



Color sensors for the detection of a single color in restricted space conditions

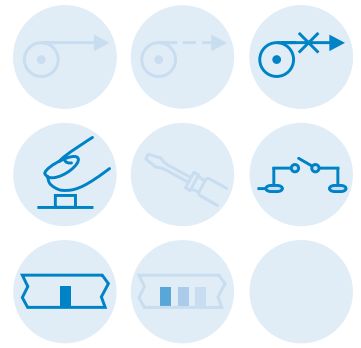
Due to its compact design, the CSM can be used in the most confined of spaces.

The choice of color tolerance is determined during the Teach procedure. The CSM offers the choice between “medium”, “fine” and “coarse” settings. Upon pressing the Teach-in button, the transmission light changes from “green” to “blue” and then to “red”.

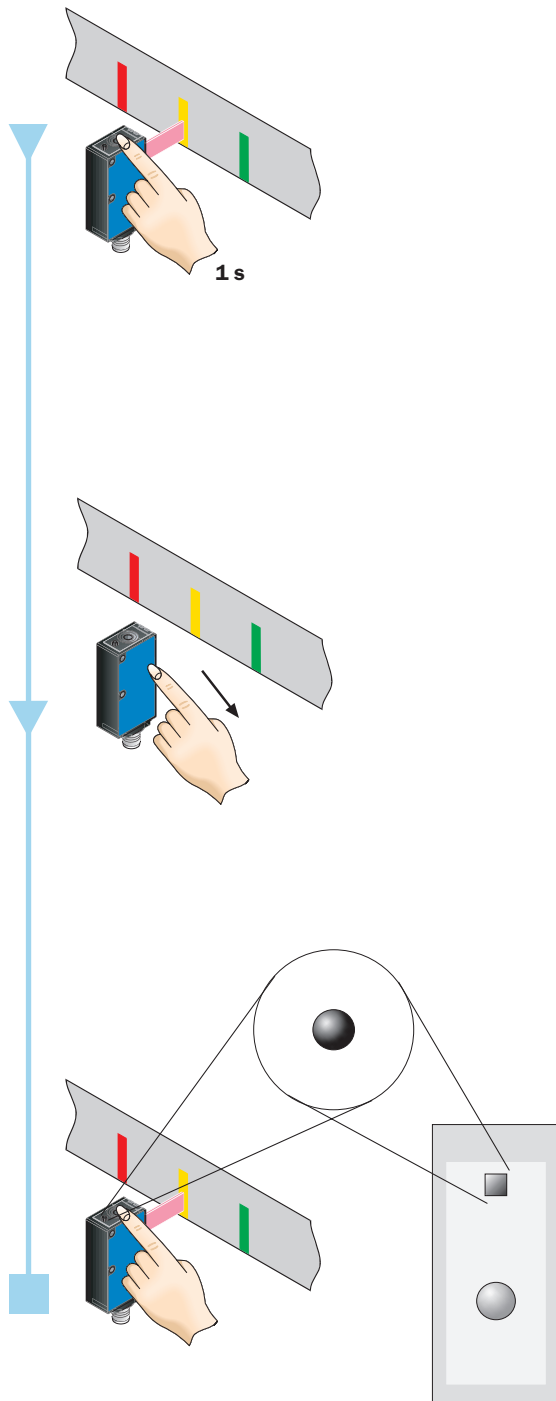
Depending upon which color of the Teach process is triggered, the corresponding color tolerance is automatically set. The simplicity of this procedure characterises the CSM.

Even its switching frequency can be impressive: with 1.5 kHz it compares well to its “larger rivals”.

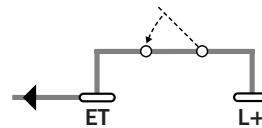




Teach-in: Setting the switch threshold



or



Status

- Upon successfully completing the Teach process, the Receive indicator illuminates.

Notes

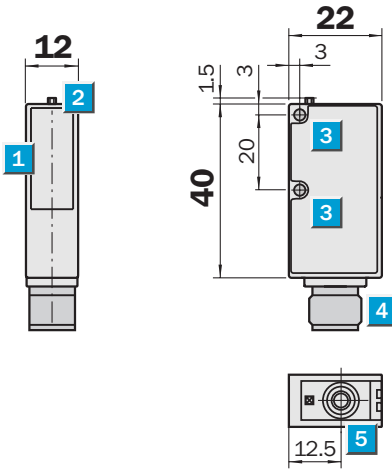
- If the Receive indicator and the red transmitting light flash, the Teach process was unsuccessful. Change the color tolerance.
- During Teach-in using the external control wire, the last color tolerance set by means of the operating console (manual operation) or the factory setting at “medium” is chosen.(i.e., setting of the color tolerance is only possible at the operating console.)
- Upon pressing the Teach-in button, the green transmitting led illuminates for 2 seconds. If in this time the Teach-in button is pressed, the Teach-in process is initiated and the “medium” color tolerance is selected. In the event that the button is not pressed the green light of the transmitting lamp will turn off and the blue light of the transmitting lamp will illuminate for approx. 1 second. If during this time the Teach-in button is pressed, the Teach process will be initiated with the selected color tolerance set to “fine”. If the Teach-in button is not pressed, the blue transmitting light will turn off and the red transmitting light will illuminate for 1 sec. In this time, the Teach-in process will be initiated with the selected color tolerance set to “coarse”.

