







MP SERIES

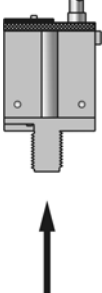




Opposed Mode (Standard Range)

T: MP SERIES

Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
Light Source: infrared 880nm	2m Cable 	10-30V DC	Emitter	MP-T3000D-EX9C3L2
			NPN/PNP (1ms on/off)	MP-T3000D-CX9C4U2
			Emitter	MP-T3000D-EX9C3L2-HS
			NPN/PNP (0.3ms on/off)	MP-T3000D-CX9C4U2-HS
	9m Cable 	10-30V DC	Emitter	MP-T3000D-EX9C3L9
			NPN/PNP (1ms on/off)	MP-T3000D-CX9C4U9
			Emitter	MP-T3000D-EX9C3L9-HS
			NPN/PNP (0.3ms on/off)	MP-T3000D-CX9C4U9-HS
Pico Style 4 Pins QD 	10-30V DC	Emitter	MP-T3000D-EX9Q4LP	
		NPN/PNP (1ms on/off)	MP-T3000D-CX9Q4UP	
		Emitter	MP-T3000D-EX9Q4LP-HS	
		NPN/PNP (0.3ms on/off)	MP-T3000D-CX9Q4UP-HS	
Euro Style 4 Pins QD 	10-30V DC	Emitter	MP-T3000D-EX9Q4LE	
		NPN/PNP (1ms on/off)	MP-T3000D-CX9Q4UE	
		Emitter	MP-T3000D-EX9Q4LE-HS	
		NPN/PNP (0.3ms on/off)	MP-T3000D-CX9Q4UE-HS	
Opposed Mode Sensing Distance:3m	Pico Style 4 Pins 6" Pigtail 	10-30V DC	Emitter	MP-T3000D-EX9P4LP
			NPN/PNP (1ms on/off)	MP-T3000D-CX9P4UP
			Emitter	MP-T3000D-EX9P4LP-HS
			NPN/PNP (0.3ms on/off)	MP-T3000D-CX9P4UP-HS
	Euro Style 4 Pins 6" Pigtail 	10-30V DC	Emitter	MP-T3000D-EX9P4LE
			NPN/PNP (1ms on/off)	
			Emitter	MP-T3000D-EX9P4LE-HS
			NPN/PNP (0.3ms on/off)	

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Opposed Mode (Standard Range)

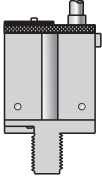
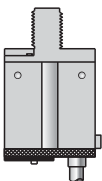






Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
<p>Light Source : Infrared 880nm</p>  <p>Opposed Mode Sensing Distance: 3m</p>	<p>2m Cable</p> 	24~240V AC	Emitter (2-wire)	MP-T3000A-EX9C2L2
		24~240V AC	SPST Solid-state (2ms on/1ms off) (3-wire)	MP-T3000A-CX9C3U2
		12~240V DC/ 24~240V AC	Emitter (2-wire)	
		12~240V DC/ 24~240V AC	SPST Solid-state (2ms on/1ms off) (2-wire)	
	<p>9m Cable</p> 	24~240V AC	Emitter (2-wire)	MP-T3000A-EX9C2L9
		24~240V AC	SPST Solid-state (2ms on/1ms off) (3-wire)	MP-T3000A-CX9C3U9
		12~240V DC/ 24~240V AC	Emitter (2-wire)	
		12~240V DC/ 24~240V AC	SPST Solid-state (2ms on/1ms off) (2-wire)	
<p>Micro Style 3 Pins QD</p> 	24~240V AC	Emitter (2-wire)		
	24~240V AC	SPST Solid-state (2ms on/1ms off) (3-wire)		
	12~240V DC/ 24~240V AC	Emitter (2-wire)		
	12~240V DC/ 24~240V AC	SPST Solid-state (2ms on/1ms off) (2-wire)		
<p>Micro Style 3 Pins 6" Pigtail</p> 	24~240V AC	Emitter (2-wire)	MP-T3000A-EX9P3LM	
	24~240V AC	SPST Solid-state (2ms on/1ms off) (3-wire)		
	12~240V DC/ 24~240V AC	Emitter (2-wire)		
	12~240V DC/ 24~240V AC	SPST Solid-state (2ms on/1ms off) (2-wire)		

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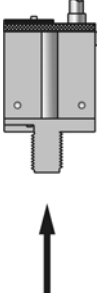




Opposed Mode (Long Range, Sn=30m)

T: MP SERIES

Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
Light Source : Infrared 880nm  ↑  Opposed Mode Sensing Distance:30m	2m Cable 	10-30V DC	Emitter	MP-T030MD-EX9C3L2
			NPN/PNP (1ms on/off)	MP-T030MD-CX9C4U2
			Emitter	MP-T030MD-EX9C3L2-HS
			NPN/PNP (0.3ms on/off)	MP-T030MD-CX9C4U2-HS
	9m Cable 	10-30V DC	Emitter	MP-T030MD-EX9C3L9
			NPN/PNP (1ms on/off)	MP-T030MD-CX9C4U9
			Emitter	MP-T030MD-EX9C3L9-HS
			NPN/PNP (0.3ms on/off)	MP-T030MD-CX9C4U9-HS
	Pico Style 4 Pins QD 	10-30V DC	Emitter	MP-T030MD-EX9Q4LP
			NPN/PNP (1ms on/off)	MP-T030MD-CX9Q4UP
			Emitter	MP-T030MD-EX9Q4LP-HS
			NPN/PNP (0.3ms on/off)	MP-T030MD-CX9Q4UP-HS
Euro Style 4 Pins QD 	10-30V DC	Emitter	MP-T030MD-EX9Q4LE	
		NPN/PNP (1ms on/off)	MP-T030MD-CX9Q4UE	
		Emitter	MP-T030MD-EX9Q4LE-HS	
		NPN/PNP (0.3ms on/off)	MP-T030MD-CX9Q4UE-HS	
Pico Style 4 Pins 6" Pigtail 	10-30V DC	Emitter	MP-T030MD-EX9P4LP	
		NPN/PNP (1ms on/off)	MP-T030MD-CX9P4UP	
		Emitter	MP-T030MD-EX9P4LP-HS	
		NPN/PNP (0.3ms on/off)	MP-T030MD-CX9P4UP-HS	
Euro Style 4 Pins 6" Pigtail 	10-30V DC	Emitter	MP-T030MD-EX9P4LE	
		NPN/PNP (1ms on/off)	MP-T030MD-CX9P4UE	
		Emitter	MP-T030MD-EX9P4LE-HS	
		NPN/PNP (0.3ms on/off)	MP-T030MD-CX9P4UE-HS	

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Opposed Mode (Long Range, Sn=30m)

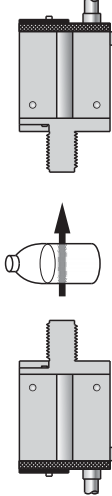






Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
<p>Light Source : Infrared 880nm</p>  <p>Opposed Mode Sensing Distance: 30m</p>	<p>2m Cable</p> 	24~240V AC	Emitter (2-wire)	MP-T030MA-EX9C2L2
			SPST Solid-state (2ms on/1ms off) (3-wire)	MP-T030MA-CX9C3U2
		12~240V DC/ 24~240V AC	Emitter (2-wire)	
			SPST Solid-state (2ms on/1ms off) (2-wire)	
	<p>9m Cable</p> 	24~240V AC	Emitter (2-wire)	MP-T030MA-EX9C2L9
			SPST Solid-state (2ms on/1ms off) (3-wire)	MP-T030MA-CX9C3U9
		12~240V DC/ 24~240V AC	Emitter (2-wire)	
			SPST Solid-state (2ms on/1ms off) (2-wire)	
	<p>Micro Style 3 Pins QD</p> 	24~240V AC	Emitter (2-wire)	MP-T030MA-EX9Q3LM
			SPST Solid-state (2ms on/1ms off) (3-wire)	MP-T030MA-CX9Q3UM
		12~240V DC/ 24~240V AC	Emitter (2-wire)	
			SPST Solid-state (2ms on/1ms off) (2-wire)	
<p>Micro Style 3 Pins 6" Pigtail</p> 	24~240V AC	Emitter (2-wire)	MP-T030MA-EX9P3LM	
		SPST Solid-state (2ms on/1ms off) (3-wire)	MP-T030MA-CX9P3UM	
	12~240V DC/ 24~240V AC	Emitter (2-wire)		
		SPST Solid-state (2ms on/1ms off) (2-wire)		

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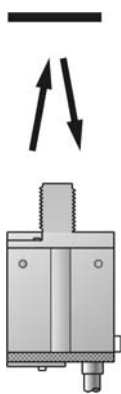





Opposed Mode (For plastic detection, Sn=300mm)

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Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
<p>Light Source : red light 650nm For plastic detection</p>  <p>Opposed Mode Sensing Distance:300mm</p>	<p>2m Cable</p> 	10-30V DC	Emitter	MP-T0300D-EX6C3L2-PD
			NPN/PNP (1ms on/off)	MP-T0300D-CX6C4U2-PD
			Emitter	MP-T0300D-EX6C3L2-PH
			NPN/PNP (0.3ms on/off)	MP-T0300D-CX6C4U2-PH
	<p>9m Cable</p> 	10-30V DC	Emitter	MP-T0300D-EX6C3L9-PD
			NPN/PNP (1ms on/off)	MP-T0300D-CX6C4U9-PD
			Emitter	MP-T0300D-EX6C3L9-PH
			NPN/PNP (0.3ms on/off)	MP-T0300D-CX6C4U9-PH
	<p>Pico Style 4 Pins QD</p> 	10-30V DC	Emitter	MP-T0300D-EX6Q4LP-PD
			NPN/PNP (1ms on/off)	MP-T0300D-CX6Q4UP-PD
			Emitter	MP-T0300D-EX6Q4LP-PH
			NPN/PNP (0.3ms on/off)	MP-T0300D-CX6Q4UP-PH
<p>Euro Style 4 Pins QD</p> 	10-30V DC	Emitter	MP-T0300D-EX6Q4LE-PD	
		NPN/PNP (1ms on/off)	MP-T0300D-CX6Q4UE-PD	
		Emitter	MP-T0300D-EX6Q4LE-PH	
		NPN/PNP (0.3ms on/off)	MP-T0300D-CX6Q4UE-PH	
<p>Pico Style 4 Pins 6" Pigtail</p> 	10-30V DC	Emitter	MP-T0300D-EX6P4LP-PD	
		NPN/PNP (1ms on/off)	MP-T0300D-CX6P4UP-PD	
		Emitter	MP-T0300D-EX6P4LP-PH	
		NPN/PNP (0.3ms on/off)	MP-T0300D-CX6P4UP-PH	
<p>Euro Style 4 Pins 6" Pigtail</p> 	10-30V DC	Emitter	MP-T0300D-EX6P4LE-PD	
		NPN/PNP (1ms on/off)		
		Emitter		
		NPN/PNP (0.3ms on/off)		

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Convergent Mode (Sensing Distance=16mm,Infrared Light)

