

OF500170

Optical sensors • Color sensors

Sensor optical, color, 27x50x50mm, white light, true colour, Sn: 5-50, 22-26V DC, 2x PNP/NPN push-pull, M8 connector 4-pin, IP64, aluminum anodized/anodized+glass, $\Delta E \geq 0.5$, 60kHz, 3 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 switching outputs	2
Display	LED display
Type of switching function	Normally closed (n.o. for PNP) Normally closed (n.c. for NPN) - Adjustable
Type of electrical connection	Connector M8
Type of switching output	Push-pull
Rated switching current	100 mA
Setting procedure	Parameterization Teach-In
Pulse stretching	100 ms
No-load current	160 mA
Max. number of measurements for averaging	32768
Measurement frequency in constant light operation	85000 Hz
Measurement frequency in alternating light operation	28000 Hz
Number of pins	4
Switching frequency	60000 Hz
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 - 26,4 V
Measuring range	5 - 50 mm
Time function	Yes
Input function	Teach-in Trigger
Measurement frequency	28000 - 85000 Hz

Mechanical features

Design	Cuboid
Width	50 mm
Height	27 mm
Storage temperature	-20 - 85 °C
Length	50 mm
Surface	teflon coated
Degree of protection (IP)	IP64
Active area material of sensor	glass
Housing material	Aluminum
For glossy/reflecting surfaces	Yes
Number of colors	3
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	5000 lx
Measuring method for color detection	Active tristimulus method
Nominal operating distance	15 mm
Constant light operation	Yes
True color	Yes
Alternating light operation	Yes
Number of colors	3
focus	15 mm
Light spot diameter at focal point	5 mm

Other features

Reference distance	15
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Classification

ETIM 8	EC001817 Color probe
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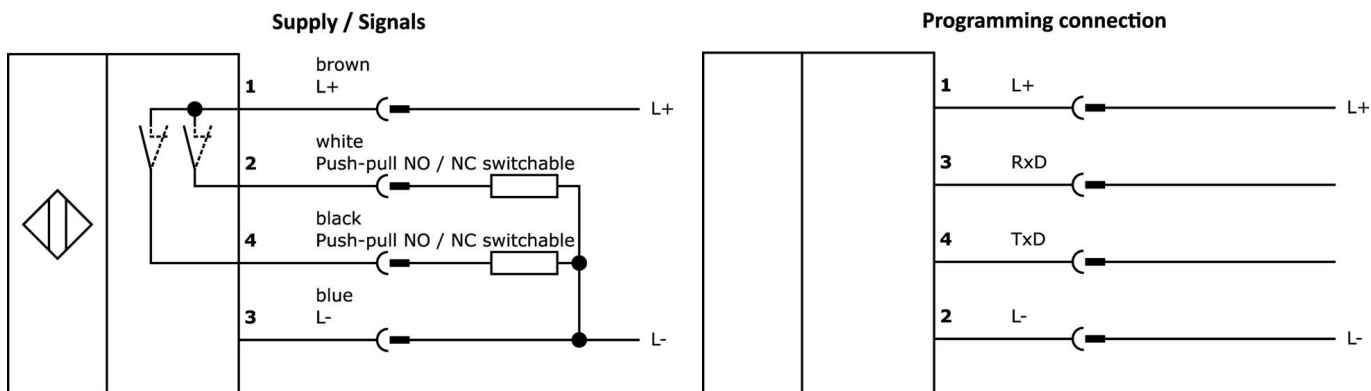
More

IPF Product Group	104 color sensors
packaging dimensions	160 x 99 x 60 mm
gross weight	140 g
Customs tariff number	85365019
WEEE number	40951076
POP-compliant	Yes
Reach-compliant	Yes
RoHS-compliant	Yes

