

# CR100-FO

## Color Sensor

**D**ue to its design as a sensor with fixed optic the CROMLAVIEW® CR100-FO color sensor is even more compact than the well-known CR100. It recognizes finest color differences on all kinds of surfaces. The working distance lies in a range of 30 mm to 60 mm, depending on this distance the measuring spot diameter varies between 5 mm and 10 mm. There are two methods to put the color sensor into operation, via buttons on the sensor, but also by using the free delivered software CR-tool for parameterization.

The functional principle of the CR100-FO is based on the three range procedure. The measuring light is assessed with the tristimulus value functions and assigned to the three wave length ranges red, green and blue. Through the assessment with these tristimulus value functions the sensor is able to perceive colors similar to the human eye.

The sensor contains an own white light source clocked with a frequency of up to 10 kHz. Sampling takes place in both, the light and the dark phase. Additive ambient light cannot change the difference between the light and dark phase, so that the sensor is independent from ambient light.



### Key Features

- Up to 350 colors can be stored
- Quick response time from 50  $\mu$ s
- 4 channels, with binary encoding 15 channels
- Long-term stability of color recognition without new teach-in by CROMLASTAB®-technology
- Finest color differences can be detected ( $\Delta E < 1$ )
- Fixed optics with a working distance of 30 mm to 60 mm
- Measuring spot diameter 5 mm to 10 mm
- Release of color recognition via trigger
- Signal settings and teach-in of colors via buttons
- PC software CR-Tool for parameterization and validation of color recognition

### Applications

- Presence check
- Print mark detection in Printing machines, banderoling machines, register controls
- Color inspection in final assembly
- Color detection and color control in the food industry

### Options and accessory

- CR-TBox
- CR-COMBox
- Fiber Optics
- Fiber spacer

## Technical Data

Sensing channels	1 Sensing channel 1 Internal stabilization channel
Drift stabilization	CROMLASTAB®, can be switched off
Receiving detector	Three range photo diode
Sensitivity	Adjustable by user
Sensitivity steps	8 (1x, 4x, 20x, 40x, 80x, 200x, 400x, 800x)
Receiving signal resolution	3 x 4096 Steps
Object illumination	Power white light LED, Adjustable (4096 steps) Can be switched off
Ambient light compensation	Can be switched off
Standard interfaces	4 Switching outputs 2 Control inputs Serial (RS232)
Displays	9 LEDs for switching outputs and status
Buttons	3 Buttons for Teach-In
Color resolution	$\Delta E_{Lab} < 1$
Response time	$\geq 50 \mu s$ <sup>1)</sup>
On-/Off-Delay (channel specific)	0 ms ... 65535 ms
Hysteresis	0 % ... 255 %
Color value memory cells	350
Color output channels	4 (up to 15 at binary encoding)
Protection standard	IP 54
Power supply	18 ... 28 VDC, max. 500 mA
Case temperature during operation	-10 °C ... 55 °C
Coupling in signal path	Via fixed optics
Case material	Aluminium, anodized
Working distance	30 mm ... 60 mm
Measuring spot diameter	5 mm ... 10 mm
Case Size	50 mm x 50 mm x 21 mm
Weight	Approx. 80 g

<sup>1)</sup> Limited functionality

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