OPTICAL SENSORS

THROUGH-BEAM, DIFFUSE REFLECTION SENSORS 2900

dimensions 8 x 58 x 12mm 8 x 67 x 12mm through-beam sensors operating range 2.5m dif. reflection sensors sensing range 40mm 80mm ✓ LED-display √ integrated amplifier √ high sampling frequency and sensing ranges √ connection with cable and M8-connector √ robust metal housing diffuse reflection sensors with intensity differentiation

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 an aluminum housing and are often used in connection with a PLC for automatic production processes and machines. Through-beam sensors detect objects of any shape, regardless of their color.

Diffuse reflection sensors that can differentiate between levels of intensity are suitable for, among other things, differentiating between white and black objects.

If, in the case of the receivers of through-beam sensors or diffuse reflection sensors the red LED flashes when the output is switched, the respective device is working without sufficient functional reserve, e.g. due to soiling or maladjustment. The red LED lights up if the output is securely switched.

application examples

- ▶ checking the presence of various objects
- avoiding collision, in the case of feed movements
- monitoring object and stack heights
- limit switches, position switches and pulse generators

OPTICAL SENSORS



2900 THROUGH-BEAM, DIFFUSE REFLECTION SENSORS

onerating range	OS110000 through-beam transmitter	OS110070 through-beam transmitter
operating range	2.5m	2.5m
connection	cable	connector
article-no.	OE110100	OE110170
version	through-beam receiver	through-beam receiver
output	pnp, dark-on mode	pnp, dark-on mode
connection	cable	connector
	transmitter without LED	transmitter without LED
TECHNICAL DATA	2.5m	2.5m
onerating range		
operating range output *	pnp, dark-on mode	pnp, dark-on mode
output * operating voltage	pnp, dark-on mode 10 30V DC	pnp, dark-on mode 10 30V DC
output * operating voltage current consumption (w/o load)	pnp, dark-on mode 10 30V DC ≤ 50mA (transmitter), ≤ 25mA (receiver)	pnp, dark-on mode 10 30V DC ≤ 50mA (transmitter), ≤ 25mA (receiver)
output * operating voltage current consumption (w/o load) output current (max. load) *	pnp, dark-on mode 10 30V DC	pnp, dark-on mode 10 30V DC
output * operating voltage current consumption (w/o load) output current (max. load) * voltage drop (max. load) *	pnp, dark-on mode 10 30V DC ≤ 50mA (transmitter), ≤ 25mA (receiver) 100mA	pnp, dark-on mode 10 30V DC ≤ 50mA (transmitter), ≤ 25mA (receiver) 100mA
output * operating voltage current consumption (w/o load) output current (max. load) * voltage drop (max. load) * transmitting element (pulsed) wavelength	pnp, dark-on mode 10 30V DC ≤ 50mA (transmitter), ≤ 25mA (receiver) 100mA 2.0V DC	pnp, dark-on mode 10 30V DC ≤ 50mA (transmitter), ≤ 25mA (receiver) 100mA 2.0V DC
output * operating voltage current consumption (w/o load) output current (max. load) * voltage drop (max. load) * transmitting element (pulsed) wavelength	pnp, dark-on mode 10 30V DC ≤ 50mA (transmitter), ≤ 25mA (receiver) 100mA 2.0V DC LED, infrared light	pnp, dark-on mode 10 30V DC ≤ 50mA (transmitter), ≤ 25mA (receiver) 100mA 2.0V DC LED, infrared light
poutput * poperating voltage current consumption (w/o load) putput current (max. load) * voltage drop (max. load) * transmitting element (pulsed) wavelength response/decay time *	pnp, dark-on mode 10 30V DC ≤ 50mA (transmitter), ≤ 25mA (receiver) 100mA 2.0V DC LED, infrared light 880nm	pnp, dark-on mode 10 30V DC ≤ 50mA (transmitter), ≤ 25mA (receiver) 100mA 2.0V DC LED, infrared light 880nm
poutput * operating voltage current consumption (w/o load) output current (max. load) * voltage drop (max. load) * transmitting element (pulsed) wavelength response/decay time * display (signal/reserve) *	pnp, dark-on mode 10 30V DC ≤ 50mA (transmitter), ≤ 25mA (receiver) 100mA 2.0V DC LED, infrared light 880nm < 2.5ms	pnp, dark-on mode 10 30V DC ≤ 50mA (transmitter), ≤ 25mA (receiver) 100mA 2.0V DC LED, infrared light 880nm < 2.5ms
poutput * operating voltage current consumption (w/o load) output current (max. load) * voltage drop (max. load) * cransmitting element (pulsed) wavelength response/decay time * display (signal/reserve) * nterference suppression	pnp, dark-on mode 10 30V DC ≤ 50mA (transmitter), ≤ 25mA (receiver) 100mA 2.0V DC LED, infrared light 880nm < 2.5ms red LED / red LED, flashing	pnp, dark-on mode 10 30V DC ≤ 50mA (transmitter), ≤ 25mA (receiver) 100mA 2.0V DC LED, infrared light 880nm < 2.5ms red LED / red LED, flashing
