

Mini-rectangular Photoelectric Sensors - OS10



Description:

Mini-rectangular photoelectric sensors OS10 series, with high performance and 25.4mm standard mounting hole distance, are available as BGS (background suppression) mode, Diffused mode, retro-reflective mode, and opposed mode. With optional red beam or laser beam source, they are suitable for printing and packaging, pharmaceutical, electronic, small equipment and other application fields.

Features:

- BGS function has greatly improved the detection effect
- Optional red beam or laser beam
- Adjustable sensing range
- Protection class IP67
- Optional M8 connector, 2 m pre-wired cable

Red Beam:

Detection mode	Type	Max. sensing range	Switching frequency	Output	Switching mode	Connection	Wiring diagram
Opposed	OS10-S6 (emitter)	30 m	—	—	—	2m cable	Fig.1
	OS10-ECN6(receiver)	30 m	1 kHz	NPN	Light-on / Dark-on	2m cable	Fig.2
	OS10-ECP6(receiver)	30 m	1 kHz	PNP	Light-on / Dark-on	2m cable	Fig.3
	OS10-S6Q8(emitter)	30 m	—	—	—	M8 connector, 4-pin	Fig.4
	OS10-ECN6Q8(receiver)	30 m	1 kHz	NPN	Light-on / Dark-on	M8 connector, 4-pin	Fig.5
	OS10-ECP6Q8(receiver)	30 m	1 kHz	PNP	Light-on / Dark-on	M8 connector, 4-pin	Fig.6
Polarized	OS10-RPCN6	3 m	1 kHz	NPN	Light-on / Dark-on	2m cable	Fig.2
retro-reflective	OS10-RPCP6	3 m	1 kHz	PNP	Light-on / Dark-on	2m cable	Fig.3
	OS10-RPCN6Q8	3 m	1 kHz	NPN	Light-on / Dark-on	M8 connector, 4-pin	Fig.5
	OS10-RPCP6Q8	3 m	1 kHz	PNP	Light-on / Dark-on	M8 connector, 4-pin	Fig.6
BGS diffused	OS10-AK150CN6	6..150 mm	1 kHz	NPN	Light-on / Dark-on	2m cable	Fig.2
	OS10-AK150CP6	6..150 mm	1 kHz	PNP	Light-on / Dark-on	2m cable	Fig.3
	OS10-AK150CN6Q8	6..150 mm	1 kHz	NPN	Light-on / Dark-on	M8 connector, 4-pin	Fig.5
	OS10-AK150CP6Q8	6..150 mm	1 kHz	PNP	Light-on / Dark-on	M8 connector, 4-pin	Fig.6
	OS10-AK350CN6	6..350 mm	1 kHz	NPN	Light-on / Dark-on	2m cable	Fig.2
	OS10-AK350CP6	6..350 mm	1 kHz	PNP	Light-on / Dark-on	2m cable	Fig.3
	OS10-AK350CN6Q8	6..350 mm	1 kHz	NPN	Light-on / Dark-on	M8 connector, 4-pin	Fig.5
	OS10-AK350CP6Q8	6..350 mm	1 kHz	PNP	Light-on / Dark-on	M8 connector, 4-pin	Fig.6

Laser Beam:

