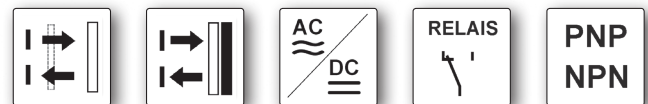


dimensions **68 x 26 x 68mm**  
dif. reflection sensors sensing range **200 to 2500mm**

- ✓ time adjustment: pick-up- / release delay (on/off) of 0.1 to 5 seconds
- ✓ robust plastic housing
- ✓ LED display for signal and functional reserve
- ✓ display for sensing range adjustment
- ✓ universal voltage devices with relay output
- ✓ DC devices with pnp and npn output
- ✓ high sampling frequency and sensing ranges
- ✓ integrated interference suppression
- ✓ connection with connecting terminals or M12-connector



**fore- and background suppression  
infinitely variable sensing range setting**



**description**

Series **OT59** sensors are robust diffuse reflection sensors in a plastic housing that function according to the triangulation principle.

The light beam emitted by an LED is reflected by the object which is to be detected onto a two-part optic recognition element. Depending on the object's distance, light is incident on the electronic recognition element at certain positions and the distance of the object is determined from the angle of the reflected light. This enables very precise background suppression.

The DC models in this series can also be switched to foreground suppression by means of a DIP switch.

Triangulation diffuse reflection sensors are used as limit switches, position switches and pulse generators on automatic machines / production sequences, often in conjunction with a programmable logic control (PLC). They are capable of a contactless detection of objects made from metal, glass, plastic (films!), wood, paper, etc.

The sensing range of the sensors is largely independent of color, shape and material. Erroneous operations due to objects, which are farther away (machine parts, operating

staff), are securely avoided.

The latest electronics from the area of film technology in a robust housing ensure maximum operating safety and reliability. Even with normal soiling of the lenses, perfect position recognition is still possible with the measurement technique. All devices are available with time functions.

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 that does not involve contact and which is reliable and fast.

In addition to devices with DC voltage, universal voltage versions are also available.

**application examples**

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

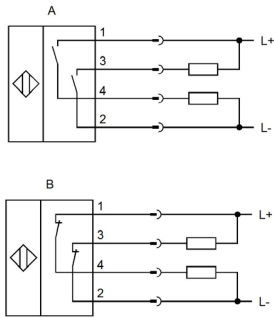
article-no.	OT590500	OT590520
version	diffuse reflection sensor with fore- and background suppression	diffuse reflection sensor with fore- and background suppression
time adjustment	-	-
sensing range	200 ... 1000mm	200 ... 1000mm
article-no.	OT590505	OT590525
version	diffuse reflection sensor with fore- and background suppression	diffuse reflection sensor with fore- and background suppression
time adjustment	-	-
sensing range	200 ... 2500mm	200 ... 2500mm
<b>TECHNICAL DATA</b>		
sensing range	see above	see above
output signal	pnp / npn, dark-on/light-on mode	pnp / npn, dark-on/light-on mode
operating voltage	12 ... 24V DC $\pm$ 10%	12 ... 24V DC $\pm$ 10%
current consumption (w/o load)	< 45mA	< 45mA
output current (max. load)	100mA	100mA
voltage drop (max. load)	1.0V DC	1.0V DC
transmitting element (pulsed)	LED, infrared light	LED, infrared light
hysteresis	10% of the sensing range	10% of the sensing range
response time	< 2.0ms	< 2.0ms
display (signal)	orange LED	orange LED
display (functional reserve)	green LED	green LED
sensitivity adjustment	2-turn potentiometer with sensing range display	2-turn potentiometer with sensing range display
time adjustment	-	-
short-circuit protection	+	+
reverse polarity protection	+	+
dimensions	68x26x68mm	68x26x68mm
housing material	ABS	ABS
front screen material	polycarbonate	polycarbonate
operating temperature	-25 ... +55°C	-25 ... +55°C
degree of protection (EN 60529)	IP67	IP67
connection	terminals	M12-connector, 4-pin
connection accessories	-	e.g. VK200325
mounting accessories (bracket)	AO000038	AO000038

article-no.	OT590580	OT590581
version	diffuse reflection sensor with fore- and background suppression	diffuse reflection sensor with fore- and background suppression
time adjustment	0.1 ... 5.0s, on / off	0.1 ... 5.0s, on / off
sensing range	200 ... 1000mm	200 ... 1000mm
article-no.	OT590585	OT590586
version	diffuse reflection sensor with fore- and background suppression	diffuse reflection sensor with fore- and background suppression
time adjustment	0.1 ... 5.0s, on / off	0.1 ... 5.0s, on / off
sensing range	200 ... 2500mm	200 ... 2500mm
<b>TECHNICAL DATA</b>		
sensing range	see above	see above
output signal	pnp / npn, dark-on/light-on mode	pnp / npn, dark-on/light-on mode
operating voltage	12 ... 24V DC ± 10%	12 ... 24V DC ± 10%
current consumption (w/o load)	< 45mA	< 45mA
output current (max. load)	100mA	100mA
voltage drop (max. load)	1.0V DC	1.0V DC
transmitting element (pulsed)	LED, infrared light	LED, infrared light
hysteresis	10% of the sensing range	10% of the sensing range
response time	< 2.0ms	< 2.0ms
display (signal)	orange LED	orange LED
display (functional reserve)	green LED	green LED
sensitivity adjustment	2-turn potentiometer with sensing range display	2-turn potentiometer with sensing range display
time adjustment	potentiometer, 0.1 ... 5.0sec, on / off	potentiometer, 0.1 ... 5.0sec, on / off
short-circuit protection	+	+
reverse polarity protection	+	+
dimensions	68x26x68mm	68x26x68mm
housing material	ABS	ABS
lens material	polycarbonate	polycarbonate
operating temperature	-25 ... +55°C	-25 ... +55°C
degree of protection (EN 60529)	IP67	IP67
connection	terminals	M12-connector, 4-pin
connection accessories	-	e.g. VK200325
mounting accessories	A0000038	A0000038

