ONLINE DATA SHEET
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Color sensors
CS8, CS8-4

CS84-P3612

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CS8, CS8-4

Model Name > CS84-P3612
Part No. > 1028227

At a glance

- One (CS8-1) or four (CS8-4) colors can be saved
- 12.5 mm or 60 mm sensing distance
- Fast response time up to 85 µs
- High resolution color
- Bar graph display shows the correlation of the colors
- Extremely precise light spot and high resolution
- Metal housing with two light exits (interchangeable)

Your benefits

- Identify and store up to four colors. No need to reprogram the sensor for changeovers, reducing downtime.
- High resolution colors can be matched exactly for better process reliability
- Maintains the extreme precision of the light spot, enabling a consistent object detection
- A bar graph display provides information about the color quality and detection reliability, ensuring simple process monitoring
- Broad spectrum of color tolerances enables more flexible use
- Fast response times at high speeds for reliable detection
- Detection reliability is not affected by varying temperatures

Features

Dimensions (L x W x H):	53 mm x 30.4 mm x 80 mm
Sensing distance [1]:	60 mm
Sensing distance tolerance:	± 9 mm
Light source [2]: [3]:	LED red, green, blue
Light spot size:	13 mm x 13 mm
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 10 V ... 30 V
Ripple [2]:	< 5 Vpp
Power consumption [3]:	< 120 mA
Switching frequency [4]:	Adjustable, 0.5 kHz 1 kHz 3.5 kHz

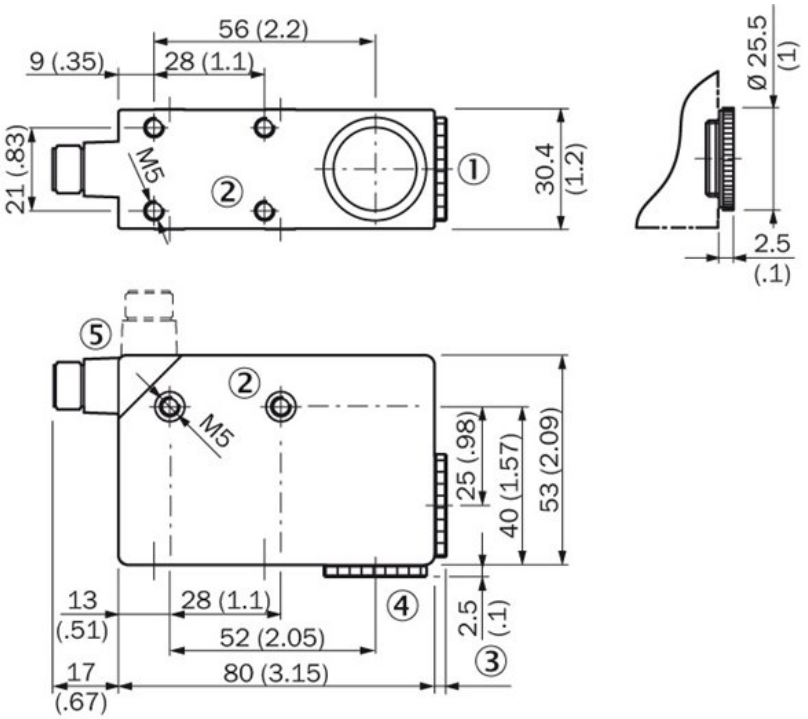
Response time [5]:	1,000 µs 500 µs 145 µs
Output type:	PNP: HIGH = VS- ≤ 2 V/LOW approx. 0 V
Switching mode:	PNP
Output (channel):	4 colors
Output current Imax. [6]:	< 100 mA
Input, teach-in (ET):	PNP:, Run: U < 2 V, Teach: U = 10 V ... < U_V
Input, blanking input (AT) [7]:	Blanked: U > 10 V ... < Uv, Free-running: U < 2 V, PNP:
Retention time (ET):	25 ms, non-volatile memory
Time delay:	Deactivation delay 20 ms, shiftable
Connection type:	Connector M12, 8-pin
Protection class [8]:	II
Circuit protection:	VS connections reverse-polarity protected Output Q short-circuit protected Interference suppression
Enclosure rating:	IP 67
Weight:	Ca. 400 g
Housing material:	Zinc diecast

[1] Limit values: 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] Consumption count Q1 ... Q4 [7] AT > 200 µs [8] Reference voltage DC 32 V