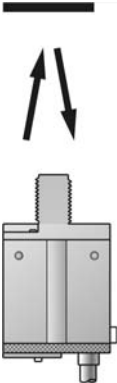





Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
Light Source: infrared 880nm 	2m or 9m Cable 	10-30V DC	NPN/PNP (1ms on/off)	
			NPN/PNP (0.3ms on/off)	
		24-240V AC	SPST Solid-state (4ms on/off) (3-wire)	
		12-240V DC/ 24-240V AC	SPST Solid-state (4ms on/off) (2-wire)	
	M8 Connector (Pico-style) 	10-30V DC	NPN/PNP (1ms on/off)	
			NPN/PNP (0.3ms on/off)	
		24-240V AC	—	—
		12-240V DC/ 24-240V AC	—	—
	M12 Connector 	10-30V DC (Euro-style)	NPN/PNP (1ms on/off)	
			NPN/PNP (0.3ms on/off)	
		24-240V AC (Micro-style)	SPST Solid-state (4ms on/off) (3-wire)	
		12-240V DC/ 24-240V AC (Micro-style)	SPST Solid-state (4ms on/off) (2-wire)	
Convergent Mode Sensing Distance: 16mm	6" M8 Pigtail (Pico-style) 	10-30V DC	NPN/PNP (1ms on/off)	
			NPN/PNP (0.3ms on/off)	
		24-240V AC	—	—
	12-240V DC/ 24-240V AC	—	—	
	6" M12 Pigtail 	10-30V DC (Euro-style)	NPN/PNP (1ms on/off)	MP-C0016D-CX9P4UE
			NPN/PNP (0.3ms on/off)	MP-C0016D-CX9P4UE-HS
		24-240V AC (Micro-style)	SPST Solid-state (4ms on/off) (3-wire)	MP-C0016A-CX9P3UM
		12-240V DC/ 24-240V AC (Micro-style)	SPST Solid-state (4ms on/off) (2-wire)	

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Convergent Mode (Sensing Distance=43mm, Infrared Light)

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Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
Light Source: infrared 880nm 	2m or 9m Cable 	10-30V DC	NPN/PNP (1ms on/off)	MP-C0043D-CX9C4U2 (2m) MP-C0043D-CX9C4U9 (9m)
			NPN/PNP (0.3ms on/off)	MP-C0043D-CX9C4U2-HS (2m) MP-C0043D-CX9C4U9-HS (9m)
		24-240V AC	SPST Solid-state (4ms on/off) (3-wire)	
		12-240V DC/ 24-240V AC	SPST Solid-state (4ms on/off) (2-wire)	
	M8 Connector (Pico-style) 	10-30V DC	NPN/PNP (1ms on/off)	MP-C0043D-CX9Q4UP
			NPN/PNP (0.3ms on/off)	MP-C0043D-CX9Q4UP-HS
		24-240V AC	_____	_____
		12-240V DC/ 24-240V AC	_____	_____
	M12 Connector 	10-30V DC (Euro-style)	NPN/PNP (1ms on/off)	MP-C0043D-CX9Q4UE
			NPN/PNP (0.3ms on/off)	MP-C0043D-CX9Q4UE-HS
		24-240V AC (Micro-style)	SPST Solid-state (4ms on/off) (3-wire)	
		12-240V DC/ 24-240V AC (Micro-style)	SPST Solid-state (4ms on/off) (2-wire)	
Convergent Mode Sensing Distance: 43mm	6" M8 Pigtail (Pico-style) 	10-30V DC	NPN/PNP (1ms on/off)	MP-C0043D-CX9P4UP
			NPN/PNP (0.3ms on/off)	MP-C0043D-CX9P4UP-HS
		24-240V AC	_____	_____
		12-240V DC/ 24-240V AC	_____	_____
	6" M12 Pigtail 	10-30V DC (Euro-style)	NPN/PNP (1ms on/off)	MP-C0043D-CX9P4UE
			NPN/PNP (0.3ms on/off)	MP-C0043D-CX9P4UE-HS
		24-240V AC (Micro-style)	SPST Solid-state (4ms on/off) (3-wire)	
		12-240V DC/ 24-240V AC (Micro-style)	SPST Solid-state (4ms on/off) (2-wire)	

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Convergent Mode (Sensing Distance=16mm, Green Light)

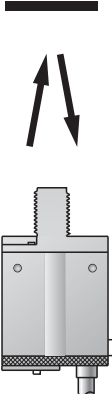





Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
<p>Light Source: green light 525nm</p>  <p>Convergent Mode Sensing Distance: 16mm Spot size at focus: 1.0mm</p>	<p>2m or 9m Cable</p> 	10-30V DC	NPN/PNP (1ms on/off)	MP-C0016D-CX5C4U2 (2m) MP-C0016D-CX5C4U9 (9m)
			NPN/PNP (0.3ms on/off)	MP-C0016D-CX5C4U2-HS (2m) MP-C0016D-CX5C4U9-HS (9m)
		24-240V AC	SPST Solid-state (4ms on/off) (3-wire)	
		12-240V DC/ 24-240V AC	SPST Solid-state (4ms on/off) (2-wire)	
	<p>M8 Connector (Pico-style)</p> 	10-30V DC	NPN/PNP (1ms on/off)	MP-C0016D-CX5Q4UP
			NPN/PNP (0.3ms on/off)	MP-C0016D-CX5Q4UP-HS
		24-240V AC	————	————
		12-240V DC/ 24-240V AC	————	————
	<p>M12 Connector</p> 	10-30V DC (Euro-style)	NPN/PNP (1ms on/off)	MP-C0016D-CX5Q4UE
			NPN/PNP (0.3ms on/off)	MP-C0016D-CX5Q4UE-HS
		24-240V AC (Micro-style)	SPST Solid-state (4ms on/off) (3-wire)	
		12-240V DC/ 24-240V AC (Micro-style)	SPST Solid-state (4ms on/off) (2-wire)	
<p>6" M8 Pigtail (Pico-style)</p> 	10-30V DC	NPN/PNP (1ms on/off)	MP-C0016D-CX5P4UP	
		NPN/PNP (0.3ms on/off)	MP-C0016D-CX5P4UP-HS	
	24-240V AC	————	————	
	12-240V DC/ 24-240V AC	————	————	
<p>6" M12 Pigtail</p> 	10-30V DC (Euro-style)	NPN/PNP (1ms on/off)	MP-C0016D-CX5P4UE	
		NPN/PNP (0.3ms on/off)	MP-C0016D-CX5P4UE-HS	
	24-240V AC (Micro-style)	SPST Solid-state (4ms on/off) (3-wire)		
	12-240V DC/ 24-240V AC (Micro-style)	SPST Solid-state (4ms on/off) (2-wire)		

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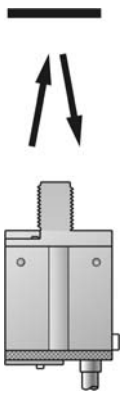





Convergent Mode (Sensing Distance=16mm, Red Light)

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Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
<p>Light Source: red light 650nm</p>  <p>Convergent Mode Sensing Distance: 16mm Spot size at focus: 1.3mm</p>	<p>2m or 9m Cable</p> 	10-30V DC	NPN/PNP (1ms on/off)	MP-C0016D-CX6C4U2 (2m) MP-C0016D-CX6C4U9 (9m)
			NPN/PNP (0.3ms on/off)	MP-C0016D-CX6C4U2-HS (2m) MP-C0016D-CX6C4U9-HS (9m)
		24-240V AC	SPST Solid-state (4ms on/off) (3-wire)	
		12-240V DC/ 24-240V AC	SPST Solid-state (4ms on/off) (2-wire)	
	<p>M8 Connector (Pico-style)</p> 	10-30V DC	NPN/PNP (1ms on/off)	MP-C0016D-CX6Q4UP
			NPN/PNP (0.3ms on/off)	MP-C0016D-CX6Q4UP-HS
		24-240V AC	————	————
		12-240V DC/ 24-240V AC	————	————
	<p>M12 Connector</p> 	10-30V DC (Euro-style)	NPN/PNP (1ms on/off)	MP-C0016D-CX6Q4UE
			NPN/PNP (0.3ms on/off)	MP-C0016D-CX6Q4UE-HS
		24-240V AC (Micro-style)	SPST Solid-state (4ms on/off) (3-wire)	
		12-240V DC/ 24-240V AC (Micro-style)	SPST Solid-state (4ms on/off) (2-wire)	
<p>6" M8 Pigtail (Pico-style)</p> 	10-30V DC	NPN/PNP (1ms on/off)	MP-C0016D-CX6P4UP	
		NPN/PNP (0.3ms on/off)	MP-C0016D-CX6P4UP-HS	
	24-240V AC	————	————	
	12-240V DC/ 24-240V AC	————	————	
	<p>6" M12 Pigtail</p> 	10-30V DC (Euro-style)	NPN/PNP (1ms on/off)	MP-C0016D-CX6P4UE
			NPN/PNP (0.3ms on/off)	MP-C0016D-CX6P4UE-HS
24-240V AC (Micro-style)		SPST Solid-state (4ms on/off) (3-wire)		
12-240V DC/ 24-240V AC (Micro-style)		SPST Solid-state (4ms on/off) (2-wire)		

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Convergent Mode (Sensing Distance=43mm, Red Light)

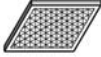

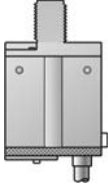





Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
<p>Light Source: red light 650nm</p>  <p>Convergent Mode Sensing Distance: 43mm Spot size at focus: 1.3mm</p>	<p>2m or 9m Cable</p> 	10-30V DC	NPN/PNP (1ms on/off)	MP-C0043D-CX6C4U2 (2m) MP-C0043D-CX6C4U9 (9m)
			NPN/PNP (0.3ms on/off)	MP-C0043D-CX6C4U2-HS (2m) MP-C0043D-CX6C4U9-HS (9m)
		24-240V AC	SPST Solid-state (4ms on/off) (3-wire)	
		12-240V DC/ 24-240V AC	SPST Solid-state (4ms on/off) (2-wire)	
	<p>M8 Connector (Pico-style)</p> 	10-30V DC	NPN/PNP (1ms on/off)	MP-C0043D-CX6Q4UP
			NPN/PNP (0.3ms on/off)	MP-C0043D-CX6Q4UP-HS
		24-240V AC	————	————
		12-240V DC/ 24-240V AC	————	————
	<p>M12 Connector</p> 	10-30V DC (Euro-style)	NPN/PNP (1ms on/off)	MP-C0043D-CX6Q4UE
			NPN/PNP (0.3ms on/off)	MP-C0043D-CX6Q4UE-HS
		24-240V AC (Micro-style)	SPST Solid-state (4ms on/off) (3-wire)	
		12-240V DC/ 24-240V AC (Micro-style)	SPST Solid-state (4ms on/off) (2-wire)	
<p>6" M8 Pigtail (Pico-style)</p> 	10-30V DC	NPN/PNP (1ms on/off)	MP-C0043D-CX6P4UP	
		NPN/PNP (0.3ms on/off)	MP-C0043D-CX6P4UP-HS	
	24-240V AC	————	————	
	12-240V DC/ 24-240V AC	————	————	
	<p>6" M12 Pigtail</p> 	10-30V DC (Euro-style)	NPN/PNP (1ms on/off)	MP-C0043D-CX6P4UE
			NPN/PNP (0.3ms on/off)	MP-C0043D-CX6P4UE-HS
24-240V AC (Micro-style)		SPST Solid-state (4ms on/off) (3-wire)		
12-240V DC/ 24-240V AC (Micro-style)		SPST Solid-state (4ms on/off) (2-wire)		