poutput * poperating voltage current consumption (w/o load) putput current (max. load) * voltage drop (max. load) * transmitting element (pulsed) wavelength response/decay time * display (signal/reserve) * nterference suppression short-circuit protection *	pnp, dark-on mode 10 30V DC ≤ 50mA (transmitter), ≤ 25mA (receiver) 100mA 2.0V DC LED, infrared light 880nm < 2.5ms red LED / red LED, flashing -	pnp, dark-on mode 10 30V DC ≤ 50mA (transmitter), ≤ 25mA (receiver) 100mA 2.0V DC LED, infrared light 880nm < 2.5ms red LED / red LED, flashing -
poutput * operating voltage current consumption (w/o load) output current (max. load) * voltage drop (max. load) * transmitting element (pulsed) wavelength response/decay time * display (signal/reserve) * interference suppression short-circuit protection * reverse polarity protection	pnp, dark-on mode 10 30V DC ≤ 50mA (transmitter), ≤ 25mA (receiver) 100mA 2.0V DC LED, infrared light 880nm < 2.5ms red LED / red LED, flashing - +	pnp, dark-on mode 10 30V DC ≤ 50mA (transmitter), ≤ 25mA (receiver) 100mA 2.0V DC LED, infrared light 880nm < 2.5ms red LED / red LED, flashing - +
poutput * operating voltage current consumption (w/o load) output current (max. load) * voltage drop (max. load) * transmitting element (pulsed) wavelength response/decay time * display (signal/reserve) * interference suppression short-circuit protection * reverse polarity protection dimensions	pnp, dark-on mode 10 30V DC ≤ 50mA (transmitter), ≤ 25mA (receiver) 100mA 2.0V DC LED, infrared light 880nm < 2.5ms red LED / red LED, flashing - + +	pnp, dark-on mode 10 30V DC ≤ 50mA (transmitter), ≤ 25mA (receiver) 100mA 2.0V DC LED, infrared light 880nm < 2.5ms red LED / red LED, flashing - + +
poperating voltage current consumption (w/o load) putput current (max. load) * voltage drop (max. load) * cransmitting element (pulsed) wavelength response/decay time * display (signal/reserve) * interference suppression short-circuit protection * reverse polarity protection dimensions ength (thread/complete)	pnp, dark-on mode 10 30V DC ≤ 50mA (transmitter), ≤ 25mA (receiver) 100mA 2.0V DC LED, infrared light 880nm < 2.5ms red LED / red LED, flashing - + + + 8x58x12mm	pnp, dark-on mode 10 30V DC ≤ 50mA (transmitter), ≤ 25mA (receiver) 100mA 2.0V DC LED, infrared light 880nm < 2.5ms red LED / red LED, flashing - + + 8x67x12mm
poperating voltage current consumption (w/o load) cutput current (max. load) * voltage drop (max. load) * cransmitting element (pulsed) wavelength response/decay time * display (signal/reserve) * nterference suppression short-circuit protection * reverse polarity protection dimensions ength (thread/complete) nousing material ens material	pnp, dark-on mode 10 30V DC ≤ 50mA (transmitter), ≤ 25mA (receiver) 100mA 2.0V DC LED, infrared light 880nm < 2.5ms red LED / red LED, flashing - + + + 8x58x12mm - / 58mm aluminum PC	pnp, dark-on mode 10 30V DC ≤ 50mA (transmitter), ≤ 25mA (receiver) 100mA 2.0V DC LED, infrared light 880nm < 2.5ms red LED / red LED, flashing - + + + 8x67x12mm - / 67mm aluminum PC
poperating voltage current consumption (w/o load) cutput current (max. load) * voltage drop (max. load) * transmitting element (pulsed) wavelength response/decay time * display (signal/reserve) * interference suppression short-circuit protection * reverse polarity protection dimensions length (thread/complete) housing material lens material operating temperature	pnp, dark-on mode 10 30V DC ≤ 50mA (transmitter), ≤ 25mA (receiver) 100mA 2.0V DC LED, infrared light 880nm < 2.5ms red LED / red LED, flashing - + + + 8x58x12mm - / 58mm aluminum	pnp, dark-on mode 10 30V DC ≤ 50mA (transmitter), ≤ 25mA (receiver) 100mA 2.0V DC LED, infrared light 880nm < 2.5ms red LED / red LED, flashing - + + + 8x67x12mm - / 67mm aluminum
poperating voltage current consumption (w/o load) cutput current (max. load) * voltage drop (max. load) * cransmitting element (pulsed) wavelength response/decay time * display (signal/reserve) * nterference suppression short-circuit protection * reverse polarity protection dimensions ength (thread/complete) nousing material ens material operating temperature	pnp, dark-on mode 10 30V DC ≤ 50mA (transmitter), ≤ 25mA (receiver) 100mA 2.0V DC LED, infrared light 880nm < 2.5ms red LED / red LED, flashing - + + + 8x58x12mm - / 58mm aluminum PC	pnp, dark-on mode 10 30V DC ≤ 50mA (transmitter), ≤ 25mA (receiver) 100mA 2.0V DC LED, infrared light 880nm < 2.5ms red LED / red LED, flashing - + + + 8x67x12mm - / 67mm aluminum PC
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THROUGH-BEAM, DIFFUSE REFLECTION SENSORS 2900

