
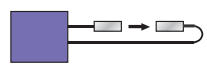
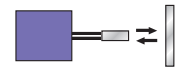

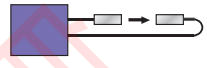
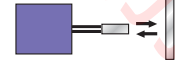


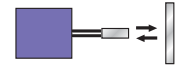

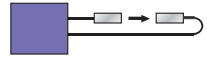
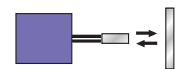


FOS2 SERIES

Plastic Fiber Optic Amplifier

Q: FOS2SERIES

	Connection	Sensing Mode (Note)	Output Mode	Part Number	
Red Light Source	2m Cable 	 Thru-beam Mode Sensing Distance: 0 to 580mm	NPN L.O./D.O.	FOS2-T0580N-CX6C3U2	
			PNP L.O./D.O.	FOS2-T0580P-CX6C3U2	
		 Diffuse Mode Sensing Distance: 0 to 100mm	NPN L.O./D.O.	FOS2-D0100N-CX6C3U2	
		PNP L.O./D.O.	FOS2-D0100P-CX6C3U2		
	Quick Disconnect (Pico-style) 		 Thru-beam Mode Sensing Distance: 0 to 580mm	NPN L.O./D.O.	FOS2-T0580N-CX6Q4UP
				PNP L.O./D.O.	FOS2-T0580P-CX6Q4UP
 Diffuse Mode Sensing Distance: 0-100mm		NPN L.O./D.O.	FOS2-D0100N-CX6Q4UP		
		PNP L.O./D.O.	FOS2-D0100P-CX6Q4UP		
Green Light Source (Mark-Sensor Type)	2m Cable 	 Thru-beam Mode (Mark-Sensor Type) Sensing Distance: 0 to 140mm	NPN L.O./D.O.	FOS2-T0140N-CX5C3U2-K	
			PNP L.O./D.O.	FOS2-T0140P-CX5C3U2-K	
		 Diffuse Mode (Mark-Sensor type) Sensing Distance: 0 to 25mm	NPN L.O./D.O.	FOS2-D0025N-CX5C3U2-K	
		PNP L.O./D.O.	FOS2-D0025P-CX5C3U2-K		
	Quick Disconnect (Pico-style) 		 Thru-beam Mode (Mark-Sensor Type) Sensing Distance: 0 to 140mm	NPN L.O./D.O.	FOS2-T0140N-CX5Q4UP-K
				PNP L.O./D.O.	FOS2-T0140P-CX5Q4UP-K
		 Diffuse Mode (Mark-Sensor type) Sensing Distance: 0 to 25mm	NPN L.O./D.O.	FOS2-T0025N-CX5Q4UP-K	
			PNP L.O./D.O.	FOS2-T0025P-CX5Q4UP-K	

Note: Sensing mode & range Depends on fiber optic used (Please see our **Glass Fiber & Plastic Fiber** catalogue).
Coming Soon : Part numbers with underline
In Preparation: Part numbers with a line through the middle

FOS2 SERIES

Q: FOS2SERIES

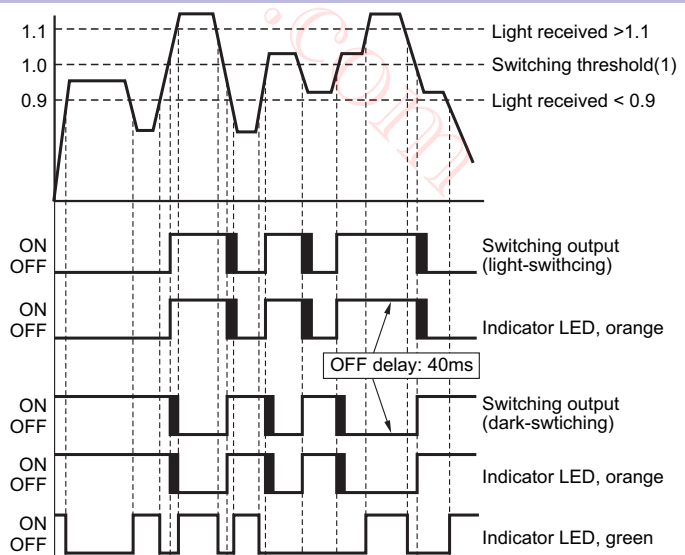
Specifications

Sensing Range	Depends on fiber optics used (please see our Glass Fiber & Plastic Fiber catalogue).
Light Source	Visible red light or visible green light (see each type)
Supply Voltage	10...30V DC
Ripple (within Vs tolerance)	10 %
Current Consumption (no load)	<=50 mA
Output Current Max.	100 mA
Response Time/Frequency	<= 0.5 ms / 1000/s
Time delay (OFF delay)	40ms fix, selectable by sliding switch
Output Type	NPN, PNP
Light Switching	Light-ON / Dark-ON switching selectable via switch
Circuit Protection	Outputs short circuit and over current protected, Vs reverse polarity protected
VDE protection class	III
Enclosure Rating	IP 50
Ambient Operating Temperature	-25...+55°C (Storage temperature:-40...+70°C)
Mounting Bracket	MB-3509
EMC	IEC 60947-5-2, Parts 7.2.6.1. 2. 3 or RFI>3V/m(in 30-1000MHZ), EFT>1KV, ESD>4KV(contact)
Voltage Withstand Ability	IEC 60947-5-2, Part 8.3.3.4 or 1500VAC for one min, between all supply terminals connected together and enclosure
Insulation Resistance	>20MΩ, with 1500V AC megger between all supply terminals connected together and enclosure
Vibration Resistance	IEC 60947-5-2, Part 7.4.2 or 10-55Hz, 1.0mm amplitude in x, y and z directions for 30 min
Shock Resistance	IEC 60947-5-2, Part 7.4.1 or 30g, 11ms in x, y and z directions for six time each
Housing Material	ABS
Connection types	Cable type: 4 dia. 2m PVC, 3x0.2mm ² , Connector type: M8 4-pin plug
Weight	Cable type: approx. 60g, M8 connector type: approx. 20g

Function Diagram (Standard)

Orange LED display:
Lights up if switching output is active.
Dependent on setting of light/dark selector switch.

Green LED display:
Lights up if light received is < 0.9 or >1.1
(based on the switching threshold ,switching threshold=1)

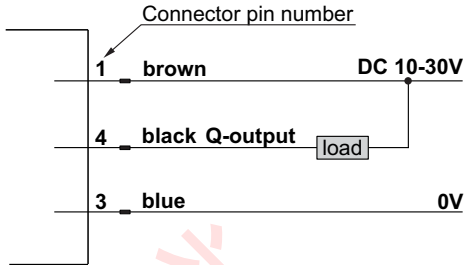


FOS2 SERIES

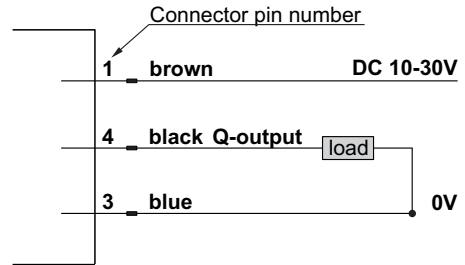
Connection Diagrams & Dimensions (Unit: mm)

Connection Diagrams

NPN Output Type



PNP Output Type



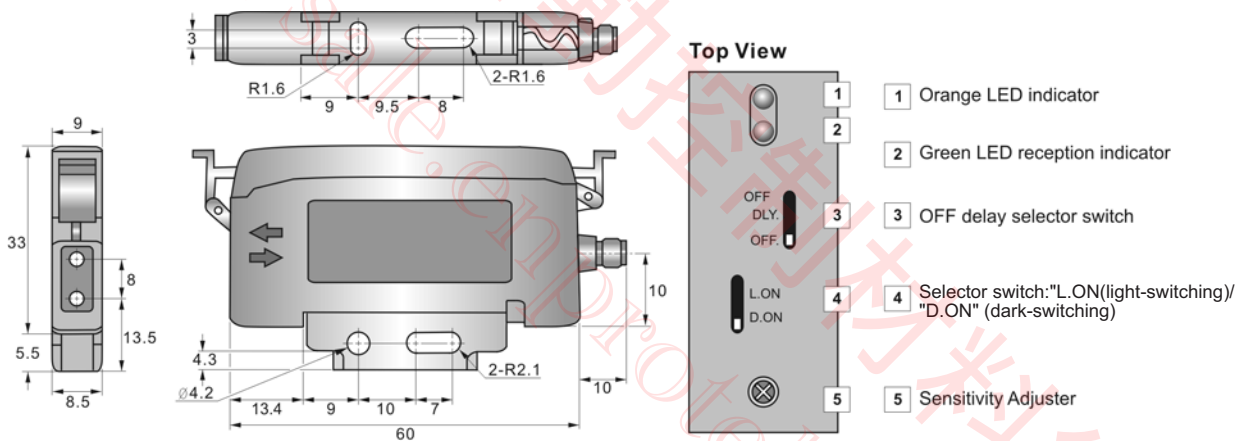
Connector face view

Pico-Style



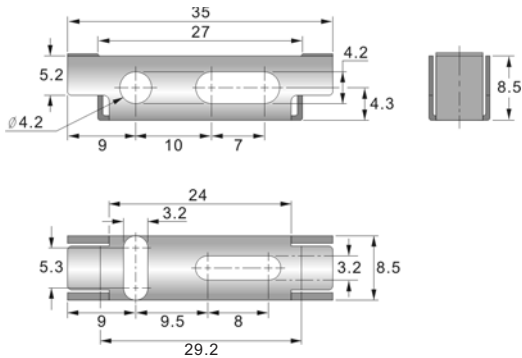
- 1. Brown (+)
- 2. Not used
- 3. Blue (-)
- 4. Black (Output)

Sensor's Dimensions



Mounting Bracket's Dimensions


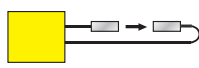
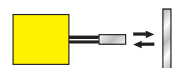

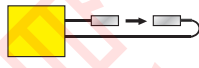
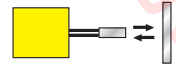

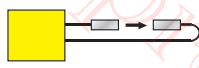
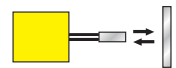

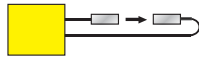
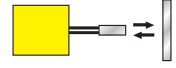
MB-3509 (optional)