T: MP SERIES

MP SERIES

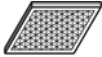

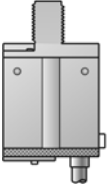





Retroreflective Mode

T: MP SERIES

Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
<p>Light Source: red light 650nm</p>    <p>Retro-reflective Mode Sensing Distance: 5m (Note) NON-Polarized</p>	<p>2m or 9m Cable</p> 	<p>10-30V DC</p>	<p>NPN/PNP (1ms on/off)</p>	<p>MP-L5000D-CX6C4U2 (2m) MP-L5000D-CX6C4U9 (9m)</p>
			<p>NPN/PNP (0.3ms on/off)</p>	<p>MP-L5000D-CX6C4U2-HS (2m) MP-L5000D-CX6C4U9-HS (9m)</p>
		<p>24-240V AC</p>	<p>SPST Solid-state (4ms on/off) (3-wire)</p>	<p>MP-L5000A-CX6C3U2 (2m) MP-L5000A-CX6C3U9 (9m)</p>
		<p>12-240V DC/ 24-240V AC</p>	<p>SPST Solid-state (4ms on/off) (2-wire)</p>	
	<p>M8 Connector (Pico-style)</p> 	<p>10-30V DC</p>	<p>NPN/PNP (1ms on/off)</p>	<p>MP-L5000D-CX6Q4UP</p>
			<p>NPN/PNP (0.3ms on/off)</p>	<p>MP-L5000D-CX6Q4UP-HS</p>
		<p>24-240V AC</p>	<p>_____</p>	<p>_____</p>
		<p>12-240V DC/ 24-240V AC</p>	<p>_____</p>	<p>_____</p>
	<p>M12 Connector</p> 	<p>10-30V DC (Euro-style)</p>	<p>NPN/PNP (1ms on/off)</p>	<p>MP-L5000D-CX6Q4UE</p>
			<p>NPN/PNP (0.3ms on/off)</p>	<p>MP-L5000D-CX6Q4UE-HS</p>
		<p>24-240V AC (Micro-style)</p>	<p>SPST Solid-state (4ms on/off) (3-wire)</p>	<p>MP-L5000A-CX6Q3UM</p>
		<p>12-240V DC/ 24-240V AC (Micro-style)</p>	<p>SPST Solid-state (4ms on/off) (2-wire)</p>	
<p>6" M8 Pigtail (Pico-style)</p> 	<p>10-30V DC</p>	<p>NPN/PNP (1ms on/off)</p>	<p>MP-L5000D-CX6P4UP</p>	
		<p>NPN/PNP (0.3ms on/off)</p>	<p>MP-L5000D-CX6P4UP-HS</p>	
	<p>24-240V AC</p>	<p>_____</p>	<p>_____</p>	
<p>6" M12 Pigtail</p> 	<p>10-30V DC (Euro-style)</p>	<p>NPN/PNP (1ms on/off)</p>		
		<p>NPN/PNP (0.3ms on/off)</p>		
	<p>24-240V AC (Micro-style)</p>	<p>SPST Solid-state (4ms on/off) (3-wire)</p>	<p>MP-L5000A-CX6P3UM</p>	
	<p>12-240V DC/ 24-240V AC (Micro-style)</p>	<p>SPST Solid-state (4ms on/off) (2-wire)</p>		

MP SERIES

Retroreflective Mode with Polarizing Filter

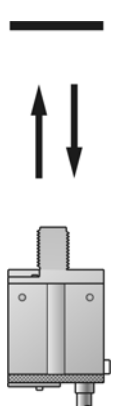





Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
<p>Light Source: red light 650nm</p>    <p>Retro-reflective Mode with Polarizing Filter Sensing Distance:2m (Note)</p>	<p>2m or 9m Cable</p> 	<p>10-30V DC</p>	<p>NPN/PNP (1ms on/off)</p>	<p>MP-L2000D-CX6C4U2-PF (2m) MP-L2000D-CX6C4U9-PF (9m)</p>
			<p>NPN/PNP (0.3ms on/off)</p>	<p>MP-L2000D-CX6C4U2-FH (2m) MP-L2000D-CX6C4U9-FH (9m)</p>
		<p>24-240V AC</p>	<p>SPST Solid-state (4ms on/off) (3-wire)</p>	<p>MP-L2000A-CX6C3U2-PF (2m) MP-L2000A-CX6C3U9-PF (9m)</p>
		<p>12-240V DC/ 24-240V AC</p>	<p>SPST Solid-state (4ms on/off) (2-wire)</p>	
	<p>M8 Connector (Pico-style)</p> 	<p>10-30V DC</p>	<p>NPN/PNP (1ms on/off)</p>	<p>MP-L2000D-CX6Q4UP-PF</p>
			<p>NPN/PNP (0.3ms on/off)</p>	<p>MP-L2000D-CX6Q4UP-FH</p>
		<p>24-240V AC</p>	<p>————</p>	<p>————</p>
		<p>12-240V DC/ 24-240V AC</p>	<p>————</p>	<p>————</p>
	<p>M12 Connector</p> 	<p>10-30V DC (Euro-style)</p>	<p>NPN/PNP (1ms on/off)</p>	<p>MP-L2000D-CX6Q4UE-PF</p>
			<p>NPN/PNP (0.3ms on/off)</p>	<p>MP-L2000D-CX6Q4UE-FH</p>
		<p>24-240V AC (Micro-style)</p>	<p>SPST Solid-state (4ms on/off) (3-wire)</p>	<p>MP-L2000A-CX6Q3UM-PF</p>
		<p>12-240V DC/ 24-240V AC (Micro-style)</p>	<p>SPST Solid-state (4ms on/off) (2-wire)</p>	
<p>6" M8 Pigtail (Pico-style)</p> 	<p>10-30V DC</p>	<p>NPN/PNP (1ms on/off)</p>	<p>MP-L2000D-CX6P4UP-PF</p>	
		<p>NPN/PNP (0.3ms on/off)</p>	<p>MP-L2000D-CX6P4UP-FH</p>	
	<p>24-240V AC</p>	<p>————</p>	<p>————</p>	
<p>6" M12 Pigtail</p> 	<p>10-30V DC (Euro-style)</p>	<p>NPN/PNP (1ms on/off)</p>	<p>MP-L2000D-CX6P4UE-PF</p>	
		<p>NPN/PNP (0.3ms on/off)</p>	<p>MP-L2000D-CX6P4UE-FH</p>	
	<p>24-240V AC (Micro-style)</p>	<p>SPST Solid-state (4ms on/off) (3-wire)</p>	<p>MP-L2000A-CX6P3UM-PF</p>	
	<p>12-240V DC/ 24-240V AC (Micro-style)</p>	<p>SPST Solid-state (4ms on/off) (2-wire)</p>		

T: MP SERIES

MP SERIES

Diffuse Mode (Sensing Distance=380mm)

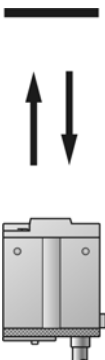





T: MP SERIES

Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
Light Source: infrared 880nm 	2m or 9m Cable 	10-30V DC	NPN/PNP (1ms on/off)	MP-D0380D-CX9C4U2 (2m) MP-D0380D-CX9C4U9 (9m)
			NPN/PNP (0.3ms on/off)	MP-D0380D-CX9C4U2-HS (2m) MP-D0380D-CX9C4U9-HS (9m)
		24-240V AC	SPST Solid-state (4ms on/off) (3-wire)	MP-D0380A-CX9C3U2 (2m) MP-D0380A-CX9C3U9 (9m)
		12-240V DC/ 24-240V AC	SPST Solid-state (4ms on/off) (2-wire)	
	M8 Connector (Pico-style) 	10-30V DC	NPN/PNP (1ms on/off)	MP-D0380D-CX9Q4UP
			NPN/PNP (0.3ms on/off)	MP-D0380D-CX9Q4UP-HS
		24-240V AC	_____	_____
		12-240V DC/ 24-240V AC	_____	_____
	M12 Connector 	10-30V DC (Euro-style)	NPN/PNP (1ms on/off)	MP-D0380D-CX9Q4UE
			NPN/PNP (0.3ms on/off)	MP-D0380D-CX9Q4UE-HS
		24-240V AC (Micro-style)	SPST Solid-state (4ms on/off) (3-wire)	MP-D0380A-CX9Q3UM
		12-240V DC/ 24-240V AC (Micro-style)	SPST Solid-state (4ms on/off) (2-wire)	
Diffuse Mode Sensing Distance: 380mm	6" M8 Pigtail (Pico-style) 	10-30V DC	NPN/PNP (1ms on/off)	MP-D0380D-CX9P4UP
			NPN/PNP (0.3ms on/off)	MP-D0380D-CX9P4UP-HS
		24-240V AC	_____	_____
		12-240V DC/ 24-240V AC	_____	_____
	6" M12 Pigtail 	10-30V DC (Euro-style)	NPN/PNP (1ms on/off)	MP-D0380D-CX9P4UE
			NPN/PNP (0.3ms on/off)	MP-D0380D-CX9P4UE-HS
		24-240V AC (Micro-style)	SPST Solid-state (4ms on/off) (3-wire)	MP-D0380A-CX9P3UM
		12-240V DC/ 24-240V AC (Micro-style)	SPST Solid-state (4ms on/off) (2-wire)	

MP SERIES

Diffuse Mode (Sensing Distance=130mm)






T: MP SERIES

Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number	
Light Source: Infrared 880nm  Diffuse Mode Sensing Distance: 130mm	2m or 9m Cable 	10-30V DC	NPN/PNP (1ms on/off)	MP-D0130D-CX9C4U2 (2m) MP-D0130D-CX9C4U9 (9m)	
			NPN/PNP (0.3ms on/off)		
		24-240V AC	SPST Solid-state (8ms on/off) (3-wire)		
		12-240V DC/ 24-240V AC		SPST Solid-state (8ms on/off) (2-wire)	
	M8 Connector (Pico-style) 	10-30V DC	NPN/PNP (1ms on/off)		
			NPN/PNP (0.3ms on/off)		
		24-240V AC	—	—	
		12-240V DC/ 24-240V AC	—	—	
	M12 Connector 	10-30V DC (Euro-style)	NPN/PNP (1ms on/off)		
			NPN/PNP (0.3ms on/off)		
		24-240V AC (Micro-style)	SPST Solid-state (8ms on/off) (3-wire)		
		12-240V DC/ 24-240V AC (Micro-style)	SPST Solid-state (8ms on/off) (2-wire)		
6" M8 Pigtail (Pico-style) 	10-30V DC	NPN/PNP (1ms on/off)			
		NPN/PNP (0.3ms on/off)			
	24-240V AC	—	—		
	12-240V DC/ 24-240V AC	—	—		
	6" M12 Pigtail 	10-30V DC (Euro-style)	NPN/PNP (1ms on/off)		
			NPN/PNP (0.3ms on/off)		
24-240V AC (Micro-style)		SPST Solid-state (8ms on/off) (3-wire)			
12-240V DC/ 24-240V AC (Micro-style)		SPST Solid-state (8ms on/off) (2-wire)			

MP SERIES

Glass Fiber Optic with Opposed Mode

T: MP SERIES

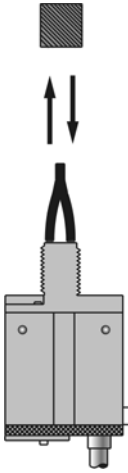





Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
Light Source: infrared 880nm		10-30V DC	NPN/PNP (1ms on/off)	MP-TGFD-CX9C4U2 (2m) MP-TGFD-CX9C4U9 (9m)
			NPN/PNP (0.3ms on/off)	
		24-240V AC	SPST Solid-state (8ms on/off) (3-wire)	
		12-240V DC/ 24-240V AC	SPST Solid-state (8ms on/off) (2-wire)	
		10-30V DC	NPN/PNP (1ms on/off)	
			NPN/PNP (0.3ms on/off)	
		24-240V AC	—	—
		12-240V DC/ 24-240V AC	—	—
		10-30V DC (Euro-style)	NPN/PNP (1ms on/off)	MP-TGFD-CX9Q4UE
			NPN/PNP (0.3ms on/off)	
		24-240V AC (Micro-style)	SPST Solid-state (8ms on/off) (3-wire)	
		12-240V DC/ 24-240V AC (Micro-style)	SPST Solid-state (8ms on/off) (2-wire)	
Glass Fiber Optic Opposed Mode Sensing Distance (Note)		10-30V DC	NPN/PNP (1ms on/off)	
			NPN/PNP (0.3ms on/off)	
		24-240V AC	—	—
	12-240V DC/ 24-240V AC	—	—	
		10-30V DC (Euro-style)	NPN/PNP (1ms on/off)	
			NPN/PNP (0.3ms on/off)	
		24-240V AC (Micro-style)	SPST Solid-state (8ms on/off) (3-wire)	
		12-240V DC/ 24-240V AC (Micro-style)	SPST Solid-state (8ms on/off) (2-wire)	