Scanning distance
12.5 mm

Color sensors scanning principle

- Color tolerance adjustable
- Static Teach-in for objects via means of the control wire or operating console
- Switching frequency 1500/s
- Plug M12

Dimensional drawing

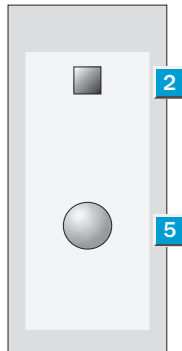


Adjustments possible

CSM 1-P 1114

CSM 1-N 1114

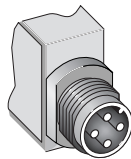
- 1 Centre of optical axis
- 2 Receive indicator
- 3 Mounting hole \varnothing 3.2 mm
- 4 M12 plug, 4-pin
- 5 Teach-in button



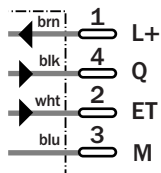
Connection type

CSM 1-P 1114

CSM 1-N 1114



4-pin, M12



Accessories

Cables and connectors



Technical data		CSM 1-	P 1114	N 1114								
Scanning distance, from front	12.5 mm											
edge of lens												
Color tolerance	± 2 mm											
Light source ¹⁾ ; light type	LED; green, red, blue											
Light spot dimension	1.5 x 6.5 mm											
Supply voltage V _S	24 V DC ±20%											
Ripple ²⁾	< 5 V _{SS}											
Current consumption ³⁾	< 35 mA											
Switching outputs	NPN: HIGH = V _S /LOW = < 2 V											
	PNP: HIGH = V _S - < 2 V/LOW = approx. 0 V											
Output current I _A max.	100 mA											
Response time ⁴⁾	500 μs											
Switching frequency ⁵⁾	1500/s											
Time delay optional	20 ms											
Teach-in input ET	PNP: Teach > 10 V ... < V _S											
	NPN: Teach 0 V ... < 2 V											
Connection type	Plug M12, 4-pin											
VDE protection class ⁶⁾	□											
Enclosure rating	IP 67											
Circuit protection ⁷⁾	A, B, C											
Ambient temperature T _A	Operation -10 ... +55 °C											
	Storage -20 ... +75 °C											
Shock load	To IEC 68											
Weight	Approx. 11 g											
Housing material	ABS											

¹⁾ Average service life 100,000 h at T_A = + 25 °C

²⁾ May not exceed or fall short of V_S tolerances

³⁾ Without load

⁴⁾ Signal transit time with resistive load

⁵⁾ With light/dark ratio 1:1

⁶⁾ Reference voltage 50 V DC

⁷⁾ A = V_S connections reverse-polarity protected

B = Output Q short-circuit protected

C = Interference pulse suppression

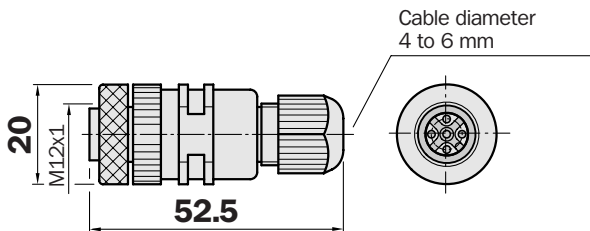
Order information	
Type	Part no.
CSM 1-P 1114	1 022 569
CSM 1-N 1114	1 018 514

Dimensional drawings and order information

SENSICK screw-in system M12, 4- or 5-pin, enclosure rating IP 67

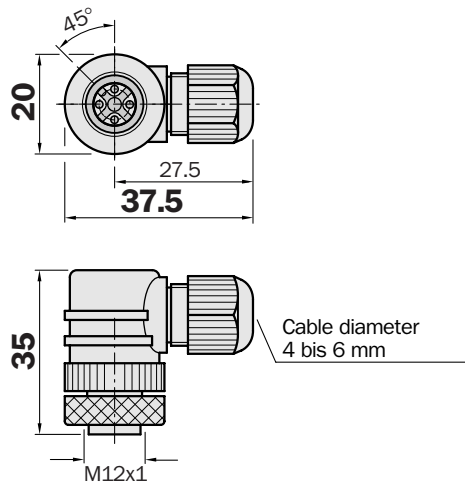
Female connector M12, 4- or 5-pin, straight

