

CS1 Color Sensor

CS1-P1111 FARNELL NO - 7097311

Scanning Range

12.5 and 60 mm



Range

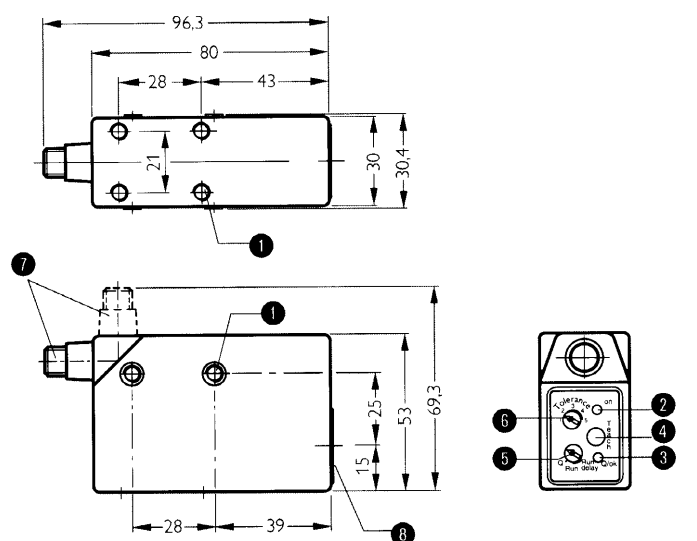
100 ... 1000 mm



Features:

- Comparative three-color method
- Color detection in proximity and reflex (transmission) modes
- Programming with teach-in method (manual or by control lead)
- Individual color selectivity setting
- 2 operating modes: permanent or synchronised (blanked)
- Pilot light
- Switching frequency 1 kHz
- Die-cast housing
- Hinged connector socket (can be rotated through 90°)
- CE

CS1



- ① Mounting holes M5 – 5.5 deep
- ② Operating display (green)
- ③ Function display: switching output/teach (yellow)
- ④ Teach button
- ⑤ Program selector switch
- ⑥ Color-tolerance selector switch
- ⑦ Connector M12 x 1; 5-pin (hinged)
- ⑧ Lens system (aperture)

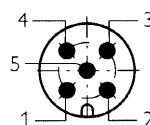
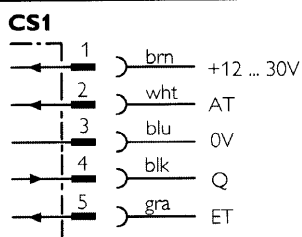
Setting Instructions

In order to simplify setting and operation of the device, the reference color is programmed using the teach-in method.

The color selectivity can be set individually and is defined by changing the position on the rotary switch. The reference colours can then be stored by simply pressing a button.

The programming procedure can also be carried out automatically via the External Teach (ET) control lead. Each pulse causes the sensor to switch to programming mode and determine the color of the scanned object. The system then immediately returns to sensing mode.

Connection Diagram



brn	wht	blu	blk	gra
brown	white	blue	black	gray
braun	weiß	blau	schwarz	grau

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	CS1	-P 1111	-P 3611
Order no.		1 012 858	1 012 859
Scanning range ¹⁾		12.5 mm	60 mm
Scanning range tolerance		± 2 mm	± 9 mm
Light spot dimensions		2 x 4 mm at distance of 12.5 mm	Ø 13 mm at distance of 60 mm
Light spot position		longitudinal	
Range			
With reflector PL 80 A		100...250 mm (object-specific)	250 ... 1000 mm (object-specific)
Supply voltage V_S		DC 12 ... 30 V ²⁾	
Current consumption		80 mA ³⁾	
Residual ripple		< 5 V _{pp} ⁴⁾	
Service life of light source		Average service life 100 000 h at 25°C ambient temperature	
Programming of reference color/ color recording		Teach-in method (either with Teach-in button or External Teach ET input); 1 color can be stored	
Color selectivity/tolerance		variable	(rotary selector switch, 5-stage)
Operating mode		options: permanent (normal/off delay) or synchronized (blanked)	
Immunity to external light sources		up to 20 klx with indirect constant light radiation	
Switching output		Q	(color detected/not detected)
Switching type		PNP	
Output voltage HIGH		V _S - (≥ 2 V)	color detected
Output voltage LOW		0 V	
Output current		100 mA	
Switching frequency		1 kHz	
Duration of Teach impulse		700 µs	
Timer (dropout delay)		variable: 0 ms (run), 20 ms dropout delay (run delay)	
External Teach ET input		automatic programming of reference color	
Teach-in (programming)		signal voltage HIGH:	> 12 V ... < V _S max.
Run		signal voltage LOW:	> 2 V or open-circuited
Response time		≥ 0.5 ms	
Blanking input			
Blanked		signal voltage HIGH:	> 12 V ... < UV max.
Free-running		signal voltage LOW:	< 2 V or open-circuited
Response time		< 0.2 ms	
Type of protection		IP 67	
VDE protection class		II ⁵⁾	
Protective circuits ⁶⁾		A, B, C	
Ambient temperature T _A		- 10 ... + 55°C	
Storage temperature T _S		- 25 ... + 75°C	
Schock/vibration		IEC 68	
Weight		approx. 400 g	

- 1) from edge of housing
2) limit values, non-interchangeable
3) without load, at 24 V DC

- 4) must not exceed or fall below V_S tolerances
5) totally insulated, class 2 as per VDE 0110/0160
(Withstand voltage 50 V)

- 6) A = V_S terminals non-interchangeable
B = switching output Q standard switch on/off,
short-circuit and overload protection
C = spurious pulse suppression

Accessories

Socket M12 x 1; 5-pin, straight, 2 m connecting cable with integral plug, order no. 6 008 899.
Socket M12 x 1; 5-pin, angular, 2 m connecting cable with integral plug, order no. 6 008 900.
Reflector PL 80 A, order no. 1 003 865.

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