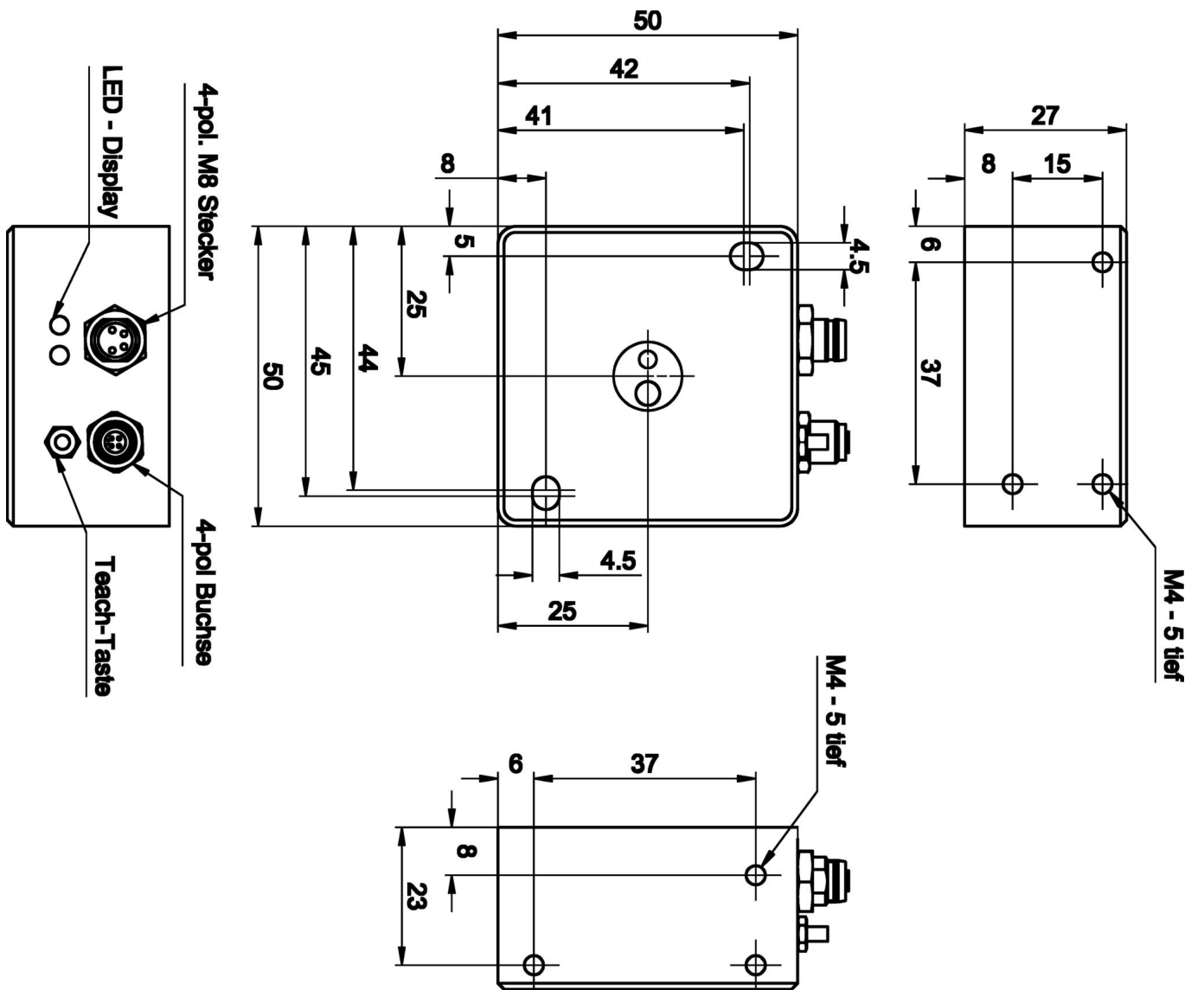
Important notes

/ The value of the measurement frequency refers to the maximum of the slowest and the fastest operational mode.

Connection



Dimensional drawing



Extract accessories program

VK000040



Adaption, M8 Female (socket)
4pin Straight, M12 Male
(connector) 4pin Straight, 24V, -
25-85°C, IP67, Oil and cooling
lubricants, Welding area

VK207U40



Connection cable RS232/USB, 2m,
M5 Male (connector) Angular,
USB-A Male (connector) Straight,
PUR (Polyurethane)

VK207U44



Connection cable RS232/USB, 2m,
M5 Male (connector) Straight,
USB-A Male (connector) Straight,
PUR (Polyurethane)

VK200371



Connection cable, 2m, M8 Female
(socket) 4pin Angular, Free
conductor end, 4x0.34mm², PUR
(Polyurethane), Ø4.7mm, 30V, -
30-90°C, IP67, Suitable for trailing
chain and torsion resistant, Oil and
cooling lubricants, Welding area,
Silicone-free

VK200375



Connection cable, 2m, M8 Female
(socket) 4pin Straight, Free
conductor end, 4x0.34mm², PUR
(Polyurethane), Ø4.7mm, 30V, -
30-90°C, IP67, Suitable for trailing
chain and torsion resistant, Oil and
cooling lubricants, Welding area,
Silicone-free

VKSI0297



Connection cable RS232/Ethernet,
0.5m, M5 Male (connector) 4pin
Straight, M12 Male (connector)
4pin Straight, D-coding, PUR
(Polyurethane), Aluminum

VK207F44



Connection cable RS232/Sub-D,
2m, M5 Male (connector) Straight,
D-Sub Male (connector) 9pin
Straight, PUR (Polyurethane)

VK000053



Screw plug, M5, Plastic, Black

You can find further accessories on our homepage



Installation

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



Disposal

WEEE number according to § 6 para. 3
ElektroG: 40951076

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.

/ 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