FOS3 SERIES

Plastic Fiber-optic Amplifier with Potentiometer Type

R: FOS3 SERIES

	Connection	Sensing Mode (Note)	Output Mode	Part Number
Red Light (680nm) Source	2m Cable 	 Thru-beam Mode Sensing Distance:500mm	NPN L.O./D.O.	<u>FOS3-T0500N-CX6C4U2/P</u>
		Thru-beam Mode Sensing Distance:500mm	PNP L.O./D.O.	<u>FOS3-T0500P-CX6C4U2/P</u>
		 Diffuse Mode Sensing Distance:200mm	NPN L.O./D.O.	<u>FOS3-D0200N-CX6C4U2/P</u>
		Diffuse Mode Sensing Distance:200mm	PNP L.O./D.O.	<u>FOS3-D0200P-CX6C4U2/P</u>
	Quick Disconnect (Pico-style) 	 Thru-beam Mode Sensing Distance:500mm	NPN L.O./D.O.	<u>FOS3-T0500N-CX6Q4UP/P</u>
		Thru-beam Mode Sensing Distance:500mm	PNP L.O./D.O.	<u>FOS3-T0500P-CX6Q4UP/P</u>
 Diffuse Mode Sensing Distance:200mm		NPN L.O./D.O.	<u>FOS3-D0200N-CX6Q4UP/P</u>	
Diffuse Mode Sensing Distance:200mm		PNP L.O./D.O.	<u>FOS3-D0200P-CX6Q4UP/P</u>	
Blue Light (465nm) Source	2m Cable 	 Thru-beam Mode Sensing Distance:300mm	NPN L.O./D.O.	<u>FOS3-T0300N-CX4C4U2/P</u>
		Thru-beam Mode Sensing Distance:300mm	PNP L.O./D.O.	<u>FOS3-T0300P-CX4C4U2/P</u>
		 Diffuse Mode Sensing Distance:100mm	NPN L.O./D.O.	<u>FOS3-D0100N-CX4C4U2/P</u>
		Diffuse Mode Sensing Distance:100mm	PNP L.O./D.O.	<u>FOS3-D0100P-CX4C4U2/P</u>
	Quick Disconnect (Pico-style) 	 Thru-beam Mode Sensing Distance:300mm	NPN L.O./D.O.	<u>FOS3-T0300N-CX4Q4UP/P</u>
		Thru-beam Mode Sensing Distance:300mm	PNP L.O./D.O.	<u>FOS3-T0300P-CX4Q4UP/P</u>
 Diffuse Mode Sensing Distance:100mm		NPN L.O./D.O.	<u>FOS3-D0100N-CX4Q4UP/P</u>	
Diffuse Mode Sensing Distance:100mm		PNP L.O./D.O.	<u>FOS3-D0100P-CX4Q4UP/P</u>	

Note: Sensing mode & range depends on fiber optic used (Please see our Glass Fiber & Plastic Fiber catalogue).
 Coming Soon : Part numbers with underline
 In Preparation: Part numbers with a line through the middle

Specifications

Specifications

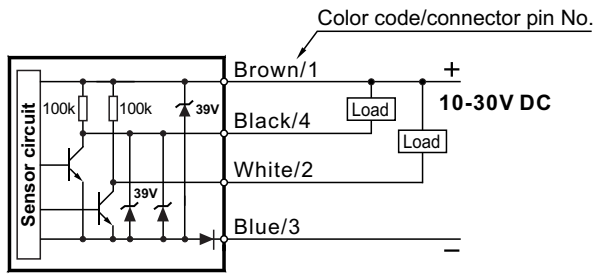
Sensing Range	Depends on fiber optics used (please see our Glass Fiber & Plastic Fiber catalogue).
Light Source	Red light 680nm or blue light 465nm (see each type)
Standard target	100X100 mm white (only for diffuse type)
Supply voltage range U_B	10...30 V DC
No-load supply current (at $U_B=24V$)	15 mA typ.
Hysteresis	10% typ.
Max. ripple content	20%
Output current	200 mA max.
Output voltage drop	2.0 V max. at 200mA
Max. switching frequency	1500 Hz
Switching time (\uparrow and \downarrow)	330 μ sec
Operation Mode	Switch selectable Light-ON/Dark-ON
Circuit Protection	Outputs short circuit & overload protected, VS reverse polarity protected
Max. ambient light	Halogen 5000 Lux Sun 10000Lux
Ambient temperature range	-25...+55 °C
Degree of protection	IP64
Housing	Glass fiber reinforced plastic
EMC	IEC 60947-5-2, Parts 7.2.6.1. 2. 3 or RFI>3V/m(in 30-1000MHz), EFT>1KV, ESD>4KV(contact)
Voltage Withstand Ability	IEC 60947-5-2, Part 8.3.3.4 or 1500VAC for one min, between all supply terminals connected together and enclosure
Insulation Resistance	>20M Ω , with 1500V AC megger between all supply terminals connected together and enclosure
Vibration Resistance	IEC 60947-5-2, Part 7.4.2 or 10-55Hz, 1.0mm amplitude in x, y and z directions for 30 min
Shock Resistance	IEC 60947-5-2, Part 7.4.1 or 30g, 11ms in x, y and z directions for six time each
Weight	69 g(cable type) / 18 g (connector type)

FOS3 SERIES

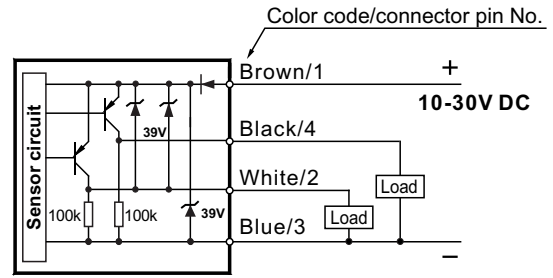
Connection Diagrams / Response Curve / Dimensions

R: FOS3 SERIES

NPN output type

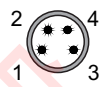


PNP output type



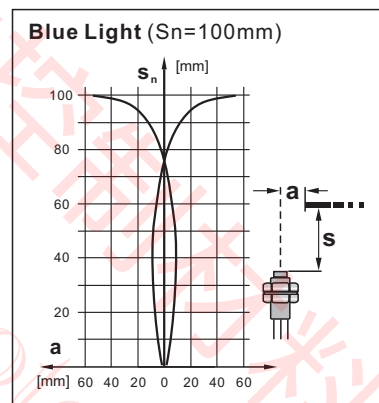
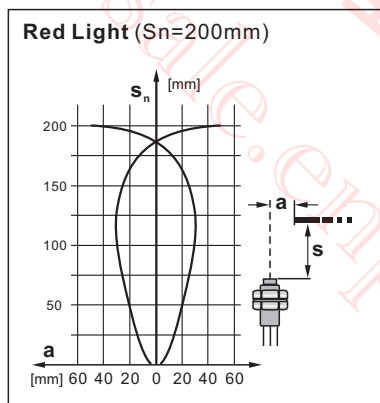
Connector face view

Pico-Style

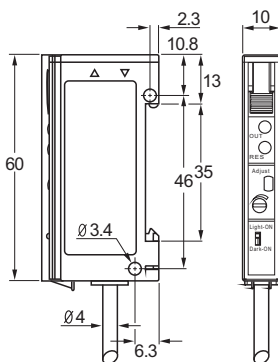


1. Brown (+)
2. White (Output)
3. Blue (-)
4. Black (Output)

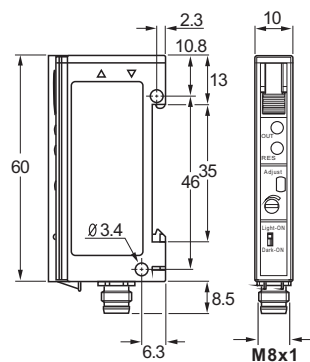
Response Curve (Diffuse Type)



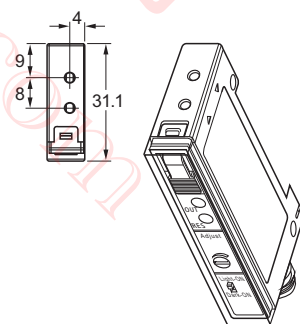
Dimensions (Unit: mm)



Cable Type


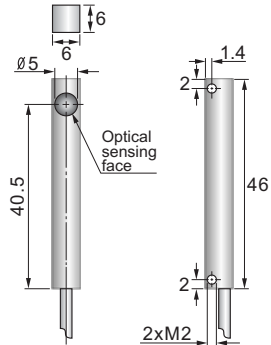


Connector Type



RX SERIES


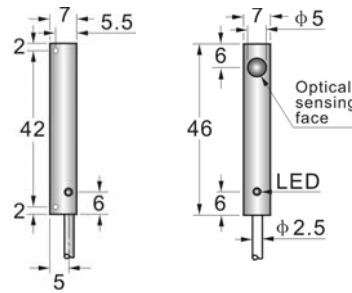
Diffuse Mode/Retroreflective Mode (Die-cast Housing)

<ul style="list-style-type: none"> ※ Red or Infrared light source ※ Die-cast housing ※ Compact construction ※ Highly flexible connecting cable. 	<p style="text-align: center;">Q6x6x46</p> 			
Sensing Type	Diffuse Mode		Retroreflective Mode	
Sensing Distance	50mm		600mm (Note)	
Light Source	Red Light 660nm	Infrared 880 nm	Red Light 660nm	Infrared 880 nm
NPN Light-ON	<u>R6A-D0050N-LX6C3U2</u>	<u>R6A-D0050N-LX9C3U2</u>	<u>R6A-L0600N-LX6C3U2</u>	<u>R6A-L0600N-LX9C3U2</u>
NPN Dark-ON	<u>R6A-D0050N-DX6C3U2</u>	<u>R6A-D0050N-DX9C3U2</u>	<u>R6A-L0600N-DX6C3U2</u>	<u>R6A-L0600N-DX9C3U2</u>
PNP Light-ON	<u>R6A-D0050P-LX6C3U2</u>	<u>R6A-D0050P-LX9C3U2</u>	<u>R6A-L0600P-LX6C3U2</u>	<u>R6A-L0600P-LX9C3U2</u>
PNP Dark-ON	<u>R6A-D0050P-DX6C3U2</u>	<u>R6A-D0050P-DX9C3U2</u>	<u>R6A-L0600P-DX6C3U2</u>	<u>R6A-L0600P-DX9C3U2</u>
Voltage supply/ripple	10 to 30V DC(<15% peak-to-peak)			
Voltage drop, output	<2.0V at 100mA			
Rated output current	100mA			
Supply current (no load)	30mA			
Protections	Short circuit, polarity reversal			
Response time	1 ms			
Switching frequency	500 Hz			
Output type	NPN,PNP			
Output function	Only Light-ON or Dark-ON			
Sensitivity/Range adjustment	—			
Connection	2m cable, 3x0.09 mm ²			
LED indicators	LED Red			
Ambient light detection	Per EN 60947-5-2			
Ambient operating temperature	-10°C to +55°C(+14°F to + 131°F)			
Storage temperature	-30°C to +70°C(-22°F to 158°F)			
Degree of protection	IP 65			
Relative humidity	90% at 20°C			
Housing material	Die-cast			
Sensing face material	PMMA			
Dimensions (Unit: mm)				

Note: Used with RE-4235 (supplied with sensor) reflector.
 Coming Soon : Part numbers with underline
 In Preparation: Part numbers with a line through the middle

RX SERIES

Diffuse Mode/Retroreflective Mode (Die-cast Housing)


