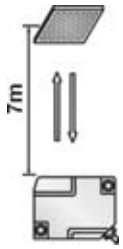
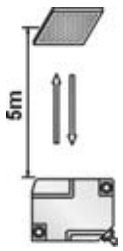
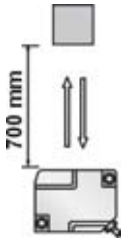
Opposed Mode

Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
 Opposed Mode Sensing Distance:10m Light Source : Red LED	2m Cable 	12-240V DC or 24-240V AC	Emitter (2-wire)	RS62-T010MD-EY6C2L2
			SPDT RELAY Light-ON (5-wire)	RS62-T010MR-LY6C5L2
			SPDT RELAY Dark-ON (5-wire)	RS62-T010MR-DY6C5L2
			SPST SCR Solid-state Light-ON (2-wire)	RS62-T010MC-LY6C2L2
			SPST SCR Solid-state Dark-ON (2-wire)	RS62-T010MC-DY6C2L2
	5m Cable 	12-240V DC or 24-240V AC	Emitter (2-wire)	RS62-T010MD-EY6C2L5
			SPDT RELAY Light-ON (5-wire)	RS62-T010MR-LY6C5L5
			SPDT RELAY Dark-ON (5-wire)	RS62-T010MR-DY6C5L5
			SPST SCR Solid-state Light-ON (2-wire)	RS62-T010MC-LY6C2L5
			SPST SCR Solid-state Dark-ON (2-wire)	RS62-T010MC-DY6C2L5
 Opposed Mode Sensing Distance:30m Light Source: Infrared LED	2m Cable 	12-240V DC or 24-240V AC	Emitter (2-wire)	RS62-T030MD-EY9C2L2
			SPDT RELAY Light-ON (5-wire)	RS62-T030MR-LY9C5L2
			SPDT RELAY Dark-ON (5-wire)	RS62-T030MR-DY9C5L2
			SPST SCR Solid-state Light-ON (2-wire)	RS62-T030MC-LY9C2L2
			SPST SCR Solid-state Dark-ON (2-wire)	RS62-T030MC-DY9C2L2
	5m cable 	12-240V DC or 24-240V AC	Emitter (2-wire)	RS62-T030MD-EY9C2L5
			SPDT RELAY Light-ON (5-wire)	RS62-T030MR-LY9C5L5
			SPDT RELAY Dark-ON (5-wire)	RS62-T030MR-DY9C5L5
			SPST SCR Solid-state Light-ON (2-wire)	RS62-T030MC-LY9C2L5
			SPST SCR Solid-state Dark-ON (2-wire)	RS62-T030MC-DY9C2L5

Retroreflective Mode

Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
 Retroreflective Mode Sensing Distance:7m Light Source : Infrared LED	2m Cable 	12-240V DC or 24-240V AC	SPDT RELAY Light-ON (5-wire)	RS62-L7000R-LY9C5L2
			SPDT RELAY Dark-ON (5-wire)	RS62-L7000R-DY9C5L2
			SPST SCR Solid-state Light-ON (2-wire)	RS62-L7000C-LY9C2L2
			SPST SCR Solid-state Dark-ON (2-wire)	RS62-L7000C-DY9C2L2
			———	———
	5m Cable 	12-240V DC or 24-240V AC	SPDT RELAY Light-ON (5-wire)	RS62-L7000R-LY9C5L5
			SPDT RELAY Dark-ON (5-wire)	RS62-L7000R-DY9C5L5
			SPST SCR Solid-state Light-ON (2-wire)	RS62-L7000C-LY9C2L5
			SPST SCR Solid-state Dark-ON (2-wire)	RS62-L7000C-DY9C2L5
			———	———
 Retroreflective Mode with Polarizing Filter Sensing Distance:5m Light Source : Red LED	2m Cable 	12-240V DC or 24-240V AC	SPDT RELAY Light-ON (5-wire)	RS62-L5000R-LY6C5L2-PF
			SPDT RELAY Dark-ON (5-wire)	RS62-L5000R-DY6C5L2-PF
			SPST SCR Solid-state Light-ON (2-wire)	RS62-L5000C-LY6C2L2-PF
			SPST SCR Solid-state Dark-ON (2-wire)	RS62-L5000C-DY6C2L2-PF
			———	———
	5m Cable 	12-240V DC or 24-240V AC	SPDT RELAY Light-ON (5-wire)	RS62-L5000R-LY6C5L5-PF
			SPDT RELAY Dark-ON (5-wire)	RS62-L5000R-DY6C5L5-PF
			SPST SCR Solid-state Light-ON (2-wire)	RS62-L5000C-LY6C2L5-PF
			SPST SCR Solid-state Dark-ON (2-wire)	RS62-L5000C-DY6C2L5-PF
			———	———

