

## OF510142

### Optical sensors • Color sensors

sensor optical, color, 27x50x50mm, White light, True color, Sn: 5-120, 22-26V DC, 5x PNP/NPN Push-pull, Connector M12 8pin, IP64, Aluminum Anodised,  $\Delta E \geq 0.5$ , 35kHz, 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
Type of switching function	Schließer (NO bei PNP) Öffner (NC bei NPN) - Einstellbar
Type of electrical connection	Connector M12
Type of switching output	Push-pull
Rated switching current	100mA
Setting procedure	Parameterization   Teach-In
Pulse stretching	100ms
Short-circuit protection	Yes
No-load current	160mA
Max. number of measurements for averaging	32768
Measurement frequency in constant light operation	35000Hz
Measurement frequency in alternating light operation	20000Hz
Number of pins	8
Relative repeat accuracy	0.02%
Switching frequency	35000Hz
Protection class	III
Temperature drift	$\Delta X/\Delta T; \Delta Y/\Delta T$ typ. 0.2 digits/ $^{\circ}$ C ( $< 0.01\% / ^{\circ}$ 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	5 - 120mm
Control of self-luminous objects	Yes
Time function	Yes
Input function	Teach-in   Trigger
Measurement frequency	20000 - 35000Hz

**Mechanical features**

Design	Cuboid
Width	50mm
Height	27mm
Storage temperature	-20 - 85 $^{\circ}$ C
Length	50mm
Surface	teflon coated
Degree of protection (IP)	IP64
Housing material	Aluminum
Number of colors	31
Ambient temperature	-20 - 55 $^{\circ}$ 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
Constant light operation	Yes
True color	Yes
Alternating light operation	Yes
Number of colors	31

**Other features**

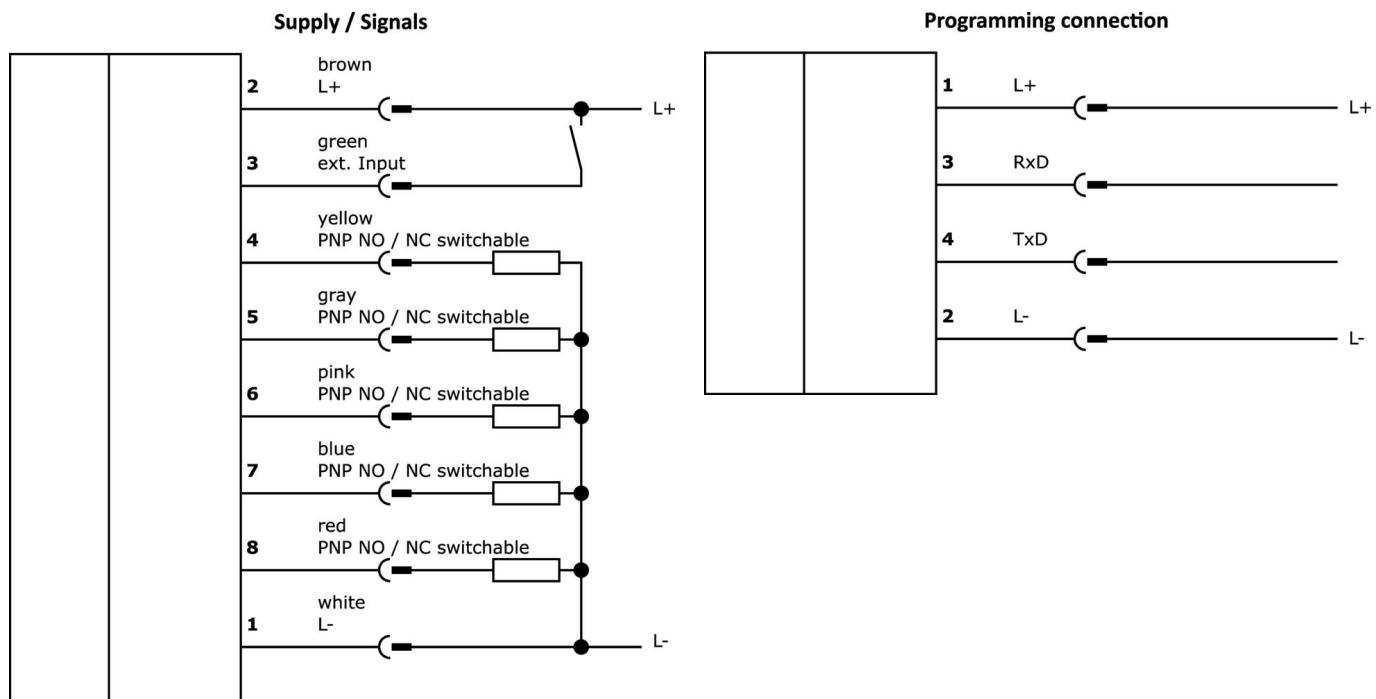
Important note	The value of the measurement frequency refers to the maximum of the slowest and the fastest operational mode.
Ambient temperature	-20 - 55°C

**Classification**

ETIM 8	EC001817 Color probe
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**More**

IPF Product Group	104 color sensors
packaging dimensions	160 x 99 x 60 mm
gross weight	156 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**