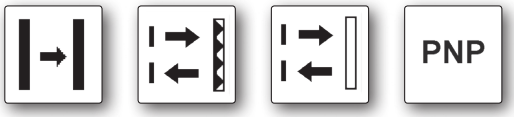
design	**M8x0.75** **M12x1** **M18x1** **M30x1.5**	
through-beam sensor	operating distance	**up to 10.0m**
retro-reflective sensor	operating distance	**up to 4.0m**
dif. reflection sensor	sensing range	**up to 1.5m**

- ✓ **robust metal housing**
- ✓ **integrated amplifier, adjustable diffuse reflection sensors**
- ✓ **high sampling frequency and sensing ranges**
- ✓ **connection with cable, M8- or M12-connector**

up to 10m operating distance
stainless steel or brass housing



description

These days, optoelectronic sensors are indispensable components in many automated manufacturing processes. They are used everywhere where parts have to be more reliably detected in a way which is fast and without contact, or have to be counted, measured or positioned.

The devices feature a brass 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.

Among other things, diffuse reflection sensors with intensity differentiation are suited to differentiate white / black objects.

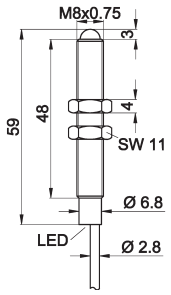
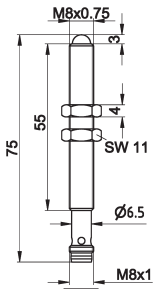
If, in the case of the receivers of through-beam sensors or diffuse reflection sensors, the corresponding LED flashes when the output is switched, the respective device is working without sufficient functional reserve, e.g. due to soiling or maladjustment. The LED display lights up if the output is securely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

The design M18 devices have a programmable output circuit (light-on or dark-on mode).

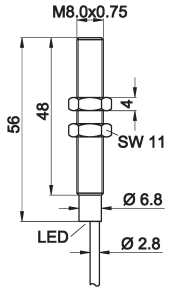
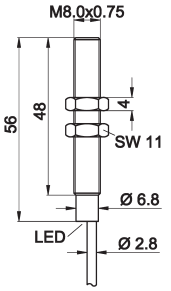
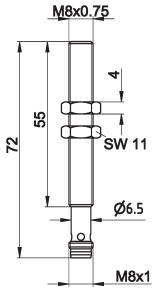
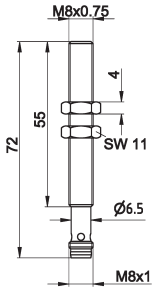
The transmitting power of the M12 design transmitters can be adjusted using an external potentiometer. Through this the operating distance in connection with the corresponding receiver can be reduced. Furthermore these devices have a test input that makes a selective cut off possible.

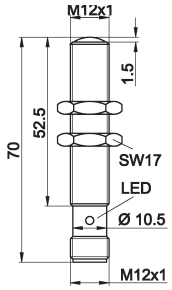
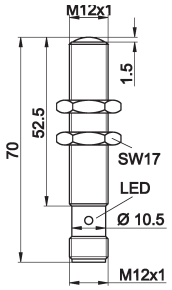
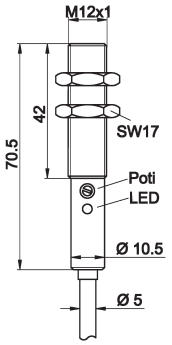
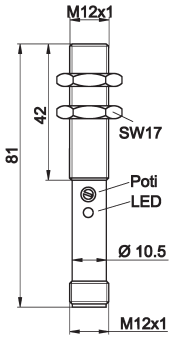
application examples

- presence check of various objects
- avoiding collision, in the case of feeding movements
- monitoring of object heights and pile heights
- limit switches, position switches and pulse generators

article-no.	**OE080100**	**OE080170**
version	**through-beam receiver**	**through-beam receiver**
operating range	**2.5m**	**2.5m**
connection	**cable**	**connector**
article-no.	**OS080000**	**OS080070**
version	**through-beam transmitter**	**through-beam transmitter**
operating range	**2.5m**	**2.5m**
connection	**cable**	**connector**
		
