

CS8: detect, check and sort colours



W

When colours are the decisive criterion for detecting, checking and sorting, the CS8 color sensor is the right choice.


Thanks to the two scanning ranges of 12.5 mm with a precise light spot and 60 mm with a larger spot, numerous tasks can be handled. A difference in a single colour can be detected using the CS8-1. If more colour distinctions are required, the CS8-4 is available with 4 channels.

The simple teach-in and the bar display make the device especially easy to use. At the teach-in, the light spot is positioned on the colour to be detected, push button – ready. If required, the colour tolerance can easily be adjusted. Using the CS8-4 each channel is selected for a corresponding colour. The high performance color sensors from SICK do not require any complex set-up procedures.

The default setting is selected in such a way that it can handle the majority of applications. However, if especially high speed or high colour resolution is required, you can select from three modes (speed, resolution and combi).

The sensor is then set automatically to the different conditions. The CS8 can be installed flexibly with its robust metal housing, selectable light exits and rotatable M12 plug. Thanks to its electrical and mechanical compatibility and a common teach-in procedure, you can switch from the old generation CS1 to CS8-1 and CS3 to CS8-4 without problems.

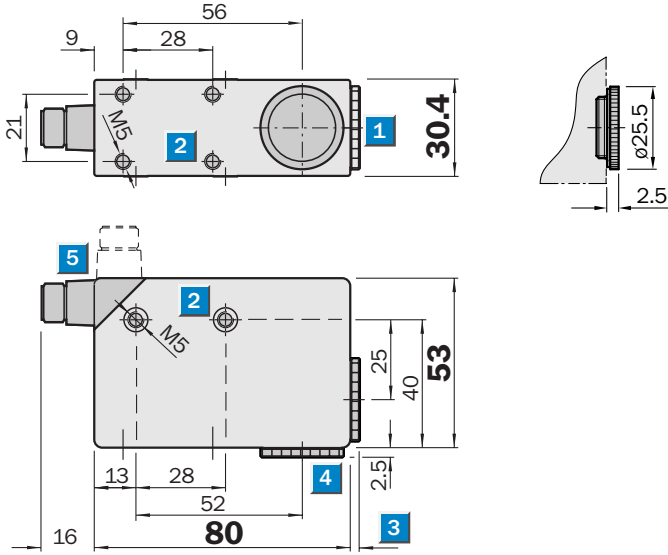
SICK

 **Scanning distance**
12.5 mm/60 mm

Color sensors

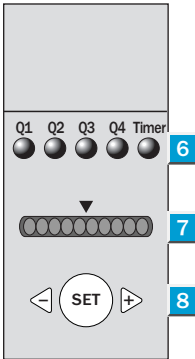
- Response time up to 85 μ s
- High colour resolution
- Quality of colour indicator via bar display
- Very precise light spot
- High geometrical resolution
- Metal housing with 2 light exits (changeable)

Dimensional drawing



Adjustments possible

All Types

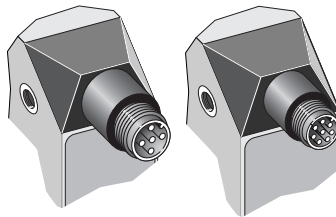


- 1 Lens (light transmission)
- 2 M5 mounting holes, 5.5 mm deep
- 3 See dimensional drawing of lens
- 4 Blind screw can be replaced by lens 1
- 5 5-pin, M12 x 1 plug (rotatable through 90°) or 8-pin, M12 x 1 plug (rotatable through 90°)
- 6 Function signal indicators (yellow)
- 7 Bar display (green), Power on \triangle left LED
- 8 Teach-in button/“+” and “-” button

