

Ultra-thin photoelectric PSV series



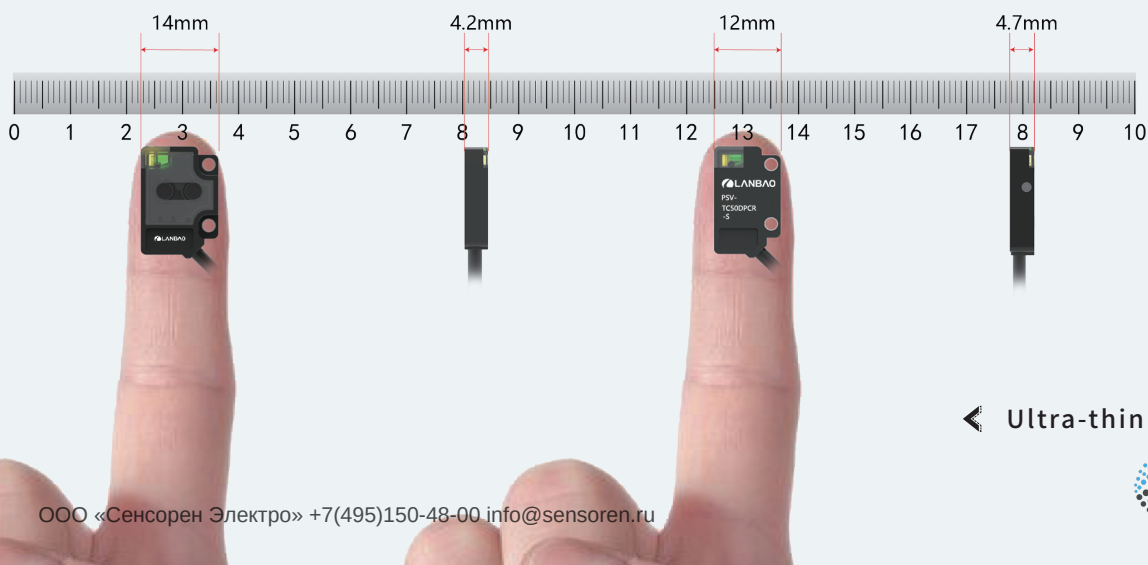
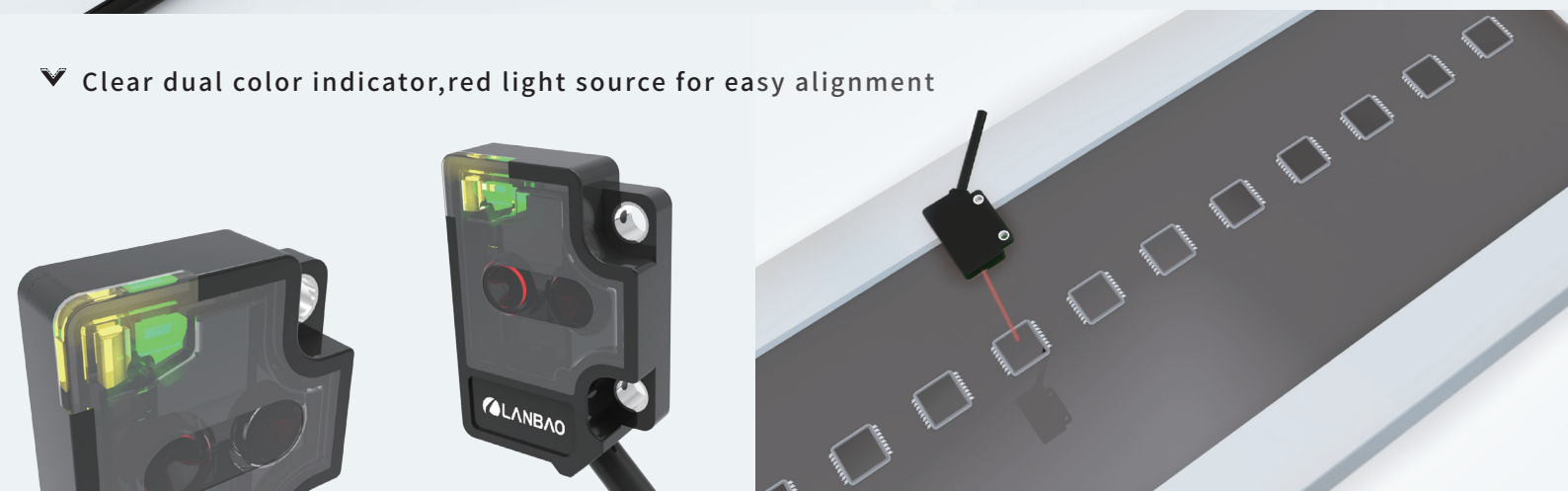
Shanghai Lanbao Sensing Technology Co., Ltd.

