



# CSM-WP117A2P

CSM

COLOR SENSORS

**SICK**  
Sensor Intelligence.



## Ordering information

Type	Part no.
CSM-WP117A2P	1067294

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>	12.5 mm <sup>1)</sup>
<b>Sensing distance tolerance</b>	± 3 mm
<b>Housing design (light emission)</b>	Rectangular
<b>Light source</b>	LED, RGB <sup>2)</sup>
<b>Wave length</b>	640 nm, 525 nm, 470 nm
<b>Light spot size</b>	1.5 mm x 6.5 mm
<b>Light spot direction</b>	Vertical
<b>Adjustment</b>	Teach-in button
<b>Teach-in mode</b>	1-point teach-in

<sup>1)</sup> From front edge of lens.

<sup>2)</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>Power consumption</b>	< 50 mA <sup>3)</sup>
<b>Switching frequency</b>	1.7 kHz <sup>4)</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> = 30 mA. I<sub>max</sub> is consumption count of all Q<sub>N</sub>.

<b>Response time</b>	300 $\mu$ s <sup>5)</sup>
<b>Jitter</b>	150 $\mu$ s
<b>Switching output</b>	PNP
<b>Switching output (voltage)</b>	PNP: HIGH = $V_S - \leq 2$ V / LOW approx. 0 V
<b>Output (channel)</b>	8 colors via IO-Link
<b>Output current <math>I_{max}</math></b>	< 100 mA <sup>6)</sup>
<b>Input, teach-in (ET)</b>	PNP Teach: U = 10 V ... < $U_V$ Run: U < 2 V or open
<b>Connection type</b>	Cable with M12 male connector, 4-pin, 0.2 m
<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>	25 g
<b>Housing material</b>	ABS

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,  $I_{max} = 30$  mA.  $I_{max}$  is consumption count of all  $Q_n$ .

## Ambient data

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

## Classifications

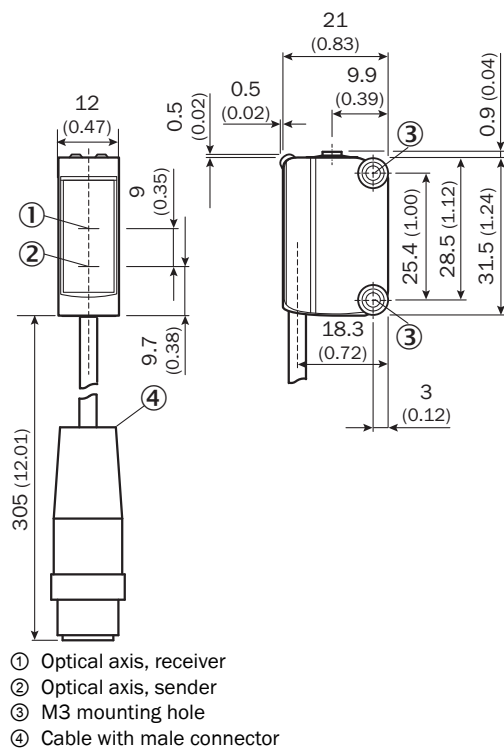
<b>ECI@ss 5.0</b>	27270907
<b>ECI@ss 5.1.4</b>	27270907
<b>ECI@ss 6.0</b>	27270907
<b>ECI@ss 6.2</b>	27270907
<b>ECI@ss 7.0</b>	27270907
<b>ECI@ss 8.0</b>	27270907
<b>ECI@ss 8.1</b>	27270907
<b>ECI@ss 9.0</b>	27270907
<b>ETIM 5.0</b>	EC001817
<b>ETIM 6.0</b>	EC001817
<b>UNSPSC 16.0901</b>	39121528

