

## OF650180

### Optical sensors • Color sensors

sensor optical, color, 28x65x65mm, White light, True color, Sn: 1-500, 22-26V DC, 5x PNP/NPN Push-pull, Connector M9 8pin, IP64, Aluminum Anodised, With fiber optics connection,  $\Delta E \geq 0.5$ , 40kHz, 31 colors



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.

**Electrical features**

|                                                      |                                                                             |
|------------------------------------------------------|-----------------------------------------------------------------------------|
| Number of digital inputs                             | 1                                                                           |
| Number of switching outputs                          | 5                                                                           |
| Display                                              | LED display                                                                 |
| Type of switching function                           | Schließer (NO bei PNP) Öffner (NC bei NPN) - Einstellbar                    |
| Type of electrical connection                        | Connector M9                                                                |
| Type of switching output                             | Push-pull                                                                   |
| Rated switching current                              | 100mA                                                                       |
| Setting procedure                                    | Parameterization   Teach-In                                                 |
| Pulse stretching                                     | 100ms                                                                       |
| No-load current                                      | 220mA                                                                       |
| Max. number of measurements for averaging            | 32768                                                                       |
| Measurement frequency in flash mode                  | 5000Hz                                                                      |
| Measurement frequency in constant light operation    | 35000Hz                                                                     |
| Measurement frequency in alternating light operation | 20000Hz                                                                     |
| Number of pins                                       | 8                                                                           |
| Switching frequency                                  | 40000Hz                                                                     |
| Protection class                                     | III                                                                         |
| Temperature drift                                    | $\Delta X/\Delta T$ ; $\Delta Y/\Delta T$ typ. 0.2 digits/°C (< 0.01% / °C) |
| Reverse polarity protection                          | Yes                                                                         |
| Type of plug-in contact, communication interface     | Female (socket)                                                             |
| Type of plug-in connection, communication interface  | Connector M5                                                                |
| Number of pins of interface connection               | 4                                                                           |
| Selectable amplifier stages                          | 8                                                                           |
| Overload protection                                  | Yes                                                                         |
| Supported communication interface                    | RS232                                                                       |
| Operating voltage (DC)                               | 21,6 - 26,4V                                                                |
| Measuring range                                      | 1 - 500mm                                                                   |
| Time function                                        | Yes                                                                         |
| Input function                                       | Teach-in   Trigger                                                          |
| Measurement frequency                                | 5000 - 35000Hz                                                              |

**Mechanical features**

|                              |               |
|------------------------------|---------------|
| Design                       | Cuboid        |
| Width                        | 65mm          |
| Height                       | 28mm          |
| Storage temperature          | -20 - 85°C    |
| Length                       | 65mm          |
| Surface                      | teflon coated |
| Degree of protection (IP)    | IP64          |
| Housing material             | Aluminum      |
| With fiber optics connection | Yes           |
| Number of colors             | 31            |
| Ambient temperature          | -20 - 55°C    |

**Optical features**

|                                      |                           |
|--------------------------------------|---------------------------|
| Color distance                       | $\Delta E \geq 0.5$       |
| Color spaces                         | X Y INT siM (Lab)         |
| Light source                         | White light               |
| Max. ambient light                   | 5000lx                    |
| Measuring method for color detection | Active tristimulus method |
| Transmitted light applications       | Yes                       |
| Constant light operation             | Yes                       |
| True color                           | Yes                       |
| Alternating light operation          | Yes                       |
| Number of colors                     | 31                        |

**Other features**

|                     |                                                                                                               |
|---------------------|---------------------------------------------------------------------------------------------------------------|
| Important note      | The value of the measurement frequency refers to the maximum of the slowest and the fastest operational mode. |
| Ambient temperature | -20 - 55°C                                                                                                    |