- ▼ Complete product line, options of through beam, diffuse, background suppression, convergent reflection
Through beam sensor with front and side light emitting to satisfy different applications



- ▼ Quick response, suitable to detect fast moving tiny objects

- ▼ Clear dual color indicator, red light source for easy alignment

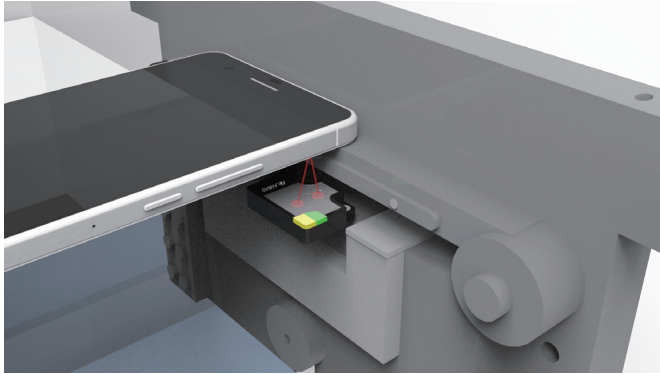


- ◀ Ultra-thin size, good for small space

Application

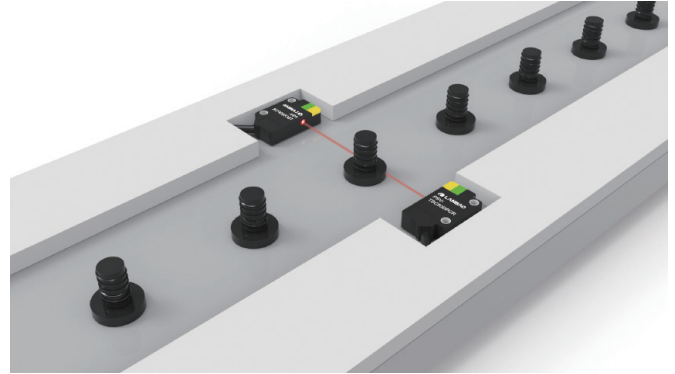
Detection of cell phone cover plate

Convergent reflection series, suitable to fix inside narrow machine body regardless of background impact



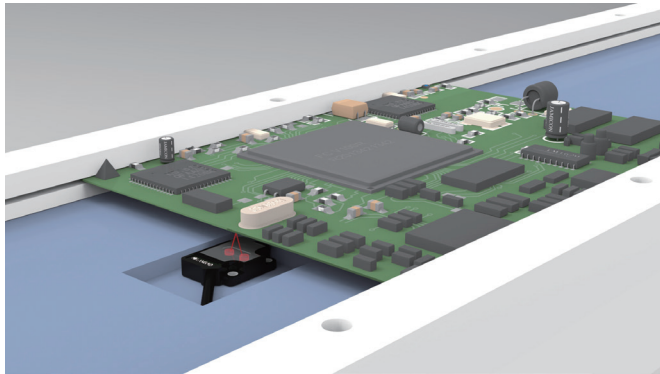
Components pass counting

Side light through beam sensor, installed in narrow space to make stable detection of small objects



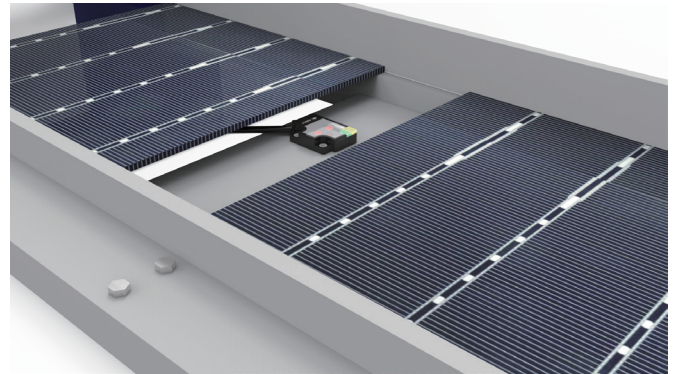
Tiny electrical elements position detection