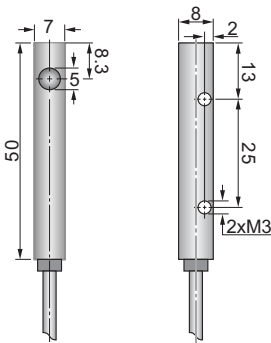
※ Red or Infrared light source ※ Die-cast housing ※ Compact construction ※ Highly flexible connecting cable.	Q7x7x46 			
Sensing Type	Diffuse Mode		Retroreflective Mode	
Sensing Distance	50mm		600mm (Note)	
Light Source	Red Light 660nm	Infrared 880 nm	Red Light 660nm	Infrared 880 nm
NPN Light-ON	<u>R7A-D0050N-LX6C3U2</u>	<u>R7A-D0050N-LX9C3U2</u>	<u>R7A-L0600N-LX6C3U2</u>	<u>R7A-L0600N-LX9C3U2</u>
NPN Dark-ON	<u>R7A-D0050N-DX6C3U2</u>	<u>R7A-D0050N-DX9C3U2</u>	<u>R7A-L0600N-DX6C3U2</u>	<u>R7A-L0600N-DX9C3U2</u>
PNP Light-ON	<u>R7A-D0050P-LX6C3U2</u>	<u>R7A-D0050P-LX9C3U2</u>	<u>R7A-L0600P-LX6C3U2</u>	<u>R7A-L0600P-LX9C3U2</u>
PNP Dark-ON	<u>R7A-D0050P-DX6C3U2</u>	<u>R7A-D0050P-DX9C3U2</u>	<u>R7A-L0600P-DX6C3U2</u>	<u>R7A-L0600P-DX9C3U2</u>
Voltage supply/ripple	10 to 30V DC (<15% peak-to-peak)			
Voltage drop, output	<2.0V at 100mA			
Rated output current	100mA			
Supply current (no load)	30mA			
Protections	Short circuit, polarity reversal			
Response time	1 ms			
Switching frequency	500 Hz			
Output type	NPN, PNP			
Output function	Only Light-ON or Dark-ON			
Sensitivity/Range adjustment	—			
Connection	2m cable, 3x0.09 mm ²			
LED indicators	LED Red			
Ambient light detection	Per EN 60947-5-2			
Ambient operating temperature	-10°C to +55°C (+14°F to +131°F)			
Storage temperature	-30°C to +70°C (-22°F to 158°F)			
Degree of protection	IP 65			
Relative humidity	90% at 20°C			
Housing material	Die-cast			
Sensing face material	PMMA			
Dimensions (Unit: mm)				

N: RX SERIES

Note: Used with RE-4235 (supplied with sensor) reflector.
 Coming Soon : Part numbers with underline
 In Preparation: Part numbers with a line through the middle

RX SERIES


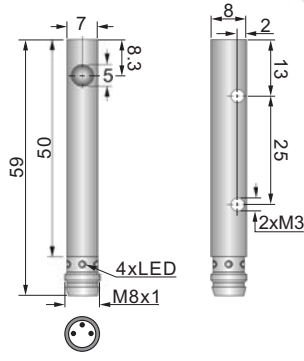
Diffuse Mode/Retroreflective Mode (Die-cast Housing)

<ul style="list-style-type: none"> ※ Red or Infrared light source ※ Die-cast housing ※ Compact construction ※ Highly flexible connecting cable. 	Q7x8x50 			
Sensing Type	Diffuse Mode		Retroreflective Mode	
Sensing Distance	50mm		600mm (Note)	
Light Source	Red Light 660nm	Infrared 880 nm	Red Light 660nm	Infrared 880 nm
NPN Light-ON	<u>R8A-D0050N-LX6C3U2</u>	<u>R8A-D0050N-LX9C3U2</u>	<u>R8A-L0600N-LX6C3U2</u>	<u>R8A-L0600N-LX9C3U2</u>
NPN Dark-ON	<u>R8A-D0050N-DX6C3U2</u>	<u>R8A-D0050N-DX9C3U2</u>	<u>R8A-L0600N-DX6C3U2</u>	<u>R8A-L0600N-DX9C3U2</u>
PNP Light-ON	<u>R8A-D0050P-LX6C3U2</u>	<u>R8A-D0050P-LX9C3U2</u>	<u>R8A-L0600P-LX6C3U2</u>	<u>R8A-L0600P-LX9C3U2</u>
PNP Dark-ON	<u>R8A-D0050P-DX6C3U2</u>	<u>R8A-D0050P-DX9C3U2</u>	<u>R8A-L0600P-DX6C3U2</u>	<u>R8A-L0600P-DX9C3U2</u>
Voltage supply/ripple	10 to 30V DC (<15% peak-to-peak)			
Voltage drop, output	<2.0V at 100mA			
Rated output current	100mA			
Supply current (no load)	30mA			
Protections	Short circuit, polarity reversal			
Response time	1 ms			
Switching frequency	500 Hz			
Output type	NPN, PNP			
Output function	Only Light-ON or Dark-ON			
Sensitivity/Range adjustment	—			
Connection	2m cable, 3x0.09 mm ²			
LED indicators	LED Red			
Ambient light detection	Per EN 60947-5-2			
Ambient operating temperature	-10°C to +55°C (+14°F to + 131°F)			
Storage temperature	-30°C to +70°C (-22°F to 158°F)			
Degree of protection	IP 65			
Relative humidity	90% at 20°C			
Housing material	Die-cast			
Sensing face material	PMMA			
Dimensions (Unit: mm)				

Note: Used with RE-4235 (supplied with sensor) reflector.
 Coming Soon : Part numbers with underline
 In Preparation: Part numbers with a line through the middle

RX SERIES



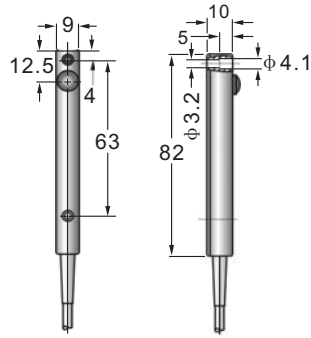
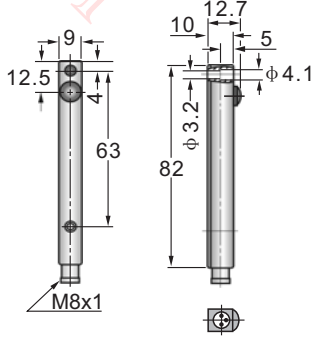
Diffuse Mode/Retroreflective Mode (Die-cast Housing)

<ul style="list-style-type: none"> ※ Red or Infrared light source ※ Die-cast housing ※ Compact construction ※ M8 quick disconnect 	Q7x8x59 			
Sensing Type	Diffuse Mode		Retroreflective Mode	
Sensing Distance	50mm		600mm (Note)	
Light Source	Red Light 660nm	Infrared 880 nm	Red Light 660nm	Infrared 880 nm
NPN Light-ON	<u>R8A-D0050N-LX6Q3UP</u>	<u>R8A-D0050N-LX9Q3UP</u>	<u>R8A-L0600N-LX6Q3UP</u>	<u>R8A-L0600N-LX9Q3UP</u>
NPN Dark-ON	<u>R8A-D0050N-DX6Q3UP</u>	<u>R8A-D0050N-DX9Q3UP</u>	<u>R8A-L0600N-DX6Q3UP</u>	<u>R8A-L0600N-DX9Q3UP</u>
PNP Light-ON	<u>R8A-D0050P-LX6Q3UP</u>	<u>R8A-D0050P-LX9Q3UP</u>	<u>R8A-L0600P-LX6Q3UP</u>	<u>R8A-L0600P-LX9Q3UP</u>
PNP Dark-ON	<u>R8A-D0050P-DX6Q3UP</u>	<u>R8A-D0050P-DX9Q3UP</u>	<u>R8A-L0600P-DX6Q3UP</u>	<u>R8A-L0600P-DX9Q3UP</u>
Voltage supply/ripple	10 to 30V DC (<15% peak-to-peak)			
Voltage drop, output	<2.0V at 100mA			
Rated output current	100mA			
Supply current (no load)	30mA			
Protections	Short circuit, polarity reversal			
Response time	1 ms			
Switching frequency	500 Hz			
Output type	NPN, PNP			
Output function	Only Light-ON or Dark-ON			
Sensitivity/Range adjustment	—			
Connection	3 pin M8 connector			
LED indicators	LED Red			
Ambient light detection	Per EN 60947-5-2			
Ambient operating temperature	-10°C to +55°C (+14°F to + 131°F)			
Storage temperature	-30°C to +70°C (-22°F to 158°F)			
Degree of protection	IP 65			
Relative humidity	90% at 20°C			
Housing material	Die-cast			
Sensing face material	PMMA			
Dimensions (Unit: mm)				

Note: Used with RE-4235 (supplied with sensor) reflector.
 Coming Soon : Part numbers with underline
 In Preparation: Part numbers with a line through the middle

RX SERIES

Thru-beam Mode (Die-cast Housing)



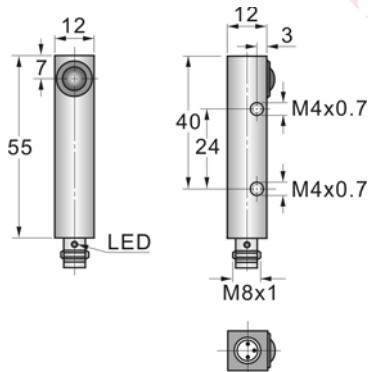
<p>---Long sensing distance; the light beam needs only to travel in one direction from the transmitter to the receiver</p> <p>---High operational safety, interference reflections rarely trigger the receiver.</p> <p>---Detection of very small objects, possible by the additional use of lenses or filters.</p>	<p>Q9x10x82</p> 	<p>Q9x10x82</p> 
	Thru-beam Mode	
Sensing Distance 6m		
Light Source Infrared 880nm		
Emitter	R10A-T6000D-EX9C3L2	R10A-T6000D-EX9Q3LP
NPN Light-ON	R10A-T6000N-LX9C3U2	R10A-T6000N-LX9Q3UP
NPN Dark-ON	R10A-T6000N-DX9C3U2	R10A-T6000N-DX9Q3UP
PNP Light-ON	R10A-T6000P-LX9C3U2	R10A-T6000P-LX9Q3UP
PNP Dark-ON	R10A-T6000P-DX9C3U2	R10A-T6000P-DX9Q3UP
Voltage range	10-30VDC	
Short-circuit protection	YES (Only for receiver)	
Output circuit (max)	200 mA (Only for receiver)	
Switching frequency (max)	>100 Hz (Only for receiver)	
LED for output function	---	
LED for supply voltage	---	
LED for diagnostic	---	
Diagnostic function	YES (Only for Emitter)	
Temperature range	-5°C to +70°C(+23°F to +158°F)	
Protection type	IP67/NEMA 4	
Housing material	Die-cast	
Sensing face material	PMMA	
Output Type	NPN, PNP	
Output function	Only Light-ON or Dark-ON	
Connection	2m Cable	M8(Pico-style) connector
Ambient light detection	Per EN 60947-5-2	
Dimensions (Unit: mm)		

N: Rx SERIES

Note:
 Coming Soon : Part numbers with underline
 In Preparation: Part numbers with a line through the middle

RX SERIES



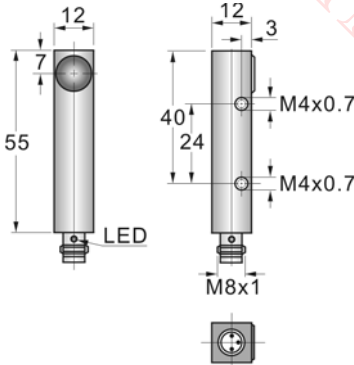
Thru-beam Mode (Sensing Range=6m)