Detection mode	Type	Max. sensing range	Switching frequency	Output type	Switching mode	Connection type	Wiring diagram
Opposed	OS10-SL6(emitter))	60 m	—	—	—	2m cable	Fig.1
	OS10-ELCN6(receiver)	60 m	1 kHz	NPN	Light-on / Dark-on	2m cable	Fig.2
	OS10-ELCP6(receiver)	60 m	1 kHz	PNP	Light-on / Dark-on	2m cable	Fig.3
	OS10-SL6Q8(emitter))	60 m	—	—	—	M8 connector, 4-pin	Fig.4
	OS10-ELCN6Q8(receiver)	60 m	1 kHz	NPN	Light-on / Dark-on	M8 connector, 4-pin	Fig.5
	OS10-ELCP6Q8(receiver)	60 m	1 kHz	PNP	Light-on / Dark-on	M8 connector, 4-pin	Fig.6
Polarized	OS10-RPLCN6	3 m	1 kHz	NPN	Light-on / Dark-on	2m cable	Fig.2
retro-reflective	OS10-RPLCP6	3 m	1 kHz	PNP	Light-on / Dark-on	2m cable	Fig.3
	OS10-RPLCN6Q8	3 m	1 kHz	NPN	Light-on / Dark-on	M8 connector, 4-pin	Fig.5
	OS10-RPLCP6Q8	3 m	1 kHz	PNP	Light-on / Dark-on	M8 connector, 4-pin	Fig.6
BGS diffused	OS10-AKL150CN6	6..150 mm	1 kHz	NPN	Light-on / Dark-on	2m cable	Fig.2
	OS10-AKL150CP6	6..150 mm	1 kHz	PNP	Light-on / Dark-on	2m cable	Fig.3
	OS10-AKL150CN6Q8	6..150 mm	1 kHz	NPN	Light-on / Dark-on	M8 connector, 4-pin	Fig.5
	OS10-AKL150CP6Q8	6..150 mm	1 kHz	PNP	Light-on / Dark-on	M8 connector, 4-pin	Fig.6
	OS10-AKL350CN6	6..350 mm	1 kHz	NPN	Light-on / Dark-on	2m cable	Fig.2
	OS10-AKL350CP6	6..350 mm	1 kHz	PNP	Light-on / Dark-on	2m cable	Fig.3
	OS10-AKL350CN6Q8	6..350 mm	1 kHz	NPN	Light-on / Dark-on	M8 connector, 4-pin	Fig.5
	OS10-AKL350CP6Q8	6..350 mm	1 kHz	PNP	Light-on / Dark-on	M8 connector, 4-pin	Fig.6

BGS - Background Suppression Function:

The sensor judges an present object when light is received at the receiver Red position.

Standard diffused mode photoelectric sensors detect the objects according to the value of the received light, which is dependent on object color, material, transparency and other factors. Therefore, even using the same type of diffused photoelectric sensor to detect different objects, the sensing ranges vary dramatically.

By using dual diode receiver, the BGS mode photoelectric sensors detect the objects according to the different position that reflected light falls on the receiver. As shown in left figure, when the sensor relatively close to the object, the reflected light falls on receiver Red position, at this time, the output is turned ON.

The sensing range of the photoelectric sensors with BGS is basically the same for various objects.

Characteristics:

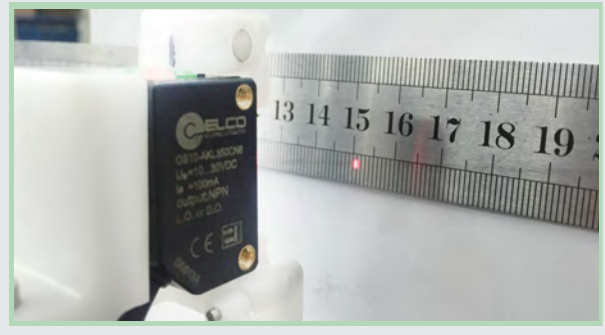
High resolution

Using a new optical system, the detection performance is substantial increased, which is up to 0.2 mm (the thickness of business card can be detected at 25 mm setting distance).



Micro-spot

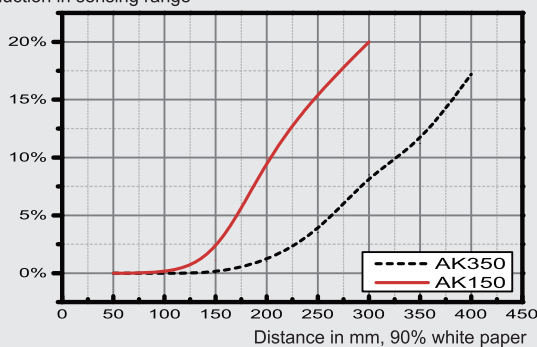
Using laser light source within 2 mm spot diameter, OS10-AKL sensors combine the performance of the laser sensor with the price of the photoelectric sensor, cost-effective, which are suitable for the small electronic components detection, transmission line edge detection and other applications.