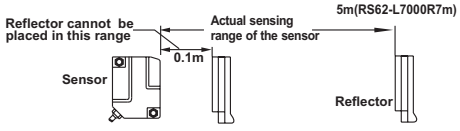
Diffuse Mode

Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
 Diffuse Mode Sensing Distance: 0.7m Light Source: Infrared LED	2m Cable 	12-240V DC or 24-240V AC	SPDT RELAY Light-ON (5-wire)	RS62-D0700R-LY9C5L2
			SPDT RELAY Dark-ON (5-wire)	RS62-D0700R-DY9C5L2
			SPST SCR Solid-state Light-ON (2-wire)	RS62-D0700C-LY9C2L2
			SPST SCR Solid-state Dark-ON (2-wire)	RS62-D0700C-DY9C2L2
			———	———
	5m Cable 	12-240V DC or 24-240V AC	SPDT RELAY Light-ON (5-wire)	RS62-D0700R-LY9C5L5
			SPDT RELAY Dark-ON (5-wire)	RS62-D0700R-DY9C5L5
			SPST SCR Solid-state Light-ON (2-wire)	RS62-D0700C-LY9C2L5
			SPST SCR Solid-state Dark-ON (2-wire)	RS62-D0700C-DY9C2L5
			———	———

Specifications

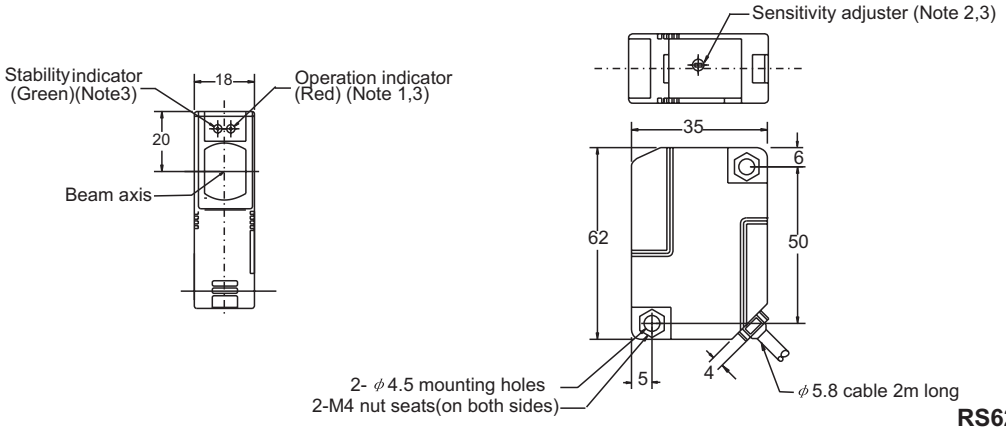
Item \ Type	Retroreflective Mode				Diffuse Mode		Thru-beam Mode			
	with polarizing filters		Long sensing range						Long sensing range	
Model Number	RS62-L5000X-LY6CXLX-PF	RS62-L5000X-DY6CXLX-PF	RS62-L7000X-LY9CXLX	RS62-L7000X-DY9CXLX	RS62-D0700X-LY9CXLX	RS62-D0700X-DY9CXLX	RS62-T010MD-EY6C2LX(Emitter) RS62-T010MX-LY6CXLX (Receiver)	RS62-T010MD-EY6C2LX(Emitter) RS62-T010MX-DY6CXLX (Receiver)	RS62-T030MD-EY9C2LX(Emitter) RS62-T030MX-LY9CXLX (Receiver)	RS62-T030MD-EY9C2LX(Emitter) RS62-T030MX-DY9CXLX (Receiver)
Sensing Range	0.1 to 5m(Note 1)		0.1 to 7m(Note 1)		700mm(Note 2)		10m		30m	
Sensing Object	ϕ50 mm or more opaque,translucent or specular Object(Note 1)		ϕ50mm or more opaque or translucent Object(Note 1)		Opaque,translucent or transparent object		ϕ20mm or more opaque object (If slit masks are fitted, an object as small as 3x6mm can be detected.)			
Hysteresis	———				15% or less of operation distance		———			
Repeatability	0.2mm or less				0.3mm or less		0.1mm or less		0.2mm or less	
Power Supply	24 to 240V AC ± 10% or 12 to 240V DC ± 10% Ripple P-P 10% or less									
Power Consumption	2VA or less						Emitter: 1VA or less Receiver:2VA or less		Emitter:1.5VA or less Receiver: 2VA or less	
Output	Relay contact 1c • Switching capacity:250V AC 1A (resistive load) 30V DC 2A (resistive load) • Electrical life:100,000or more operations (at rated AC load) 500,000or more operations (at rated DC load) • Mechanical life:100,000,000 or more operations									
Light/Dark Operation	Light-ON	Dark-ON	Light-ON	Dark-ON	Light-ON	Dark-ON	Light-ON	Dark-ON	Light-ON	Dark-ON
Response Time	10ms or less									