<p>---Long sensing distance; the light beam needs only to travel in one direction from the transmitter to the receiver</p> <p>---High operational safety, interference reflections rarely trigger the receiver.</p> <p>---Detection of very small objects, possible by the additional use of lenses or filters.</p>	<p>Q12x12x55 (Die-cast Housing)</p> 	<p>Q12x12x55 (Plastic Housing)</p> 
	Thru-beam Mode	
	6m	
Infrared 880nm		
Emitter	<u>R12A-T6000D-EX9Q3LP</u>	<u>R12P-T6000D-EX9Q3LP</u>
NPN Light-ON	<u>R12A-T6000N-LX9Q3UP</u>	<u>R12P-T6000N-LX9Q3UP</u>
NPN Dark-ON	<u>R12A-T6000N-DX9Q3UP</u>	<u>R12P-T6000N-DX9Q3UP</u>
PNP Light-ON	<u>R12A-T6000P-LX9Q3UP</u>	<u>R12P-T6000P-LX9Q3UP</u>
PNP Dark-ON	<u>R12A-T6000P-DX9Q3UP</u>	<u>R12P-T6000P-DX9Q3UP</u>
Voltage range	10-30VDC	
Short-circuit protection	YES (Only for receiver)	
Output circuit (max)	200 mA (Only for receiver)	
Switching frequency (max)	>100 Hz (Only for receiver)	
LED for output function	Yes (Only for receiver)	
LED for supply voltage	Yes (Only for emitter)	
LED for diagnostic	—	
Diagnostic function	YES (Only for Emitter)	
Temperature range	-5°C to +70°C(+23°F to +158°F)	
Protection type	IP65/NEMA 12	
Housing material	Die-cast	Plastic
Sensing face material	PMMA	
Output Type	NPN, PNP	
Output function	Only Light-ON or Dark-ON	
Connection	M8(Pico-style) connector	
Ambient light detection	Per EN 60947-5-2	
Dimensions (Unit: mm)		

Note:
 Coming Soon : Part numbers with underline
 In Preparation: Part numbers with a line through the middle

RX SERIES



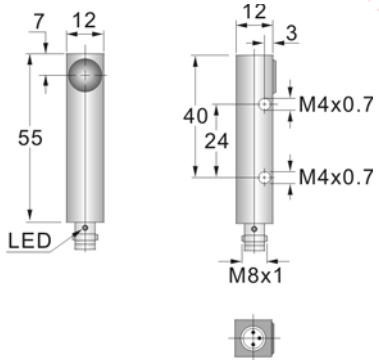
Thru-beam Mode (Sensing Range=1m)

<p>---Use reduced interior beam; the light beam needs only to travel in one direction from the transmitter to the receiver</p> <p>---High operational safety, interference reflections rarely trigger the receiver.</p> <p>---Detection of very small objects, possible by the additional use of lenses or filters.</p>	<p>Q12x12x55 (Die-cast Housing)</p> 	<p>Q12x12x55 (Plastic Housing)</p> 
	<p>Sensing Type Thru-beam Mode</p> <p>Sensing Distance 1m</p> <p>Light Source Infrared 880nm</p>	
Emitter	R12A-T1000D-EX9Q3LP	R12P-T1000D-EX9Q3LP
NPN Light-ON	R12A-T1000N-LX9Q3UP	R12P-T1000N-LX9Q3UP
NPN Dark-ON	R12A-T1000N-DX9Q3UP	R12P-T1000N-DX9Q3UP
PNP Light-ON	R12A-T1000P-LX9Q3UP	R12P-T1000P-LX9Q3UP
PNP Dark-ON	R12A-T1000P-DX9Q3UP	R12P-T1000P-DX9Q3UP
Voltage range	10-30VDC	
Short-circuit protection	YES (Only for receiver)	
Output circuit (max)	200 mA (Only for receiver)	
Switching frequency (max)	>100 Hz (Only for receiver)	
LED for output function	Yes (Only for receiver)	
LED for supply voltage	Yes (Only for emitter)	
LED for diagnostic	—	
Diagnostic function	YES (Only for Emitter)	
Temperature range	-5°C to +70°C(+23°F to +158°F)	
Protection type	IP65/NEMA 12	
Housing material	Die-cast	Plastic
Sensing face material	PMMA	
Output Type	NPN, PNP	
Output function	Only Light-ON or Dark-ON	
Connection	M8(Pico-style) connector	
Ambient light detection	Per EN 60947-5-2	
Dimensions (Unit: mm)		

Note:
 Coming Soon : Part numbers with underline
 In Preparation: Part numbers with a line through the middle

RX SERIES

Thru-beam Mode (Sensing Range=60m)



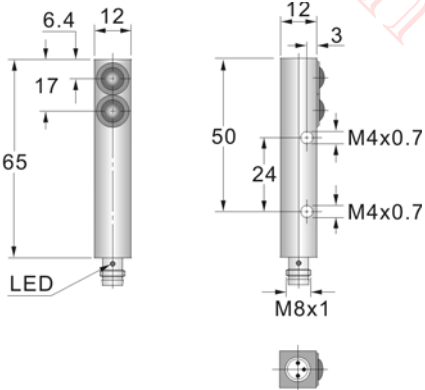
<ul style="list-style-type: none"> ---Laser light source ---Very long sensing range ---High operational safety, interference reflections rarely trigger the receiver. ---Detection of very small objects, possible by the additional use of lenses or filters. 	<p>Q12x12x55 (Die-cast Housing)</p> 	<p>Q12x12x55 (Plastic Housing)</p> 
Sensing Type	Thru-beam Mode	
Sensing Distance	60m	
Light Source	Laser Light	
Emitter	R12A-T060MD-EX8Q3LP	R12P-T060MD-EX8Q3LP
NPN Light-ON	R12A-T060MN-LX8Q3UP	R12P-T060MN-LX8Q3UP
NPN Dark-ON	R12A-T060MN-DX8Q3UP	R12P-T060MN-DX8Q3UP
PNP Light-ON	R12A-T060MP-LX8Q3UP	R12P-T060MP-LX8Q3UP
PNP Dark-ON	R12A-T060MP-DX8Q3UP	R12P-T060MP-DX8Q3UP
Voltage range	10-30VDC	
Short-circuit protection	YES (Only for receiver)	
Output circuit (max)	55 mA (Only for receiver)	
Switching frequency (max)	>1000 Hz (Only for receiver)	
LED for output function	Yes (Only for receiver)	
LED for supply voltage	Yes (Only for emitter)	
LED for diagnostic	—	
Diagnostic function	YES (Only for Emitter)	
Temperature range	-10°C to +50°C(+14°F to +122°F)	
Protection type	IP65/NEMA 12	
Housing material	Die-cast	Plastic
Sensing face material	PMMA	
Output Type	NPN, PNP	
Output function	Only Light-ON or Dark-ON	
Connection	M8(Pico-style) connector	
Ambient light detection	Per EN 60947-5-2	
Dimensions (Unit: mm)		

N : RX SERIES

Note:
 Coming Soon : Part numbers with underline
 In Preparation: Part numbers with a line through the middle

RX SERIES



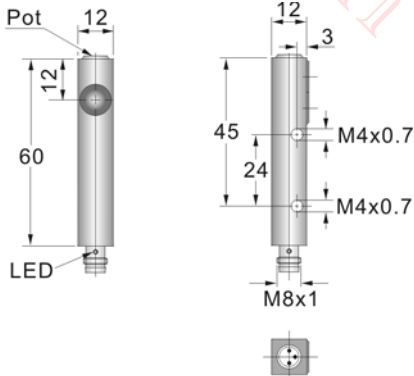
Retroreflective Mode

<p>---Easy installation of sensor head and reflector. ---Reflector can be fixed to a moving target, e.g. Conveyor belt installations.</p>	<p>Q12x12x65 (Die-cast Housing)</p> 	<p>Q12x12x65 (Plastic Housing)</p> 
<p>Sensing Type Retroreflective Mode</p>		
<p>Sensing Distance 4m (Note)</p>		
<p>Light Source Infrared 880nm</p>		
<p>NPN Light-ON</p>	<p><u>R12A-L4000N-LX9Q3UP</u></p>	<p><u>R12P-L4000N-LX9Q3UP</u></p>
<p>NPN Dark-ON</p>	<p><u>R12A-L4000N-DX9Q3UP</u></p>	<p><u>R12P-L4000N-DX9Q3UP</u></p>
<p>PNP Light-ON</p>	<p><u>R12A-L4000P-LX9Q3UP</u></p>	<p><u>R12P-L4000P-LX9Q3UP</u></p>
<p>PNP Dark-ON</p>	<p><u>R12A-L4000P-DX9Q3UP</u></p>	<p><u>R12P-L4000P-DX9Q3UP</u></p>
<p>Voltage range 10-30VDC</p>		
<p>Short-circuit protection YES</p>		
<p>Output circuit (max) 200 mA</p>		
<p>Switching frequency (max) >100 Hz</p>		
<p>LED for output function YES</p>		
<p>LED for supply voltage —</p>		
<p>Adjustable sensitivity —</p>		
<p>Temperature range -5°C to +70°C(+23°F to +158°F)</p>		
<p>Protection type IP65/NEMA 12</p>		
<p>Housing material Die-cast Plastic</p>		
<p>Sensing face material PMMA</p>		
<p>Output Type NPN, PNP</p>		
<p>Output function Only Light-ON or Dark-ON</p>		
<p>Connection M8(Pico-style) connector</p>		
<p>Ambient light detection Per EN 60947-5-2</p>		
<p> </p>		
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<p> </p>		
<p>Dimensions (Unit: mm)</p>		

Note: Used with **RE-4235** (supplied with sensor) reflector.
Coming Soon : Part numbers with underline
In Preparation: Part numbers with a line through the middle

RX SERIES

Diffuse Mode (Sensing Range=200mm)



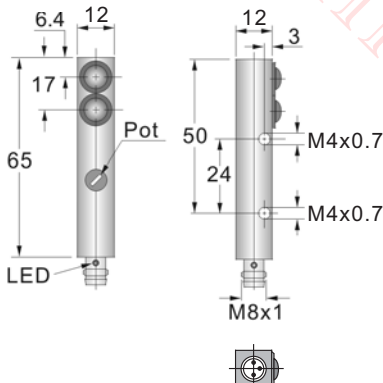
<p>---Easiest installation ---No reflector necessary</p>	<p>Q12x12x60 (Die-cast Housing)</p> 	<p>Q12x12x60 (Plastic Housing)</p> 
Sensing Type	Diffuse Mode	
Sensing Distance	200mm	
Light Source	Infrared 880nm	
NPN Light-ON	<u>R12A-D0200N-LX9Q3UP</u>	<u>R12P-D0200N-LX9Q3UP</u>
NPN Dark-ON	<u>R12A-D0200N-DX9Q3UP</u>	<u>R12P-D0200N-DX9Q3UP</u>
PNP Light-ON	<u>R12A-D0200P-LX9Q3UP</u>	<u>R12P-D0200P-LX9Q3UP</u>
PNP Dark-ON	<u>R12A-D0200P-DX9Q3UP</u>	<u>R12P-D0200P-DX9Q3UP</u>
Voltage range	10-30VDC	
Short-circuit protection	YES	
Output circuit (max)	200 mA	
Switching frequency (max)	>100 Hz	
LED for output function	YES	
LED for supply voltage	---	
Adjustable sensitivity	YES	
Temperature range	-5°C to +70°C(+23°F to +158°F)	
Protection type	IP65/NEMA 12	
Housing material	Die-cast	Plastic
Sensing face material	PMMA	
Output Type	NPN, PNP	
Output function	Only Light-ON or Dark-ON	
Connection	M8(Pico-style) connector	
Ambient light detection	Per EN 60947-5-2	
Dimensions (Unit: mm)		

