

THROUGH-BEAM, RETRO-REFLECTIVE, DIF. REFLECTION SENSORS 2100

dimensions 12.4 x 35 x 35mm

through-beam sensors operating range 7.5m retro-reflective sensors operating range 5m 15 to 300mm dif. reflection sensors sensing range

- √ dif. reflection sensors with background suppression
- √ retro-reflective sensors with polarizing filter
- √ simple adjustment
- √ high sensing ranges
- √ light-on and dark-on mode
- √ fast response time
- ✓ LED-display of the switch signal
- √ degree of protection IP67
- ✓ connection with M8-connector or cable

visible red light robust metal housing











description

Optoelectronic sensors are indispensable components in all automated production processes. They are used in all applications where parts are to be detected, counted, measured or positioned in a way which does not involve contact and which is reliable and fast.

The devices feature a zinc diecast housing and are often used in connection with a PLC for automatic production processes and machines. For example, they detect objects made from metal, glass, plastic, wood and paper.

Functional monitoring of the sensor is possible for through-beam sensors using the test input in the transmitter. For this, the operating voltage potential is applied to the corresponding

Although the distance of the diffuse reflection sensor devices can be set using a mechanical setting unit, the high degree of protection (IP67) is maintained. Objects are reliably recognzed, regardless of their color. The functional principle behind these

sensing devices is based on triangulation principle, in which the position of the object is determined by the light reflected

The sensors all work with visible red light and consequently, enable reliable and simple adjustment.

The yellow LED display lights up if the output is securely switched.

If, in the case of retro-reflective sensors, the yellow LED flashes when the output is switched, the respective device is working without sufficient functional reserve, e.g. through soiling or maladjustment.

application examples

- presence check of different objects
- collision avoidance in feeding motions
- control of object and stack heights
- limit switches, position switches and pulse generators

OPTICAL SENSORS



2100 THROUGH-BEAM, RETRO-REFLECTIVE, DIF. REFLECTION SENSORS

| icle-no. | OE160470 | OS160070 | OR160470 |
|--|---|---|---|
| rsion | receiver through-beam sensor | transmitter through-beam sensor | retro-reflective sensor with polarizing filter |
| nnection | M8-connector | M8-connector | M8-connector |
| erating range | 6m | | 5m |
| | 2.9 LED 0.7 LED 0.7 CE 0.7 | 35 2.9 35 20 20 20 20 20 20 20 20 20 20 20 20 20 | 2.9 LED 2.9 LED 8.7 0.3.2 8.7 0.3.2 8.8 |
| | * receiver axis: 13mm | * transmitter axis: 17mm | * transmitter axis: 20.5mm |
| CHNICAL DATA | | | |
| erating range | 6m | | 5m |
| tput signal | pnp, light-on/dark-on mode | | pnp, light-on/dark-on mode |
| erating voltage | 10 30V DC | 10 30V DC | 10 30V DC |
| rent consumption (w/o load) | ≤ 17mA 100mA | ≤ 30mA | ≤ 35mA 100mA |
| tput current (max. load) tage drop (max. load) | 1.8V DC | | 1.8V DC |
| nsmitting element (pulsed) | 1.87 DC | LED, red light | LED, red light |
| velength (transmitter) | - | 660nm | 660nm |
| npling frequency | 500Hz | - | 500Hz |
| | | | |
| play (signal/functional reserve) sitivity adjustment | yellow LED / yellow flashing | | yellow LED / yellow flashing |
| t input | - | operating volt. applied to contact 4 | |
| ort-circuit protection | + | operating voit. applied to contact 4 | + |
| erse polarity protection | + | + | + |
| nensions | 12.4x35x35mm | 12.4x35x35mm | 12.4x35x35mm |
| using material | zinc diecast | zinc diecast | zinc diecast |
| nt screen material | plastic PMMA | plastic PMMA | plastic PMMA |
| erating temperature | -25 +65°C | -25 +65°C | -25 +65°C |
| gree of protection (EN 60529) | IP67 | IP67 | IP67 |
| nnection | M8-connector, 4-pin | M8-connector, 4-pin | M8-connector, 4-pin |
| nnection accessories | e.g. VK200371 | e.g. VK200371 | e.g. VK200371 |
| ounting accessories | e.g. AO000067 | e.g. AO000067 | e.g. AO000067 |
| ounting bracket) | C.g. / 100000/ | C.5. / C00000/ | C. ₀ . /100000/ |
| ounting accessories viversal holder) | AY000118 | AY000118 | AY000118 |
| iversal floract) | | | |