Operation Indicator	Red LED (lights up when the output is ON)									
Stability Indicator	Green LED(lights up under stable light received condition or stable dark condition)									
Power Indicator	———								Red LED (lights up when the power is ON)	
Sensitivity Adjuster	Continuously variable adjuster		———		Continuously variable adjuster		Continuously variable adjuster		———	
Interference Immunity	Incorporated (Two units of sensors can be mounted closely.)						(Use optional interference prevention filters)		———	
Pollution Degree	3 (Industrial environment)									
Enclose Category	IP66(IEC)									
Operating Temperature	-20 to +55°C (No dew condensation or icing allowed) (Note3), Storage:-30 to +70°C									
Operating Humidity	35 to 85% RH,Storage:35 to 85% RH									
Ambient illuminance	Sunlight:11,000l x at the light-receiving face, Incandescent light:3500l × at the light-receiving face									
EMC	IEC 60947-5-2 Parts 7.2.6.1,2,3 or RFI>3V/m(In30-1000MHz),EFT>1KV,ESD>4KV(contact)									
Voltage with Standability	IEC 60947-5-2 Parts 8.3.3.4, or 500VDC for one min between all supply terminals connected together and enclosure									
Insulation Resistance	>20M,with 500VDC megger between all supply terminals									
Vibration Resistance	IEC 60947-5-2 Parts 7.4.2 or 10-55Hz 1.0m amplitude in X Y and Z directions for 30 min									
Shock Resistance	IEC 60947-5-2 Parts 7.4.1 or 30g 11ms in X Y and Z directions for six time each									
Emitting Element	Red LED (modulated)		Infrared LED (modulated)				Red LED (modulated)		Infrared LED(modulated)	
Material	Enclosure: Acrylonitrile Butadine Styrene (ABS),Lens:Polycarbonate,Cover:Acrylonitrile Butadine Styrene (ABS), Front cover: Acrylic (retroreflective type sensor only)									
Cable	0.3mm² 5-core or 2-core cabtyre cable, 2m long									
Cable Length	Extension up to total 100m is possible with 0.3mm² ,or more ,cable(thru-beam type: both emitter and receiver).									
Weight	140g approx.						Emitter: 100g approx. Receiver:140g approx.		Emitter: 125g approx. Receiver:140g approx.	
Accessories	RS62-A1, A2, A3 (see page U-04)									

Notes: 1)The sensing range and the sensing object of the retroreflective type sensor is specified for the reflector. further, the sensing range is the possible setting range for the reflector.
2)The sensing range of the diffuse reflective type sensor is specified for white non-glossy paper(200 x 200mm)as the object.