Note:
 Coming Soon : Part numbers with underline
 In Preparation: Part numbers with a line through the middle

N : RX SERIES

RX SERIES

Diffuse Mode (Sensing Range=1.2m)



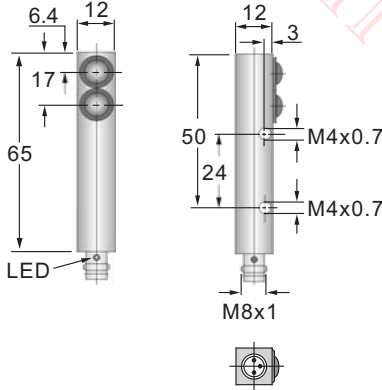
---Long Sensing Range ---Easiest installation ---No reflector necessary	Q12x12x65 (Die-cast Housing) 	Q12x12x65 (Plastic Housing) 
	Sensing Type Diffuse Mode	
Sensing Distance 1.2m		
Light Source Infrared 880nm		
NPN Light-ON	<u>R12A-D1200N-LX9Q3UP</u>	<u>R12P-D1200N-LX9Q3UP</u>
NPN Dark-ON	<u>R12A-D1200N-DX9Q3UP</u>	<u>R12P-D1200N-DX9Q3UP</u>
PNP Light-ON	<u>R12A-D1200P-LX9Q3UP</u>	<u>R12P-D1200P-LX9Q3UP</u>
PNP Dark-ON	<u>R12A-D1200P-DX9Q3UP</u>	<u>R12P-D1200P-DX9Q3UP</u>
Voltage range	10-30VDC	
Short-circuit protection	YES	
Output circuit (max)	200 mA	
Switching frequency (max)	>100 Hz	
LED for output function	YES	
LED for supply voltage	—	
Adjustable sensitivity	YES	
Temperature range	-5°C to +70°C(+23°F to +158°F)	
Protection type	IP65/NEMA 12	
Housing material	Die-cast	Plastic
Sensing face material	PMMA	
Output Type	NPN, PNP	
Output function	Only Light-ON or Dark-ON	
Connection	M8(Pico-style) connector	
Ambient light detection	Per EN 60947-5-2	
Dimensions (Unit: mm)		

Note:
 Coming Soon : Part numbers with underline
 In Preparation: Part numbers with a line through the middle

N: Rx SERIES

RX SERIES

Convergent beam Mode


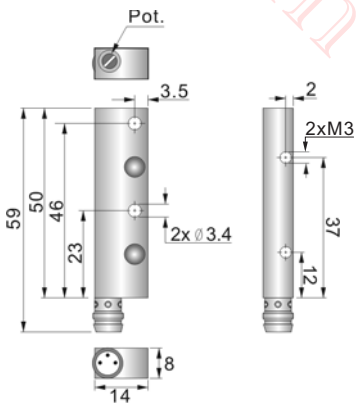
<p>---Background/foreground suppression. ---Defined active zone.</p>	<p>Q12x12x65 (Die-cast Housing)</p> 	<p>Q12x12x65 (Plastic Housing)</p> 
<p>Sensing Type Convergent beam Mode</p>		
<p>Sensing Distance 50mm</p>		
<p>Light Source Infrared 880nm</p>		
<p>NPN Light-ON</p>	<p><u>R12A-C0050N-LX9Q3UP</u></p>	<p><u>R12P-C0050N-LX9Q3UP</u></p>
<p>NPN Dark-ON</p>	<p><u>R12A-C0050N-DX9Q3UP</u></p>	<p><u>R12P-C0050N-DX9Q3UP</u></p>
<p>PNP Light-ON</p>	<p><u>R12A-C0050P-LX9Q3UP</u></p>	<p><u>R12P-C0050P-LX9Q3UP</u></p>
<p>PNP Dark-ON</p>	<p><u>R12A-C0050P-DX9Q3UP</u></p>	<p><u>R12P-C0050P-DX9Q3UP</u></p>
<p>Voltage range 10-30VDC</p>		
<p>Short-circuit protection YES</p>		
<p>Output circuit (max) 200 mA</p>		
<p>Switching frequency (max) >100 Hz</p>		
<p>LED for output function Yes</p>		
<p>LED for supply voltage —</p>		
<p>Temperature range -5°C to +70°C (+23°F to +158°F)</p>		
<p>Protection type IP65/NEMA 12</p>		
<p>Housing material Die-cast Plastic</p>		
<p>Sensing face material PMMA</p>		
<p>Output Type NPN, PNP</p>		
<p>Output function Only Light-ON or Dark-ON</p>		
<p>Connection M8(Pico-style) connector</p>		
<p>Ambient light detection Per EN 60947-5-2</p>		
<p> </p>		
<p> </p>		
<p> </p>		
<p> </p>		
<p>Dimensions (Unit: mm)</p>		

Note:
 Coming Soon : Part numbers with underline
 In Preparation: Part numbers with a line through the middle

N : RX SERIES

RX SERIES

Diffuse Mode (Die-cast Housing)

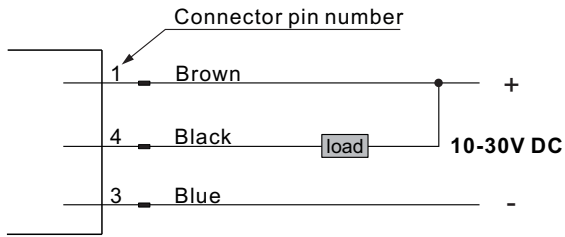
<p>---Totally self-contained units, no additional amplifier</p> <p>---Adjustable sensing distance</p> <p>---Protected against short-circuit and polarity reversal.</p> <p>---Effective background suppression</p>	<p>Q14x8x59 (Die-cast Housing)</p> 		
	Sensing Type	With Fixed focus	With Background Suppression
	Sensing Distance	10mm	8...20 mm
	Light Source	Infrared 880 nm	Infrared 880 nm
NPN Light-ON	R14A-D0010N-LX9Q3UP	R14A-D0020N-LX9Q3UP-BS	
NPN Dark-ON	R14A-D0010N-DX9Q3UP	R14A-D0020N-DX9Q3UP-BS	
PNP Light-ON	R14A-D0010P-LX9Q3UP	R14A-D0020P-LX9Q3UP-BS	
PNP Dark-ON	R14A-D0010P-DX9Q3UP	R14A-D0020P-DX9Q3UP-BS	
Voltage supply/ripple	10 to 30V DC (<15% peak-to-peak)		
Voltage drop, output	<2.0V at 100mA		
Rated output current	100mA		
Supply current (no load)	30mA		
Protections	Short circuit, polarity reversal		
Response time	1 ms		
Switching frequency	500 Hz		
Output type	NPN,PNP		
Output function	Only Light-ON or Dark-ON		
Sensitivity/Range adjustment	1-turn potentiometer		
Connection	M8(Pico-style) connector		
LED indicators	Red output indication		
Ambient light detection	Per EN 60947-5-2		
Ambient operating temperature	-10°C to +55°C(+14°F to + 131°F)		
Storage temperature	-30°C to +70°C(-22°F to 158°F)		
Degree of protection	IP 65		
Relative humidity	90% at 20°C		
Housing material	Die-cast		
Sensing face material	PMMA		
Dimensions (Unit: mm)			

Note:
 Coming Soon : Part numbers with underline
 In Preparation: Part numbers with a line through the middle

RX SERIES

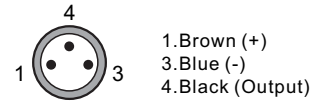
Connection Diagrams / Dimensions

NPN output type

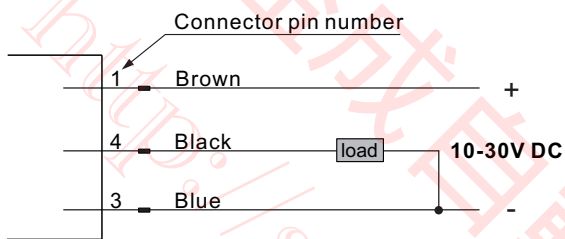


Connector pin position

Pico-Style

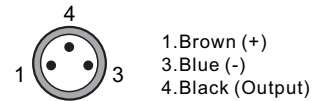


PNP output type

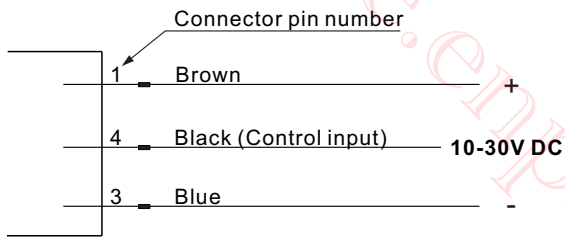


Connector pin position

Pico-Style



Emitter of Thru-beam Mode



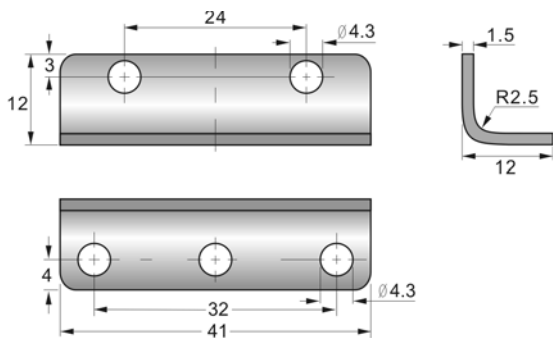
Connector pin position

Pico-Style



Mounting Bracket's Dimensions (Unit: mm)






MB-4112 (Only for Q12x12 type sensor-optional)



SU SERIES

Thru-beam Mode (Ultra-small type)


