



Color sensors CSM1

CSM1-N11114



Model Name > CSM1-N1114
Part No. > 1018514



At a glance

- One color can be saved
- 12.5 mm sensing distance
- Switching frequency 1.5 kHz
- Color tolerance (precise, medium, coarse) can be set
- Static object teach-in via control cable or control panel
- Small housing

Your benefits

- Easy integration into existing machines - even in places where space is limited
- Fast and easy setup saves time and costs
- Broad spectrum of color tolerances enables more flexible use



Features

Dimensions (L x W x H):	22 mm x 12 mm x 40 mm
Sensing distance ¹⁾ :	12.5 mm
Sensing distance tolerance:	± 2 mm
Light source ^{2), 3)} :	LED red, green, blue
Light spot size:	1.5 mm x 6.5 mm
Light spot direction:	Vertical
Adjustment:	Static 1-point teach-in

¹⁾ From front edge of lens ²⁾ Average service life of 100,000 h at T_A = +25 °C ³⁾ Wave length: 470 nm, 525 nm, 640 nm

Mechanics/electronics

Supply voltage Vs ¹⁾ :	DC 12 V ... 24 V
Ripple ²⁾ :	< 5 Vpp
Power consumption ³⁾ :	< 35 mA
Switching frequency ⁴⁾ :	1.5 kHz
Response time ⁵⁾ :	500 µs
Output type:	NPN: HIGH = approx. VS / LOW ≤ 2 V
Switching mode:	NPN
Output (channel):	1 color
Output current I _{max} :	< 100 mA
Input, teach-in (ET):	NPN: U = 10 V ... < U _V , Teach: U < 2 V
Connection type:	Connector M12, 4-pin
Protection class ⁶⁾ :	II

Circuit protection:

VS connections reverse-polarity protected
Output Q short-circuit protected
Interference suppression

Enclosure rating:

IP 67

Weight:

Ca. 11 g

Housing material:

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 short of V_S tolerances ³⁾ Without load ⁴⁾ With light/dark ratio 1:1 ⁵⁾ Signal transit time with resistive load ⁶⁾ Reference voltage DC 50 V

Ambient data

Ambient temperature:

Operation: -10 ... 55 °C, Storage: -20 ... 75 °C

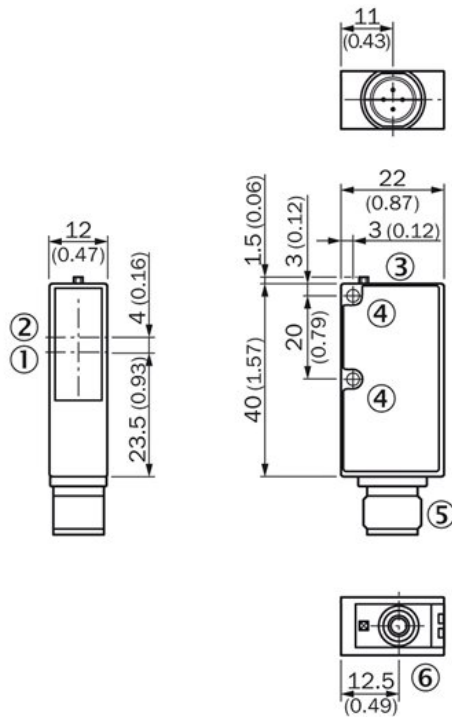
Shock load:

According to IEC 60068

UL File-No.:

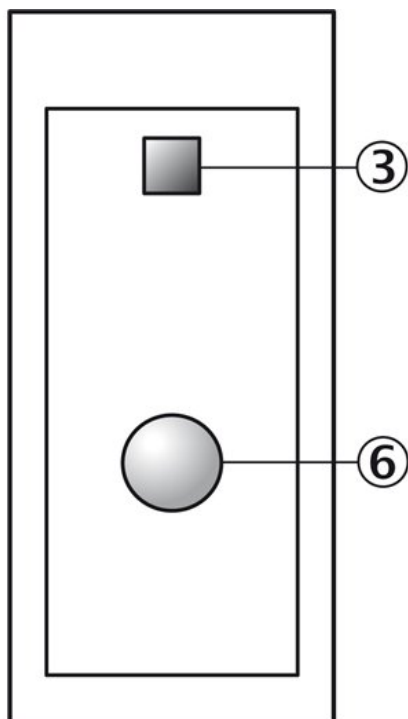
UL No. NRKH.E181493 & cUL No. NRKH7.E181493