Dimensions (Unit: mm)

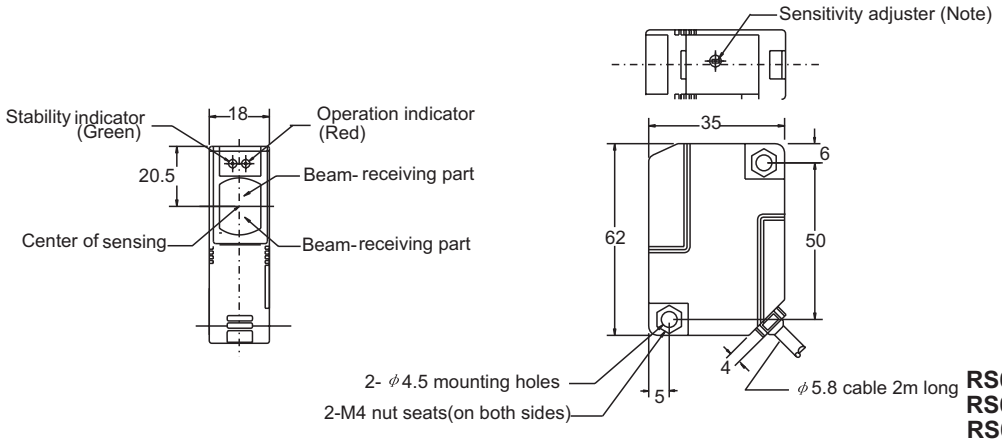
Opposed Mode



RS62-T010MD-EY6C2L2
RS62-T010MR-DY6C5L2
RS62-T030MD-EY9C2L2
RS62-T030MR-DY9C5L2

Notes: 1) It is the power indicator on the emitter of RS62-T030MD...
2) Not incorporated on RS62-T030MR...
3) Not incorporated on the emitter

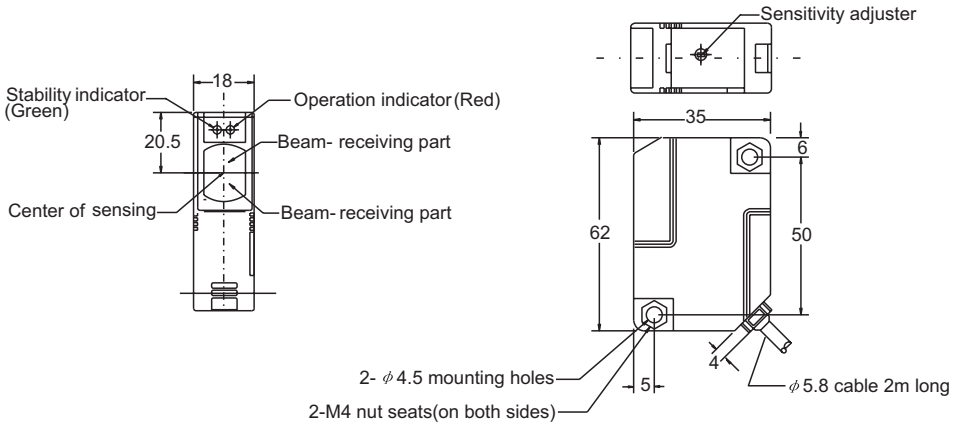
Retroreflective Mode



RS62-L5000D-EY6C2L2-PF
RS62-L5000R-DY6C2L2-PF
RS62-L7000D-EY9C2L2
RS62-L7000R-DY9C5L2

Notes: Not incorporated on RS62-L7000R...