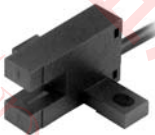




Ai: SU SERIES

Sensing Mode	Connection	Supply voltage	Connect type	Output Mode	Part Number
Thru-beam mode(Ultra-small type) Sensing Distance: 5mm Light Source: Infrared	K shape type 	10-30V DC	1m Cable	NPN L.O./D.O.	<u>SU-T0005N-CY9C4L1-UK</u>
				PNP L.O./D.O.	<u>SU-T0005P-CY9C4L1-UK</u>
			3m Cable	NPN L.O./D.O.	<u>SU-T0005N-CY9C4L3-UK</u>
				PNP L.O./D.O.	<u>SU-T0005P-CY9C4L3-UK</u>
	L shape type 	10-30V DC	1m Cable	NPN L.O./D.O.	<u>SU-T0005N-CY9C4L1-UL</u>
				PNP L.O./D.O.	<u>SU-T0005P-CY9C4L1-UL</u>
			3m Cable	NPN L.O./D.O.	<u>SU-T0005N-CY9C4L3-UL</u>
				PNP L.O./D.O.	<u>SU-T0005P-CY9C4L3-UL</u>
	F shape type 	10-30V DC	1m Cable	NPN L.O./D.O.	<u>SU-T0005N-CY9C4L1-UF</u>
				PNP L.O./D.O.	<u>SU-T0005P-CY9C4L1-UF</u>
			3m Cable	NPN L.O./D.O.	<u>SU-T0005N-CY9C4L3-UF</u>
				PNP L.O./D.O.	<u>SU-T0005P-CY9C4L3-UF</u>
	R shape type 	10-30V DC	1m Cable	NPN L.O./D.O.	<u>SU-T0005N-CY9C4L1-UR</u>
				PNP L.O./D.O.	<u>SU-T0005P-CY9C4L1-UR</u>
			3m Cable	NPN L.O./D.O.	<u>SU-T0005N-CY9C4L3-UR</u>
				PNP L.O./D.O.	<u>SU-T0005P-CY9C4L3-UR</u>
	U shape type 	10-30V DC	1m Cable	NPN L.O./D.O.	<u>SU-T0005N-CY9C4L1-UU</u>
				PNP L.O./D.O.	<u>SU-T0005P-CY9C4L1-UU</u>
			3m Cable	NPN L.O./D.O.	<u>SU-T0005N-CY9C4L3-UU</u>
				PNP L.O./D.O.	<u>SU-T0005P-CY9C4L3-UU</u>

Note:
 Coming Soon : Part numbers with underline
 In Preparation: Part numbers with a line through the middle
 — Ai-01 —

SU SERIES

Thru-beam Mode (Small type)

Type	Connection	Supply voltage	Connect type	Output Mode	Part Number
Thru-beam mode(Small type) Sensing Distance: 5mm Light Source: Infrared	K shape type 	10-30V DC	1m Cable	NPN L.O./D.O.	<u>SU-T0005N-CY9C4L1-SK</u>
				PNP L.O./D.O.	<u>SU-T0005P-CY9C4L1-SK</u>
			3m Cable	NPN L.O./D.O.	<u>SU-T0005N-CY9C4L3-SK</u>
				PNP L.O./D.O.	<u>SU-T0005P-CY9C4L3-SK</u>
	T shape type 	10-30V DC	1m Cable	NPN L.O./D.O.	<u>SU-T0005N-CY9C4L1-ST</u>
				PNP L.O./D.O.	<u>SU-T0005P-CY9C4L1-ST</u>
			3m Cable	NPN L.O./D.O.	<u>SU-T0005N-CY9C4L3-ST</u>
				PNP L.O./D.O.	<u>SU-T0005P-CY9C4L3-ST</u>
	L shape type 	10-30V DC	1m Cable	NPN L.O./D.O.	<u>SU-T0005N-CY9C4L1-SL</u>
				PNP L.O./D.O.	<u>SU-T0005P-CY9C4L1-SL</u>
			3m Cable	NPN L.O./D.O.	<u>SU-T0005N-CY9C4L3-SL</u>
				PNP L.O./D.O.	<u>SU-T0005P-CY9C4L3-SL</u>
	Y shape type 	10-30V DC	1m Cable	NPN L.O./D.O.	<u>SU-T0005N-CY9C4L1-SY</u>
				PNP L.O./D.O.	<u>SU-T0005P-CY9C4L1-SY</u>
			3m Cable	NPN L.O./D.O.	<u>SU-T0005N-CY9C4L3-SY</u>
				PNP L.O./D.O.	<u>SU-T0005P-CY9C4L3-SY</u>
	F shape type 	10-30V DC	1m Cable	NPN L.O./D.O.	<u>SU-T0005N-CY9C4L1-SF</u>
				PNP L.O./D.O.	<u>SU-T0005P-CY9C4L1-SF</u>
3m Cable			NPN L.O./D.O.	<u>SU-T0005N-CY9C4L3-SF</u>	
			PNP L.O./D.O.	<u>SU-T0005P-CY9C4L3-SF</u>	
R shape type 	10-30V DC	1m Cable	NPN L.O./D.O.	<u>SU-T0005N-CY9C4L1-SR</u>	
			PNP L.O./D.O.	<u>SU-T0005P-CY9C4L1-SR</u>	
		3m Cable	NPN L.O./D.O.	<u>SU-T0005N-CY9C4L3-SR</u>	
			PNP L.O./D.O.	<u>SU-T0005P-CY9C4L3-SR</u>	

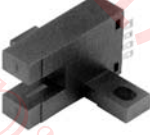

Ai: SU SERIES

Note:
 Coming Soon : Part numbers with underline
 In Preparation: Part numbers with a line through the middle
 — Ai-02 —

SU SERIES

Thru-beam Mode (Small type)

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Type	Connection	Supply voltage	Connect type	Output Mode	Part Number
Thru-beam mode (Small type) Sensing Distance: 5mm Light Source: Infrared	K shape type 	10-30V DC	Terminal	NPN L.O./D.O.	<u>SU-T0005N-CY9T4L-SK</u>
				PNP L.O./D.O.	<u>SU-T0005P-CY9T4L-SK</u>
	T shape type 	10-30V DC	Terminal	NPN L.O./D.O.	<u>SU-T0005N-CY9T4L-ST</u>
				PNP L.O./D.O.	<u>SU-T0005P-CY9T4L-ST</u>
	L shape type 	10-30V DC	Terminal	NPN L.O./D.O.	<u>SU-T0005N-CY9T4L-SL</u>
				PNP L.O./D.O.	<u>SU-T0005P-CY9T4L-SL</u>
	Y shape type 	10-30V DC	Terminal	NPN L.O./D.O.	<u>SU-T0005N-CY9T4L-SY</u>
				PNP L.O./D.O.	<u>SU-T0005P-CY9T4L-SY</u>
	F shape type 	10-30V DC	Terminal	NPN L.O./D.O.	<u>SU-T0005N-CY9T4L-SF</u>
				PNP L.O./D.O.	<u>SU-T0005P-CY9T4L-SF</u>
	R shape type 	10-30V DC	Terminal	NPN L.O./D.O.	<u>SU-T0005N-CY9T4L-SR</u>
				PNP L.O./D.O.	<u>SU-T0005P-CY9T4L-SR</u>

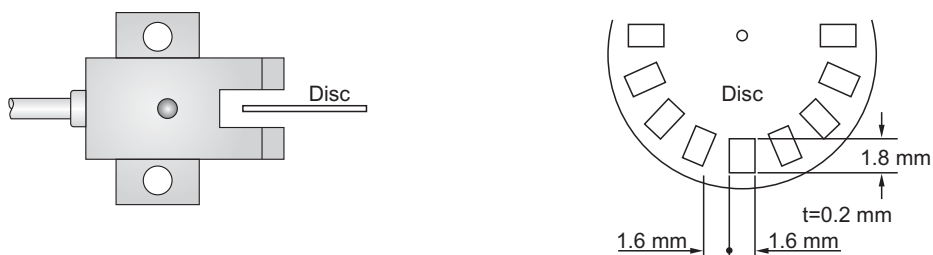
Note:

Coming Soon : Part numbers with underline
 In Preparation: Part numbers with a line through the middle

Specifications

Item	Model No.	Type	Ultra-small type		Small type	
			Cable Type		Cable Type	Terminal Type
			NPN output	SU-T0005N-CY9C4Lx-Ux	SU-T0005N-CY9C4Lx-Sx	SU-T0005N-CY9T4L-Sx
PNP output	SU-T0005P-CY9C4Lx-Ux	SU-T0005P-CY9C4Lx-Sx	SU-T0005P-CY9T4L-Sx			
Sensing range	5 mm					
Minimum sensing object	0.8 X 1.8 mm opaque object					
Hysteresis	0.05 mm or less					
Repeatability	0.03 mm or less					
Supply power	10 - 30 V DC 10% Ripple P-P % or less					
Current consumption	15 mA or less					
Output	<NPN output type> NPN open-collector transistor Maximum sink current: 50 mA Applied voltage: 30V DC or less(between output and 0V) Residual voltage: 0.7 V or less(at 50 mA sink current) 0.4 V or less (at 16 mA sink current)		<PNP output type> PNP open-collector transistor Maximum source current: 50 mA Applied voltage: 30V DC or less(between output and +V) Residual voltage: 0.7 V or less(at 50 mA source current) 0.4 V or less (at 16 mA source current)			
Output operation	Incorporated with 2 outputs: Light-ON / Dark-ON					
Light source	Infrared LED (non-modulated)					
Response time	Under light received condition: 20 μ s or less Under light interrupted condition: 100 μ s or less (Response frequency: 1 kHz or more) (Note)					
Operation indicator	Vermilion LED (lights up under light received condition)					
Pollution degree	3(Industrial environment)					
Ambient temperature	-25 to +55 °C(No dew condensation or icing allowed), Storage: -30 to + 80 °C					
Ambient humidity	35 to 85% RH, Storage:35 to 85% RH					
Ambient illuminance	Fluorescent light: 1,000 ℓ x 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 withstandability	IEC 60947-5-2 Parts 8.3.3.4, or 500VDC for one min between all supply terminals connected together and enclosure					
Insulation resistance	>50M Ω , with 250V DC megger between all supply terminals connected together and enclosure					
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					
Material	Enclosure: PBT, Slit cover: Polycarbonate, Terminal part(terminal sensor only): Solder plated					
Cable	0.09 mm ² 4-core cabtyre cable, 1m or 3m long				—	
Cable extension	Extension up to total 100m is possible with 0.3 mm ² , or more, cable.					
Weight	10 g approx.		15 g approx.		3 g approx.	

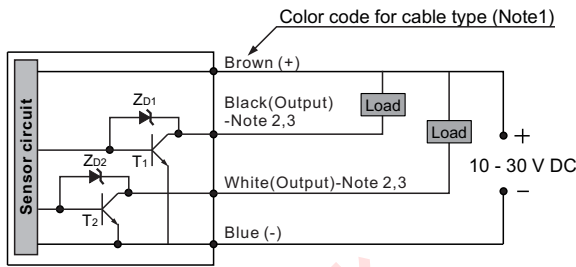
Note: The response frequency is the value when the disc, given in the figure below, is rotated.



Connection Diagrams

Ai: SU SERIES

NPN output type



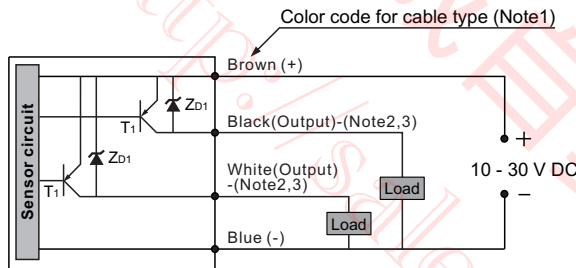
Symbols...ZD1, ZD2: Surge absorption zener diode
T1, T2: NPN output transistor

Output operation type

Color code	Output operation
Black	Light-ON
White	Dark-ON

- Note 1): The color code of the terminal attached cable is also the same.
 2): Make sure to connect terminals correctly as the sensor does not incorporate a reverse polarity protection circuit.
 Further, the output is not incorporated with a short circuit protection circuit. Do not connect it directly to a power supply or a capacitive load. Faulty wiring may result in damage.
 3): Ensure to insulate the unused output wire.