article-no. version	OT110100	
version	diffuse reflection sensor, intensity	OT110170 diffuse reflection sensor, intensity
sensing range	40mm	40mm
output	pnp, light-on mode	pnp, light-on mode
connection	cable	connector
article-no.	OT110105	OT110175
version	diffuse reflection sensor, intensity	diffuse reflection sensor, intensity
sensing range	80mm	80mm
output	pnp, light-on mode cable	pnp, light-on mode connector
	12 12 3 98 M3	12 12 13 150 M8x1
TECHNICAL DATA sensing range	see above	see above
sensing range output signal	pnp, light-on mode	pnp, light-on mode
sensing range output signal operating voltage	pnp, light-on mode 10 30V DC	pnp, light-on mode 10 30V DC
sensing range output signal operating voltage current consumption (w/o load)	pnp, light-on mode 10 30V DC ≤ 40mA	pnp, light-on mode 10 30V DC ≤ 40mA
sensing range output signal operating voltage current consumption (w/o load) output current (max. load)	pnp, light-on mode 10 30V DC ≤ 40mA 100mA	pnp, light-on mode 10 30V DC ≤ 40mA 100mA
sensing range output signal operating voltage current consumption (w/o load) output current (max. load) voltage drop (max. load)	pnp, light-on mode 10 30V DC ≤ 40mA 100mA 2.0V DC	pnp, light-on mode 10 30V DC ≤ 40mA 100mA 2.0V DC
pensing range putput signal perating voltage current consumption (w/o load) putput current (max. load) voltage drop (max. load) transmitting element (pulsed)	pnp, light-on mode 10 30V DC ≤ 40mA 100mA	pnp, light-on mode 10 30V DC ≤ 40mA 100mA
pensing range coutput signal coperating voltage courrent consumption (w/o load) coutput current (max. load) voltage drop (max. load) transmitting element (pulsed) wavelength	pnp, light-on mode 10 30V DC ≤ 40mA 100mA 2.0V DC LED, infrared light	pnp, light-on mode 10 30V DC ≤ 40mA 100mA 2.0V DC LED, infrared light
sensing range putput signal perperating voltage current consumption (w/o load) putput current (max. load) voltage drop (max. load) transmitting element (pulsed) wavelength response/decay time	pnp, light-on mode 10 30V DC ≤ 40mA 100mA 2.0V DC LED, infrared light 880nm < 1ms	pnp, light-on mode 10 30V DC ≤ 40mA 100mA 2.0V DC LED, infrared light 880nm < 1ms
sensing range putput signal perating voltage current consumption (w/o load) putput current (max. load) voltage drop (max. load) transmitting element (pulsed) wavelength response/decay time display (signal / reserve)	pnp, light-on mode 10 30V DC ≤ 40mA 100mA 2.0V DC LED, infrared light 880nm	pnp, light-on mode 10 30V DC ≤ 40mA 100mA 2.0V DC LED, infrared light 880nm
pensing range putput signal perating voltage current consumption (w/o load) putput current (max. load) voltage drop (max. load) transmitting element (pulsed) wavelength response/decay time display (signal / reserve) interference suppression	pnp, light-on mode 10 30V DC ≤ 40mA 100mA 2.0V DC LED, infrared light 880nm < 1ms red LED / red LED, flashing	pnp, light-on mode 10 30V DC ≤ 40mA 100mA 2.0V DC LED, infrared light 880nm < 1ms red LED / red LED, flashing
pensing range putput signal perating voltage current consumption (w/o load) putput current (max. load) voltage drop (max. load) cransmitting element (pulsed) wavelength response/decay time display (signal / reserve) interference suppression short-circuit protection	pnp, light-on mode 10 30V DC ≤ 40mA 100mA 2.0V DC LED, infrared light 880nm < 1ms red LED / red LED, flashing +	pnp, light-on mode 10 30V DC ≤ 40mA 100mA 2.0V DC LED, infrared light 880nm < 1ms red LED / red LED, flashing +