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

MP SERIES

Glass Fiber Optic with Diffuse Mode

T: MP SERIES

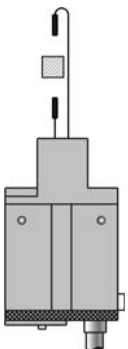





Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
<p>Light Source: infrared 880nm</p>  <p>Glass Fiber Optic Diffuse Mode Sensing Distance (Note)</p>	<p>2m or 9m Cable</p> 	10-30V DC	NPN/PNP (1ms on/off)	MP-DGFD-CX9C4U2 (2m) MP-DGFD-CX9C4U9 (9m)
			NPN/PNP (0.3ms on/off)	
		24-240V AC	SPST Solid-state (8ms on/off) (3-wire)	
		12-240V DC/ 24-240V AC	SPST Solid-state (8ms on/off) (2-wire)	
	<p>M8 Connector (Pico-style)</p> 	10-30V DC	NPN/PNP (1ms on/off)	
			NPN/PNP (0.3ms on/off)	
		24-240V AC	—	—
		12-240V DC/ 24-240V AC	—	—
	<p>M12 Connector</p> 	10-30V DC (Euro-style)	NPN/PNP (1ms on/off)	MP-DGFD-CX9Q4UE
			NPN/PNP (0.3ms on/off)	
		24-240V AC (Micro-style)	SPST Solid-state (8ms on/off) (3-wire)	
		12-240V DC/ 24-240V AC (Micro-style)	SPST Solid-state (8ms on/off) (2-wire)	
<p>6" M8 Pigtail (Pico-style)</p> 	10-30V DC	NPN/PNP (1ms on/off)		
		NPN/PNP (0.3ms on/off)		
	24-240V AC	—	—	
	12-240V DC/ 24-240V AC	—	—	
<p>6" M12 Pigtail</p> 	10-30V DC (Euro-style)	NPN/PNP (1ms on/off)		
		NPN/PNP (0.3ms on/off)		
	24-240V AC (Micro-style)	SPST Solid-state (8ms on/off) (3-wire)		
	12-240V DC/ 24-240V AC (Micro-style)	SPST Solid-state (8ms on/off) (2-wire)		

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

MP SERIES

Plastic Fiber Optic with Opposed Mode







T: MP SERIES

Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
Light Source: red light 650nm  Plastic Fiber Optic Opposed Mode Sensing Distance (Note)	2m or 9m Cable 	10-30V DC	NPN/PNP (1ms on/off)	MP-TPFD-CX6C4U2 (2m) MP-TPFD-CX6C4U9 (9m)
			NPN/PNP (0.3ms on/off)	MP-TPFD-CX6C4U2-HS (2m) MP-TPFD-CX6C4U9-HS (9m)
		24-240V AC	SPST Solid-state (4ms on/off) (3-wire)	
		12-240V DC/ 24-240V AC	SPST Solid-state (4ms on/off) (2-wire)	
	M8 Connector (Pico-style) 	10-30V DC	NPN/PNP (1ms on/off)	MP-TPFD-CX6Q4UP
			NPN/PNP (0.3ms on/off)	
		24-240V AC	—	—
		12-240V DC/ 24-240V AC	—	—
	M12 Connector 	10-30V DC (Euro-style)	NPN/PNP (1ms on/off)	MP-TPFD-CX6Q4UE
			NPN/PNP (0.3ms on/off)	
		24-240V AC (Micro-style)	SPST Solid-state (4ms on/off) (3-wire)	
		12-240V DC/ 24-240V AC (Micro-style)	SPST Solid-state (4ms on/off) (2-wire)	
6" M8 Pigtail (Pico-style) 	10-30V DC	NPN/PNP (1ms on/off)	MP-TPFD-CX6P4UP	
		NPN/PNP (0.3ms on/off)	MP-TPFD-CX6P4UP-HS	
	24-240V AC	—	—	
	12-240V DC/ 24-240V AC	—	—	
	6" M12 Pigtail 	10-30V DC (Euro-style)	NPN/PNP (1ms on/off)	
			NPN/PNP (0.3ms on/off)	
		24-240V AC (Micro-style)	SPST Solid-state (4ms on/off) (3-wire)	
		12-240V DC/ 24-240V AC (Micro-style)	SPST Solid-state (4ms on/off) (2-wire)	

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

MP SERIES

Plastic Fiber Optic with Diffuse Mode

Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
<p>Light Source: red light 650nm</p>  <p>Plastic Fiber Optic Diffuse Mode Sensing Distance (Note)</p>	<p>2m or 9m Cable</p> 	<p>10-30V DC</p>	<p>NPN/PNP (1ms on/off)</p>	<p>MP-DPFD-CX6C4U2 (2m) MP-DPFD-CX6C4U9 (9m)</p>
			<p>NPN/PNP (0.3ms on/off)</p>	
		<p>24-240V AC</p>	<p>SPST Solid-state (4ms on/off) (3-wire)</p>	
		<p>12-240V DC/ 24-240V AC</p>	<p>SPST Solid-state (4ms on/off) (2-wire)</p>	
	<p>M8 Connector (Pico-style)</p> 	<p>10-30V DC</p>	<p>NPN/PNP (1ms on/off)</p>	
			<p>NPN/PNP (0.3ms on/off)</p>	<p>MP-DPFD-CX6Q4UP-HS</p>
		<p>24-240V AC</p>	<p>————</p>	<p>————</p>
		<p>12-240V DC/ 24-240V AC</p>	<p>————</p>	<p>————</p>
	<p>M12 Connector</p> 	<p>10-30V DC (Euro-style)</p>	<p>NPN/PNP (1ms on/off)</p>	
			<p>NPN/PNP (0.3ms on/off)</p>	
		<p>24-240V AC (Micro-style)</p>	<p>SPST Solid-state (4ms on/off) (3-wire)</p>	
		<p>12-240V DC/ 24-240V AC (Micro-style)</p>	<p>SPST Solid-state (4ms on/off) (2-wire)</p>	
	<p>6" M8 Pigtail (Pico-style)</p> 	<p>10-30V DC</p>	<p>NPN/PNP (1ms on/off)</p>	
			<p>NPN/PNP (0.3ms on/off)</p>	
		<p>24-240V AC</p>	<p>————</p>	<p>————</p>
		<p>12-240V DC/ 24-240V AC</p>	<p>————</p>	<p>————</p>
<p>6" M12 Pigtail</p> 	<p>10-30V DC (Euro-style)</p>	<p>NPN/PNP (1ms on/off)</p>		
		<p>NPN/PNP (0.3ms on/off)</p>		
	<p>24-240V AC (Micro-style)</p>	<p>SPST Solid-state (4ms on/off) (3-wire)</p>		
	<p>12-240V DC/ 24-240V AC (Micro-style)</p>	<p>SPST Solid-state (4ms on/off) (2-wire)</p>		

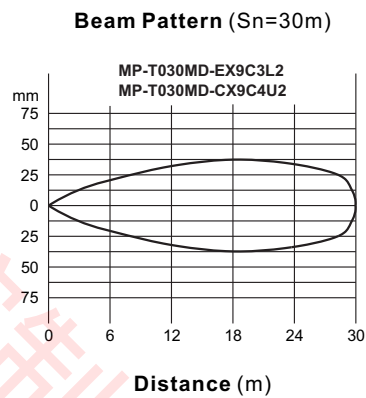
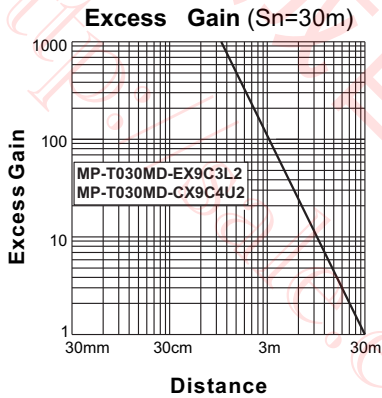
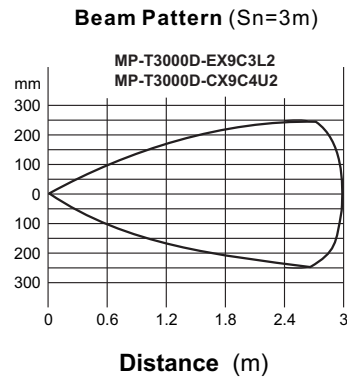
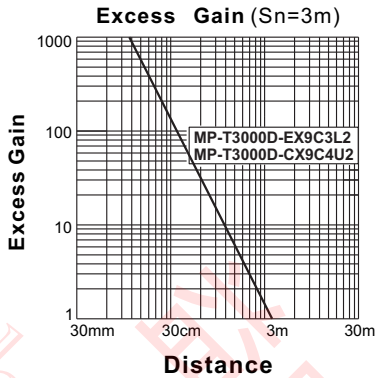
Note: Depends on fiber optic used (Please see our **Glass Fiber & Plastic Fiber** catalogue for detail information).
Coming Soon : Part numbers with underline
In Preparation: Part numbers with a line through the middle

T: MP SERIES

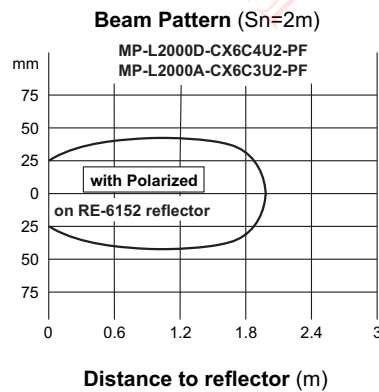
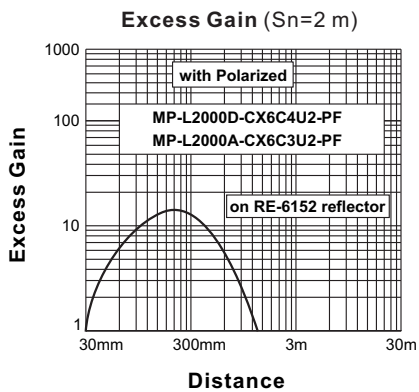
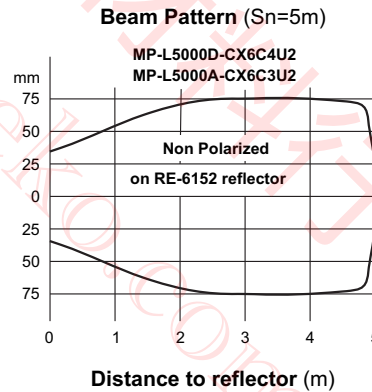
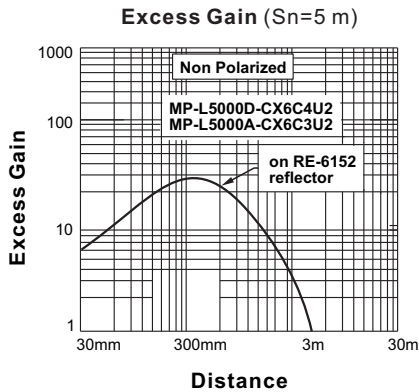
Sensing Characteristics (Typical)

Opposed Mode

T: MP SERIES



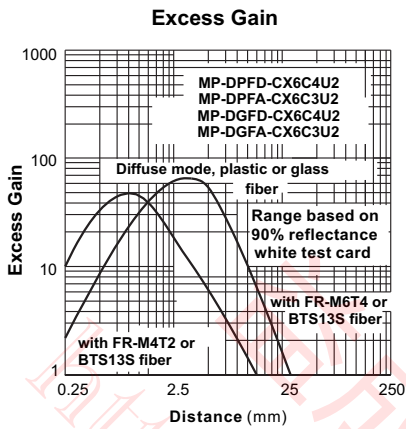
Retro-reflective Mode



Sensing Characteristics (Typical)