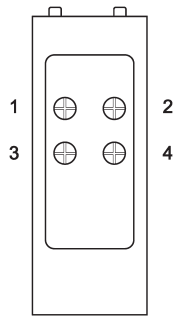
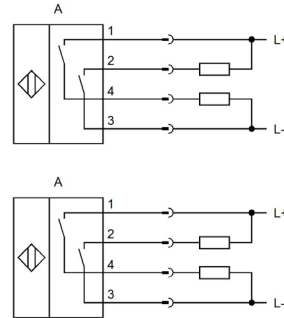
article-no.	OT595900	OT595980
version	diffuse reflection sensor with background suppression	diffuse reflection sensor with background suppression
time adjustment	-	0.1 ... 5.0s, on/off
sensing range	200 ... 1000mm	200 ... 1000mm
article-no.	OT595905	OT595985
version	diffuse reflection sensor with background suppression	diffuse reflection sensor with background suppression
time adjustment	-	0.1 ... 5.0s, on/off
sensing range	200 ... 2500mm	200 ... 2500mm
<b>TECHNICAL DATA</b>		
sensing range	see above	see above
output signal	relay, no	relay, no
operating voltage	12 ... 240V DC $\pm 10\%$ 24 ... 240V AC $\pm 10\%$	12 ... 240V DC $\pm 10\%$ 24 ... 240V AC $\pm 10\%$
current consumption (w/o load)	AC: 5VA / DC: 3W	AC: 5VA / DC: 3W
output current (max. load)	ohmic load: 3A to 250V AC / 3A to 30V DC	ohmic load: 3A to 250V AC / 3A to 30V DC
transmitting element (pulsed)	LED, infrared light	LED, infrared light
hysteresis	10% of the sensing range	10% of the sensing range
response time	< 2.0ms	< 2.0ms
display (signal)	orange LED	orange LED
display (functional reserve)	green LED	green LED
sensitivity adjustment	2-turn potentiometer with sensing range display	2-turn potentiometer with sensing range display
time adjustment	-	potentiometer, 0.1 ... 5.0s on / off
short-circuit protection	-	-
reverse polarity protection	+	+
dimensions	68x26x68mm	68x26x68mm
housing material	ABS	ABS
lens material	polycarbonate	polycarbonate
operating temperature	-25 ... +55°C	-25 ... +55°C
degree of protection (EN 60529)	IP67	IP67
connection	terminals	terminals
connection accessories	-	-
mounting accessories	<b>AO000038</b>	<b>AO000038</b>

**connection**

DC version, terminals

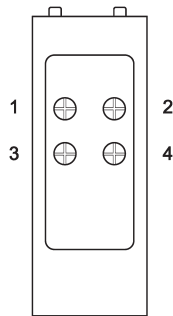
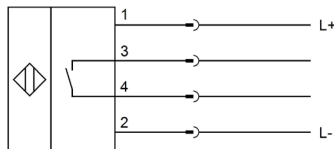


DC version, connector device

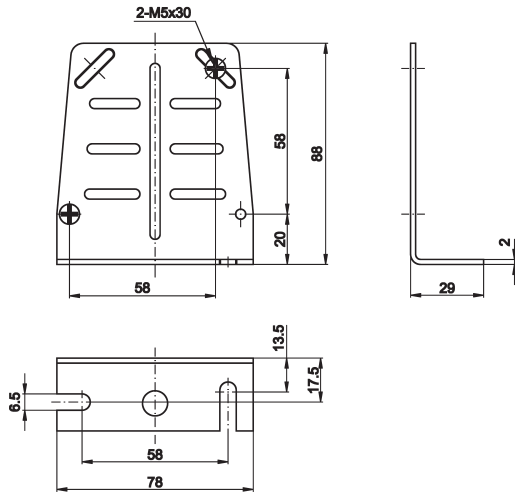


**wire colors:** bn = brown (1), wh = white (2), bu = blue (3), bk = black (4)

AC/DC version, terminals



**mounting accessories** mounting bracket **AO000038**



**ACCESSORIES**

article-no.	description	material
AO000038	mounting bracket 59	sheet steel, painted black

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-SENSORFLEX®**“ or search our website for „VK“.

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

This data sheet as well as your personal contact can be found at [www.ipf-electronic.com](http://www.ipf-electronic.com)

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**NOTES**

A large grid area for taking notes, consisting of a 30x30 grid of small squares. The grid is empty and occupies the majority of the page.