Connection type

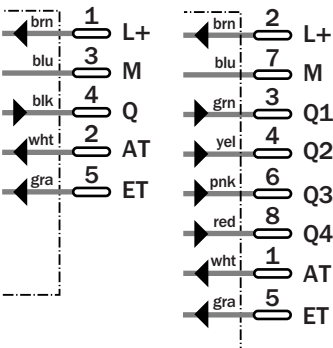
CS8-1

CS8-4



5-pin, M12

8-pin, M12



Technical data		CS8	1-P1112	1-P3612	4-P1112	4-P3612	1-N1112	1-N3612	4-N1112	4-N3612		
Scanning distance,	12.5 ± 3 mm											
from front edge of housing	60 ± 9 mm											
Light spot size	4 x 2 mm ² (at 12.5 mm)											
	13 x 13 mm ² (at 60 mm)											
Light source⁴⁾	LED; red, green, blue											
Wave length (nm)	640, 525, 470											
Light spot direction	Longitudinal											
Scanning range with PL80A reflector	100 ... 250 mm											
	250 ... 1000 mm											
Supply voltage V_S	10 ... 30 V DC ²⁾											
Residual ripple ³⁾	< 5 V											
Current consumption ⁴⁾	< 80 mA											
Switching outputs	PNP: HIGH = V _S - < 2 V / LOW = 0 V											
	NPN: HIGH = V _S / LOW = < 2 V											
Output current I _A max.	< 120 mA											
Switching frequency ⁵⁾	Adjustable											
	1 kHz (0,5 ms); 3 kHz (160 μs); 6 kHz (85 μs)											
	0,5 kHz (1 ms); 1 kHz (500 μs); 3,5 kHz (145 μs)											
Timer	Off delay 20 ms adjustable											
Output (Channel)	1 colour											
	4 colours											
Teach-in input ET	PNP: Teach > 10 V ... < V _S											
ET > 2ms	Run 0 V or unswitched											
	NPN: Teach 0 V											
	Run V _S or unswitched											
Blanking input AT	AT > 200 μs											
Blanked	PNP: AT > 10 V											
Free running	AT > 2 V or unswitched											
	NPN: AT < 2 V											
	AT > 10 V or unswitched											
Retention time	25 ms, non-volatile memory											
Connection type	M12 plug, 5-pin											
	M12 plug, 8-pin											
VDE protection class ⁶⁾	□											
Circuit protection ⁷⁾	A, B, C, D											
Enclosure rating	IP 67											
Ambient temperature T_A	Operation -10 ... +55 °C											
	Storage -25 ... +75 °C											
Shock load	To IEC 68											
Weight	Approx. 400 g											
Housing material	Cast zinc											

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

²⁾ Limit values

³⁾ May not exceed or fall short of V_S tolerances

⁴⁾ Without load

⁵⁾ With light/dark ratio 1:1

⁶⁾ Reference voltage 50 V DC

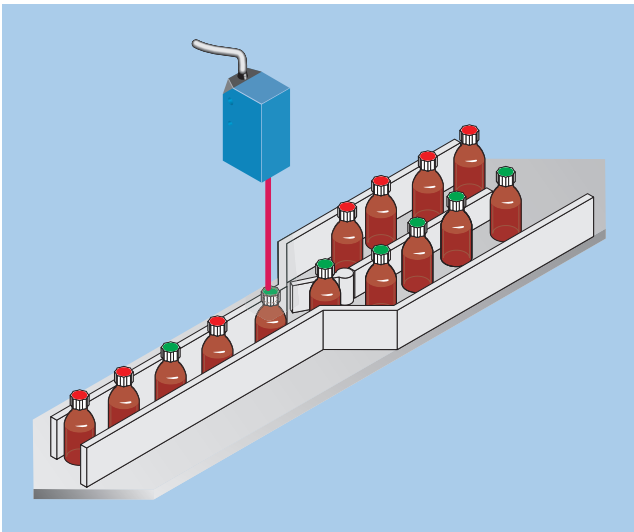
⁷⁾ A = V_S connection reverse-polarity protected