T: MP SERIES

Fiber Optic Mode

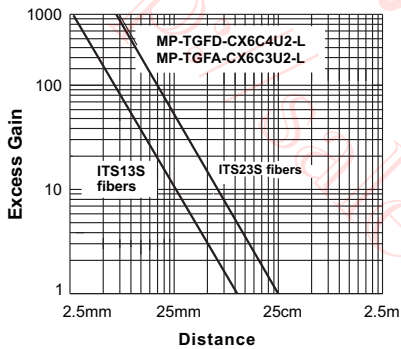
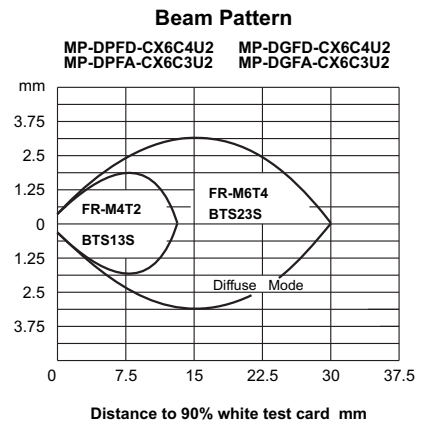


**MP-DPFD-CX6C4U2 or
MP-DGFD-CX6C4U2**

VOLTAGE: 10~30V DC
RANGE: see E.G. curves
RESPONSE: 1ms
BEAM: red light 650nm
FIBER: plastic or glass

**MP-DPFA-CX6C3U2 or
MP-DGFA-CX6C3U2**

VOLTAGE: 24~240V AC
RANGE: see E.G. curves
RESPONSE: 4ms
BEAM: red light 650nm
FIBER: plastic or glass

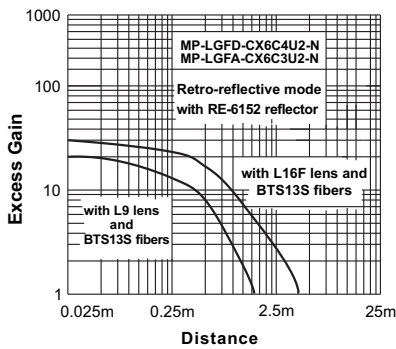
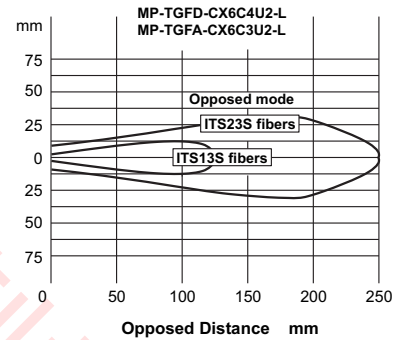


MP-TGFD-CX6C4U2-L

VOLTAGE: 10~30V DC
RANGE: see E.G. curves
RESPONSE: 1ms
BEAM: red light 650nm
FIBER: glass

MP-TGFA-CX6C3U2-L

VOLTAGE: 24~240V AC
RANGE: see E.G. curves
RESPONSE: 4ms
BEAM: red light 650nm
FIBER: glass

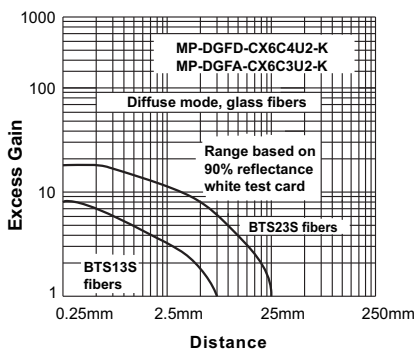
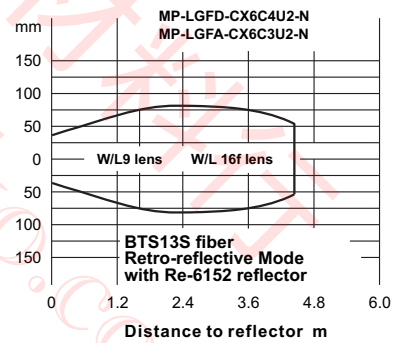


MP-LGFD-CX6C4U2-N

VOLTAGE: 10~30V DC
RANGE: see E.G. curves
RESPONSE: 1ms
BEAM: red light 650nm
FIBER: glass

MP-LGFA-CX6C3U2-N

VOLTAGE: 24~240V AC
RANGE: see E.G. curves
RESPONSE: 4ms
BEAM: red light 650nm
FIBER: glass

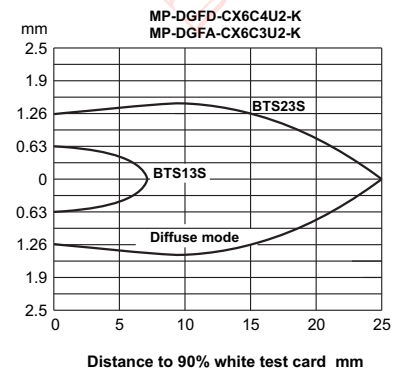


MP-DGFD-CX6C4U2-K

VOLTAGE: 10~30V DC
RANGE: see E.G. curves
RESPONSE: 1ms
BEAM: red light 650nm
FIBER: glass

MP-DGFA-CX6C3U2-K

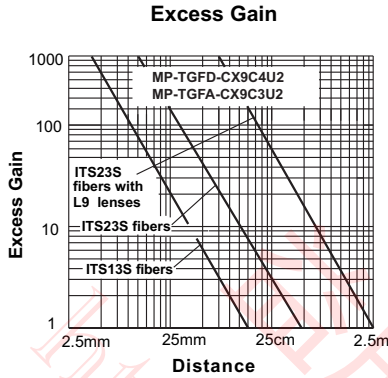
VOLTAGE: 24~240V AC
RANGE: see E.G. curves
RESPONSE: 4ms
BEAM: red light 650nm
FIBER: glass



Sensing Characteristics (Typical)

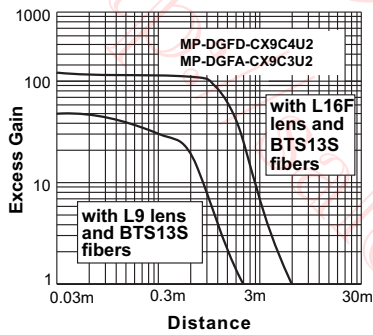
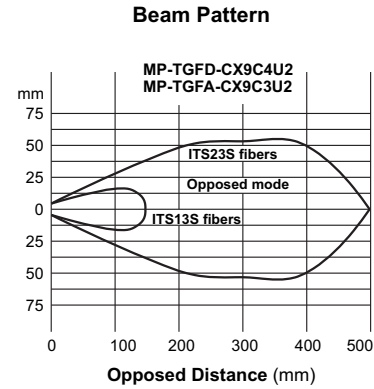
Fiber Optic Mode

T: MP SERIES



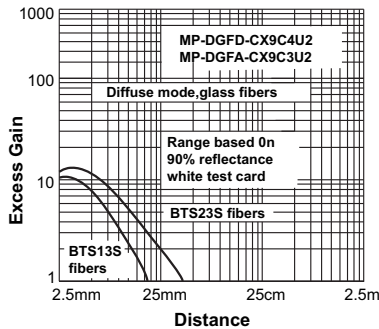
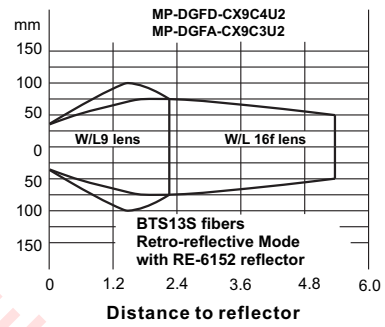
MP-TGFD-CX9C4U2
VOLTAGE: 10~30V DC
RANGE: see E. G. curves
RESPONSE: 1ms
BEAM: infrared 880nm
FIBER: glass

MP-TGFA-CX9C3U2
VOLTAGE: 24~240V AC
RANGE: see E. G. curves
RESPONSE: 4ms
BEAM: infrared 880nm
FIBER: glass



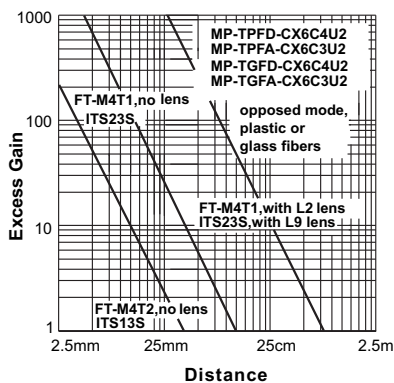
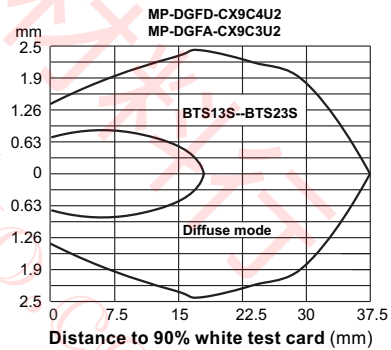
MP-DGFD-CX9C4U2
VOLTAGE: 10~30V DC
RANGE: see E. G. curves
RESPONSE: 1ms
BEAM: infrared 880nm
FIBER: glass

MP-DGFA-CX9C3U2
VOLTAGE: 24~240V AC
RANGE: see E. G. curves
RESPONSE: 4ms
BEAM: infrared 880nm
FIBER: glass



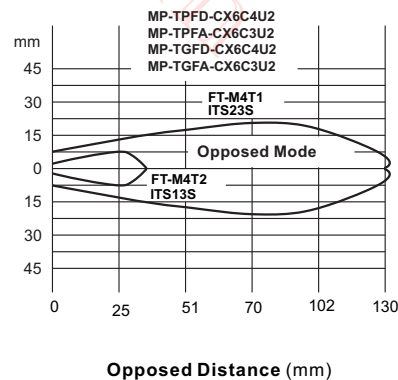
MP-DGFD-CX9C4U2
VOLTAGE: 10~30V DC
RANGE: see E. G. curves
RESPONSE: 1ms
BEAM: infrared 880nm
FIBER: glass

MP-DGFA-CX9C3U2
VOLTAGE: 24~240V AC
RANGE: see E. G. curves
RESPONSE: 4ms
BEAM: infrared 880nm
FIBER: glass



MP-TPFD-CX6C4U2 or MP-TGFD-CX6C4U2
VOLTAGE: 10~30V DC
RANGE: see E. G. curves
RESPONSE: 1ms
BEAM: red light 650nm
FIBER: plastic or glass

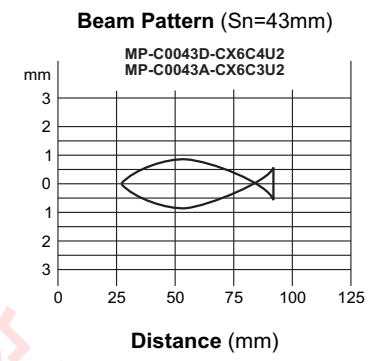
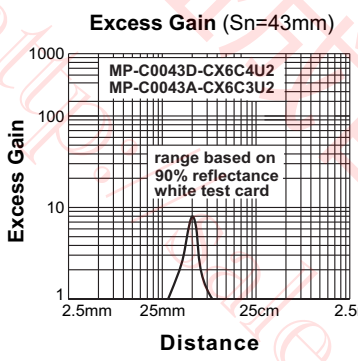
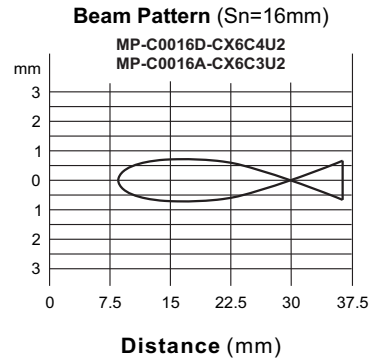
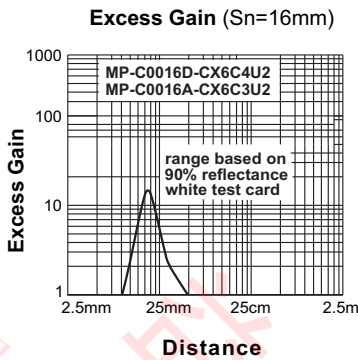
MP-TPFA-CX6C3U2 or MP-TGFA-CX6C3U2
VOLTAGE: 24~240V AC
RANGE: see E. G. curves
RESPONSE: 4ms
BEAM: red light 650nm
FIBER: plastic or glass



