



# CS84-N1112

## CS8

COLOR SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



## Ordering information

Type	Part no.
CS84-N1112	1028230

Other models and accessories → [www.sick.com/CS8](http://www.sick.com/CS8)

## Detailed technical data

### Features

<b>Dimensions (W x H x D)</b>	30.4 mm x 80 mm x 53 mm
<b>Sensing distance</b>	≤ 12.5 mm <sup>1)</sup>
<b>Sensing distance tolerance</b>	± 3 mm
<b>Housing design</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>	2 mm x 4 mm
<b>Light spot direction</b>	Vertical
<b>Adjustment</b>	Teach-in button
<b>Teach-in mode</b>	Static 1-point teach-in

<sup>1)</sup> From leading 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>	10 V DC ... 30 V DC <sup>1)</sup>
<b>Ripple</b>	< 5 V <sub>pp</sub> <sup>2)</sup>
<b>Current consumption</b>	< 120 mA <sup>3)</sup>
<b>Switching frequency</b>	0.5 kHz, 1 kHz, 3.5 kHz <sup>4)</sup> adjustable

<sup>1)</sup> Limit values when operated 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 24 V.

<sup>7)</sup> AT > 200 µs.

<sup>8)</sup> Reference voltage DC 32 V.

<b>Response time</b>	1,000 µs, 500 µs, 145 µs <sup>5)</sup>
<b>Switching output</b>	NPN
<b>Switching output (voltage)</b>	NPN: HIGH = approx. $U_V$ / LOW $\leq 2$ V
<b>Output (channel)</b>	4 colors
<b>Output current <math>I_{\max}</math></b>	100 mA <sup>6)</sup>
<b>Input, teach-in (ET)</b>	NPN Teach: $U < 2$ V Run: $U = 10$ V ... $< U_V$
<b>Input, blanking input (AT)</b>	NPN Blanked: $U < 2$ V Free-running: $U > 10$ V ... $< U_V$ <sup>7)</sup>
<b>Retention time (ET)</b>	25 ms, non-volatile memory
<b>Time delay</b>	Deactivation delay 20 ms, shiftable
<b>Connection type</b>	Male connector M12, 8-pin
<b>Protection class</b>	II <sup>8)</sup>
<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>	400 g
<b>Housing material</b>	Metal, zinc diecast

1) Limit values when operated 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 24 V.

7) AT  $> 200$  µs.

8) Reference voltage DC 32 V.

## Ambient data

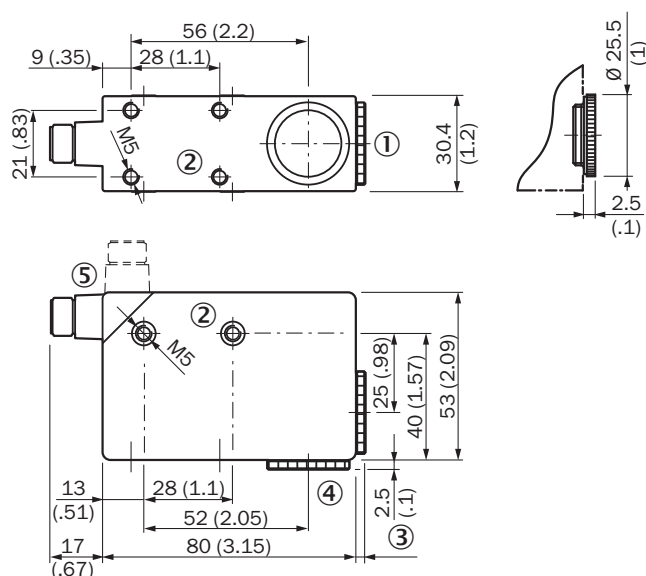
<b>Ambient operating temperature</b>	-10 °C ... +55 °C
<b>Ambient temperature, storage</b>	-20 °C ... +75 °C
<b>Shock load</b>	According to IEC 60068
<b>UL File No.</b>	NRKH.E181493 & NRKH7.E181493

## 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

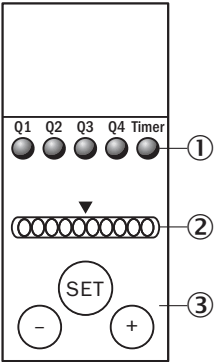
**Dimensional drawing** (Dimensions in mm (inch))