TECHNICAL DATA		
operating distance	2.5m	2.5m
output signal	pnp dark-on mode *	pnp dark-on mode *
operating voltage	10 ... 30V DC	10 ... 30V DC
current consumption (w/o load)	≤ 24mA (receiver) / ≤ 17mA (transmitter)	≤ 24mA (receiver) / ≤ 17mA (transmitter)
output current (max. load)	100mA *	100mA *
voltage drop (max. load)	2.0V DC *	2.0V DC *
transmitting element (pulsed)	LED, infrared light, 880nm	LED, Infrarotlicht ,880nm
response/decay time	< 2.5msec *	< 2.5msec *
display (signal)	red LED *	red LED *
display (stand-by)	red LED, flashing *	red LED, flashing *
sensitivity adjustment	-	-
short-circuit protection	+	+
reverse polarity protection	+	+
design	M8x0.75	M8x0.75
length (thread/complete)	48mm/59mm	55mm/75mm
housing material	nickel-plated brass	nickel-plated brass
front screen material	plastic	plastic
operating temperature	-25 ... +65°C	-25 ... +65°C
system of protection (EN 60529)	IP65	IP65
connection	cable, PVC, 3-wire	M8-connector, 3-pin
connection accessories	-	e.g. **VK200075**, 2m straight, PUR

* only receiver

article-no.	OT080100	OT080105	OT080170	OT080175
version	dif. reflection sensor with intensity differentiation	dif. reflection sensor with intensity differentiation	dif. reflection sensor with intensity differentiation	dif. reflection sensor with intensity differentiation
operating range	40mm	80mm	40mm	80mm
connection	cable	cable	connector	connector
				
TECHNICAL DATA				
sensing range	40mm	80mm	40mm	80mm
output signal	pnp light-on mode	pnp light-on mode	pnp light-on mode	pnp light-on mode
operating voltage	10 ... 30V DC	10 ... 30V DC	10 ... 30V DC	10 ... 30V DC
current consumption (w/o load)	≤ 20mA	≤ 20mA	≤ 20mA	≤ 20mA
output current (max. load)	100mA	100mA	100mA	100mA
voltage drop (max. load)	2.0V DC	2.0V DC	2.0V DC	2.0V DC
transmitting element (pulsed)	LED, infrared light, 880nm	LED, infrared light, 880nm	LED, infrared light, 880nm	LED, infrared light, 880nm
response/decay time	< 1msec	< 1msec	< 1msec	< 1msec
display (signal)	red LED	red LED	red LED	red LED
display (stand-by)	red LED, flashing	red LED, flashing	red LED, flashing	red LED, flashing
sensitivity adjustment	-	-	-	-
short-circuit protection	+	+	+	+
reverse polarity protection	+	+	+	+
design	M8x0.75	M8x0.75	M8x0.75	M8x0.75
length (thread/complete)	48mm/56mm	48mm/56mm	55mm/72mm	55mm/72mm
housing material	nickel-plated brass	nickel-plated brass	nickel-plated brass	nickel-plated brass
lens material	plastic	plastic	plastic	plastic
operating temperature	-25 ... +65°C	-25 ... +65°C	-25 ... +65°C	-25 ... +65°C
system of protection (EN 60529)	IP65	IP65	IP65	IP65
connection	cable, 2m, PVC, 3-wire	cable, 2m, PVC, 3-wire	M8-connector, 3-pin	M8-connector, 3-pin
connection accessories	-	-	e.g. **VK200075**, 2m straight, PUR	e.g. **VK200075**, 2m straight, PUR

article-no.	OE120125	OS120020	OT120100	OT120120
version	through-beam receiver	through-beam transmitter	dif. reflection sensor with intensity differentiation	dif. reflection sensor with intensity differentiation
operating range	6m	-	30 ... 200mm	30 ... 200mm
connection	connector	connector	cable	connector
				