BGS

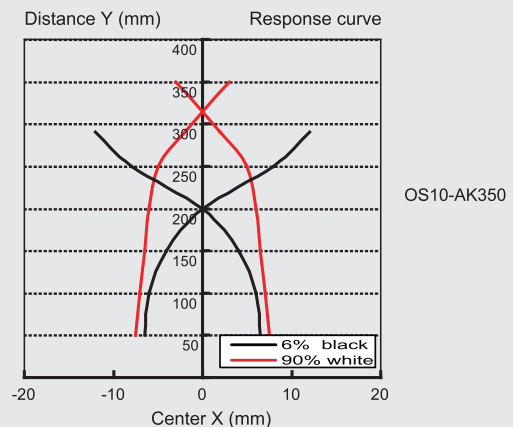
The sensing range is basically the same in rated sensing distance regardless of the color, material of the objects. As shown in figure, white paper with 90% reflectivity and blackboard with 5% reflectivity, the reduction in sensing range within 15%.

Reduction in sensing range



Ultra-bright light source

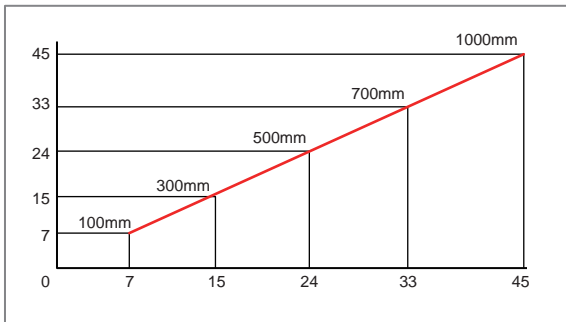
Using bright, red LED, the detection position is easy-to-read.



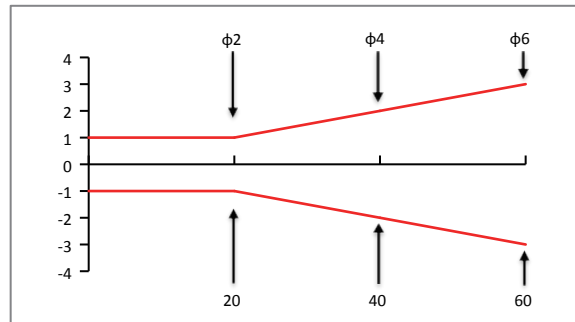
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Beam Pattern:

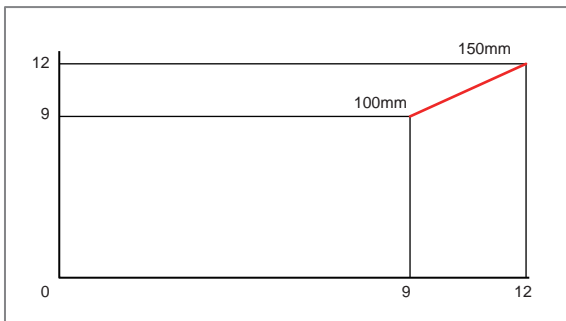
OS10-K1000 (mm)



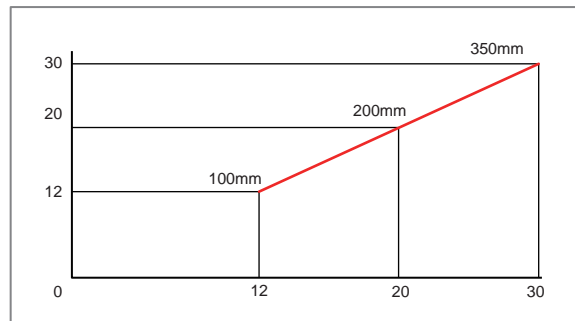
OS10-AK65 (mm)



