



# CSM-WP1B7A2P

CSM

COLOR SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ

### Ordering information

Type	Part no.
CSM-WP1B7A2P	1122739

Other models and accessories → [www.sick.com/CSM](http://www.sick.com/CSM)



### Detailed technical data

#### Features

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

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

#### Mechanics/electronics

<b>Supply voltage</b>	12 V DC ... 24 V DC <sup>1)</sup>
<b>Ripple</b>	< 5 V <sub>pp</sub> <sup>2)</sup>
<b>Current consumption</b>	< 50 mA <sup>3)</sup>

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

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

<sup>3)</sup> Without load.

<sup>4)</sup> With light/dark ratio 1:1.

<sup>5)</sup> Signal transit time with resistive load.

<sup>6)</sup> At supply voltage > 24 V, I<sub>max</sub> = 50 mA. I<sub>max</sub> is consumption count of all Q<sub>n</sub>.

<b>Switching frequency</b>	1.7 kHz <sup>4)</sup>
<b>Response time</b>	300 µs <sup>5)</sup>
<b>Jitter</b>	150 µs
<b>Switching output</b>	PNP
<b>Switching output (voltage)</b>	PNP: HIGH = $U_V \leq 2\text{ V}$ / LOW approx. 0 V
<b>Switching mode</b>	Light/dark switching
<b>Output (channel)</b>	8 colors via IO-Link
<b>Output current <math>I_{\max}</math></b>	< 100 mA <sup>6)</sup>
<b>Connection type</b>	Cable with M12 male connector, 4-pin, 0.2 m
<b>Cable diameter</b>	Ø 3.4 mm
<b>Protection class</b>	III
<b>Circuit protection</b>	$U_V$ connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression
<b>Enclosure rating</b>	IP67
<b>Weight</b>	Approx. 25 g
<b>Housing material</b>	Plastic, ABS
<b>Optics material</b>	Plastic, PMMA

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

<sup>2)</sup> May not exceed or fall below  $U_V$  tolerances.

<sup>3)</sup> Without load.

<sup>4)</sup> With light/dark ratio 1:1.

<sup>5)</sup> Signal transit time with resistive load.

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

## Communication interface

<b>IO-Link</b>	✓, 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
<b>Process data structure A</b>	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
<b>Process data structure B</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
<b>Digital output</b>	$Q_1, Q_2$

Number	2
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Ambient data

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

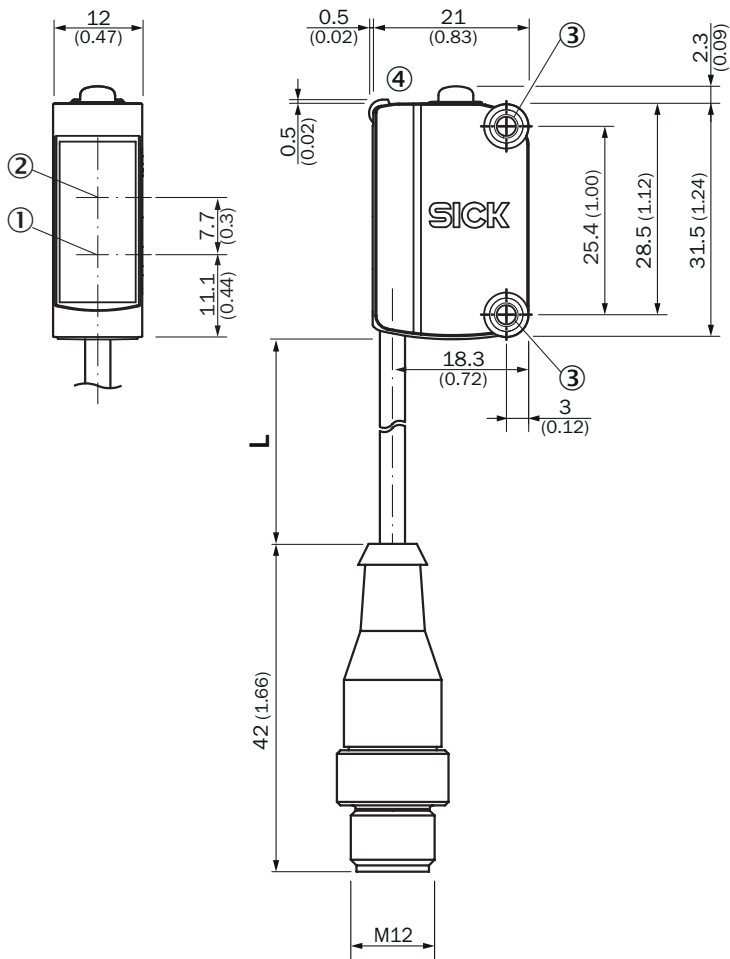
Classifications

<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
<b>ETIM 8.0</b>	EC001817
<b>UNSPSC 16.0901</b>	39121528

Connection type/pinouts

<b>Connection type</b>	Cable with M12 male connector, 4-pin, 0.2 m
<b>Connection type Detail</b>	
Cable diameter	Ø 3.4 mm
Conductor cross section	0.15 mm <sup>2</sup>
Cable material	PVC
<b>Pinouts</b>	
BN 1	+ (L+)
WH 2	Q
BU 3	-(M)
BK 4	Q/C

Dimensional drawing (Dimensions in mm (inch))

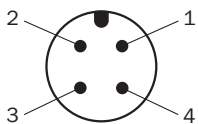


For length of cable (L), see technical data

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

Pinouts

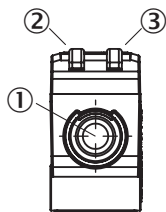
Pinouts, see Technical details: **Connection type/pinouts**



M12 male connector, 4-pin, A-coding

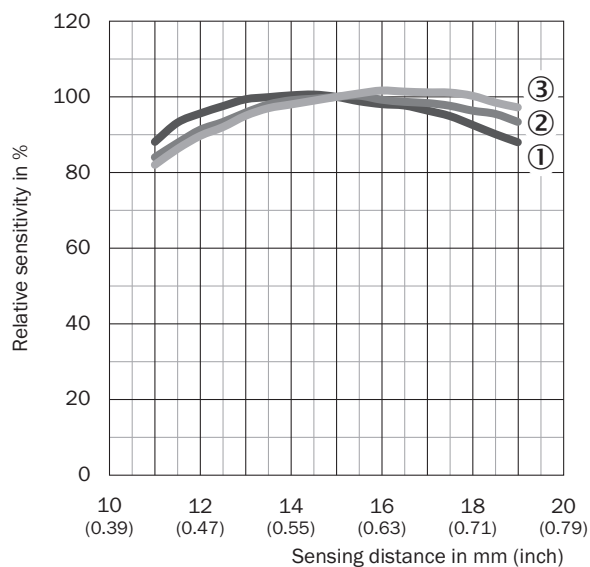
## Adjustments

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

	Brief description	Type	Part no.
Mounting brackets and plates			
	Stainless steel (1.4301)	BEF-WN-G6	2062909

	Brief description	Type	Part no.
Plug connectors and cables			
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Male connector, M12, 4-pin, straight</li> <li>• <b>Description:</b> Unshielded</li> <li>• <b>Connection systems:</b> Screw-type terminals</li> <li>• <b>Permitted cross-section:</b> ≤ 0.75 mm<sup>2</sup></li> </ul>	STE-1204-G	6009932
Others			
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 4-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, 4-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals</li> </ul>	YF2A14-050VB3XLEAX	2096235

## 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)