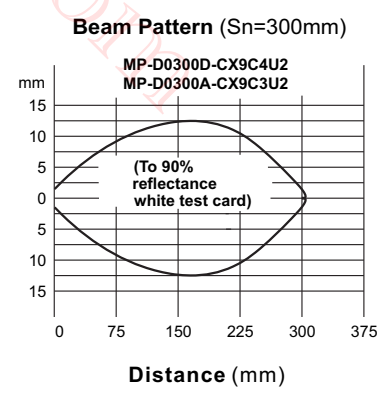
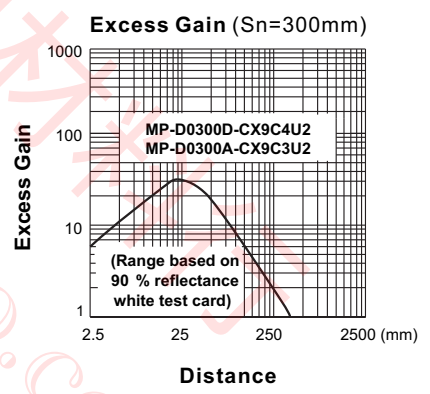
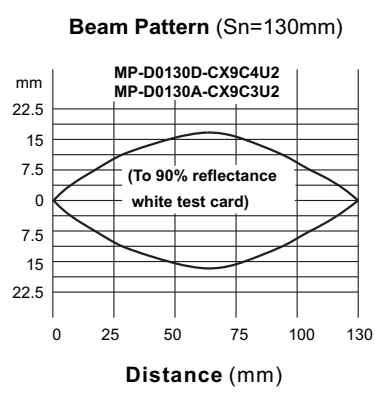
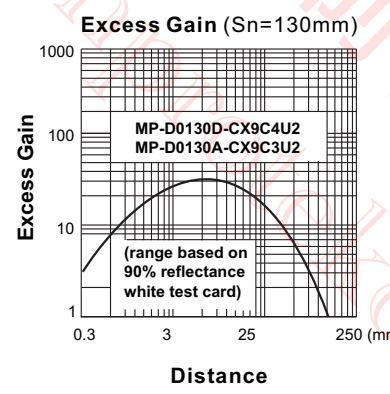
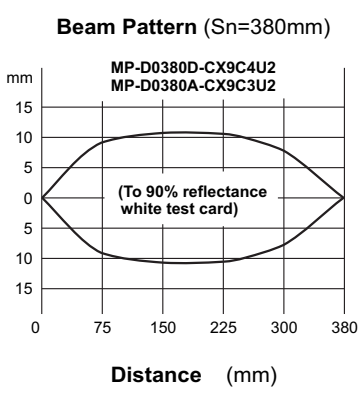
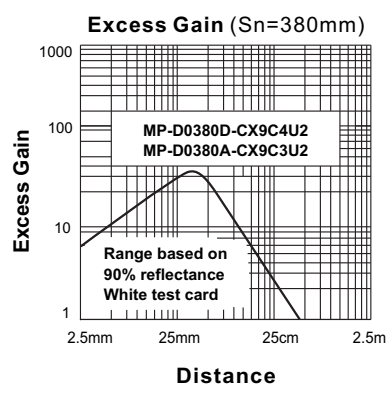
Sensing Characteristics (Typical)

T: MP SERIES

Convergent Mode



Diffuse Mode

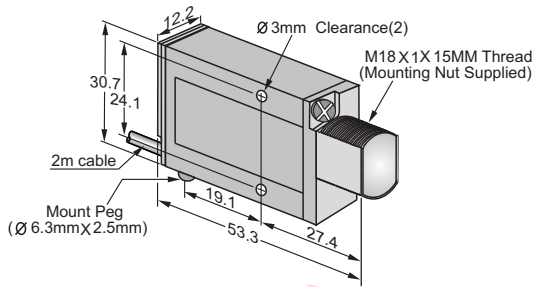


MP SERIES

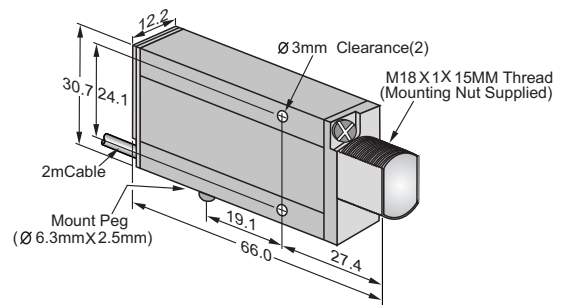
Dimensions (Unit: mm)

T: MP SERIES

Standard Type Sensor

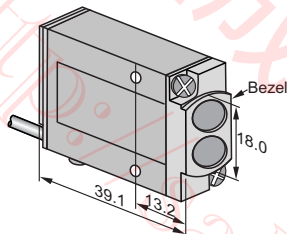


DC Type Sensor



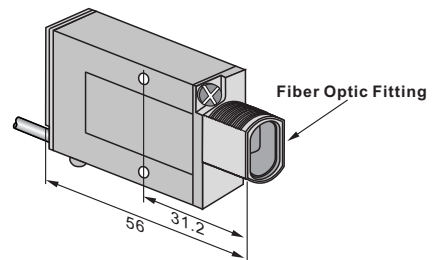
AC & AC/DC Type Sensor

Diffuse Mode Sensor (Sn=130mm, Sn=300mm)

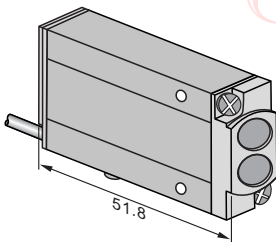


DC Type Sensor

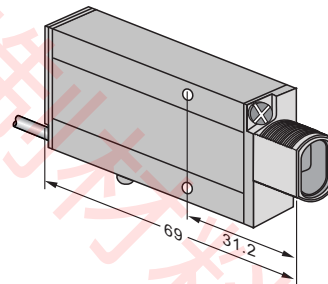
Glass Fiber Optic Mode Sensor



DC Type Sensor

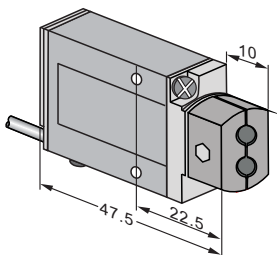


AC & AC/DC Type Sensor



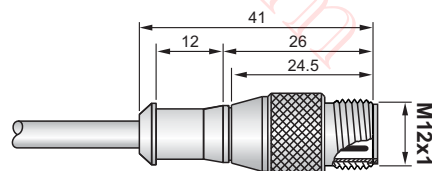
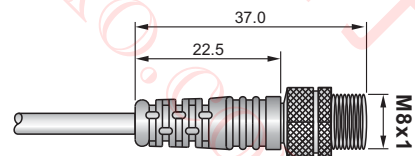
AC & AC/DC Type Sensor

Plastic Fiber Optic Mode Sensor

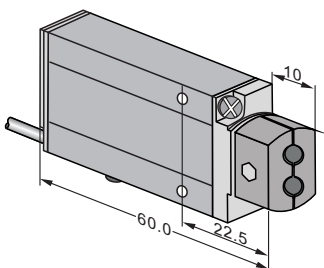


DC Type Sensor

Pigtail* Type



*: Please see Pigtail Series or our Cables & Connectors catalogue for more information.



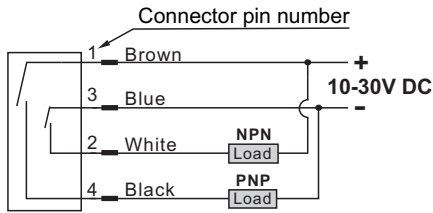
AC & AC/DC Type Sensor

MP SERIES

Connection Diagrams

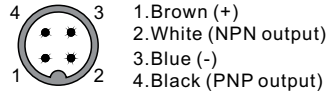
T: MP SERIES

NPN/PNP



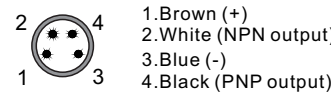
Connector face view

Euro-style



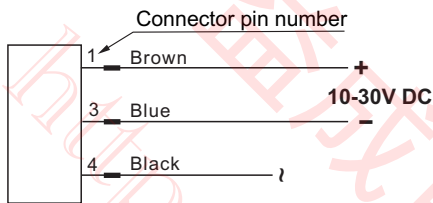
- 1. Brown (+)
- 2. White (NPN output)
- 3. Blue (-)
- 4. Black (PNP output)

Pico-Style



- 1. Brown (+)
- 2. White (NPN output)
- 3. Blue (-)
- 4. Black (PNP output)

Emitter of Thru-beam Mode (DC)



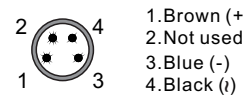
Connector face view

Euro-style



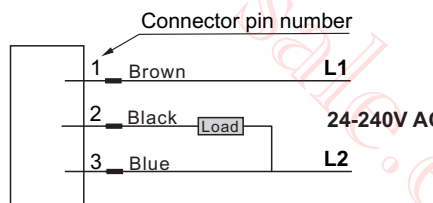
- 1. Brown (+)
- 2. Not used
- 3. Blue (-)
- 4. Black (l)

Pico-Style



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

AC Type Sensor



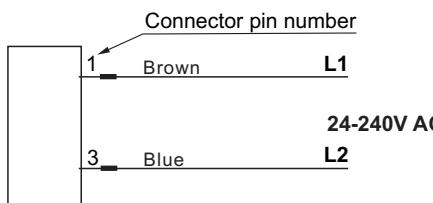
Connector face view

Micro-style



- 1. Brown(L1)
- 2. Black (Output)
- 3. Blue (L2)

Emitter of Thru-beam Mode (AC)



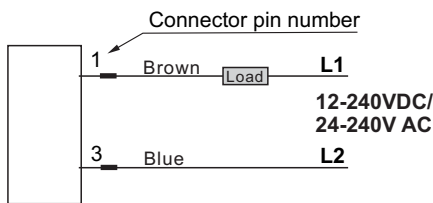
Connector face view

Micro-style



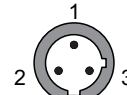
- 1. Brown(L1)
- 2. Not used
- 3. Blue (L2)

AC/DC Type Sensor



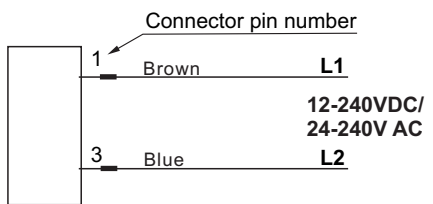
Connector face view

Micro-style



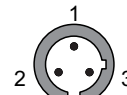
- 1. Brown(L1)
- 2. Not used
- 3. Blue (L2)

Emitter of Thru-beam Mode (AC/DC)



Connector face view

Micro-style









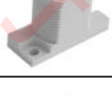

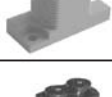
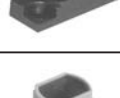

- 1. Brown(L1)
- 2. Not used
- 3. Blue (L2)

Accessories

Lens assemblies (upper cover)

Lens assemblies (upper covers) consist of a miniature-beam head-shell, a lens, and mounting hardware. They allow sensing mode changes or sensing range changes in the field.

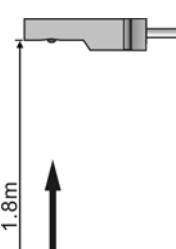




Table below lists the various miniature-beam types and the lens assemblies models supplied with them. With different upper covers. A miniature beam sensor body can change its sensing mode or range.

