

## OF340140

### Optical sensors • Color sensors

Sensor optical, color, M34x1.5 130long, white light, true colour, Sn: 15-80, 22-26V DC, 5x PNP/NPN push-pull, plug connector M9 8-pin, IP64, aluminum anodized/ anodized+glass,  $\Delta E \geq 0.5$ , 60kHz, 31 colors

including Nut



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 by using 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**

|  |   |
|--|---|
| Number of digital inputs                             | 1   |
| Number of switching outputs                          | 5   |
| 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 M9  |
| Type of switching output                             | Push-pull   |
| Rated switching current                              | 100 mA  |
| Setting procedure                                    | Parameterization   Teach-In   |
| Pulse stretching                                     | 100 ms  |
| No-load current                                      | 220 mA  |
| Max. number of measurements for averaging            | 32768   |
| Measurement frequency in flash mode                  | 5000 Hz   |
| Measurement frequency in constant light operation    | 35000 Hz  |
| Measurement frequency in alternating light operation | 20000 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) |
| 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   |
| Supported communication interface                    | RS232   |
| Operating voltage (DC)                               | 21,6 - 26,4 V   |
| Measuring range                                      | 15 - 80 mm  |
| Input function                                       | Teach-in   Trigger  |
| Measurement frequency                                | 5000 - 35000 Hz   |
| ardTEEL_Schutzfunktionen                             | Overload protection   Reverse polarity protection                           |

**Mechanical features**

|   |                        |
|---|------------------------|
| Design  | Cylinder, screw-thread |
| Diameter  | 34 mm                  |
| Thread pitch  | 1.5 mm                 |
| Storage temperature                                 | -20 - 85 °C            |
| Length  | 130 mm                 |
| Surface   | teflon coated          |
| Degree of protection (IP)                           | IP64                   |
| Degree of protection (IP) of evaluation electronics | IP64                   |
| Degree of protection (IP), front side               | IP67                   |
| Active area material of sensor                      | glass                  |
| Housing material                                    | Aluminum               |
| Thread dimension                                    | M34                    |
| 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                   | 5000 lx                   |
| Measuring method for color detection | Active tristimulus method |
| Nominal operating distance           | 30 mm                     |
| Number of colors                     | 31                        |
| focus                                | 30 mm                     |
| Light spot diameter at focal point   | 12 mm                     |

**Other features**

|                     |   |
|---------------------|---|
| Range of functions  | Gleichlichtbetrieb True Color Wechsellichtbetrieb<br>Zeitfunktion   |
| Reference distance  | 30  |
| ardTE00_Anwendungen | Abfrage glänzender Oberflächen   Abfrage<br>spiegelnder Oberflächen |