Ambient data

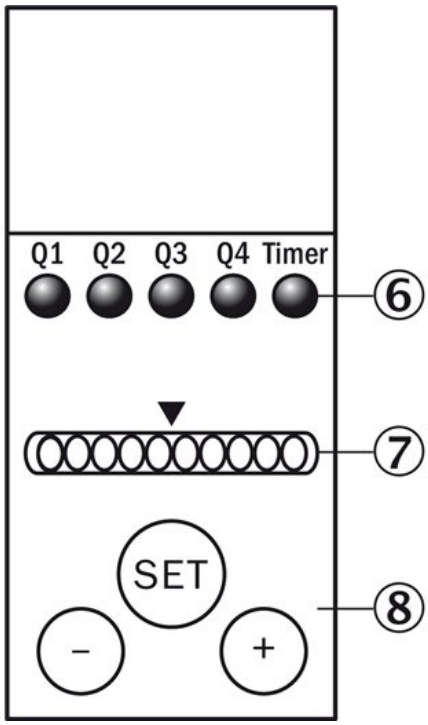
Ambient temperature:	Operation: -10 ... 55 °C, Storage: -20 ... 75 °C
Shock load:	According to IEC 60068
UL File-No.:	UL No. NRKH.E181493 & cUL No. NRKH7.E181493

Dimensional drawing



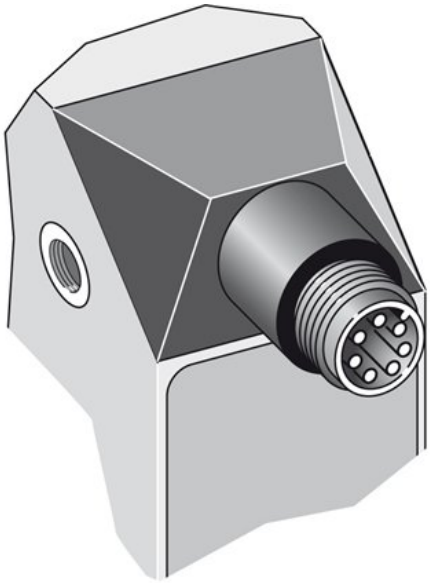
|1| Lens (light transmission)
|2| M5 threaded mounting hole, 5.5 mm deep
|3| See dimensional drawing for lens
|4| Blind screw can be replaced by lens
|5| Connector M12 (rotatable up to 90°)

Adjustments

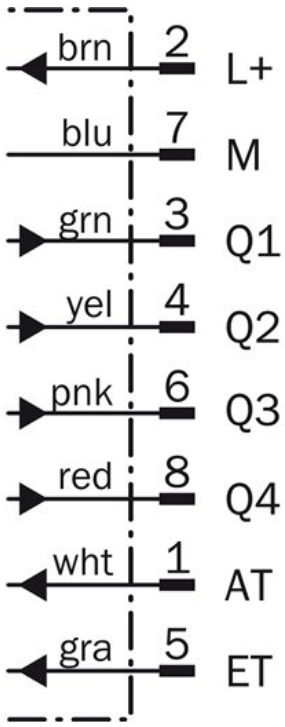


|6| Function signal indicators (yellow)
|7| Bar graph (green), Power on left LED
|8| Teach-in button/"+" and "–" button

Connection type

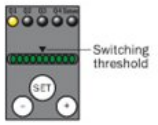


Connection diagram



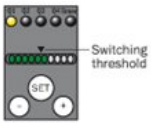
Display of the color correspondence

1. Full correspondence



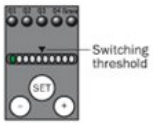
Color detected
= Q active.

2. Correspondence



Color just detected
= Q active.

3. No correspondence



Color not detected
= Q inactive.

Special settings

"Evaluation mode," "Tolerance change during operation," "Show quality," "Time stage," and "Output logic" can be set via a special menu (cf. appropriate operating instructions for the device).

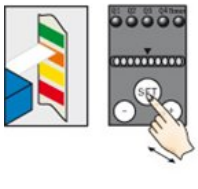
− and +
> 1 s = enter/exit

− or +
< 1 s = navigate

SET
> 1 s = select/confirm

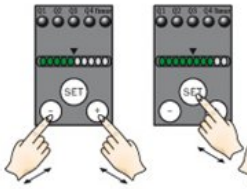
Setting the switching threshold

1. Trigger teach-in



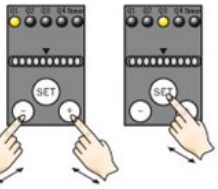
Position object in light field.
Press SET button > 1 s.

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.

4. Confirm teach-in

Press SET button > 1 s.
Color correspondence is visualized via bar graph display.

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