Diffuse Mode

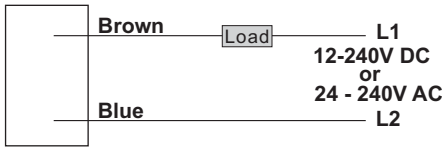


RS62-D0700R-LY9C5L2
RS62-D0700R-DY9C5L2

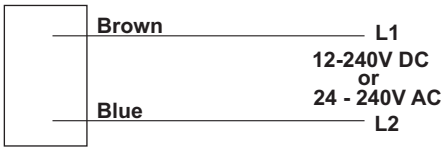
Circuit Diagrams

Circuit Diagrams

Note: SPDT Relay Version



Note: SPST SCR Solid-state Version



Note: Emitter's Connection

Object detected state

Sensing Mode		Thru-beam & Retroreflective type				Diffuse reflective type			
		Light-ON type		Dark-ON type		Light-ON type		Dark-ON type	
Output		NO (Black cable)	NC (Gray cable)	NO (Black cable)	NO (Gray cable)	NO (Black cable)	NC (Gray cable)	NO (Black cable)	NO (Gray cable)
Output Condition	Power OFF	Open	Close	Open	Close	Open	Close	Open	Close
	Beam-received	Close	Open	Open	Close	Close	Open	Open	Close
	Beam-interrupted	Open	Close	Close	Open	Open	Close	Close	Open

Precautions For Proper Use

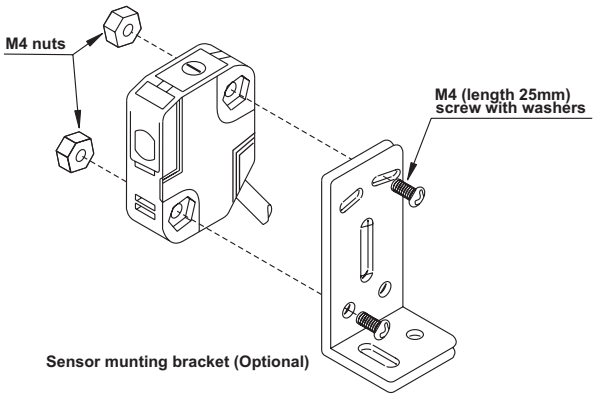
Precautions for proper use

Cautions:

Don't use the sensor for a safety aim, because it's only designed for a normal object detection

Mounting

The tightening torque should be 0.8N.m or less.

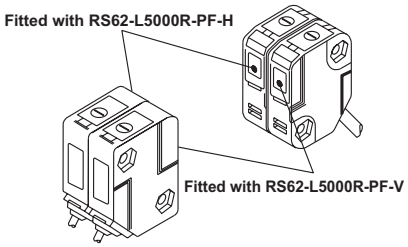


Others

Do not use during the initial transient time (50ms) after the power supply is switched on.

Interference prevention filter (Exclusively for RS62-T010M...)

Use the interference prevention filters (optional)when two units of thru-beam type sensors are mounted closely.



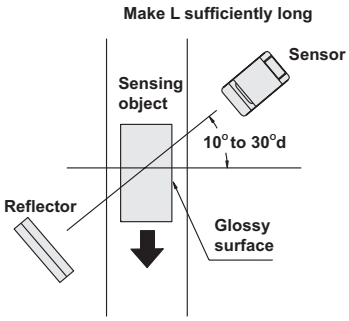
There are two types of interference prevention filters. The two sets of thru-beam type sensors should be fitted with different types of interference prevention filters.

Retroreflective type sensor (RS62-L7000R-LY9C5L2)

Please take care of the following points when detecting materials having a gloss.

- Make L, shown in the diagram, sufficiently long.
- Install at an angle of 10 to 30 degrees to the sensing object.

RS62-L500R-LY6C5L2-PF;does not need the above adjustment.



Retroreflective type sensor with polarizing filters (RS62-L7000R-LY9C5L2-PF)

If a shiny object is covered or wrapped with a transparent film, such as those described below, the retroreflective type sensor with polarizing filters may not be able to detect it.

In that case, follow the steps given below.

Example of sensing objects

- Can wrapped by clear film
- Aluminum sheet covered by plastic film
- Gold or silver color (glossy) label or wrapping paper

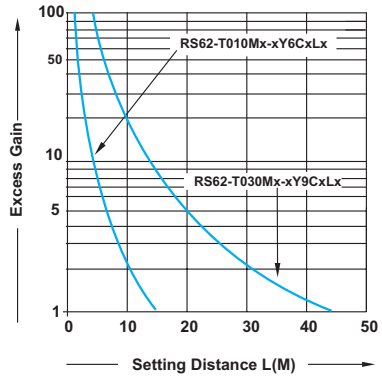
Steps

- Tilt the sensor with respect to the sensing object while fitting.
- Reduce the sensitivity.
- Increase the distance between the sensor and the sensing object.