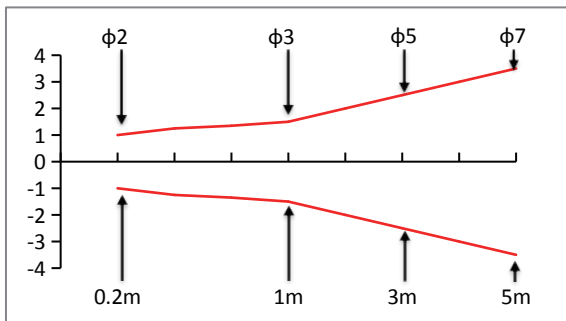
OS10-AK150 (mm)



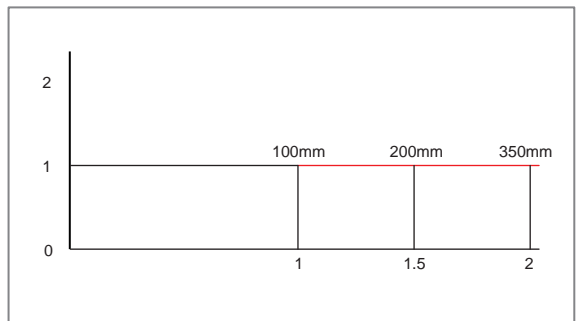
OS10-AK350 (mm)



OS10-RPL



OS10S-AKL(AKL150|AKL350)