TECHNICAL DATA				
operating distance/sensing range	6m	(external adjustable)	30 ... 200mm	30 ... 200mm
output signal	pnp light-on mode	-	pnp light-on mode	pnp light-on mode
operating voltage	10 ... 30V DC	10 ... 30V DC	10 ... 30V DC	10 ... 30V DC
current consumption (w/o load)	≤ 20mA	≤ 28mA	≤ 24mA	≤ 24mA
output current (max. load)	100mA	-	200mA	200mA
voltage drop (max. load)	2.1V DC	-	1.8V DC	1.8V DC
transmitting element (pulsed)	-	LED, infrared light, 880nm	LED, infrared light, 880nm	LED, infrared light, 880nm
response/decay time	< 6msec	-	< 1msec	< 1msec
display (signal)	red LED	-	yellow LED	yellow LED
display (operation)	-	green LED	-	-
display (stand-by)	-	-	yellow LED, flashing	yellow LED, flashing
sensitivity adjustment	potentiometer	-	potentiometer	potentiometer
short-circuit protection	+	+	+	+
reverse polarity protection	+	+	+	+
design	M12x1	M12x1	M12x1	M12x1
length (thread/complete)	52.5mm/70mm	52.5mm/70mm	42mm/70.5mm	42mm/81mm
housing material	stainless steel	stainless steel	nickel-plated brass	nickel-plated brass
lens material	plastic	plastic	plastic	plastic
operating temperature	-25 ... +55°C	-25 ... +55°C	-25 ... +65°C	-25 ... +65°C
system of protection (EN 60529)	IP67	IP67	IP65	IP65
connection	M12-connector, 3-pin	M12-connector, 3-pin	cable, 2m, PVC, 3-wire	M12-connector, 3-pin
connection accessories	e.g. **VK200025**, 2m straight, PUR	e.g. **VK200025**, 2m straight, PUR	-	e.g. **VK200025**, 2m straight, PUR

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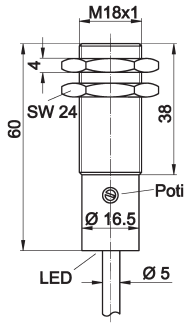
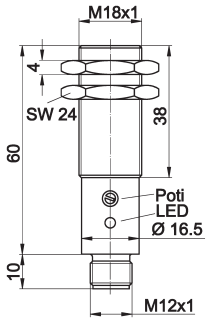
article-no.	**OE180303**	**OE180323**
version	**through-beam receiver**	**through-beam receiver**
operating range	**10m**	**10m**
connection	**cable**	**connector**
article-no.	**OS180003**	**OS180023**
version	**through-beam transmitter**	**through-beam transmitter**
operating range	**10m**	**10m**
connection	**cable**	**connector**



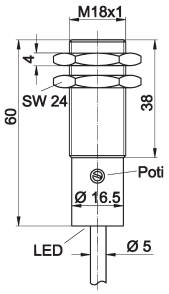
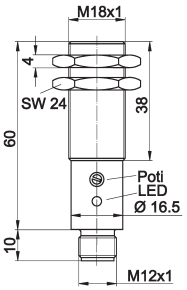
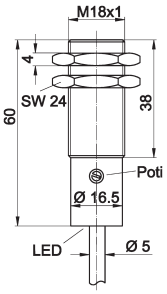
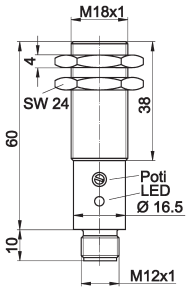
potentiometer only receiver



