CR50
Color Sensor

The recognition of finest color differences on surfaces of all kinds is the strength of the CROMLAVIEW® CR50 color sensor. Due to an optical fiber connection the sensor can be adjusted to a large number of applications. Thus, the size of the measuring spot and the measuring distance are variable. Through a sophisticated control concept the sensor can be comfortably be parameterized via buttons.

The integrated stabilization channel technology CROMLASTAB® ensures reliable operation during the whole life cycle and protects it from temperature drift as well.

The functional principle of the CR50 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 2 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 4 colors can be stored**
- **Response time 10 ms or 1 ms (selectable)**
- **4 color output channels**
- **Long-term stability of color recognition without new teach-in by CROMLASTAB®-technology**
- **Easy adjustment to the recognition task via optical fibers and optics**
- **Color recognition released via trigger**
- **Signal settings and teach-in of colors via buttons**

Applications

- Check the presence and correct position of assembly parts
- Control task in printing machines

Options and accessory

- CR-TBox
- Fiber optics
- Optics
- Fiber spacer

Technical Data

Sensing channels	1 Sensing channel 1 internal stabilization channel
Drift stabilization	CROMLASTAB®
Receiving detector	Three range photo diode
Sensitivity	Adjustable
Sensitivity steps	4 (20x, 40x, 80x, 200x)
Receiving signal resolution	3 x 4096 steps
Object illumination	High-power white light LED, Adjustable (4096 steps)
Ambient light compensation	Always activated
Standard interfaces	4 Switching outputs 1 Control input
Displays	9 LEDs for outputs and/or status
Buttons	3 buttons for Teach-In
Color resolution	$\Delta E_{Lab} < 1$
Response time	10 ms, 1 ms
Off-Delay	0 ms, 50 ms
Hysteresis	10 % fixed
Color value memory cells	4
Color output channels	4
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 optical fiber
Case material	Aluminium, anodized
Case size	50 mm × 50 mm × 21 mm
Weight	Approx. 80 g

Vers. 1.1 (2014-07-25), 18-3011-02, Datasheet_CR50_EN_V1.1.docx