



## CSM-WP1B7A2P

CSM

COLOR SENSORS

**SICK**  
Sensor Intelligence.



## Ordering information

Type	part no.
CSM-WP1B7A2P	1122739

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

Illustration may differ



## Detailed technical data

## Features

<b>Housing design</b>	Small
<b>Dimensions (W x H x D)</b>	12 mm x 31.5 mm x 21 mm
<b>Light source</b>	LED, RGB <sup>1)</sup>
<b>Light emission</b>	Long side of housing
<b>Light spot size</b>	4.9 mm x 10.1 mm
<b>Light spot direction</b>	Vertical
<b>Wave length</b>	640 nm, 525 nm, 470 nm
<b>Sensing distance</b>	≤ 15 mm
<b>Sensing distance tolerance</b>	± 4 mm
<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  $T_U = +25^\circ\text{C}$ .

## Interfaces

<b>IO-Link</b>	✓, IO-Link V1.1.0
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 8 ... 15 = empty
<b>Digital output</b>		$Q_1, Q_2$
	Number	2

## 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>
<b>Switching frequency</b>	1.7 kHz <sup>4)</sup>
<b>Response time</b>	300 $\mu$ s
<b>Jitter</b>	150 $\mu$ s
<b>Switching output</b>	PNP
<b>Switching output (voltage)</b>	PNP: HIGH = $U_V \leq 2$ 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>5)</sup>
<b>Time delay</b>	None
<b>Protection class</b>	III
<b>Circuit protection</b>	$U_V$ connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression
<b>Connection type</b>	Cable with M12 male connector, 4-pin, 0.2 m

<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 fall below or exceed  $U_V$  tolerances.

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

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

<sup>5)</sup> At supply voltage > 24 V,  $I_{max.} = 50$  mA.  $I_{max.}$  is consumption count of all  $Q_n$ .

## Mechanics

<b>Housing material</b>	ABS
<b>Optics material</b>	PMMA
<b>Weight</b>	Approx. 25 g

## 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>Enclosure rating</b>	IP67
<b>UL File No.</b>	NRKH.E348498 & NRKH7.E348498

## Connection type/pinouts

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

## Certificates

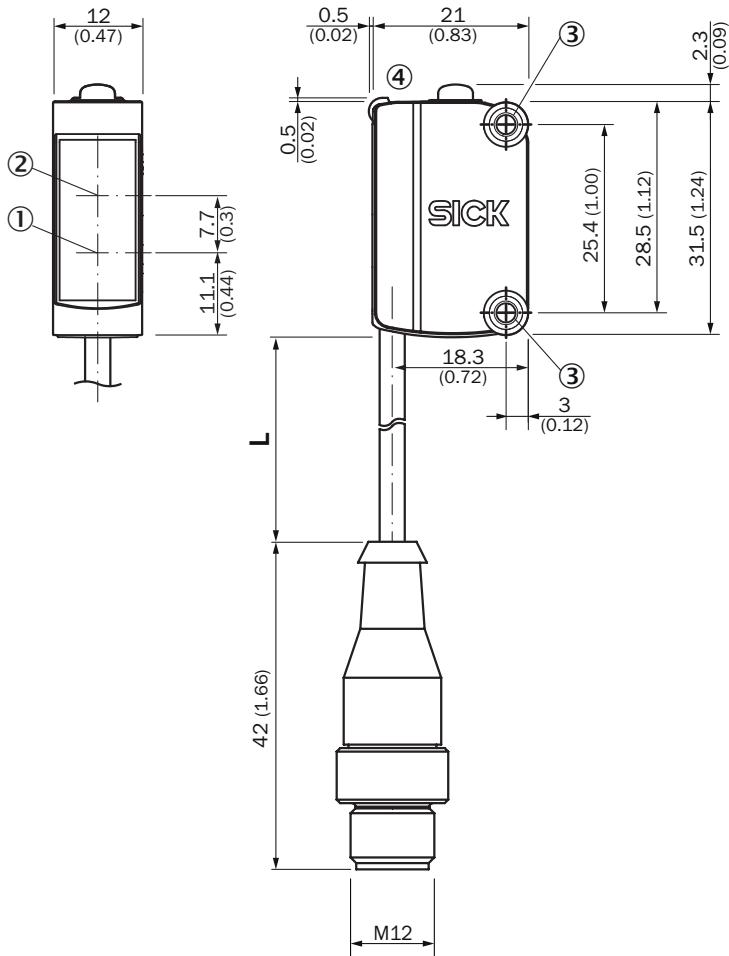
<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓
<b>ACMA declaration of conformity</b>	✓
<b>Moroccan declaration of conformity</b>	✓
<b>China RoHS</b>	✓
<b>cULus certificate</b>	✓
<b>IO-Link certificate</b>	✓
<b>Photobiological safety (IEC EN 62471)</b>	✓
<b>Information according to Art. 3 of Data Act (Regulation EU 2023/2854)</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
<b>ETIM 8.0</b>	EC001817
<b>UNSPSC 16.0901</b>	39121528

Dimensional drawing



Dimensions in mm (inch)

For length of cable (L), see technical data

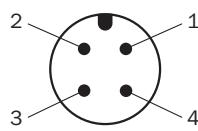
① Center of optical axis, sender

② Center of optical axis, receiver

③ Mounting holes M3

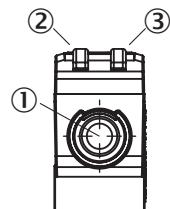
④ display and adjustment elements

Pinouts, see table Technical data: Connection type/pinouts



M12 male connector, 4-pin, A-coding

### display and adjustment elements

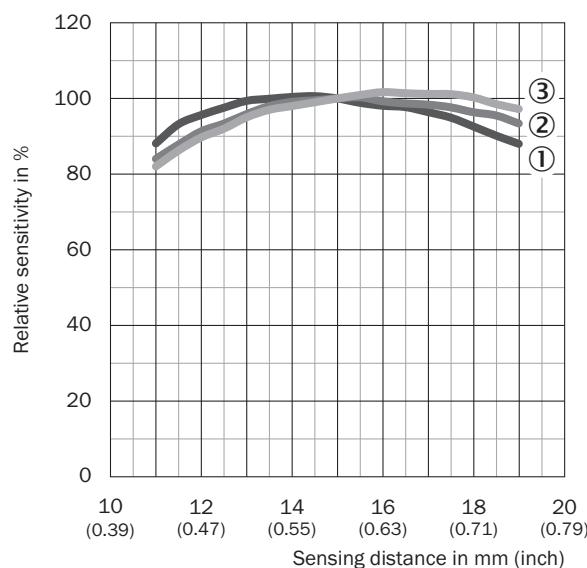


① Teach-in button

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 systems			
	<ul style="list-style-type: none"> <li><b>Material:</b> Stainless steel</li> <li><b>Details:</b> Stainless steel (1.4301)</li> <li><b>Suitable for:</b> W4S, W4S</li> </ul>	BEF-WN-G6	2062909
connectors and cables			
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 4-pin, straight, A-coded</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
	<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> Uncontaminated zones, 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)