THROUGH-BEAM, RETRO-REFLECTIVE, DIF. REFLECTION SENSORS 2100

| version | | | |
|--|--|---|--|
| | dif. reflection sensor | dif. reflection sensor | |
| anna attau | with background suppression cable | with background suppression M8-connector | |
| connection sensing range | 15 300mm | 15 300mm | |
| | 12.4 2.9 Poti LED | 12.4 2.9 Poti LED | |
| | * transmitter axis: 24.3mm 24.3mm | * transmitter axis: | |
| TECHNICAL DATA | | | |
| sensing range output signal | 15 300mm pnp, light-on/dark-on mode | 15 300mm pnp, light-on/dark-on mode | |
| operating voltage | | | |
| | 10 30V DC | 10 30V DC | |
| | | | |
| current consumption (w/o load) | ≤ 35mA | ≤ 35mA | |
| current consumption (w/o load) | ≤ 35mA 100mA | ≤ 35mA 100mA | |
| | | | |
| current consumption (w/o load) output current (max. load) | 100mA | 100mA 1.8V DC | |
| current consumption (w/o load) putput current (max. load) voltage drop (max. load) cransmitting element (pulsed) | 100mA 1.8V DC | 100mA | |
| current consumption (w/o load) cutput current (max. load) voltage drop (max. load) | 100mA 1.8V DC LED, red light | 100mA 1.8V DC LED, red light | |
| current consumption (w/o load) cutput current (max. load) coltage drop (max. load) cransmitting element (pulsed) wavelength (transmitter) campling frequency | 1.8V DC LED, red light 660nm 500Hz | 100mA 1.8V DC LED, red light 660nm 500Hz | |
| current consumption (w/o load) cutput current (max. load) coltage drop (max. load) cransmitting element (pulsed) wavelength (transmitter) sampling frequency display (signal/reserve) | 1.8V DC LED, red light 660nm 500Hz yellow LED / - | 1.8V DC LED, red light 660nm 500Hz yellow LED / - | |
| current consumption (w/o load) cutput current (max. load) coltage drop (max. load) cransmitting element (pulsed) cwavelength (transmitter) campling frequency display (signal/reserve) censitivity adjustment | 1.8V DC LED, red light 660nm 500Hz yellow LED / - mechanical, 5 revolutions | 1.8V DC LED, red light 660nm 500Hz yellow LED / - mechanical, 5 revolutions | |
| current consumption (w/o load) putput current (max. load) roltage drop (max. load) rransmitting element (pulsed) wavelength (transmitter) campling frequency display (signal/reserve) censitivity adjustment interference suppression | 1.8V DC LED, red light 660nm 500Hz yellow LED / - mechanical, 5 revolutions + | 1.8V DC LED, red light 660nm 500Hz yellow LED / - mechanical, 5 revolutions + | |
| current consumption (w/o load) putput current (max. load) voltage drop (max. load) varansmitting element (pulsed) wavelength (transmitter) campling frequency display (signal/reserve) sensitivity adjustment interference suppression short-circuit protection | 1.8V DC LED, red light 660nm 500Hz yellow LED / - mechanical, 5 revolutions + + | 1.8V DC LED, red light 660nm 500Hz yellow LED / - mechanical, 5 revolutions + + | |
| current consumption (w/o load) cutput current (max. load) coltage drop (max. load) cransmitting element (pulsed) covered from the color of the color | 1.8V DC LED, red light 660nm 500Hz yellow LED / - mechanical, 5 revolutions + + + | 1.8V DC LED, red light 660nm 500Hz yellow LED / - mechanical, 5 revolutions + + + | |
| current consumption (w/o load) cutput current (max. load) coltage drop (max. load) cransmitting element (pulsed) consumpting frequency display (signal/reserve) censitivity adjustment chort-circuit protection dimensions | 1.8V DC LED, red light 660nm 500Hz yellow LED / - mechanical, 5 revolutions + + + + 12.5x35x35mm | 1.8V DC LED, red light 660nm 500Hz yellow LED / - mechanical, 5 revolutions + + + + 12.5x35x35mm | |
| current consumption (w/o load) putput current (max. load) voltage drop (max. load) variansmitting element (pulsed) wavelength (transmitter) sampling frequency display (signal/reserve) sensitivity adjustment interference suppression short-circuit protection reverse polarity protection dimensions nousing material | 1.8V DC LED, red light 660nm 500Hz yellow LED / - mechanical, 5 revolutions + + + 12.5x35x35mm zinc diecast | 1.8V DC LED, red light 660nm 500Hz yellow LED / - mechanical, 5 revolutions + + + 12.5x35x35mm zinc diecast | |
| current consumption (w/o load) putput current (max. load) putput current (max. load) proltage drop (max. load) proltage dr | 1.8V DC LED, red light 660nm 500Hz yellow LED / - mechanical, 5 revolutions + + + 12.5x35x35mm zinc diecast plastic PMMA | 1.8V DC LED, red light 660nm 500Hz yellow LED / - mechanical, 5 revolutions + + + 12.5x35x35mm zinc diecast plastic PMMA | |
| current consumption (w/o load) putput current (max. load) roltage drop (max. load) ransmitting element (pulsed) wavelength (transmitter) campling frequency display (signal/reserve) censitivity adjustment enterference suppression chort-circuit protection reverse polarity protection dimensions cousing material cront screen material operating temperature | 1.8V DC LED, red light 660nm 500Hz yellow LED / - mechanical, 5 revolutions + + + 21.5x35x35mm zinc diecast plastic PMMA -25 +65°C | 1.8V DC LED, red light 660nm 500Hz yellow LED / - mechanical, 5 revolutions + + + 12.5x35x35mm zinc diecast plastic PMMA -25 +65°C | |
| current consumption (w/o load) cutput current (max. load) cutput current (pulsed) cutput current (max. load) cutput current (pulsed) cutput cutpu | 1.8V DC LED, red light 660nm 500Hz yellow LED / - mechanical, 5 revolutions + + + 12.5x35x35mm zinc diecast plastic PMMA -25 +65°C IP67 | 1.8V DC LED, red light 660nm 500Hz yellow LED / - mechanical, 5 revolutions + + + 12.5x35x35mm zinc diecast plastic PMMA -25 +65°C IP67 | |
| courrent consumption (w/o load) coutput current (max. load) coltage drop (max. load) cransmitting element (pulsed) consumpting frequency display (signal/reserve) censitivity adjustment conterference suppression chort-circuit protection dimensions cousing material cront screen material coperating temperature degree of protection (EN 60529) connection | 1.8V DC LED, red light 660nm 500Hz yellow LED / - mechanical, 5 revolutions + + + 21.5x35x35mm zinc diecast plastic PMMA -25 +65°C | 1.8V DC LED, red light 660nm 500Hz yellow LED / - mechanical, 5 revolutions + + + 12.5x35x35mm zinc diecast plastic PMMA -25 +65°C IP67 M8-connector, 4-pin | |
| current consumption (w/o load) putput current (max. load) voltage drop (max. load) voltage drop (max. load) vavelength (transmitter) sampling frequency display (signal/reserve) sensitivity adjustment interference suppression short-circuit protection reverse polarity protection dimensions nousing material iront screen material operating temperature degree of protection (EN 60529) connection connection accessories | 1.8V DC LED, red light 660nm 500Hz yellow LED / - mechanical, 5 revolutions + + + 12.5x35x35mm zinc diecast plastic PMMA -25 +65°C IP67 2m PVC cable, 4-wire - | 1.8V DC LED, red light 660nm 500Hz yellow LED / - mechanical, 5 revolutions + + + 12.5x35x35mm zinc diecast plastic PMMA -25 +65°C IP67 M8-connector, 4-pin e.g. VK200371 | |
| courrent consumption (w/o load) coutput current (max. load) coltage drop (max. load) cransmitting element (pulsed) consumpting frequency display (signal/reserve) censitivity adjustment conterference suppression chort-circuit protection dimensions cousing material cront screen material coperating temperature degree of protection (EN 60529) connection | 1.8V DC LED, red light 660nm 500Hz yellow LED / - mechanical, 5 revolutions + + + 12.5x35x35mm zinc diecast plastic PMMA -25 +65°C IP67 | 1.8V DC LED, red light 660nm 500Hz yellow LED / - mechanical, 5 revolutions + + + 12.5x35x35mm zinc diecast plastic PMMA -25 +65°C IP67 M8-connector, 4-pin | |