Lens Assemblies	Range	Miniature-beam type example	Lens
UC-300AG	2m (Retro-reflective Mode)	MP-L2000D-CX6C4U2-PF	
UC-300BZ	300mm 130mm (Diffuse Mode)	MP-D0300D-CX9C4U2	
UC-300C2	43mm (Convergent Mode)	MP-C0043D-CX9C4U2	
UC-300C7	16mm (Convergent Mode)	MP-C0016D-CX9C4U2	
UC-300E	3m (Opposed Mode)	MP-T3000D-CX9C4U2	
UC-300EL	30m (Opposed Mode)	MP-T030MD-CX9C4U2	
UC-300EPD	300mm (Opposed Mode)	MP-T0300D-EX6C3L2-PD	
UC-300RPD	300mm (Opposed Mode)	MP-T0300D-CX6C4U2-PD	
UC-300F	500mm Glass Fiber Optic	MP-TGFD-CX9C4U2	
UC-300FP	130mm Plastic Fiber optic	MP-TPFD-CX6C4U2	
UC-300L	5m (Retroreflective Mode)	MP-L5000D-CX6C4U2	

EP SERIES

Opposed Mode

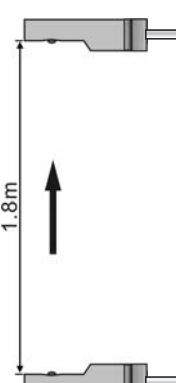



U: EP SERIES

Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
<p>Light Source : infrared 880nm</p>  <p>1.8m</p> <p>Opposed Mode Sensing Distance: 1.8m</p>	<p>2m Cable</p> 	<p>10-30V DC (10ms on/off)</p>	Emitter	EP-T1800D-EY9C3L2
			NPN/PNP Light-ON	EP-T1800D-LY9C4U2
			NPN/PNP Dark-ON	EP-T1800D-DY9C4U2
			NPN/PNP L.O./D.O.	
		<p>10-30V DC (1ms on/off)</p>	Emitter	EP-T1800D-EY9C3L2-HS
			NPN/PNP Light-ON	EP-T1800D-LY9C4U2-HS
			NPN/PNP Dark-ON	EP-T1800D-DY9C4U2-HS
			NPN/PNP L.O./D.O.	
	<p>9m Cable</p> 	<p>10-30V DC (10ms on/off)</p>	Emitter	EP-T1800D-EY9C3L9
			NPN/PNP Light-ON	EP-T1800D-LY9C4U9
			NPN/PNP Dark-ON	EP-T1800D-DY9C4U9
			NPN/PNP L.O./D.O.	
		<p>10-30V DC (1ms on/off)</p>	Emitter	EP-T1800D-EY9C3L9-HS
			NPN/PNP Light-ON	EP-T1800D-LY9C4U9-HS
			NPN/PNP Dark-ON	EP-T1800D-DY9C4U9-HS
			NPN/PNP L.O./D.O.	
<p>Pico Style 4 Pins 6" Pigtail</p> 	<p>10-30V DC (10ms on/off)</p>	Emitter	EP-T1800D-EY9P4LP	
		NPN/PNP Light-ON	EP-T1800D-LY9P4UP	
		NPN/PNP Dark-ON	EP-T1800D-DY9P4UP	
		NPN/PNP L.O./D.O.		
	<p>10-30V DC (1ms on/off)</p>	Emitter	EP-T1800D-EY9P4LP-HS	
		NPN/PNP Light-ON	EP-T1800D-LY9P4UP-HS	
		NPN/PNP Dark-ON	EP-T1800D-DY9P4UP-HS	
		NPN/PNP L.O./D.O.		
<p>Euro Style 4 Pins 6" Pigtail</p> 	<p>10-30V DC (10ms on/off)</p>	Emitter	EP-T1800D-EY9P4LE	
		NPN/PNP Light-ON	EP-T1800D-LY9P4UE	
		NPN/PNP Dark-ON	EP-T1800D-DY9P4UE	
		NPN/PNP L.O./D.O.		
	<p>10-30V DC (1ms on/off)</p>	Emitter	EP-T1800D-EY9P4LE-HS	
		NPN/PNP Light-ON	EP-T1800D-LY9P4UE-HS	
		NPN/PNP Dark-ON	EP-T1800D-DY9P4UE-HS	
		NPN/PNP L.O./D.O.		

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

EP SERIES

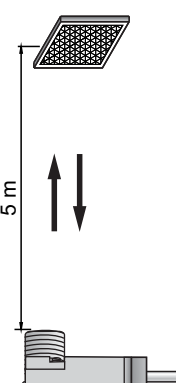

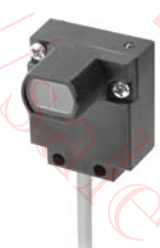


Opposed Mode

Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
Light Source : infrared:880nm  1.8m Opposed Mode Sensing Distance:1.8m	2m Cable 	24-240V AC (10ms on/off)	Emitter (2-wire)	EP-T1800A-EY9C2L2
			SPST Solid-state Light-ON (3-wire)	EP-T1800A-LY9C3U2
			SPST Solid-state Dark-ON (3-wire)	
			SPST Solid-state Light-ON (2-wire)	
			SPST Solid-state Dark-ON (2-wire)	
		12-240V DC/ 24-240V AC (10ms on/off)	Emitter (2-wire)	
	9m Cable 	24-240V AC (10ms on/off)	Emitter (2-wire)	EP-T1800A-EY9C2L9
			SPST Solid-state Light-ON (3-wire)	EP-T1800A-LY9C3U9
			SPST Solid-state Dark-ON (3-wire)	
			SPST Solid-state Light-ON (2-wire)	
			SPST Solid-state Dark-ON (2-wire)	
		12-240V DC/ 24-240V AC (10ms on/off)	Emitter (2-wire)	
Micro Style 3Pins 6" Pigtail 	24-240V AC (10ms on/off)	Emitter (2-wire)	EP-T1800A-EY9P3LM	
		SPST Solid-state Light-ON (3-wire)	EP-T1800A-LY9P3UM	
		SPST Solid-state Dark-ON (3-wire)		
		SPST Solid-state Light-ON (2-wire)		
		SPST Solid-state Dark-ON (2-wire)		
	12-240V DC/ 24-240V AC (10ms on/off)	Emitter (2-wire)		
	SPST Solid-state Light-ON (2-wire)			
	SPST Solid-state Dark-ON (2-wire)			

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

Retroreflective Mode

U: EP SERIES

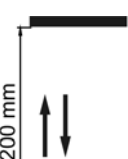




Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
<p>Light Source: red light:650nm</p>  <p>5 m</p> <p>Retroreflective Mode Sensing Distance:5m (Note)</p>	<p>2m Cable</p> 	<p>10-30V DC (10ms on/off)</p>	NPN/PNP Light-ON	EP-L5000D-LY6C4U2
			NPN/PNP Dark-ON	EP-L5000D-DY6C4U2
			NPN/PNP L.O./D.O.	
		<p>10-30V DC (1ms on/off)</p>	NPN/PNP Light-ON	EP-L5000D-LY6C4U2-HS
			NPN/PNP Dark-ON	EP-L5000D-DY6C4U2-HS
			NPN/PNP L.O./D.O.	
	<p>9m Cable</p> 	<p>10-30V DC (10ms on/off)</p>	NPN/PNP Light-ON	EP-L5000D-LY6C4U9
			NPN/PNP Dark-ON	EP-L5000D-DY6C4U9
			NPN/PNP L.O./D.O.	
		<p>10-30V DC (1ms on/off)</p>	NPN/PNP Light-ON	EP-L5000D-LY6C4U9-HS
			NPN/PNP Dark-ON	EP-L5000D-DY6C4U9-HS
			NPN/PNP L.O./D.O.	
<p>Pico Style 4 Pins 6" Pigtail</p> 	<p>10-30V DC (10ms on/off)</p>	NPN/PNP Light-ON	EP-L5000D-LY6P4UP	
		NPN/PNP Dark-ON	EP-L5000D-DY6P4UP	
		NPN/PNP L.O./D.O.		
	<p>10-30V DC (1ms on/off)</p>	NPN/PNP Light-ON	EP-L5000D-LY6P4UP-HS	
		NPN/PNP Dark-ON	EP-L5000D-DY6P4UP-HS	
		NPN/PNP L.O./D.O.		
<p>Euro Style 4 Pins 6" Pigtail</p> 	<p>10-30V DC (10ms on/off)</p>	NPN/PNP Light-ON	EP-L5000D-LY6P4UE	
		NPN/PNP Dark-ON	EP-L5000D-DY6P4UE	
		NPN/PNP L.O./D.O.		
	<p>10-30V DC (1ms on/off)</p>	NPN/PNP Light-ON	EP-L5000D-LY6P4UE-HS	
		NPN/PNP Dark-ON	EP-L5000D-DY6P4UE-HS	
		NPN/PNP L.O./D.O.		

Note: Used with RE-6152 (supplied with sensor) reflector.
 Coming Soon : Part numbers with underline
 In Preparation: Part numbers with a line through the middle

EP SERIES

Diffuse Mode (Long range, Sn=200mm)

U: EP SERIES

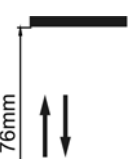




Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
<p>Light Source: infrared 880nm</p>  <p>200 mm</p> <p>Diffuse Mode Sensing Distance: 200mm</p>	<p>2m Cable</p> 	<p>10-30V DC (10ms on/off)</p>	NPN/PNP Light-ON	EP-D0200D-LY9C4U2
			NPN/PNP Dark-ON	EP-D0200D-DY9C4U2
			NPN/PNP L.O./D.O.	
		<p>10-30V DC (1ms on/off)</p>	NPN/PNP Light-ON	EP-D0200D-LY9C4U2-HS
			NPN/PNP Dark-ON	EP-D0200D-DY9C4U2-HS
			NPN/PNP L.O./D.O.	
	<p>9m Cable</p> 	<p>10-30V DC (10ms on/off)</p>	NPN/PNP Light-ON	EP-D0200D-LY9C4U9
			NPN/PNP Dark-ON	EP-D0200D-DY9C4U9
			NPN/PNP L.O./D.O.	
		<p>10-30V DC (1ms on/off)</p>	NPN/PNP Light-ON	EP-D0200D-LY9C4U9-HS
			NPN/PNP Dark-ON	EP-D0200D-DY9C4U9-HS
			NPN/PNP L.O./D.O.	
	<p>Pico Style 4 Pins 6" Pigtail</p> 	<p>10-30V DC (10ms on/off)</p>	NPN/PNP Light-ON	EP-D0200D-LY9P4UP
			NPN/PNP Dark-ON	EP-D0200D-DY9P4UP
			NPN/PNP L.O./D.O.	
		<p>10-30V DC (1ms on/off)</p>	NPN/PNP Light-ON	EP-D0200D-LY9P4UP-HS
			NPN/PNP Dark-ON	EP-D0200D-DY9P4UP-HS
			NPN/PNP L.O./D.O.	
<p>Euro Style 4 Pins 6" Pigtail</p> 	<p>10-30V DC (10ms on/off)</p>	NPN/PNP Light-ON	EP-D0200D-LY9P4UE	
		NPN/PNP Dark-ON	EP-D0200D-DY9P4UE	
		NPN/PNP L.O./D.O.		
	<p>10-30V DC (1ms on/off)</p>	NPN/PNP Light-ON	EP-D0200D-LY9P4UE-HS	
		NPN/PNP Dark-ON	EP-D0200D-DY9P4UE-HS	
		NPN/PNP L.O./D.O.		

