



# CSM-WP117A1P

CSM

**COLOR SENSORS**

**SICK**  
Sensor Intelligence.



Illustration may differ



Ordering information

Type	part no.
CSM-WP117A1P	1097438

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

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>	1.5 mm x 6.5 mm
<b>Light spot direction</b>	Vertical
<b>Wave length</b>	640 nm, 525 nm, 470 nm
<b>Sensing distance</b>	≤ 12.5 mm
<b>Sensing distance tolerance</b>	± 3 mm
<b>Adjustment</b>	Teach-in button, cable, IO-Link
<b>Teach-in mode</b>	Static 1-point teach-in

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

Interfaces

<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 <sub>L1</sub> Bit 1 = switching signal Q <sub>L2</sub> 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 <sub>L1</sub> Bit 1 = switching signal Q <sub>L2</sub> Bit 2 = switching signal Q <sub>L3</sub> Bit 3 = switching signal Q <sub>L4</sub> Bit 4 = switching signal Q <sub>L5</sub> Bit 5 = switching signal Q <sub>L6</sub> Bit 6 = switching signal Q <sub>L7</sub> Bit 7 = switching signal Q <sub>L8</sub> Bit 9 ... 15 = empty
<b>Digital output</b>	Q <sub>1</sub> , Q <sub>2</sub>
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 µs
<b>Jitter</b>	150 µs
<b>Switching output</b>	PNP
<b>Switching output (voltage)</b>	PNP: HIGH = U <sub>V</sub> ≤ 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 I<sub>max</sub></b>	< 100 mA <sup>5)</sup>
<b>Time delay</b>	None
<b>Protection class</b>	III
<b>Circuit protection</b>	U <sub>V</sub> connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression
<b>Connection type</b>	Male connector M8, 4-pin

<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<sub>V</sub> tolerances.

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

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

<sup>5)</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>.

## Mechanics

<b>Housing material</b>	ABS
<b>Optics material</b>	PMMA
<b>Weight</b>	Approx. 20 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>	Male connector M8, 4-pin		
<b>Pinouts</b>			
	BN 1	+ (L+)	
	WH 2	Q	
	BU 3	- (M)	
	BK 4	Q/C	

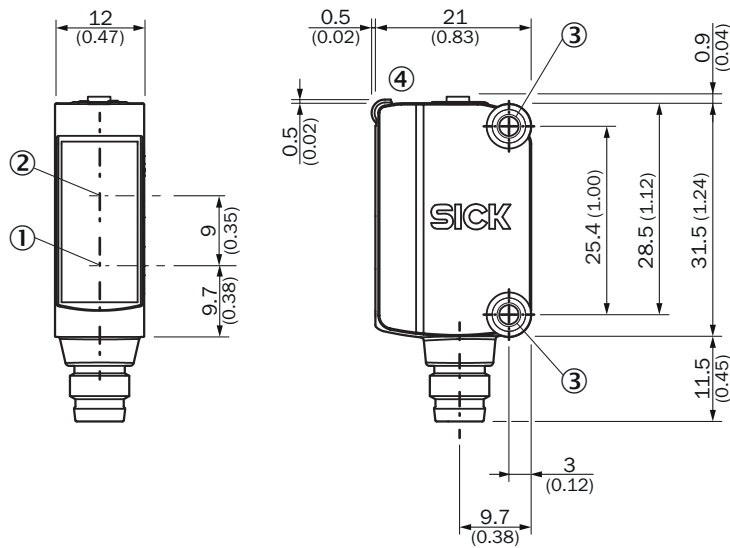
## Classifications

<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

## 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>	✓

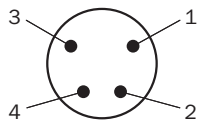
## Dimensional drawing



Dimensions in mm (inch)

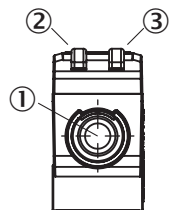
- ① Center of optical axis, sender
- ② Center of optical axis, receiver
- ③ Mounting holes M3
- ④ display and adjustment elements

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



Male connector, M8, 4-pin, uncoded

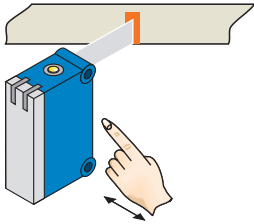
## display and adjustment elements



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

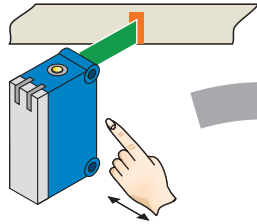
## Setting the switching threshold

### 1. Trigger teach-in

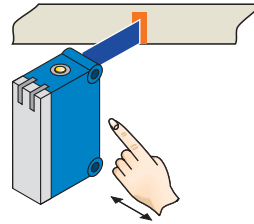


Position object in light field.  
Press teach-in button > 1 s.

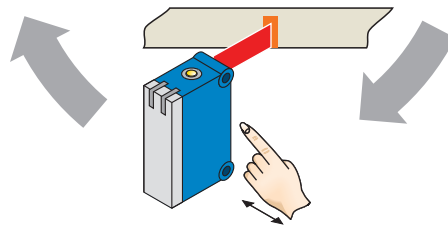
### 2. Select color tolerance



Press teach-in button when  
transmitted light is green  
= **tolerance medium**  
(standard setting).



Press teach-in button when  
transmitted light is blue  
= **tolerance precise.**

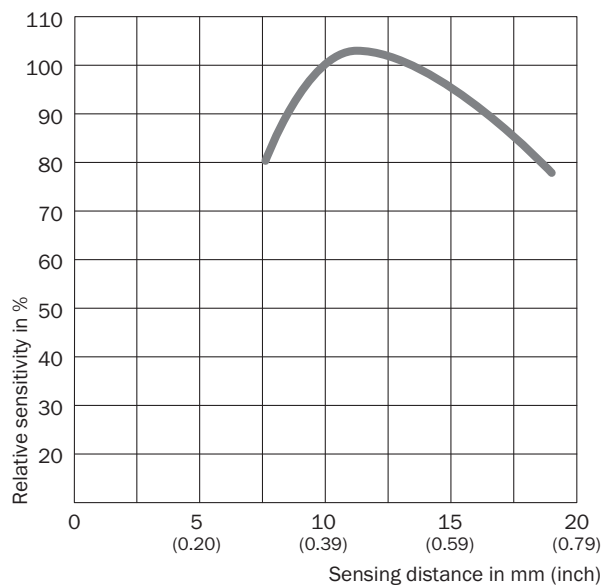


Press teach-in button when  
transmitted light is red  
= **tolerance coarse.**

Teach-in can also be performed using an external control signal (only dynamic teach-in).

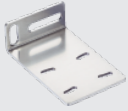





Keylock activation and deactivation: hold down teach-in button > 30 s.

## Sensing distance



## 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
network devices			
		IOLA2US-01101 (SiLink2 Master)	1061790
		SIG200-0A0412200	1089794
		SIG200-0A0G12200	1102605
connectors and cables			
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M8, 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> 0.14 mm² ... 0.5 mm²</li> </ul>	STE-0804-G	6037323
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M8, 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, Uncontaminated zones</li> </ul>	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.”**

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)