PNP output type



Symbols...ZD1, ZD2: Surge absorption zener diode
T1, T2: PNP output transistor

Output operation type

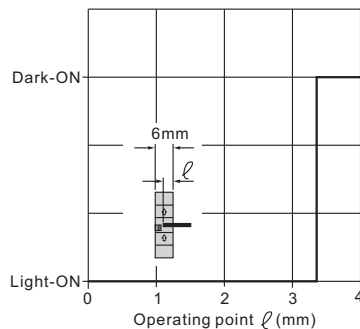
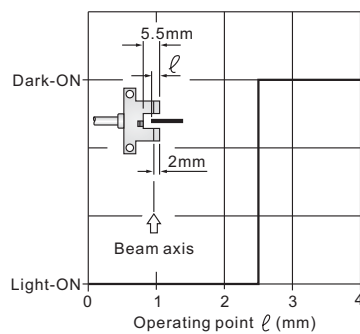
Color code	Output operation
Black	Light-ON
White	Dark-ON

- Note 1): The color code of the terminal attached cable is also the same.
 2): Make sure to connect terminals correctly as the sensor does not incorporate a reverse polarity protection circuit.
 Further, the output is not incorporated with a short circuit protection circuit. Do not connect it directly to a power supply or a capacitive load. Faulty wiring may result in damage.
 3): Ensure to insulate the unused output wire.

Sensing Characteristics (Typical)

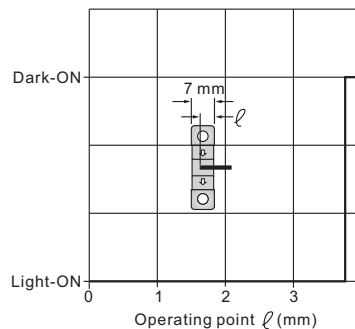
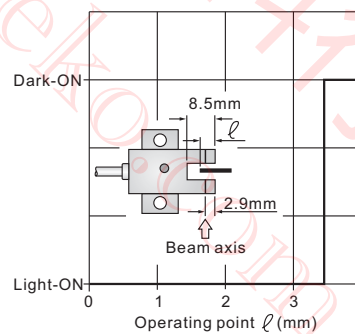
Ultra small type Sensor (with suffix '-Ux')

Sensing position



Small type Sensor (with suffix '-Sx')

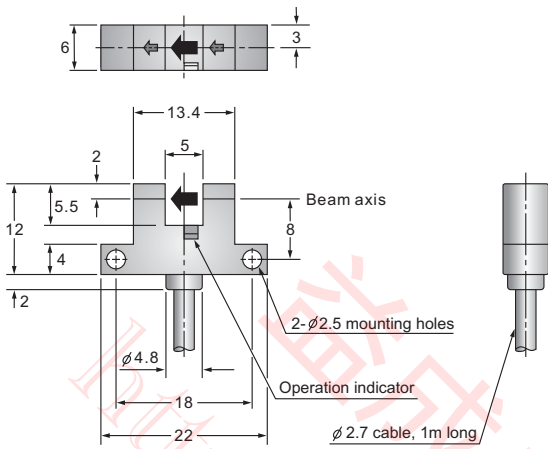
Sensing position



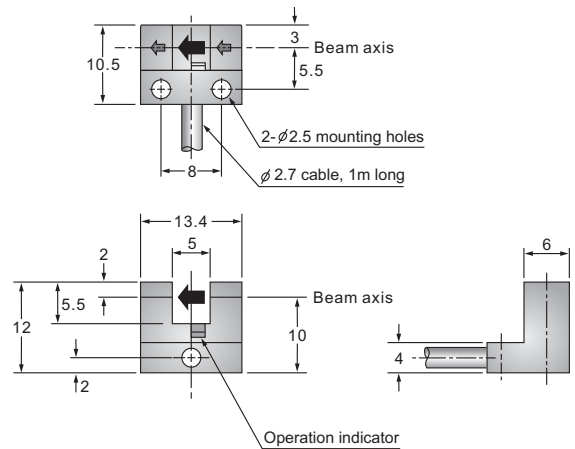
SU SERIES

Ultra-small type sensor's Dimensions (Unit: mm)

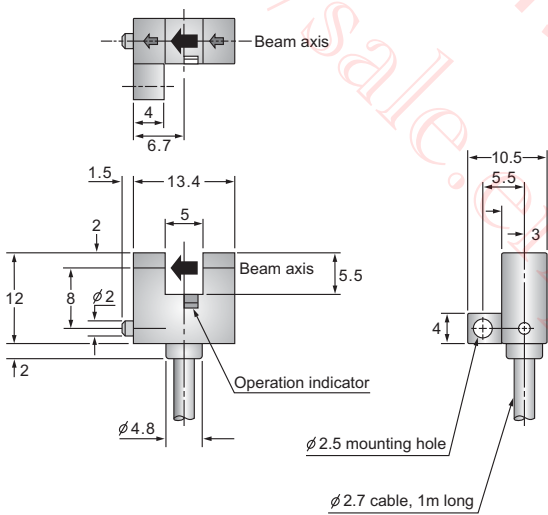
SU-T0005N-CY9C4Lx-UK (K shape)



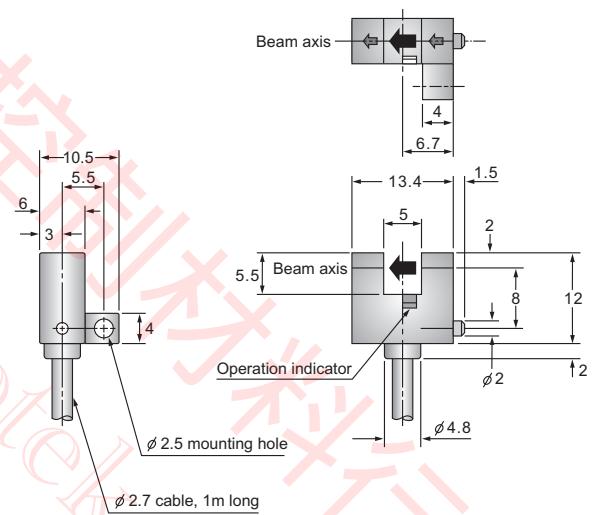
SU-T0005N-CY9C4Lx-UL (L shape)



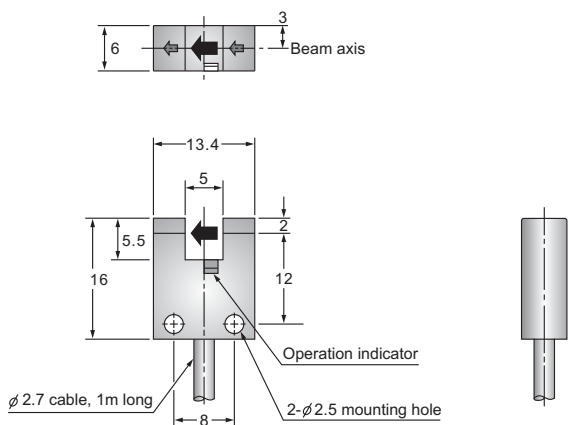
SU-T0005N-CY9C4Lx-UF (F shape)



SU-T0005N-CY9C4Lx-UR (R shape)



SU-T0005N-CY9C4Lx-UU (U shape)



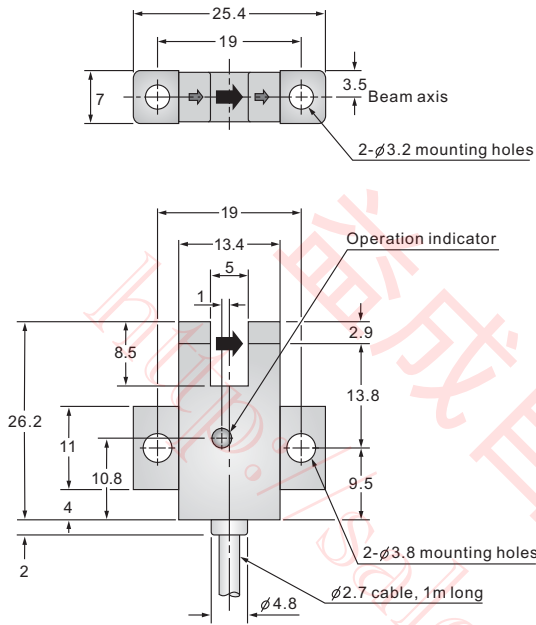
Ai: SU SERIES

SU SERIES

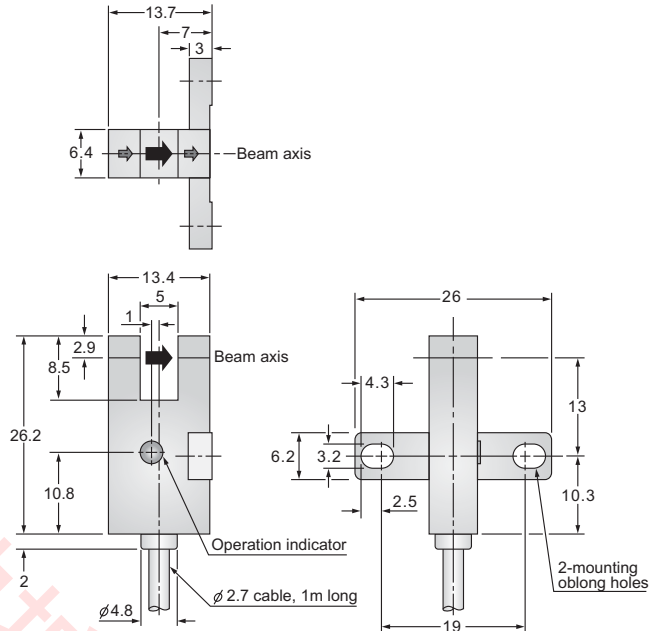
Small type sensor's Dimensions (Unit: mm)

Ai: SU SERIES

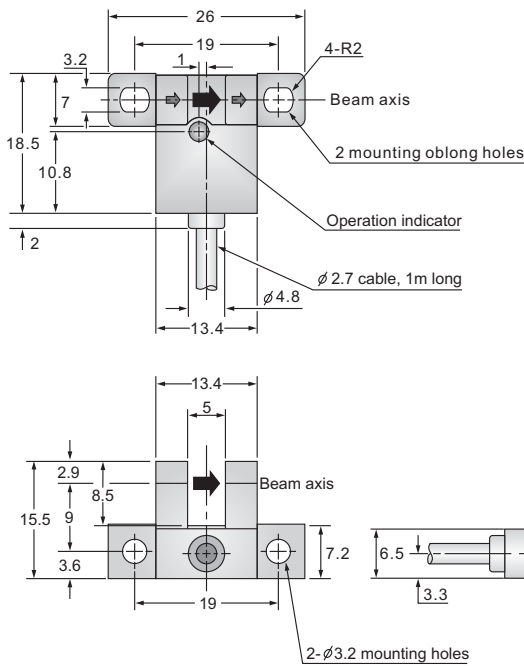
SU-T0005x-CY9C4L1-SK (K shape)