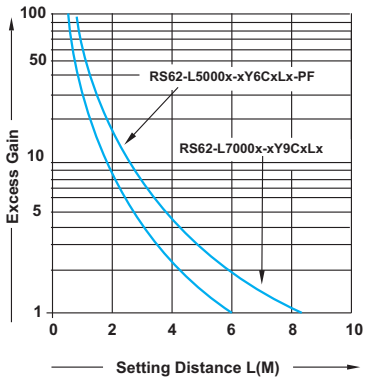
Sensing Characteristics (Typical)

All Models

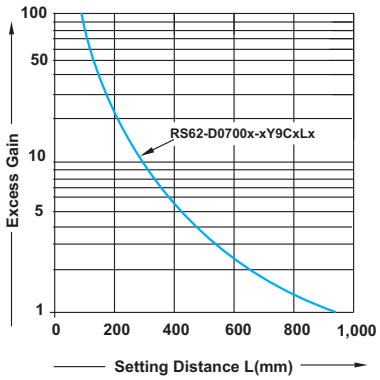
Opposed Mode



Retroreflective Mode

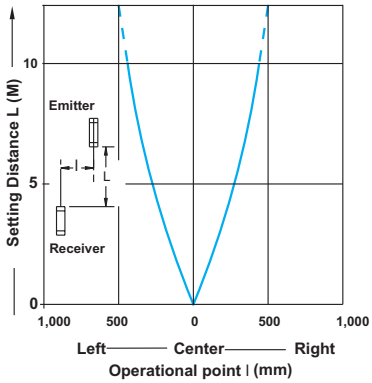


Diffuse Mode

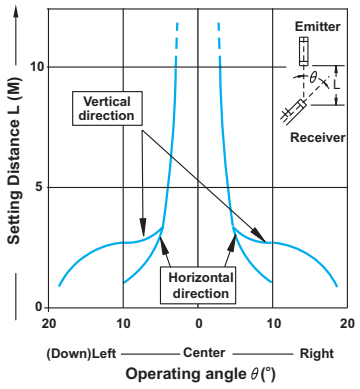


RS62-T010MR-LY6C5L2 RS62-T010MR-DY6C5L2

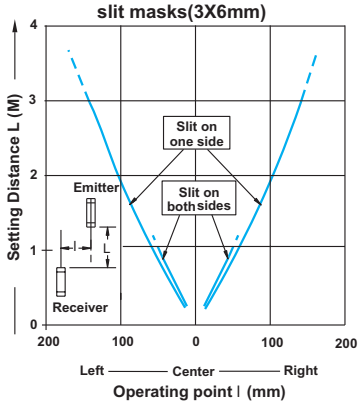
Parallel Deviation



Angular Deviation

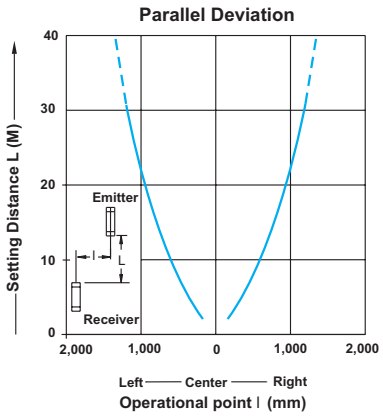


Parallel Deviation with slit masks(3X6mm)

