

OF210120
OPTICAL SENSORS • COLOR SENSORS

The functioning of the color sensors is based on the evaluation of the red, green and blue components of the light reflected by the objects to be measured, or from the emitted radiation of the 'self-luminous' object (for example, LEDs, automobile tail lights, halogen lamps, fluorescent lamps, etc.). For this purpose, a so-called 3-fold receiver is integrated in the unit next to an on / off switchable white light or UV-light. This receiver works according to the True Color principle. This means that the evaluation of the light hitting the receiver is similar to the color perception of the human eye. This is a prerequisite for the reliable differentiation of objects or luminous objects by their color and brightness. For testing fluorescent materials the use of sensors with UV-light source is recommended. The use under adverse environmental conditions is possible through the use of additional fiber optics. The interaction between a precise detection and a high switching frequency distinguishes the devices. Thus, they are an ideal tool for process and quality control.


MECHANICAL DATA

| | |
|-----------------------------|--------|
| Ambient temperature (MAX) | 55 °C |
| Ambient temperature (MIN) | -5 °C |
| Degree of protection (IP) | IP67 |
| For damp environments | Yes |
| Housing design | Cuboid |
| Housing material | PBTP |
| Material of optical surface | Glass |
| Sensor height | 50 mm |
| Sensor length | 40 mm |
| Sensor width | 15 mm |

ELECTRICAL DATA

| | |
|--|--------------------|
| EMC test in acc. with | DIN EN 60947-5-2 |
| Equipment protection class | Protection class 3 |
| Max. output current | 200 mA |
| No-load current | 180 mA |
| Number of LEDs | 3 |
| Number of pins | 5 |
| Number of switching outputs | 3 |
| Operating voltage (MAX) | 30 V |
| Operating voltage (MIN) | 10 V |
| Overload protection | Yes |
| Rated control supply voltage U_s at DC (MAX) | 30 V |
| Rated control supply voltage U_s at DC (MIN) | 10 V |
| Reverse polarity protection | Yes |
| Sensing range (MAX) | 40 mm |
| Sensing range (MIN) | 30 mm |

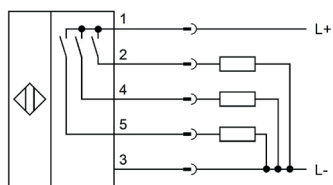
ELECTRICAL DATA

| | |
|-------------------------------|----------------------------|
| Setting procedure | Teach-In |
| Switching frequency | 4000 Hz |
| Type of electrical connection | Connector M12 |
| Type of switching function | Normally open contact (NO) |
| Type of switching output | PNP |
| Voltage type | DC |
| With LED display | Yes |
| With time function | Yes |

OPTICAL DATA

| | |
|--------------------------------------|---------------------------|
| Light focus distance | 35 |
| Light source | White light |
| Light spot | 12.57 mm ² |
| Light spot diameter | 4 mm |
| Measuring method for color detection | Active tristimulus method |
| Nominal sensing range | 35 mm |

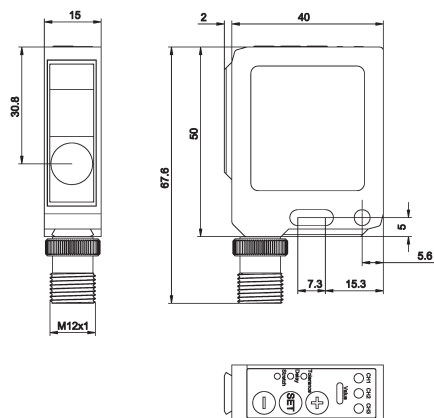
CONNECTION



Colors: 1 = BN (brown), 2 = WH (white), 3 = BU (blue), 4 = BK (black), 5 = GY (gray)

Functions: 1 = L+, 2 = PNP NO, 3 = L-, 4 = PNP NO, 5 = PNP NO

DIMENSIONAL DRAWING



INSTALLATION



Mounting / Installation may only be carried out by a qualified electrician!

DISPOSAL



SAFETY WARNINGS

Before initial operation, please make sure to follow all safety instructions that may be provided in the product information!

Never use these devices in applications where the safety of a person depends on their functionality.