5.0 | EC001817 |
| ETIM 6.0 | EC001817 |
| ETIM 7.0 | EC001817 |
| ETIM 8.0 | EC001817 |
| UNSPSC 16.0901 | 39121528 |

Connection type/pinouts

| | |
|------------------------|--------------------------|
| Connection type | Male connector M8, 4-pin |
| Pinouts | |
| BN 1 | + (L+) |
| WH 2 | Q |
| BU 3 | -(M) |
| BK 4 | Q/C |

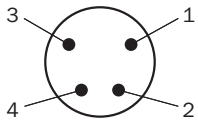
Dimensional drawing (Dimensions in mm (inch))



- ① Center of optical axis, sender
- ② Center of optical axis, receiver
- ③ Mounting holes M3
- ④ Display and adjustment elements

Pinouts

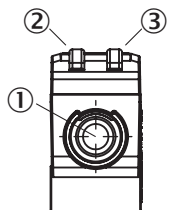
Pinouts, see Technical details: **Connection type/pinouts**



Male connector, M8, 4-pin, uncoded

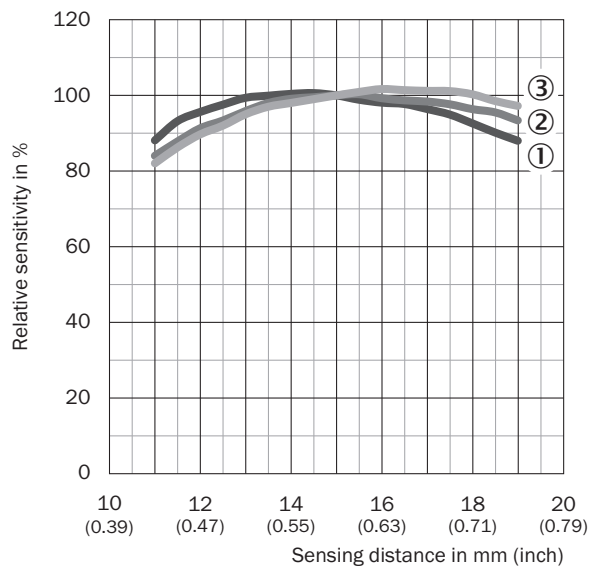
Adjustments

Display and adjustment elements



- ① Teach-in button
- ② LED yellow
- ③ LED green




Sensing distance



- ① Red
- ② Green
- ③ Blue

Recommended accessories

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

| | Brief description | Type | Part no. |
|---|--|--------------------|----------|
| Mounting brackets and plates | | | |
|  | Stainless steel (1.4301) | BEF-WN-G6 | 2062909 |
| Plug connectors and cables | | | |
|  | <ul style="list-style-type: none"> • Connection type head A: Male connector, M8, 4-pin, straight • Description: Unshielded • Connection systems: Screw-type terminals • Permitted cross-section: 0.14 mm² ... 0.5 mm² | STE-0804-G | 6037323 |
| Others | | | |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M8, 4-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 5 m, 4-wire, PVC • Description: Sensor/actuator cable, unshielded • Application: Zones with chemicals | YF8U14-050VA3XLEAX | 2095889 |

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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