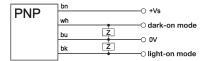
OPTICAL SENSORS



2100 THROUGH-BEAM, RETRO-REFLECTIVE, DIF. REFLECTION SENSORS

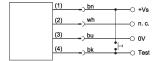
connection

light-on and dark-on mode

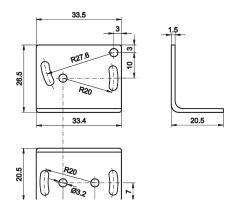


wire colors: bn = brown (1), wh = white (2), bu = blue (3), bk = black (4)

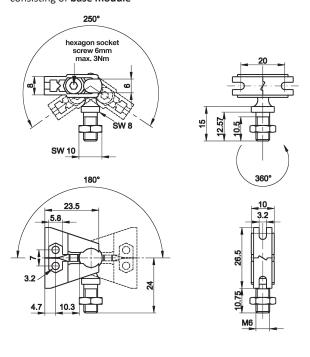
transmitter through-beam sensor



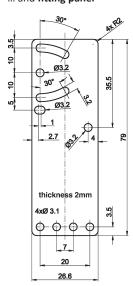
mounting bracket AO000067



mounting accessories (universal holder) AY000118 consisting of base module



... and fitting panel



This data sheet contains the standard versions only. Kindly request the availability of other output- and connection functions.

We will be pleased to supply the matching cable socket for your devices with connector. Please refer to the list in catalog chapter "accessories" under "cable sockets ipf-sensorflexe" or search our website for "VK".

Warning: Never use these devices in applications where the safety of a person depends on their functionality.