Background suppression series with laser-like lightspot and excellent black&white color sensitivity, able to detect elements position



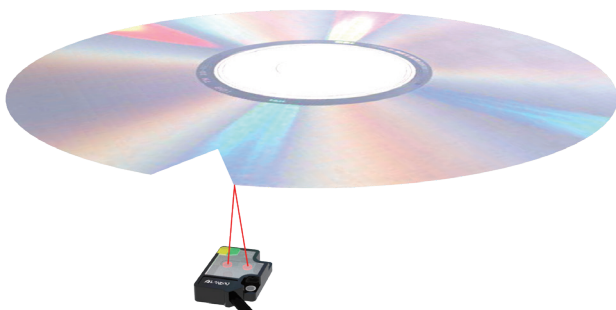
Silicon wafer pass recognition

Background suppression series with powerful background suppression function and super small dead zone, used for fast and efficient silicon wafer detection in narrow space.



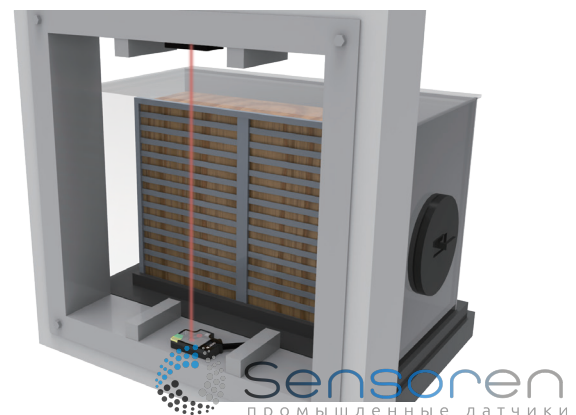
Glass wafer notch detection

Convergent reflection, focus center 10mm, on center, able to sense notch of tiny objects or wafer

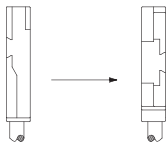
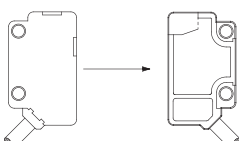
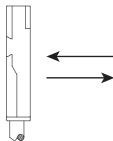
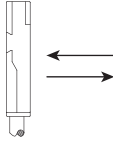
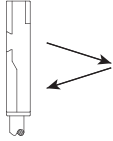


Lead frame error detection

Through beam front light sensor, red light source design, for irregular stack of lead frames



Guide Selection

Detection method	Shape	Connection method	Detection distance	Model	
				NPN Output	PNP Output
Through beam		Cable type (Front light)	50cm	Emitter PSV-TC50DR Receiver PSV-TC50DNOR	Emitter PSV-TC50DR Receiver PSV-TC50DPOR
		Cable type (Front light)	50cm	Emitter PSV-TC50DR Receiver PSV-TC50DNCR	Emitter PSV-TC50DR Receiver PSV-TC50DPCR
		Cable type (Side light)	50cm	Emitter PSV-TC50DR-S Receiver PSV-TC50DNOR-S	Emitter PSV-TC50DR-S Receiver PSV-TC50DPOR-S
		Cable type (Side light)	50cm	Emitter PSV-TC50DR-S Receiver PSV-TC50DNCR-S	Emitter PSV-TC50DR-S Receiver PSV-TC50DPCR-S
Diffuse reflection		Cable type	10cm	PSV-BC10DNOR	PSV-BC10DPOR
		Cable type	10cm	PSV-BC10DNCR	PSV-BC10DPCR
Background suppression		Cable type	15mm	PSV-YR15DNOR	PSV-YR15DPOR
			30mm	PSV-YR30DNOR	PSV-YR30DPOR
		Cable type	15mm	PSV-YR15DNCR	PSV-YR15DPCR
			30mm	PSV-YR30DNCR	PSV-YR30DPCR
Convergent reflection		Cable type	25mm	PSV-SR25DNOR	PSV-SR25DPOR
		Cable type	25mm	PSV-SR25DNCR	PSV-SR25DPCR