## Communication interface

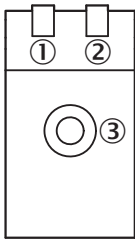
<b>Communication interface</b>	IO-Link V1.0 IO-Link V1.1
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<b>Communication Interface detail</b>	COM2 (38,4 kBaud)
<b>Cycle time</b>	2.3 ms
<b>Process data length</b>	16 Bit
<b>Process data structure A</b>	Bit 0 = switching signal Q <sub>L1</sub> Bit 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 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

**Dimensional drawing** (Dimensions in mm (inch))



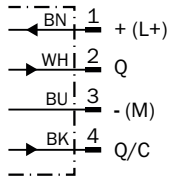
## Adjustments



- ① Status indicator LED, yellow: Status switching output Q
- ② LED indicator green: Supply voltage active
- ③ Teach-in button

## Connection diagram

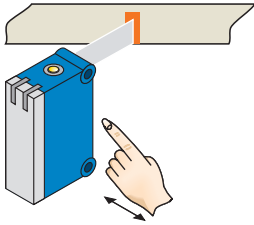
Cd-309



## Concept of operation

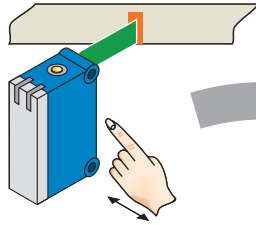
Setting the switching threshold

### 1. Trigger teach-in

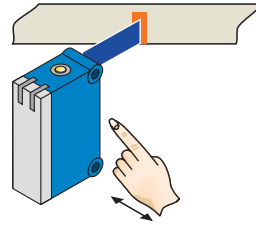


Position object in light field.  
Press teach-in button > 1 s.

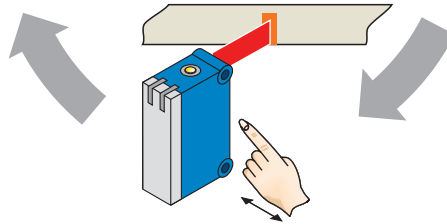
### 2. Select color tolerance



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



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



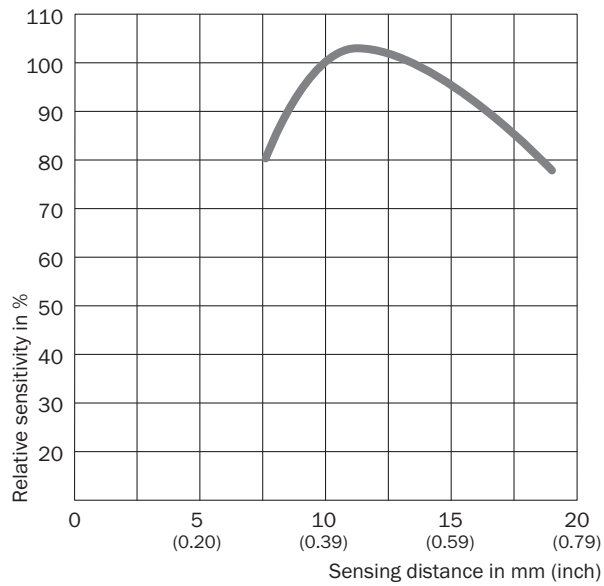
Press teach-in button when  
transmitted light is red  
= **tolerance coarse.**

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.






Teach-in failure: yellow LED indicator and the transmitted light of the sensor flashing quickly.

## Characteristic curve



## 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
Modules and gateways			
	IO-Link version V1.1, Port class 2, PIN 2, 4, 5 galvanically connected, Supply voltage 18 V DC ... 32 V DC (limit values, operation in short-circuit protected network max. 8 A)	IOLP2ZZ-M3201 (SICK Memory Stick)	1064290
	IO-Link V1.1 Class A port, USB2.0 port, optional external power supply 24V / 1A	IOLA2US-01101 (SiLink2 Master)	1061790
Plug connectors and cables			
	Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YF2A14-050VB3XLEAX	2096235
	Head A: male connector, M12, 4-pin, straight Head B: - Cable: unshielded	STE-1204-G	6009932

## 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)