- ① Lens (light emission)
- ② M5 threaded mounting hole, 5.5 mm deep
- ③ See dimensional drawings of lenses
- ④ Blind screw, can be replaced by lens
- ⑤ Connector M12 (rotatable up to 90°)

Adjustments

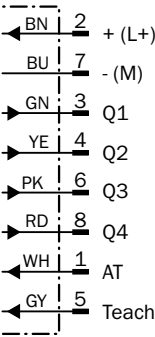
CS8-4



- ① Function signal indicators (yellow)
- ② Bar graph (green), power-on left-hand LED
- ③ Teach-in pushbutton / +/- pushbutton

Connection diagram

Cd-311



Concept of operation

Setting the switching threshold

1. Trigger teach-in

Position object in light field.  
Press SET button > 1 s.

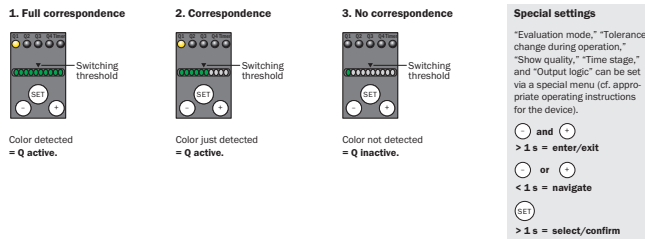
2. Select color tolerance

If requested adapt tolerance with  
"++" button (more coarse) or  
"--" button (more precise).  
Press SET button > 1 s.

3. Allocate channel to color

Allocate channel for color with  
"++" button (Q1 to Q4) or  
"--" button (Q4 to Q1).  
Press SET button > 1 s.


### Display of the color correspondence



### Recommended accessories

Other models and accessories → [www.sick.com/CS8](http://www.sick.com/CS8)

	Brief description	Type	Part no.
Universal bar clamp systems			
	Plate G for universal clamp bracket, steel, zinc coated, Universal clamp (2022726), mounting hardware	BEF-KHS-G01	2022464
	Plate K for universal clamp bracket, steel, zinc coated, Universal clamp (2022726), mounting hardware	BEF-KHS-K01	2022718
	Universal clamp bracket for rod mounting, steel, zinc coated, without mounting hardware	BEF-KHS-KH1	2022726
	Mounting bar, straight, 200 mm, steel, steel, zinc coated, without mounting hardware	BEF-MS12G-A	4056054
	Mounting bar, straight, 300 mm, steel, steel, zinc coated, without mounting hardware	BEF-MS12G-B	4056055
	Mounting bar, L-shaped, 150 mm x 150 mm, steel, steel, zinc coated, without mounting hardware	BEF-MS12L-A	4056052
	Mounting bar, L-shaped, 250 x 250 mm, steel, steel, zinc coated, without mounting hardware	BEF-MS12L-B	4056053
Plug connectors and cables			
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 8-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> 2 m, 8-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, shielded</li> <li><b>Application:</b> Zones with chemicals</li> </ul>	YF2A28-020VA6XLEAX	2096243
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 8-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, 8-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, shielded</li> <li><b>Application:</b> Zones with chemicals</li> </ul>	YF2A28-050VA6XLEAX	2096244
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 8-pin, angled, 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> 2 m, 8-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, shielded</li> <li><b>Application:</b> Zones with chemicals</li> </ul>	YG2A28-020VA6XLEAX	2096218

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	<ul style="list-style-type: none"><li>• <b>Connection type head A:</b> Female connector, M12, 8-pin, straight</li><li>• <b>Description:</b> Unshielded</li><li>• <b>Connection systems:</b> Screw-type terminals</li><li>• <b>Permitted cross-section:</b> 0.25 mm² ... 0.5 mm²</li></ul>	DOS-1208-G	6028422
	<ul style="list-style-type: none"><li>• <b>Connection type head A:</b> Female connector, M12, 8-pin, straight</li><li>• <b>Description:</b> Shielded</li><li>• <b>Connection systems:</b> Screw-type terminals</li><li>• <b>Permitted cross-section:</b> 0.25 mm² ... 0.5 mm²</li></ul>	DOS-1208-GA	6028369

## 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)