Accessories(order separately)

Mounting bracket(Purchased seperately)

Applicable sensor	Shape	Model	Description
All part numbers		ZJP-14	Material:SPCC
All part numbers		ZJP-16	Material:SPCC

Specifications

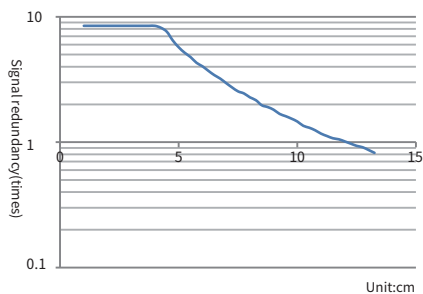
Detection type		Through beam		Diffuse reflection	Background suppression		Convergent reflection
		Side light	Front light				
Model	NPN	PSV-TC50DR-S PSV-TC50DNOR-S	PSV-TC50DR PSV-TC50DNOR	PSV-BC10DNOR	PSV-YR15DNOR	PSV-YR30DNOR	PSV-SR25DNOR
		PSV-TC50DR-S PSV-TC50DNCR-S	PSV-TC50DR PSV-TC50DNCR	PSV-BC10DNCR	PSV-YR15DNCR	PSV-YR30DNCR	PSV-SR25DNCR
	PNP	PSV-TC50DR-S PSV-TC50DPOR-S	PSV-TC50DR PSV-TC50DPOR	PSV-BC10DPOR	PSV-YR15DPOR	PSV-YR30DPOR	PSV-SR25DPOR
		PSV-TC50DR-S PSV-TC50DPCR-S	PSV-TC50DR PSV-TC50DPCR	PSV-BC10DPCR	PSV-YR15DPCR	PSV-YR30DPCR	PSV-SR25DPCR
Detection distance		50cm	50cm	10cm ^①	15mm ^①	30mm ^①	25mm
Dead zone		/	/	<5mm	<2mm	<4mm	<2mm
Standard target		φ2mm Above opaque objects	φ2mm Above opaque objects	50*50mm white cards	50*50mm white cards	50*50mm white cards	Φ0.1mm copper wire (at the detection distance of 10mm)
Direction angle		<2°	<2°	/			
Light spot size		7*7cm@50cm	10*10cm@50cm	15mm@10cm	2mm@30mm	2mm@30mm	/
Color sensitivity		/	/	/	>90%	>85%	/
Hysteresis		/	/	3...20%	<20%	<20%	<20%
Supply voltage		10...30VDC					
Consumption current		Emitter:≤10mA Receiver:≤12mA	Emitter:≤10mA Receiver:≤12mA	≤15mA			
Load current		≤50mA					
Voltage drop		<1.5V					
Light source		Red light LED(640nm)	Red light LED(625nm)	Red light LED(640nm)	Red light LED(680nm)		Red light LED(640nm)
Protection circuit		Short circuit protection,Polarity protection,Overload protection,Zener protection					
Indicator		Green:Power supply indicator,stability indication; Yellow: Output indication					
Response time		<1ms					
Anti ambient light		Sunlight interference ≤10,000 lux;Incandescent light interference ≤3,000 lux					
Operating temperature		- 20...55 °C					
Storage temperature		- 30...70 °C					
Protection degree		IP65					
Certification		CE					
Housing Material		PC+PBT					
Lens		PMMA	PC				
Weight		Emitter:20g Other:22g					
Accessory		M2 Screws×2、 Nut×2					

①Use 50*50mm 90% reflectivity white card

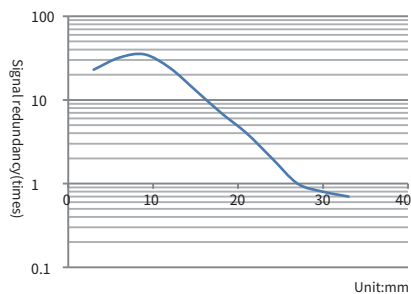
Performance*

Signal redundancy

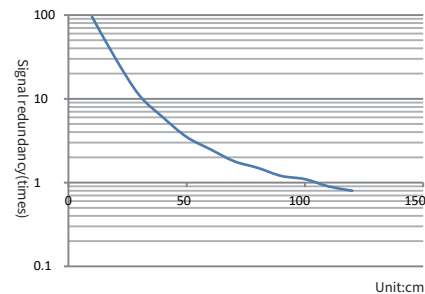
Diffuse reflection(PSV-BC**)