potentiometer only receiver

TECHNICAL DATA		
operating distance	10m	10m
output signal	pnp light-on / dark-on mode *	pnp light-on / dark-on mode *
operating voltage	10 ... 30V DC	10 ... 30V DC
current consumption (w/o load)	≤ 25mA (receiver) / ≤ 25mA (transmitter)	≤ 25mA (receiver) / ≤ 25mA (transmitter)
output current (max. load)	100mA *	100mA *
voltage drop (max. load)	2.0V DC *	2.0V DC *
transmitting element (pulsed)	LED, infrared light, 880nm	LED, infrared light, 880nm
response/decay time	< 1.0msec*	< 1.0msec *
display (signal)	yellow LED *	yellow LED *
display (operation)	green LED	green LED
display (stand-by)	green LED, flashing *	green LED, flashing *
sensitivity adjustment	potentiometer *	potentiometer *
short-circuit protection	+	+
reverse polarity protection	+	+
design	M18x1	M18x1
length (thread/complete)	35mm/60mm	35mm/71mm
housing material	nickel-plated brass	nickel-plated brass
front screen material	plastic	plastic
operating temperature	-25 ... +55°C	-25 ... +55°C
system of protection (EN 60529)	IP67	IP67
connection	cable, PVC, 4-wire	M12-connector, 4-pin
connection accessories	-	e.g. **VK200325**, 2m straight, PUR

* only receiver

article-no.	OR180303	OR180323	OT180303	OT180323
version	retro-refl. sensor	retro-refl. sensor	dif. reflection sensor	dif. reflection sensor
operating range	4m	4m	200mm	200mm
connection	cable	connector	cable	connector
				
TECHNICAL DATA				
operating distance/sensing range	4m	4m	0 ... 200mm	0 ... 200mm
output signal	pnp light-on / dark-on mode	pnp light-on / dark-on mode	pnp light-on / dark-on mode	pnp light-on / dark-on mode
operating voltage	10 ... 30V DC	10 ... 30V DC	10 ... 30V DC	10 ... 30V DC
current consumption (w/o load)	≤ 15mA	≤ 15mA	≤ 25mA	≤ 25mA
output current (max. load)	200mA	200mA	100mA	100mA
voltage drop (max. load)	2.0V DC	2.0V DC	2.5V DC	2.5V DC
transmitting element (pulsed)	LED, infrared light, 880nm	LED, infrared light, 880nm	LED, infrared light, 880nm	LED, infrared light, 880nm
response/decay time	< 1msec	< 1msec	< 1msec	< 1msec
display (signal)	yellow LED	yellow LED	yellow LED	yellow LED
display (operation)	green LED	green LED	green LED	green LED
display (stand-by)	green LED, flashing	green LED, flashing	green LED, flashing	green LED, flashing
sensitivity adjustment	potentiometer	potentiometer	potentiometer	potentiometer
short-circuit protection	+	+	+	+
reverse polarity protection	+	+	+	+
design	M18x1	M18x1	M18x1	M18x1
length (thread/complete)	35mm/60mm	35mm/71mm	35mm/60mm	35mm/71mm
housing material	nickel-plated brass	nickel-plated brass	nickel-plated brass	nickel-plated brass
front screen material	plastic	plastic	plastic	plastic
operating temperature	-25 ... +55°C	-25 ... +55°C	-25 ... +55°C	-25 ... +55°C
system of protection (EN 60529)	IP67	IP67	IP67	IP67
connection	cable, PVC, 4-wire	M12-connector, 4-pin	cable, PVC, 4-wire	M12-connector, 4-pin
connection accessories	-	e.g. **VK200325** straight, PUR, 2m	-	e.g. **VK200325** straight, PUR, 2m

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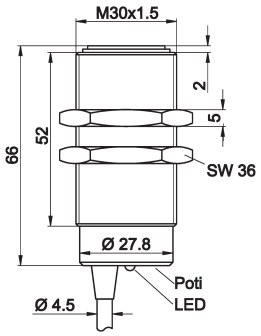
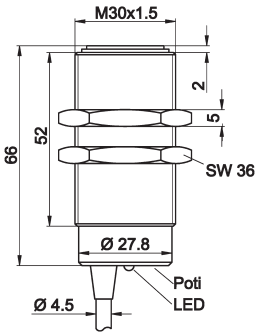
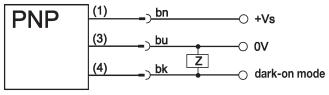
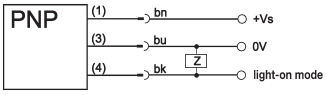
article-no.	**OT300400**	**OT300420**
version	**dif. reflection sensor**	**dif. reflection sensor**
operating range	**1.5m**	**1.5m**
connection	**cable**	**M12-cable-connector**
		