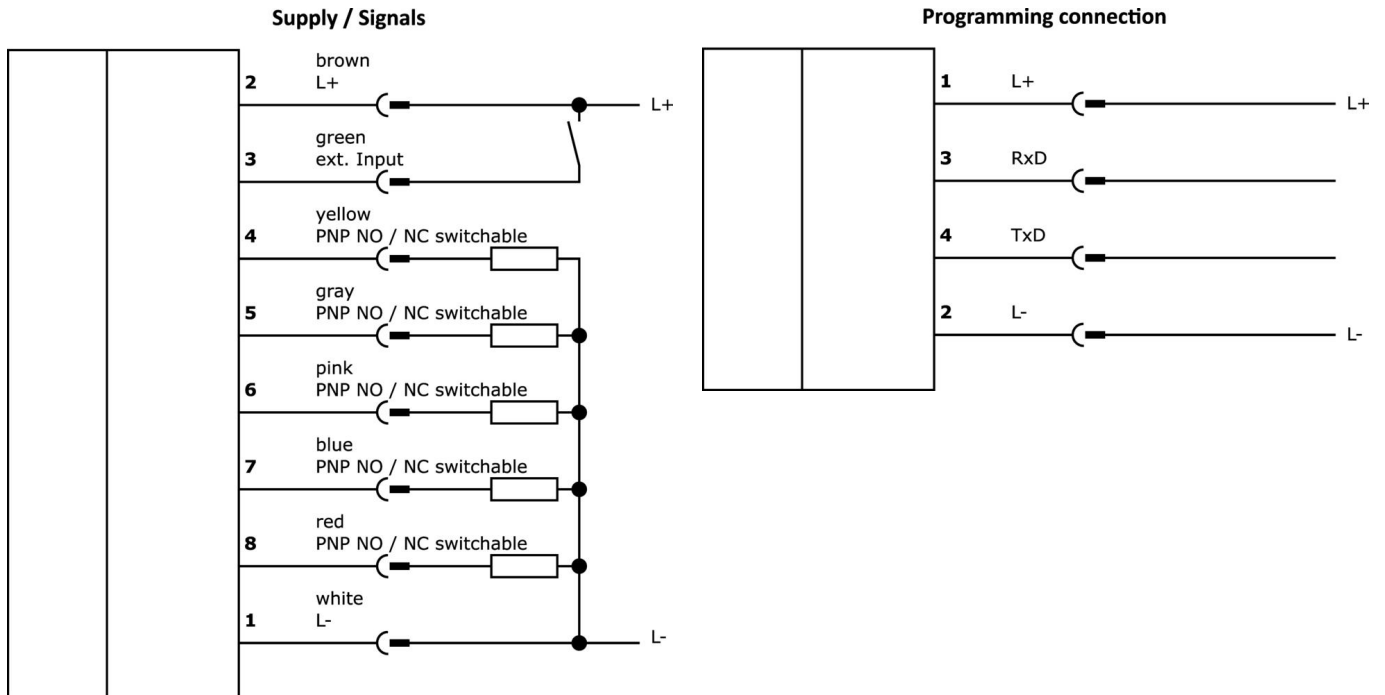
**Classification**

|        |                      |
|--------|----------------------|
| ETIM 8 | EC001817 Color probe |
|--------|----------------------|

**More**

|                       |                   |
|-----------------------|-------------------|
| IPF Product Group     | 104 color sensors |
| packaging dimensions  | 160 x 99 x 60 mm  |
| gross weight          | 185 g             |
| Customs tariff number | 85365019          |
| WEEE number           | 40951076          |
| POP-compliant         | Yes               |
| Reach-compliant       | Yes               |
| RoHS-compliant        | Yes               |

## Connection



## 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.

For suitable connection and mounting accessories, please refer to our website [www.ipf-electronic.com](http://www.ipf-electronic.com).

Any software, drivers or IODD files that may be required to operate your device can be downloaded free of charge from our homepage: [www.ipf-electronic.com](http://www.ipf-electronic.com)

Dimensional drawing