Convergent reflection(PSV-SR**)

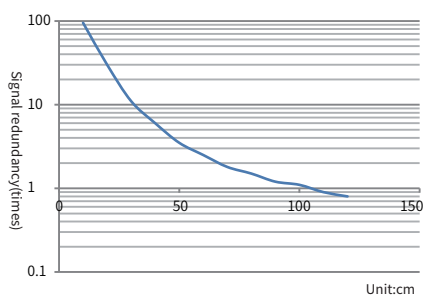


Through beam-Front light(PSV-TC**)



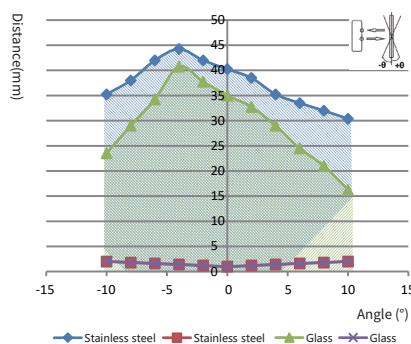
Angle detection area characteristics

Through beam-Side light(PSV-TC**-S)



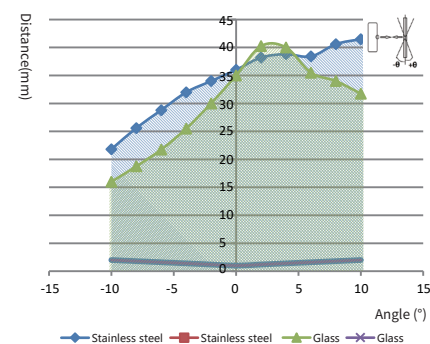
Convergent reflection(PSV-SR**)

Left and right direction



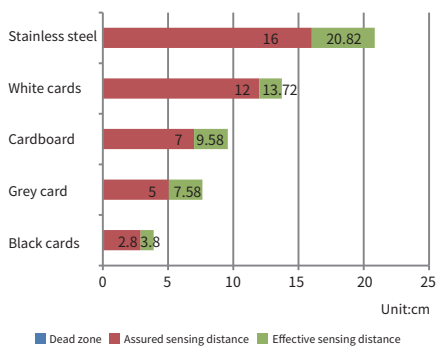
Convergent reflection(PSV-SR**)

Up and down direction

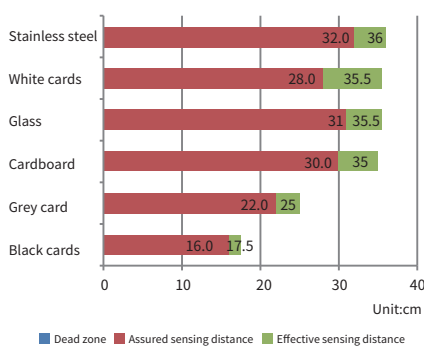


Color sensitivity

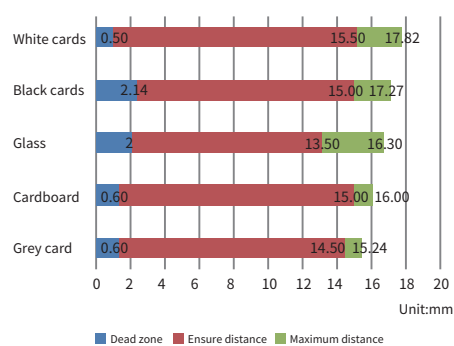
Diffuse reflection(PSV-BC**)



Convergent reflection(PSV-SR**)



Background suppression(PSV-YR15**)

