

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

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| 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, 10 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 |

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