TECHNICAL DATA		
sensing range	1.5m	1.5m
output signal	pnp light-on / dark-on mode	pnp light-on / dark-on mode
operating voltage	10 ... 30V DC	10 ... 30V DC
current consumption (w/o load)	≤ 50mA	≤ 50mA
output current (max. load)	100mA	100mA
voltage drop (max. load)	2.5V DC	2.5V DC
transmitting element (pulsed)	LED, infrared light, 880nm	LED, infrared light, 880nm
response/decay time	< 2.5msec	< 2.5msec
display (signal)	yellow LED	yellow LED
display (stand-by)	yellow LED, flashing	yellow LED, flashing
sensitivity adjustment	potentiometer	potentiometer
short-circuit protection	+	+
reverse polarity protection	+	+
design	M30x1.5	M30x1.5
length (thread/complete)	52mm/66mm	52mm/66mm
housing material	nickel-plated brass	nickel-plated brass
lens material	plastic	plastic
operating temperature	0 ... +65°C	0 ... +65°C
system of protection (EN 60529)	IP65	IP65
connection	cable, 2m, PVC, 4-wire	M12-cable connector, 4-pin
connection accessories	-	e.g. **VK200325**, straight, PUR, 2m

connection

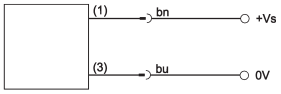
through-beam receiver, dif. reflection sensor



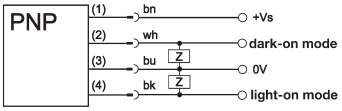
retro-reflective sensor



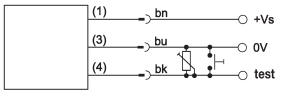
through-beam transmitter



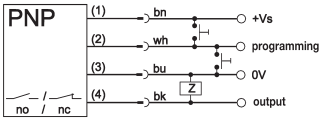
dif. reflection sensor OT30



through-beam transmitter OS12



through-beam reciever OE18, retro-reflective senseor OR18, dif. reflection sensor OT18



system test OS12: Disabling the transmitter via closing a switch between blue (3) and black (4).

power adjustment OS12: Controlling of the transmitting power via connection of a potentiometer between blue (3) and black (4).

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

light-on mode: connection between white (2) and brown (1)

dark-on mode: connection between white (2) and blue (3)

ARTICLE-NO.	DESCRIPTION	MATERIAL
AY000088	base module *	flanges: stainless steel, ball pin: steel zinced
AY000089	fixture kit for M8x1 sensors	stainless steel
AY000090	fixture kit for M12x1 sensors	stainless steel
AY000091	fixture kit for M18x1 sensors	stainless steel

* The base module **AY000088** is included in every fixture kit.
Material of the screws and nuts: galvanized steel

ARTICLE-NO.	DESCRIPTION	FOR SENSOR DIAMETER	MATERIAL CLIP/SCREW
AY000047	quick clip	8mm	PA6 / galvanized steel
AY000048	quick clip with positive stop	8mm	PA6 / galvanized steel
AY000049	quick clip	12mm	PA6 / galvanized steel
AY000050	quick clip with positive stop	12mm	PA6 / galvanized steel
AY000051	quick clip	18mm	PA6 / galvanized steel
AY000052	quick clip with positive stop	18mm	PA6 / galvanized steel
AY000061	quick clip	30mm	PA6 / galvanized steel
AY000062	quick clip with positive stop	30mm	PA6 / galvanized steel
AY000053	straight base for quick clip	12mm, 18mm	PA6 / galvanized steel
AY000054	angular base for quick clip	12mm, 18mm	PA6 / galvanized steel
AY000055	quick clip identification labels	12 ... 30mm	plastic / -
AY000057	box set with selection of quick clips	4 ... 18mm	plastic / -

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.