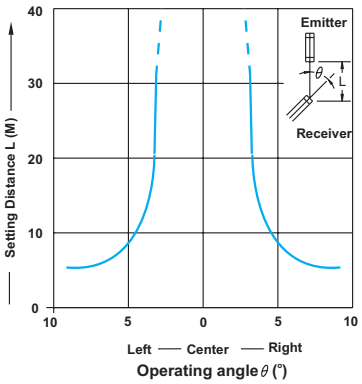


RS62-T030MR-LY9C5L2 RS62-T030MR-DY9C5L2

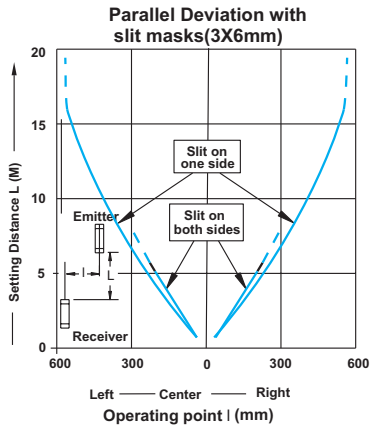
Parallel Deviation



Angular Deviation



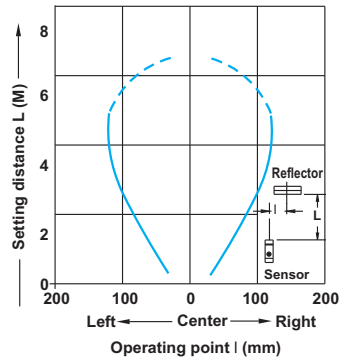
Parallel Deviation with slit masks(3X6mm)



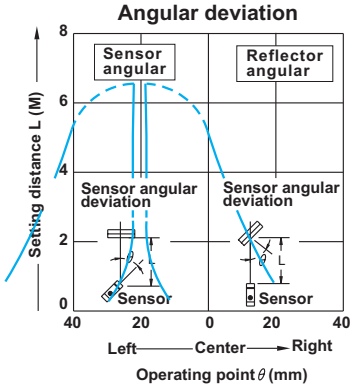
Sensing Characteristics (Typical)

RS62-L5000R-LY6C5L2-PF RS62-L5000R-DY6C5L2-PF

Parallel deviation

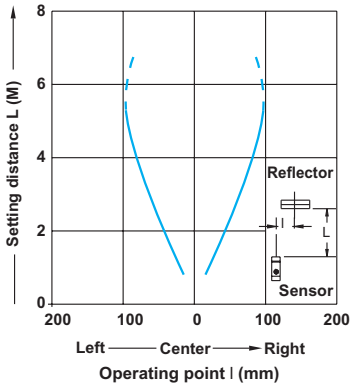


Angular deviation

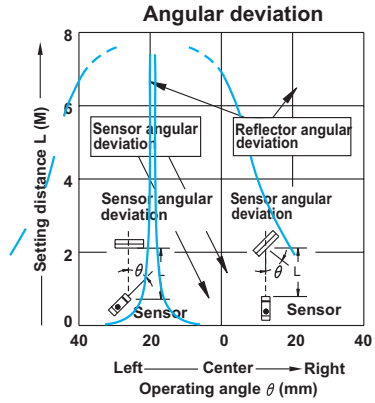


RS62-L7000R-LY9C5L2 RS62-L7000R-DY9C5L2

Parallel deviation

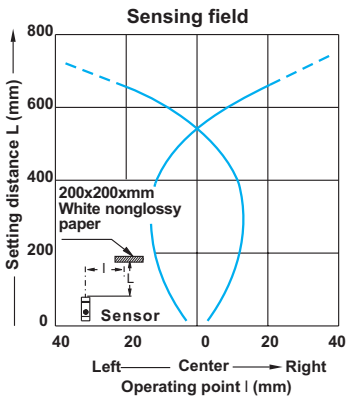


Angular deviation

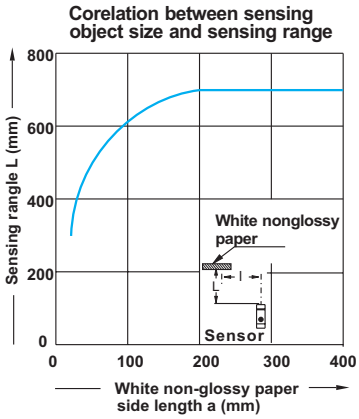


RS62-D0700R-LY9C5L2 RS62-D0700R-DY9C5L2

Sensing field



Corelation between sensing object size and sensing range



As the sensing object size becomes smaller than the standard size (white non-glossy paper 200X200mm),the sensing range shortens, as shown in the left graph.

For plotting the left graph,the sensitivity has been set such that a 200X200mm white nonglossy paper is just detectable at a distance of 700mm.