sensing range putput signal perating voltage current consumption (w/o load) putput current (max. load) cottage drop (max. load) cransmitting element (pulsed) wavelength response/decay time display (signal / reserve) interference suppression short-circuit protection reverse polarity protection	pnp, light-on mode 10 30V DC ≤ 40mA 100mA 2.0V DC LED, infrared light 880nm < 1ms red LED / red LED, flashing + + +	pnp, light-on mode 10 30V DC ≤ 40mA 100mA 2.0V DC LED, infrared light 880nm < 1ms red LED / red LED, flashing + + +
sensing range putput signal perating voltage current consumption (w/o load) putput current (max. load) voltage drop (max. load) transmitting element (pulsed) wavelength response/decay time display (signal / reserve) interference suppression short-circuit protection reverse polarity protection dimensions	pnp, light-on mode 10 30V DC ≤ 40mA 100mA 2.0V DC LED, infrared light 880nm < 1ms red LED / red LED, flashing + +	pnp, light-on mode 10 30V DC ≤ 40mA 100mA 2.0V DC LED, infrared light 880nm < 1ms red LED / red LED, flashing + +
sensing range output signal operating voltage current consumption (w/o load) output current (max. load) voltage drop (max. load) transmitting element (pulsed) wavelength response/decay time display (signal / reserve) interference suppression short-circuit protection reverse polarity protection dimensions length (thread/complete)	pnp, light-on mode 10 30V DC ≤ 40mA 100mA 2.0V DC LED, infrared light 880nm < 1ms red LED / red LED, flashing + + + 8x58x12mm	pnp, light-on mode 10 30V DC ≤ 40mA 100mA 2.0V DC LED, infrared light 880nm < 1ms red LED / red LED, flashing + + + 8x67x12mm
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sensing range output signal operating voltage current consumption (w/o load) output current (max. load) voltage drop (max. load) transmitting element (pulsed) wavelength response/decay time display (signal / reserve) interference suppression short-circuit protection reverse polarity protection dimensions length (thread/complete) housing material	pnp, light-on mode 10 30V DC ≤ 40mA 100mA 2.0V DC LED, infrared light 880nm < 1ms red LED / red LED, flashing + + + 8x58x12mm - / 58mm aluminum	pnp, light-on mode 10 30V DC ≤ 40mA 100mA 2.0V DC LED, infrared light 880nm < 1ms red LED / red LED, flashing + + + 8x67x12mm - / 67mm aluminum
sensing range output signal operating voltage current consumption (w/o load) output current (max. load) voltage drop (max. load) transmitting element (pulsed) wavelength response/decay time display (signal / reserve) interference suppression short-circuit protection reverse polarity protection dimensions length (thread/complete) housing material lens material operating temperature	pnp, light-on mode 10 30V DC ≤ 40mA 100mA 2.0V DC LED, infrared light 880nm < 1ms red LED / red LED, flashing + + + 8x58x12mm - / 58mm aluminum PC	pnp, light-on mode 10 30V DC ≤ 40mA 100mA 2.0V DC LED, infrared light 880nm < 1ms red LED / red LED, flashing + + + 8x67x12mm - / 67mm aluminum PC
	pnp, light-on mode 10 30V DC ≤ 40mA 100mA 2.0V DC LED, infrared light 880nm < 1ms red LED / red LED, flashing + + + 8x58x12mm - / 58mm aluminum PC -25 +65°C	pnp, light-on mode 10 30V DC ≤ 40mA 100mA 2.0V DC LED, infrared light 880nm < 1ms red LED / red LED, flashing + + 8x67x12mm - / 67mm aluminum PC -25 +65°C

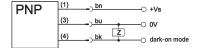
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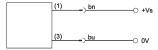


connection

cable/connector devices, through-beam receiver

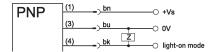


cable/connector devices, through-beam transmitter



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

cable/connector devices, dif. reflection sensor



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.