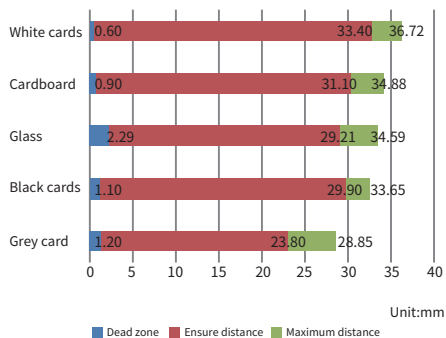


*This data based on standard sensing object

Performance*

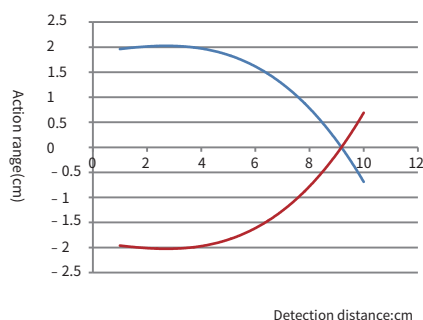
Color sensitivity

Background suppression(PSV-YR30**)

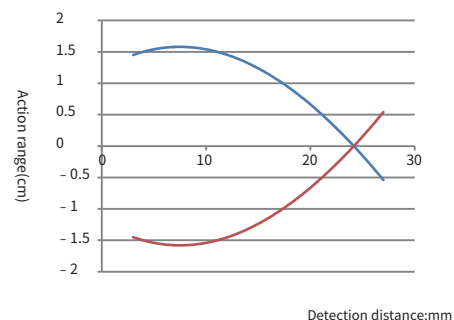


Action range

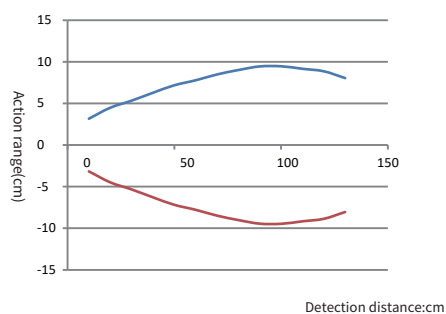
Diffuse reflection(PSV-BC**)



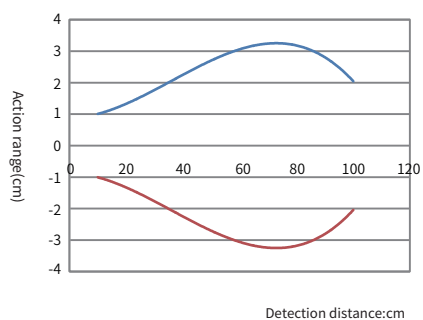
Convergent reflection(PSV-SR**)



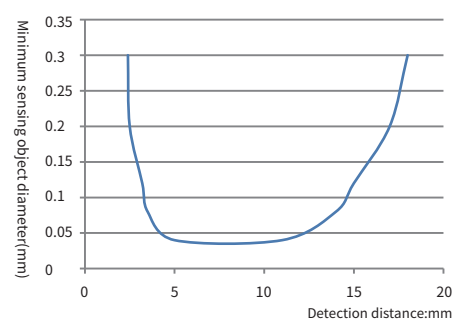
Through beam-Front light(PSV-TC**)



Through beam-Side light(PSV-TC**-S)



Convergent reflection(PSV-SR**)



*This data based on standard sensing object

Dimension dwg

Through beam(Front light)-Emitter	Through beam(Front light)-Receive	Diffuse reflection, background suppression reflection, convergent reflection

