

OFSI0332

Optical sensors • Color sensors

Sensor optical, color, 30x80x110mm, similar to D65, true colour, colour measurement LAB, Sn: 19-21, 22-26V DC, 2x PNP/NPN push/pull, plug connector M9 8-pin, IP64, aluminium anodized/anodized+glass, typ. $\Delta E = 0.3$, 60kHz, 3 colors



The function of the color sensors is based on the evaluation of the red, green and blue components of the light reflected back from measured objects or the radiation emitted by "self-luminaires" (e.g. LEDs, rear lights of cars, halogen lamps, fluorescent lamps, etc.). For this purpose, a so-called triple receiver is integrated into the device along with a white light or UV illumination that can be switched on/off. This receiver works according to the true color principle. This means that the evaluation of the light impinging on the receiver is based on the color perception of the human eye. This is the prerequisite for the reliable differentiation of objects or self-illuminators according to their color and brightness. The testing of fluorescent materials requires the use of sensors with a UV light source. Use under adverse environmental conditions is possible through the use of an additional fiber optic cable. The interaction between precise detection and a high switching frequency characterizes the devices. This makes them an ideal tool for process control and quality assurance.

Electrical features

Analog bandwidth	Max. 90kHz (-3dB)
Number of switching outputs	2
Type of switching function	Normally closed contact/normally open contact
Type of electrical connection	Connector M9
Type of switching output	PNP
Rated switching current	100 mA
Setting procedure	Parameterization Teach-In
Pulse stretching	0 - 100 ms
Short-circuit protection	Yes
No-load current	1200 mA
Max. number of measurements for averaging	32768
Measurement frequency in constant light operation	90000 Hz
Measurement frequency in alternating light operation	25000 Hz
Number of pins	8
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
Overload protection	Yes
Supported communication interface	RS232
Operating voltage (DC)	21,6 - 26,4 V
Measuring range	19 - 21 mm
Color measurement LAB	Yes
Time function	Yes
Input function	Teach-in Trigger

Mechanical features

Design	Cuboid
Width	80 mm
Height	30 mm
Storage temperature	-20 - 85 °C
Length	110 mm
Surface	Anodized
Degree of protection (IP)	IP64
Active area material of sensor	glass
Housing material	Aluminum
Number of colors	3
Ambient temperature	-20 - 55 °C

Optical features

Color distance	Typ. $\Delta E = 0.3$
Color spaces	CIE L*a*b*, CIE L*C*h*, CIE L*u*v*, CIE L*u'v' and CIE xyY
Light source	Similar to D65
Max. ambient light	5000 lx
Measuring method for color detection	Active tristimulus method
Nominal operating distance	20 mm
Constant light operation	Yes
Alternating light operation	Yes
Number of colors	3
focus	20 mm

Other features

Reference distance	20
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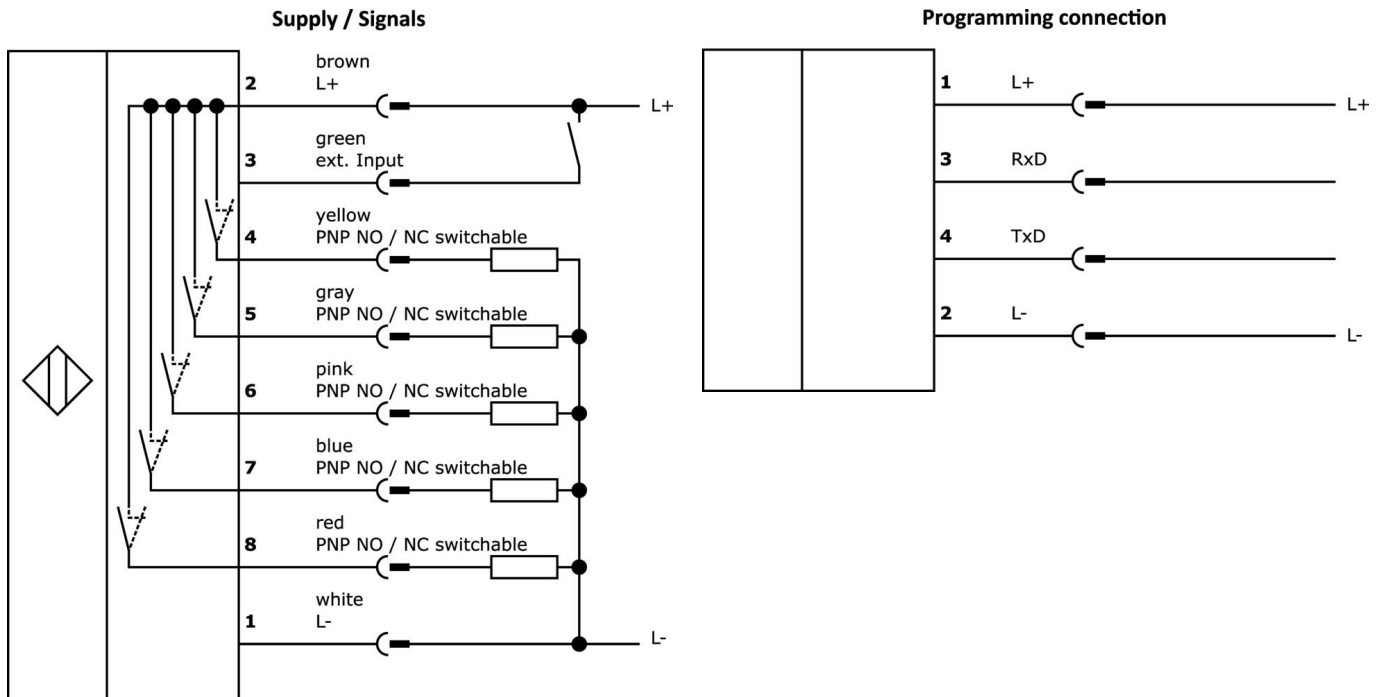
Classification