Type	Part no.	Contacts
DOS-1204-G	6 007 302	4
DOS-1205-G	6 009 719	5



Female connector M12, 4- or 5-pin, right angle

Type	Part no.	Contacts
DOS-1204-W	6 007 303	4
DOS-1205-W	6 009 720	5



Female connector M12, 4- or 5-pin, straight

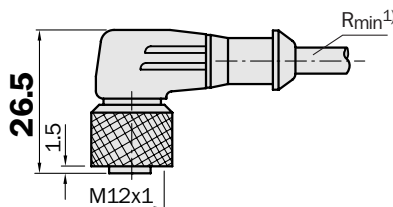
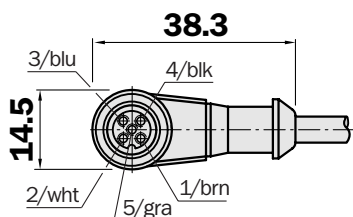
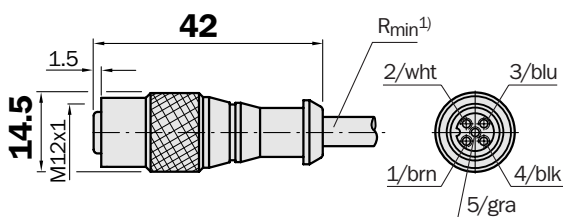
Cable 6 mm, 5 x 0.25 mm², sheath PVC

Type	Part no.	Contacts	Cable length
DOL-1204-G02M	6 009 382	4	2 m
DOL-1204-G05M	6 009 866	4	5 m
DOL-1204-G10M	6 010 543	4	10 m
DOL-1204-G15M	6 010 753	4	15 m
DOL-1205-G02M	6 008 899	5	2 m
DOL-1205-G05M	6 009 868	5	5 m
DOL-1205-G10M	6 010 544	5	10 m

Female connector M12, 4- or 5-pin, right angle

Cable 6 mm, 5 x 0.25 mm², sheath PVC

Type	Part no.	Contacts	Cable length
DOL-1204-W02M	6 009 383	4	2 m
DOL-1204-W05M	6 009 867	4	5 m
DOL-1204-W10M	6 010 541	4	10 m
DOL-1205-W02M	6 008 900	5	2 m
DOL-1205-W05M	6 009 869	5	5 m
DOL-1205-W10M	6 010 542	5	10 m



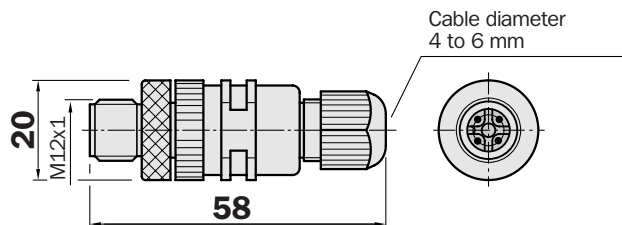
¹⁾ Minimum bend radius in dynamic use
 $R_{min} = 20 \times \text{cable diameter}$

Dimensional drawings and order information

SENSICK screw-in system M12, 4- or 5-pin, enclosure rating IP 67

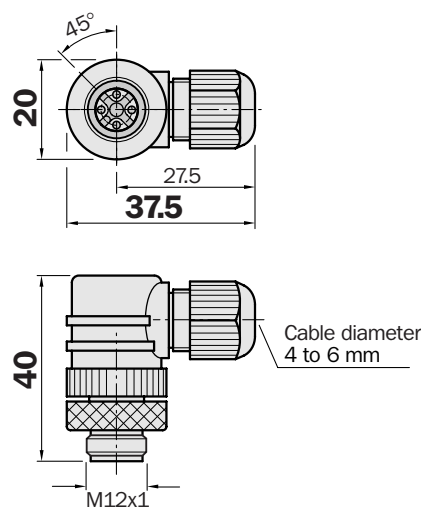
Male connector M12, 4- or 5-pin, straight, pre-assembled

Type	Part no.	Contacts
STE-1204-G	6 009 932	4
STE-1205-G	6 022 083	5



Male connector M12, 4- or 5-pin, right angle, pre-assembled

Type	Part no.	Contacts
STE-1204-W	6 022 084	4
STE-1205-W	6 022 082	5

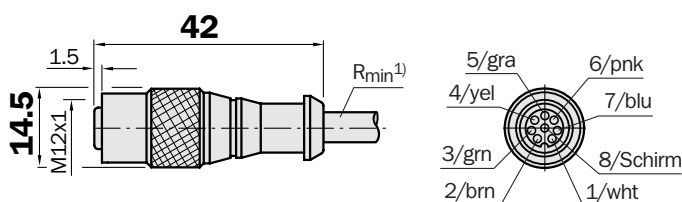


SENSICK screw-in system M12, 8-pin, enclosure rating IP 67

Female connector M12, 8-pin, straight, shielded

Cable 6 mm, 7 x 0,25 mm², sheath PUR

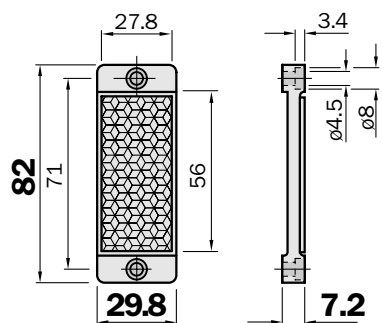
Type	Part no.	Cable length
DOL-1208-G02MB	6 010 748	2 m



Reflectors, plastic design for temperatures up to 65 °C

Reflector 30 x 50 mm²

Type	Part no.
PL 30 A	1 002 314



Reflector 80 x 80 mm²

Type	Part no.
PL 80 A	1 003 865