Dimensional drawing



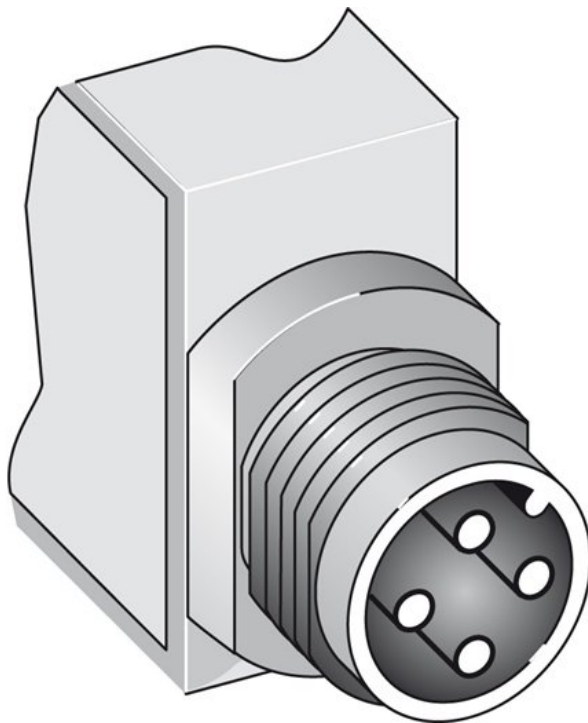
- [1] Center of optical axis, sender
- [2] Center of optical axis, receiver
- [3] LED signal strength indicator
- [4] Mounting hole, Ø 3 mm
- [5] Connector M12
- [6] Teach-in button

Adjustments

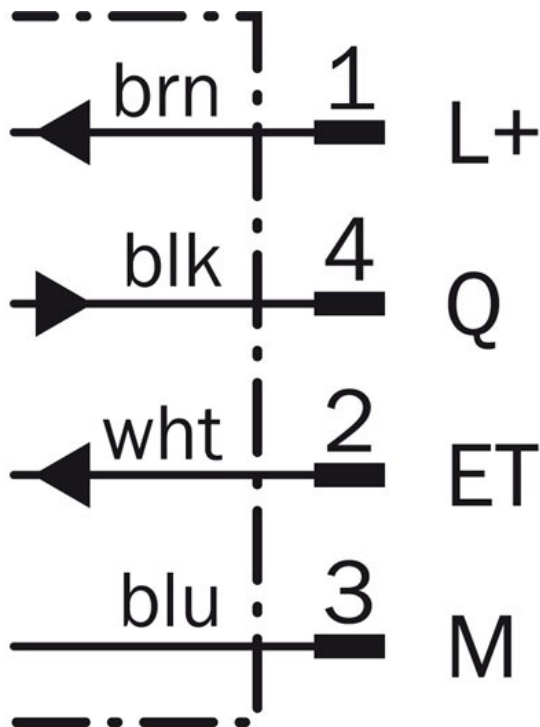


- |3| LED signal strength indicator
- |6| Teach-in button

Connection type

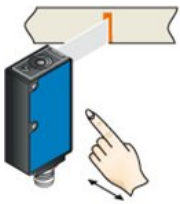


Connection diagram



Setting the switching threshold

1. Trigger teach-in

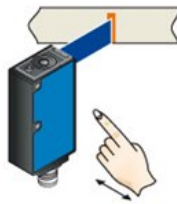


Position object in light field.
Press teach-in button > 1 s.

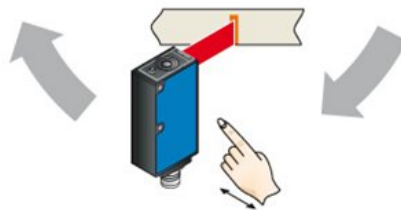
2. Select color tolerance



Press teach-in button > 1 s
when transmitted light is green
= **tolerance medium** (standard
setting).



Press teach-in button > 1 s
when transmitted light is blue
= **tolerance precise.**



Press teach-in button > 1 s
when transmitted light is red
= **tolerance coarse.**

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