**Classification**

|        |
|--------|
| ETIM 8 |
|--------|

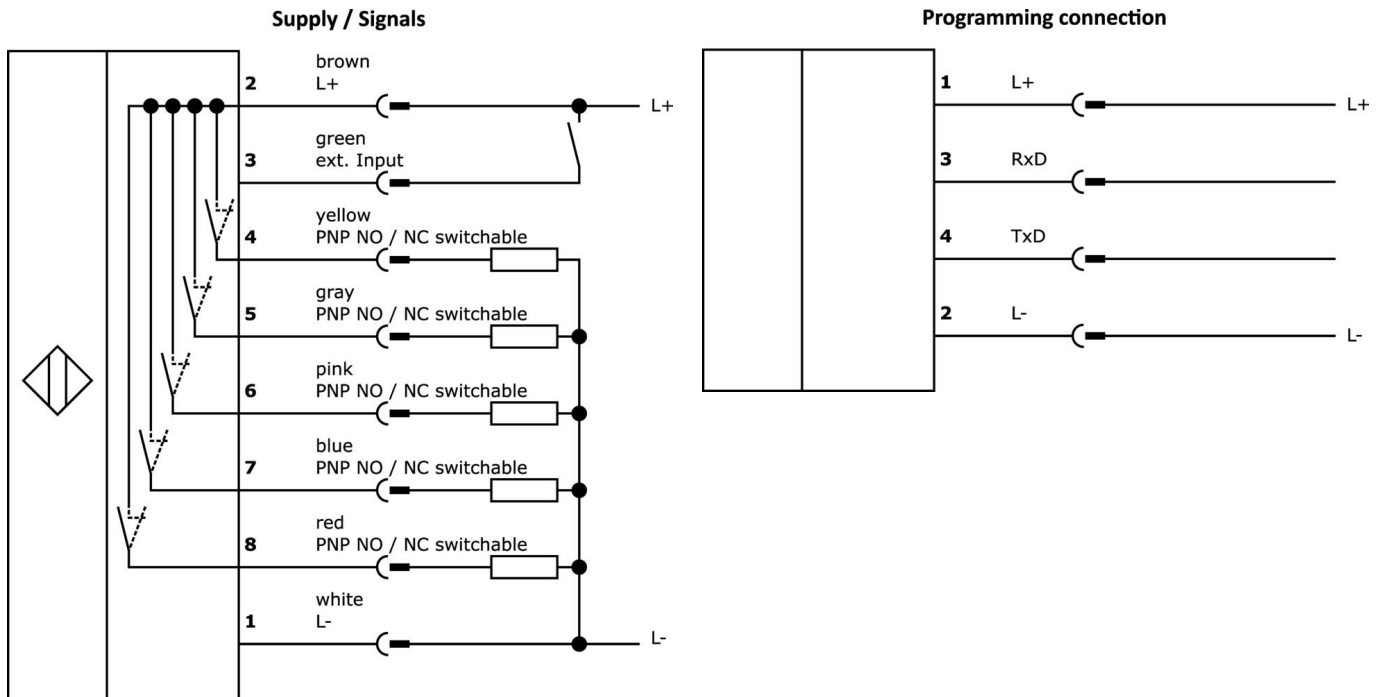
**More**

|                       |                   |
|-----------------------|-------------------|
| IPF Product Group     | 104 color sensors |
| packaging dimensions  | 160 x 99 x 60 mm  |
| gross weight          | 190 g             |
| Customs tariff number | 85365019          |
| WEEE number           | 40951076          |
| Reach-compliant       | Yes               |
| RoHS-compliant        | Yes               |

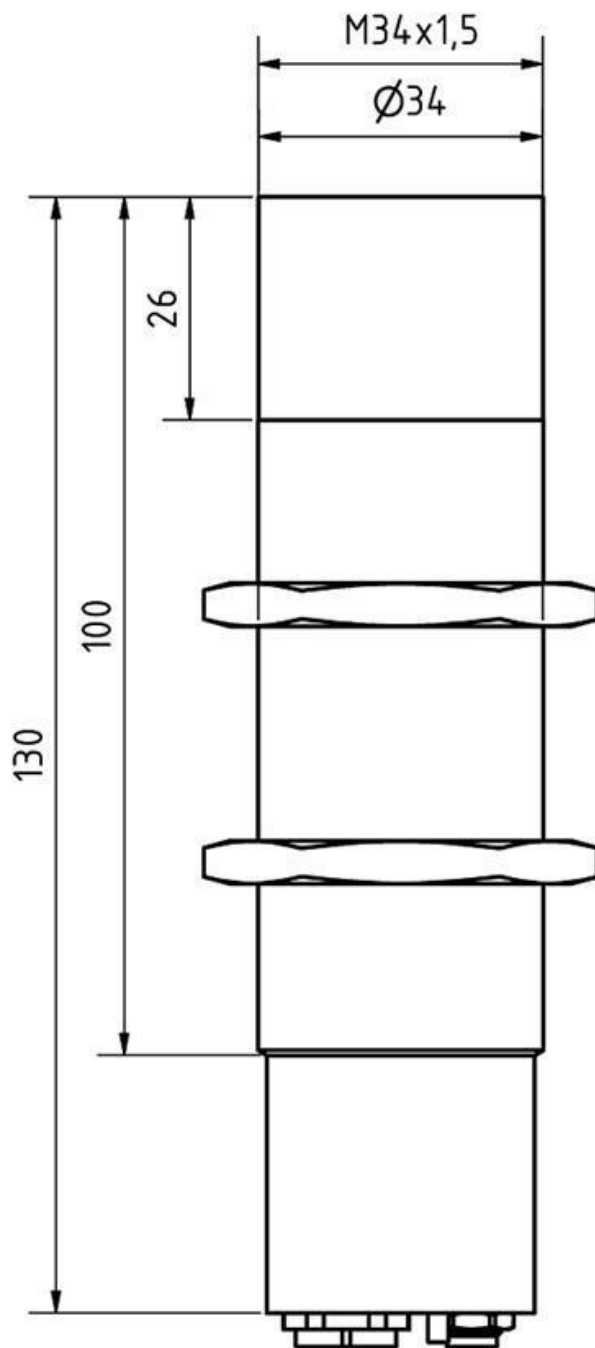
**Important notes**

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

**Connection**




Dimensional drawing



**Extract accessories program**


**VKSI0297**

 Connection cable RS232/Ethernet, 0.5m, M5 connector 4-pin straight, M12 connector 4-pin straight, D-coding, PUR (polyurethane), aluminum


**AO000164**

 accessories optical, Mounting angle bracket, Angle, Aluminum


**AY000151**

 accessories sensor, Ø34mm, Plastic, For sensor 34mm, for Wall mounting, Screw mounting


**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)


**VK207F44**

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


**VK207B41**

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

**VK207B45**

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

**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](http://www.ipf-electronic.com)