Dimension dwg

Through beam(Side light)-Emitter	Through beam(Side light)-Receive

Accessory Dimensions

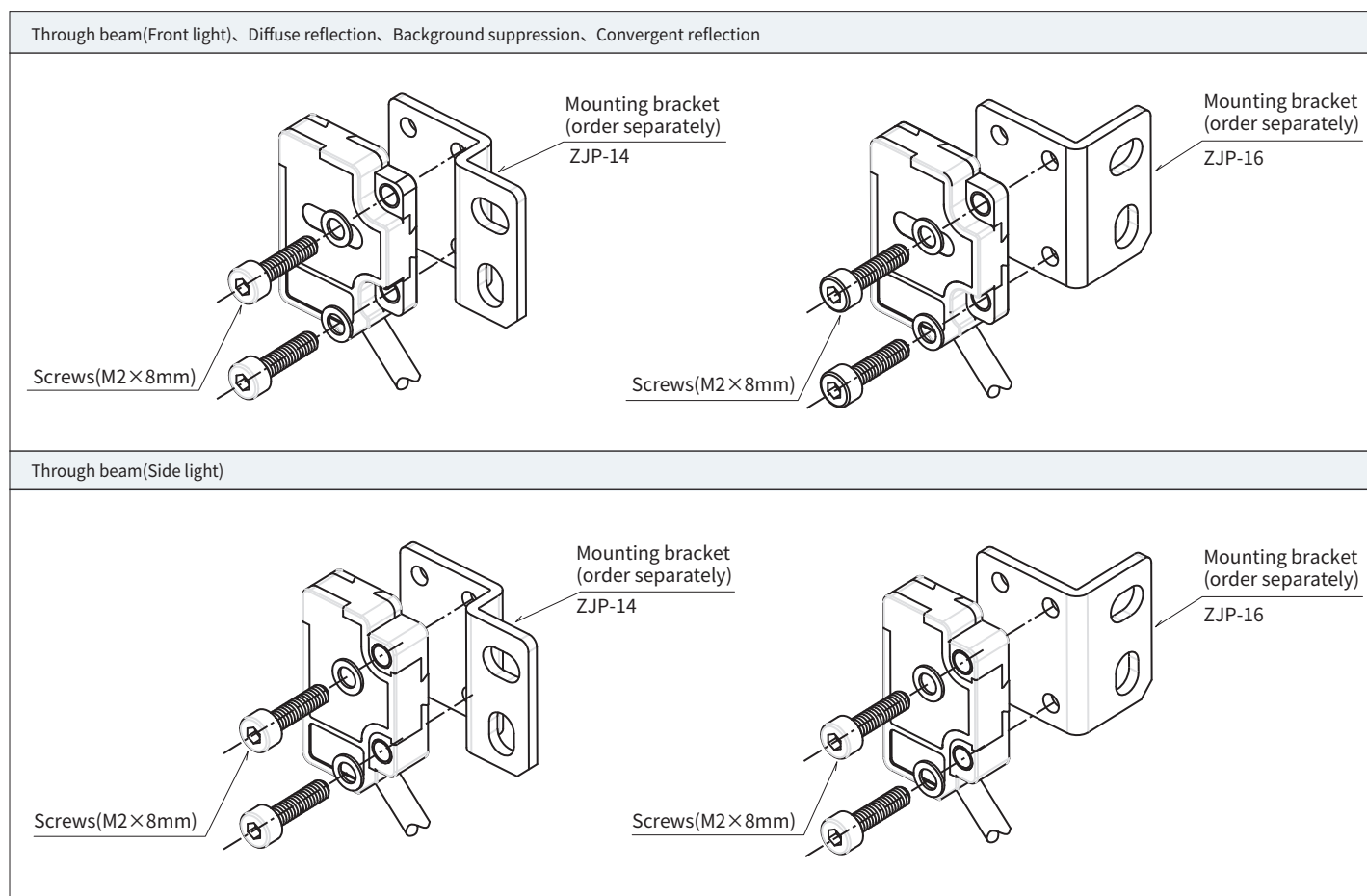
Mounting bracket ZJP-14	Mounting bracket ZJP-16

Wiring Diagram

Through beam receiver,retro reflection,background suppression reflection,convergent reflection-NPN output	Through beam receiver,retro reflection,background suppression reflection,convergent reflection-PNP output	Through beam emitter

Installation

Product Installation Diagram



Remark:For mounting,please keep the tightening torque below 0.2N·m

Precautions

- Please make sure that the power supply voltage is within the rated value before powering on
- The time from powering-on to normal detection is 100ms.Please make sure to use the sensor after 100ms of powering-on
- When using different power sources for the sensor and load,be sure to turn on the power of the sensor first
- When the sensor is not used,it is recommended to cut off the power on the load first,and then cut off the power of the sensor
- Do not subject the sensor to severe external forces (such as hammer hits,etc.) during installation,so as not to damage the sensor performance
- Avoid using thinner,alcohol or other organic solvents when cleaning the sensor

Safety Warning

- Do not use in an environment with flammable,explosive or corrosive gases
- Do not use in an environment with oil or chemicals
- Do not use in a high humidity environment
- Do not use in direct sunlight
- Do not use in other environmental conditions that exceed the rated value
- Do not disassemble,repair or modify this product without authorization

Scrap Treatment

- When the product is scrapped,please dispose of it as industrial waste