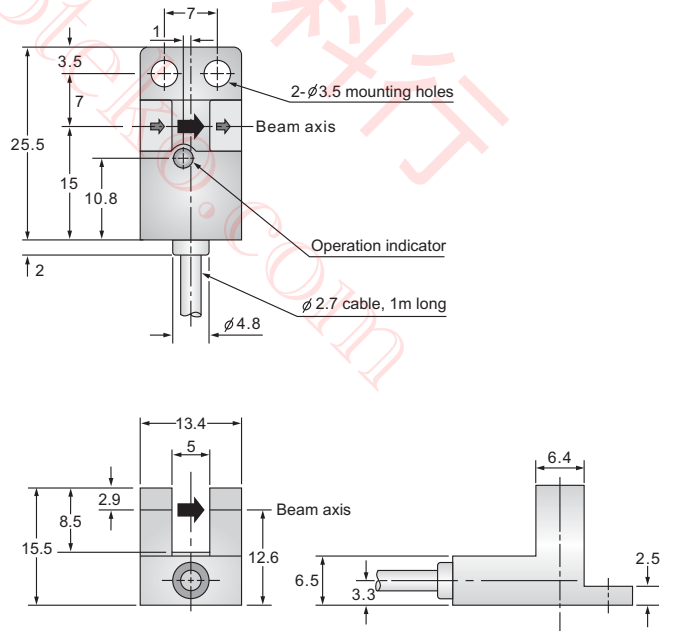
SU-T0005x-CY9C4L1-ST (T shape)



SU-T0005x-CY9C4L1-SL (L shape)



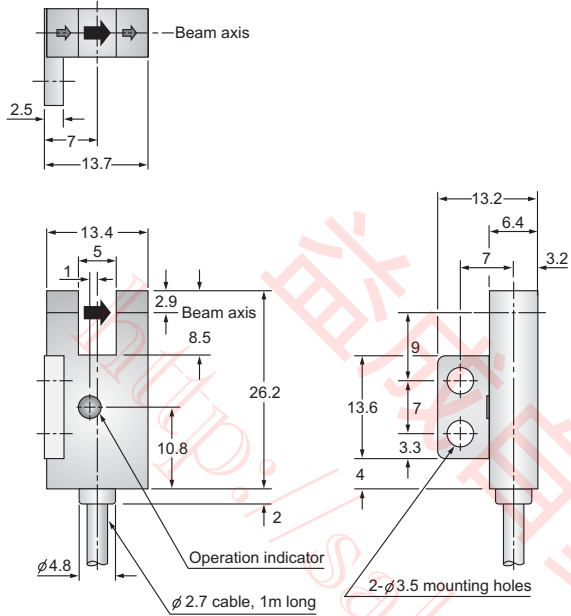
SU-T0005x-CY9C4L1-SY (Y shape)



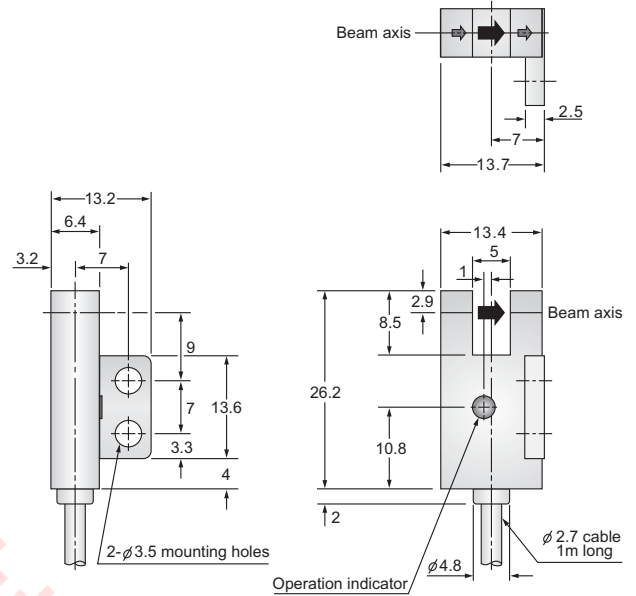
SU SERIES

Small type sensor's Dimensions (Unit: mm)

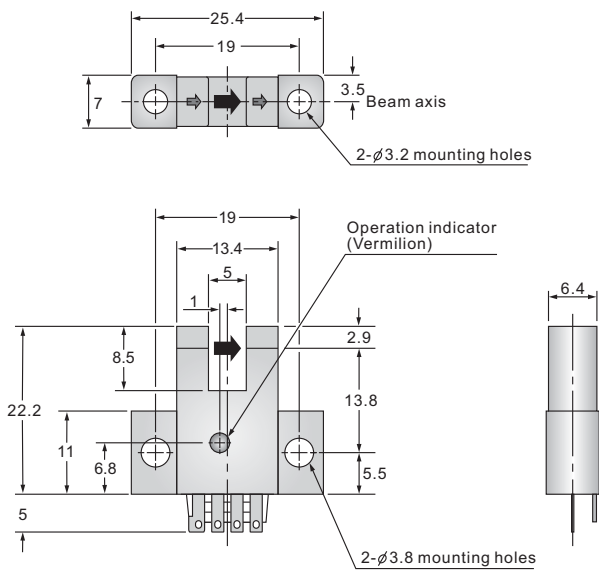
SU-T0005x-CY9C4L1-SF (F shape)



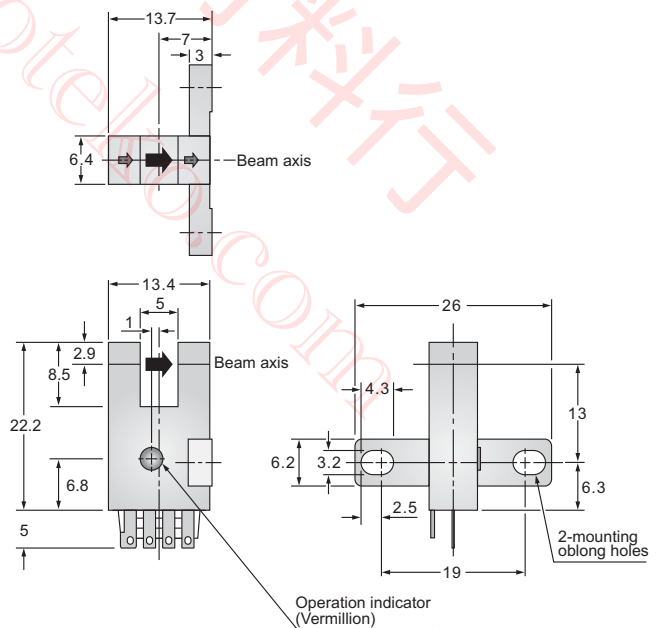
SU-T0005x-CY9C4L1-SR (R shape)



SU-T0005x-CY9T4L-SK (K shape)



SU-T0005x-CY9T4L-ST (T shape)



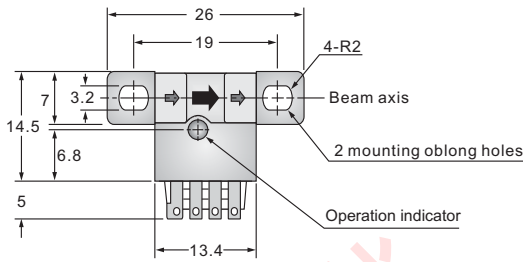
AI: SU SERIES

SU SERIES

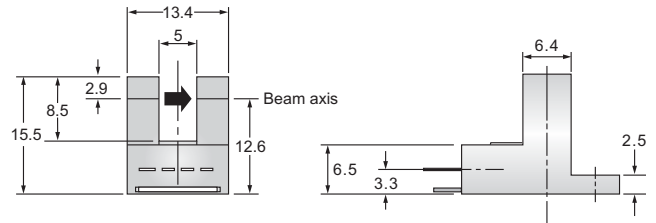
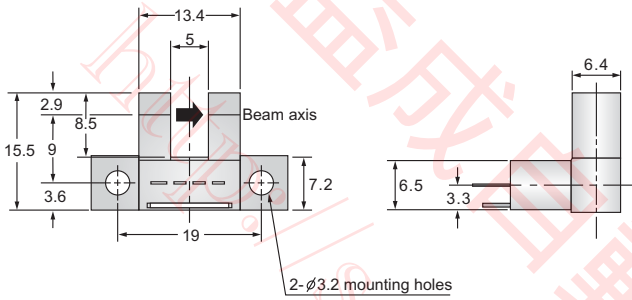
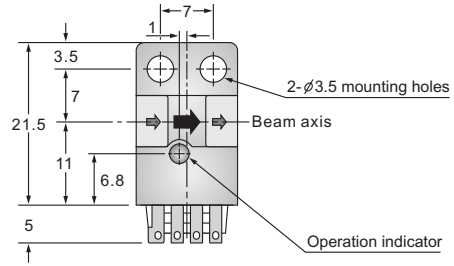
Small type sensor's Dimensions (Unit: mm)

Ai: SU SERIES

SU-T0005x-CY9T4L-SL (L shape)

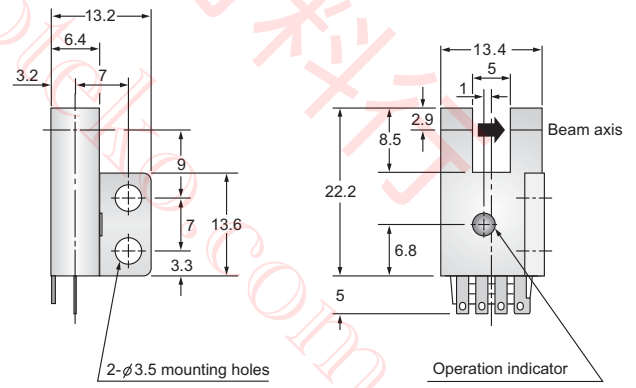
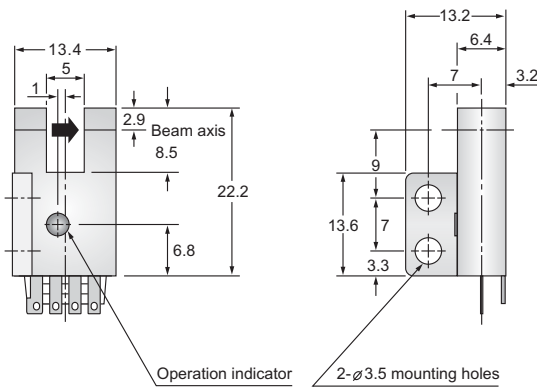
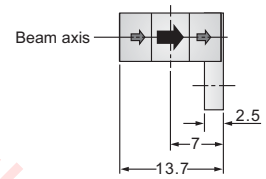
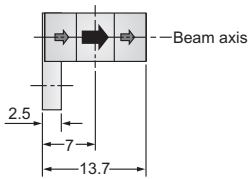


SU-T0005x-CY9T4L-SY (Y shape)



SU-T0005x-CY9T4L-SF (F shape)

SU-T0005x-CY9T4L-SR (R shape)



Terminal part