B = Output Q or Q₁ to Q₄ short-circuit protected

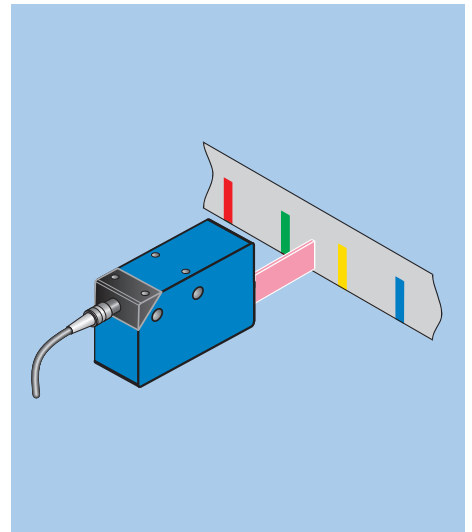
C = Interference pulse suppression

D = Output overcurrent and short-circuit protected

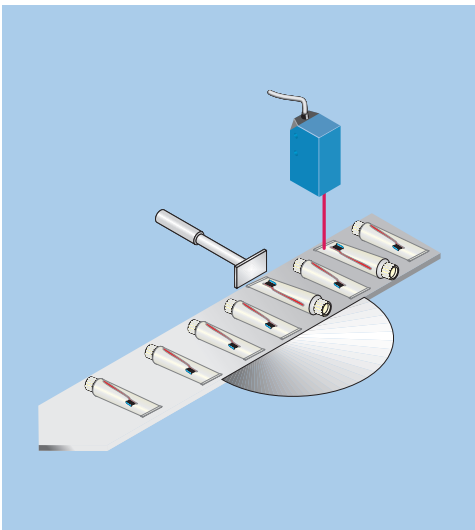
Order information	
Type	Order no.
CS81-P1112	1 028 224
CS81-P3612	1 028 225
CS84-P1112	1 028 226
CS84-P3612	1 028 227
CS81-N1112	1 028 228
CS81-N3612	1 028 229
CS84-N1112	1 028 230
CS84-N3612	1 028 231



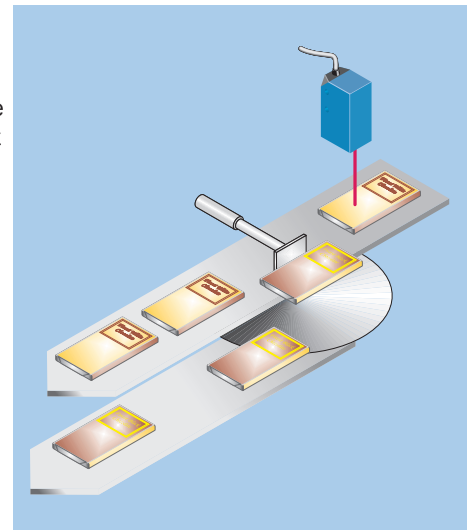
► Print mark control with the CS8: each channel corresponds to one coloured mark.



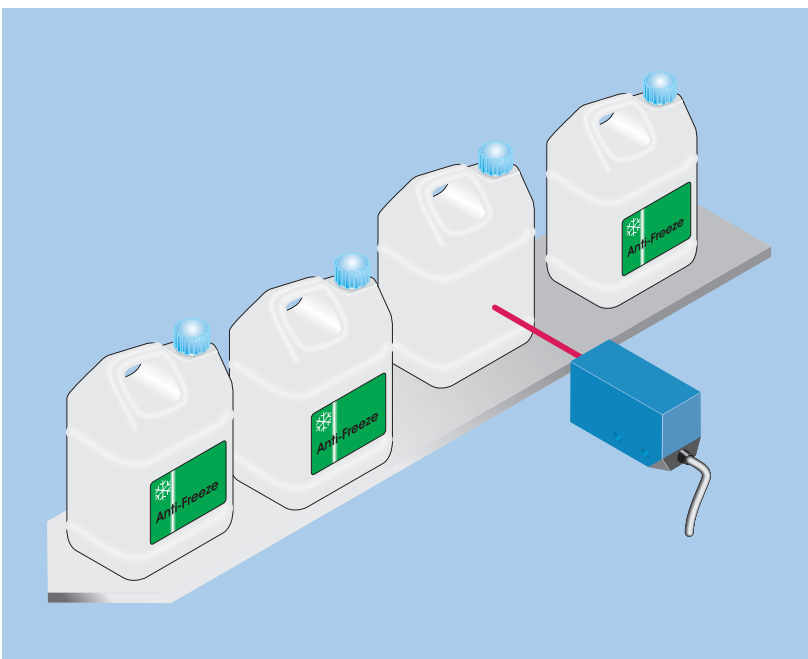
▲ The same shape, different contents: the CS8 assists in sorting if colour remains the only distinguishing feature.



► The chocolate is packed, but is it the right one? The CS8 sorts according to the colour of the different packages.



◀ The CS8 checks prior to packaging, whether the toothpaste tubes have been aligned correctly.



◀ The CS8 detects the presence or absence of the label, using the colour.

Great Britain
Phone +44 (0)1727 83 11 21
E-Mail: info@sick.co.uk

USA
Phone +1(952) 941-6780
tollfree +1-800-325-7425
E-Mail: info@sickusa.com

Australia
Phone +61 3 9497 4100
tollfree +1800 33 48 02
E-Mail: sales@sick.com.au

More representatives and agencies in all major industrial nations at www.sick.com

SICK
Sensor Intelligence.