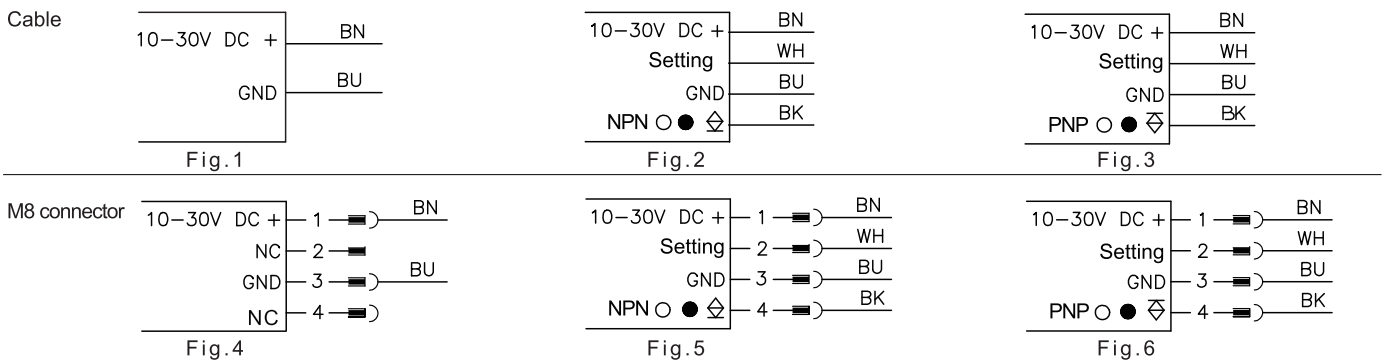


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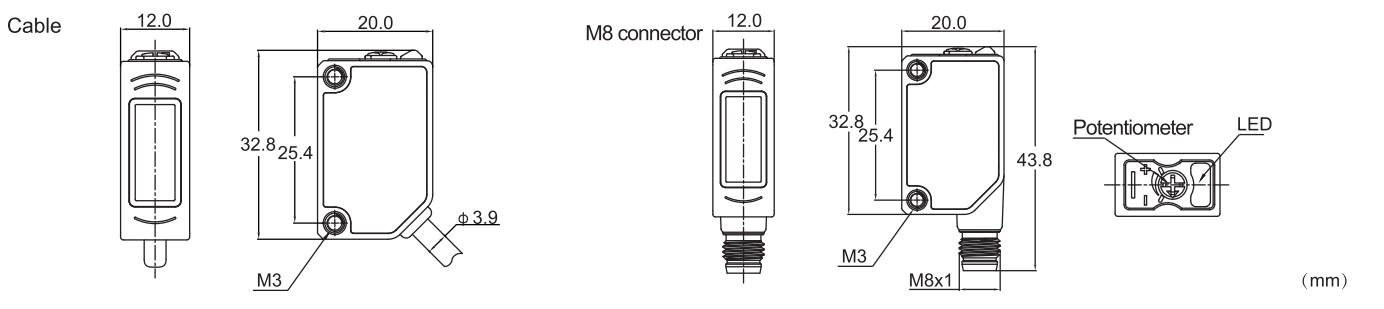
Technical Data

Supply voltage	10..30VDC
Light source	Red LED (625nm) / Laser light, Class 1
Output	PNP / NPN
Switching mode	Light on: white wire to U+ / suspended Dark on: white wire to U-
No-load supply current	≤20mA
Load supply current	≤100mA
Sensitivity	Potentiometer adjustment
LED	Power (green), output state (yellow)
Housing material	Polycarbonate
Lens material	PMMA
Connection	M8 connector / 2 m cable
Ambient operation temperature	-25°C..+55°C
Ambient storage temperature	-40°C..+70°C
Protection class	IP67

Wiring Diagram



Dimensions

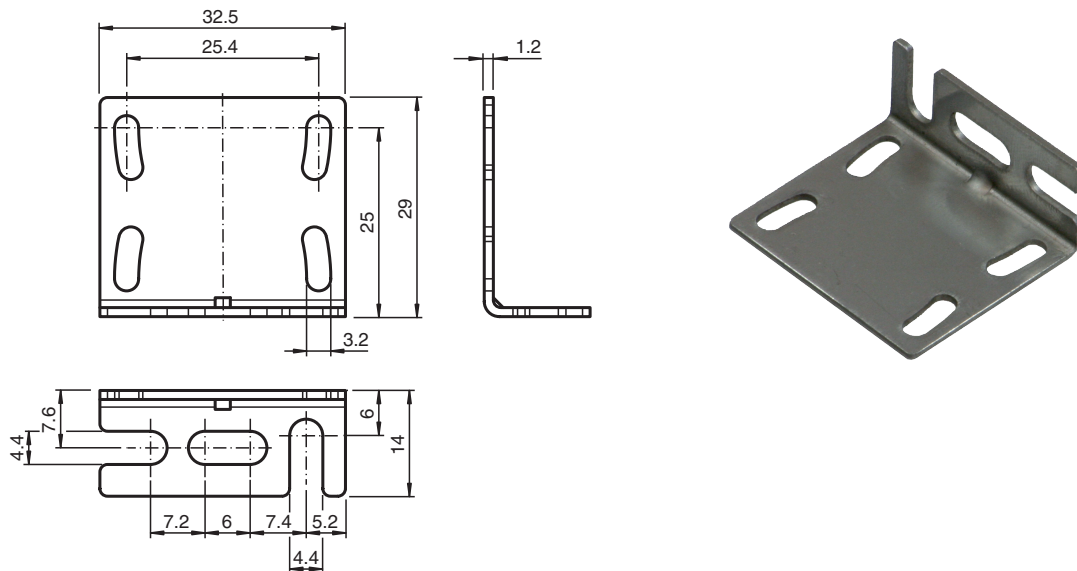


Montagehilfe

OMH-ML100-04

- Haltewinkel
- Einfache und schnelle Montage

Abmessungen



Technische Daten

Mechanische Daten	
Material	Edelstahl
Masse	ca. 10 g
Befestigung	Befestigungsmaterial inklusive
Passende Serien	
Serie	OS10 / OS10S

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