ETIM 8

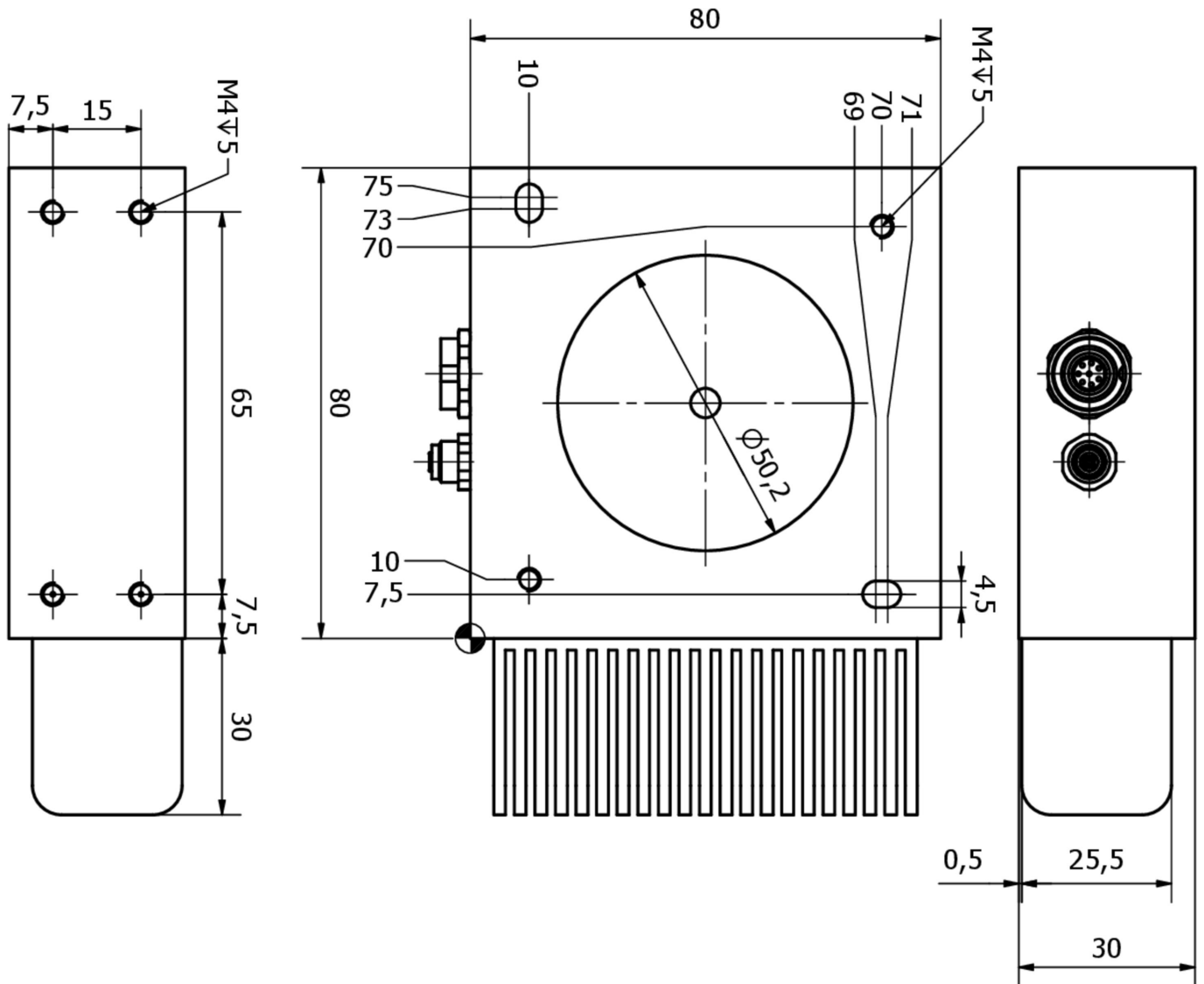
More

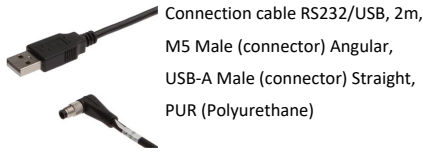
IPF Product Group	705 special devices (SI)
packaging dimensions	210 x 138 x 95 mm
gross weight	
Customs tariff number	85365019
WEEE number	40951076
POP-compliant	Yes
Reach-compliant	Yes
RoHS-compliant	Yes

Connection



Dimensional drawing



Extract accessories program**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)

VK207B41

Connection cable, 2m, M9
connector 8-pin angular, free
cable end, 8x0.14mm², PUR
(polyurethane), 125V, IP67,
shielded, oils and cooling
lubricants, welding area

VK207B45

Connection cable, 2m, M9 Male
(connector) 8pin Straight, Free
conductor end, 8x0.14mm², PUR
(Polyurethane), 125V, IP67,
Shielded, Oil and cooling
lubricants, Welding area

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

VKSI0297

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

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