Note:
 Coming Soon : Part numbers with underline
 In Preparation: Part numbers with a line through the middle
 — U-05 —

EP SERIES

Diffuse Mode (Standard range, Sn=76mm)

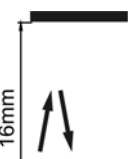




U: EP SERIES

Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
Light Source: infrared 880nm  76mm Diffused Mode Sensing Distance: 76mm	2m Cable 	10-30V DC (10ms on/off)	NPN/PNP Light-ON	EP-D0076D-LY9C4U2
			NPN/PNP Dark-ON	EP-D0076D-DY9C4U2
			NPN/PNP L.O./D.O.	
		10-30V DC (1ms on/off)	NPN/PNP Light-ON	EP-D0076D-LY9C4U2-HS
			NPN/PNP Dark-ON	EP-D0076D-DY9C4U2-HS
			NPN/PNP L.O./D.O.	
	9m Cable 	10-30V DC (10ms on/off)	NPN/PNP Light-ON	EP-D0076D-LY9C4U9
			NPN/PNP Dark-ON	EP-D0076D-DY9C4U9
			NPN/PNP L.O./D.O.	
		10-30V DC (1ms on/off)	NPN/PNP Light-ON	EP-D0076D-LY9C4U9-HS
			NPN/PNP Dark-ON	EP-D0076D-DY9C4U9-HS
			NPN/PNP L.O./D.O.	
Pico Style 4 Pins 6" Pigtail 	10-30V DC (10ms on/off)	NPN/PNP Light-ON	EP-D0076D-LY9P4UP	
		NPN/PNP Dark-ON	EP-D0076D-DY9P4UP	
		NPN/PNP L.O./D.O.		
	10-30V DC (1ms on/off)	NPN/PNP Light-ON	EP-D0076D-LY9P4UP-HS	
		NPN/PNP Dark-ON	EP-D0076D-DY9P4UP-HS	
		NPN/PNP L.O./D.O.		
Euro Style 4 Pins 6" Pigtail 	10-30V DC (10ms on/off)	NPN/PNP Light-ON	EP-D0076D-LY9P4UE	
		NPN/PNP Dark-ON	EP-D0076D-DY9P4UE	
		NPN/PNP L.O./D.O.		
	10-30V DC (1ms on/off)	NPN/PNP Light-ON	EP-D0076D-LY9P4UE-HS	
		NPN/PNP Dark-ON	EP-D0076D-DY9P4UE-HS	
		NPN/PNP L.O./D.O.		

Note:
 Coming Soon : Part numbers with underline
 In Preparation: Part numbers with a line through the middle
 — U-07 —

Convergent Mode

U: EP SERIES

Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
<p>Light Source: red light 650nm</p>  <p>16mm</p> <p>Convergent Mode Sensing Distance: 16mm</p>	<p>2m Cable</p> 	<p>10-30V DC (10ms on/off)</p>	NPN/PNP Light-ON	EP-C0016D-LY6C4U2
			NPN/PNP Dark-ON	EP-C0016D-DY6C4U2
			NPN/PNP L.O./D.O.	
		<p>10-30V DC (1ms on/off)</p>	NPN/PNP Light-ON	EP-C0016D-LY6C4U2-HS
			NPN/PNP Dark-ON	EP-C0016D-DY6C4U2-HS
			NPN/PNP L.O./D.O.	
	<p>9m Cable</p> 	<p>10-30V DC (10ms on/off)</p>	NPN/PNP Light-ON	EP-C0016D-LY6C4U9
			NPN/PNP Dark-ON	EP-C0016D-DY6C4U9
			NPN/PNP L.O./D.O.	
		<p>10-30V DC (1ms on/off)</p>	NPN/PNP Light-ON	EP-C0016D-LY6C4U9-HS
			NPN/PNP Dark-ON	EP-C0016D-DY6C4U9-HS
			NPN/PNP L.O./D.O.	
	<p>Pico Style 4 Pins 6" Pigtail</p> 	<p>10-30V DC (10ms on/off)</p>	NPN/PNP Light-ON	EP-C0016D-LY6P4UP
			NPN/PNP Dark-ON	EP-C0016D-DY6P4UP
			NPN/PNP L.O./D.O.	
		<p>10-30V DC (1ms on/off)</p>	NPN/PNP Light-ON	EP-C0016D-LY6P4UP-HS
			NPN/PNP Dark-ON	EP-C0016D-DY6P4UP-HS
			NPN/PNP L.O./D.O.	
<p>Euro Style 4 Pins 6" Pigtail</p> 	<p>10-30V DC (10ms on/off)</p>	NPN/PNP Light-ON	EP-C0016D-LY6P4UE	
		NPN/PNP Dark-ON	EP-C0016D-DY6P4UE	
		NPN/PNP L.O./D.O.		
	<p>10-30V DC (1ms on/off)</p>	NPN/PNP Light-ON	EP-C0016D-LY6P4UE-HS	
		NPN/PNP Dark-ON	EP-C0016D-DY6P4UE-HS	
		NPN/PNP L.O./D.O.		

Note:
 Coming Soon : Part numbers with underline
 In Preparation: Part numbers with a line through the middle
 — U-09 —

Specifications (DC)

U: EP SERIES

Sensing Mode Item	DC					
	Opposed Mode	Retroreflective	Diffuse Mode	Convergent	Glass Fiber	Plastic Fiber
Sensing Range	See each mode					
Hysteresis	—					
Operating Voltage	10~30V DC					
Ripple	< 10%					
Voltage Drop	<2.0V at 150mA					
Max Load Current	150mA					
No Load Current	<25mA					
Min. Load Current	5mA					
Leakage Current	<1mA					
Output Configuration	Bipolar: One current sourcing (PNP) and one current sinking (NPN) open-collector transistor					
Environmental Rating	Meets NEMA standards 1, 2, 3s, 4, 12, and 13; IEC IP66 when assembled to sensor head					
Indicators	Red indicator LED on rear or sensor is "on" when the load is energized					
Transient Protection	Yes					
Reverse Polarity Protection	Yes					
Short Circuit Protection	Yes					
Over Load Current Protection	>180mA					
Output Response Time	10ms or 1ms(High-speed type)					
Construction	Reinforced thermoplastic polyester housing, totally encapsulated, o-ring sealing, acrylic lenses, and stainless screws.					
Enclosure Rating	IP66					
Operating Conditions	Temperature: 0°...50°C, Maximum relative humidity: 90% at 50°C (non-condensing)					
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 500VDC for one min, between all supply terminals connected together and enclosure					
Insulation Resistance	>20M Ω , with 500V DC 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					
Cable	2m or 9m 5.8 ϕ 4X0.5 (Emitter :2X0.5) PVC.					
Pigtail Type	See Pigtail Series or our Cables & Connectors catalogue.					

Specifications (AC)

Item	Sensing Mode	AC					
		Opposed Mode	Retroreflective	Diffuse Mode	Convergent	Glass Fiber	Plastic Fiber
Sensing Range	See each mode						
Hysteresis	<20 % of sensing distance (only for diffuse mode)						
Operating Voltage	24~240V AC (50/60HZ)						
Output Configuration	SPST MOSFET solid-state relay with either normally closed or normally open contact 2-wire or 3-wire hookup (by type number)						
Voltage Drop	<10V at 200mA						
Max Load Current	≤200mA						
No Load Current	≤1.7mA						
Min. Load Current	≥5mA						
Leakage Current	≤1.7mA						
Transient Protection	Yes						
Short Circuit Protection	Yes						
Over Load Current Protection	≥220mA						
Response Time	10 ms						
Construction	Reinforced thermoplastic polyester housing, totally encapsulated, o-ring sealing, acrylic lenses, and stainless screws.						
Indicators	Red indicator LED on rear or sensor is "on" when the load is energized						
Enclosure Rating	IP66						
Operating Temperature	Temperature: 0°to +50°C, Maximum relative humidity: 90% at 50°C						
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						
Cable	2m or 9m 5.8 φ 2x0.5 or 3x0.5 (Emitter of thru-beam mode :2x0.5) PVC.						
Pigtail Type	See page Pigtail Series or our Cables & Connectors catalogue						

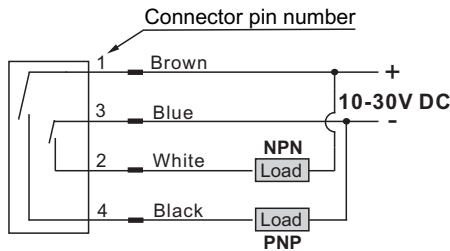
Specifications (AC/DC)

U: EP SERIES

Sensing Mode Item	AC/DC					
	Opposed Mode	Retroreflective	Diffuse Mode	Convergent	Glass Fiber	Plastic Fiber
Sensing Range	See each mode					
Hysteresis	<20 % of sensing distance (only for diffuse mode)					
Operating Voltage	12~240VDC / 24~240V AC					
Output Configuration	SPST MOSFET solid-state relay with either normally closed or normally open contact ; 2-wire hookup					
Voltage Drop	<10V @ 200mA					
Max Load Current	≤ 200mA					
No Load Current	≤ 25mA					
Min. Load Current	≥ 5mA					
Leakage Current	≤ 1.7mA					
Transient Protection	Yes					
Short Circuit Protection	Yes					
Over Load Current Protection	≥ 220mA					
Response Time	10 ms					
Construction	Reinforced thermoplastic polyester housing, totally encapsulated, o-ring sealing, acrylic lenses, and stainless screws.					
Indicators	Red indicator LED on rear or sensor is "on" when the load is energized					
Enclosure Rating	IP66					
Operating Temperature	Temperature: 0° to +50°C, Maximum relative humidity: 90% at 50°C					
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					
Cable	2m or 9m 5.8 φ 2x0.5 PVC.					
Pigtail Type	See page Pigtail Series or our Cables & Connectors catalogue					

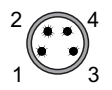
Connection Diagrams

NPN/PNP Light-On or Dark-ON output



Connector pin position

Pico-Style



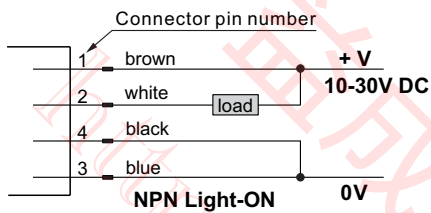
- 1. Brown (+)
- 2. White (NPN output)
- 3. Blue (-)
- 4. Black (PNP output)

Euro-style

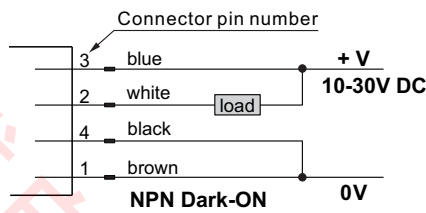


- 1. Brown (+)
- 2. White (NPN output)
- 3. Blue (-)
- 4. Black (PNP output)

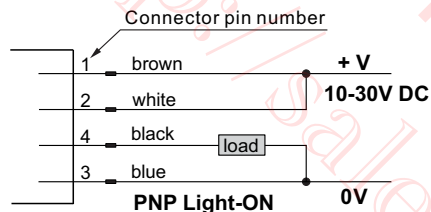
NPN/PNP Light-ON/Dark-ON changeover output



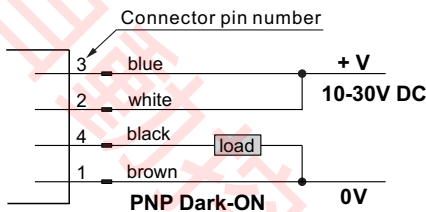
NPN Light-ON



NPN Dark-ON



PNP Light-ON



PNP Dark-ON

Connector pin position

Pico-Style

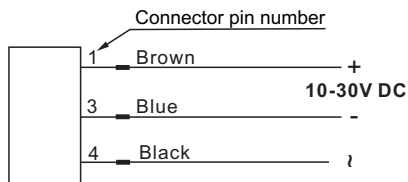


Euro-style



- 1. Brown
- 2. White
- 3. Blue
- 4. Black

Emitter of Thru-beam Mode (DC)



Connector pin position

Pico-Style



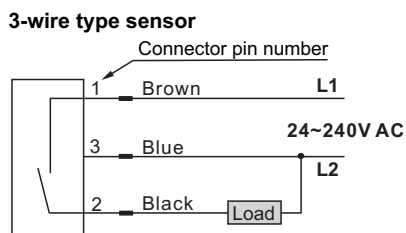
- 1. Brown (+)
- 2. Not used
- 3. Blue (-)
- 4. Black (t)

Euro-style

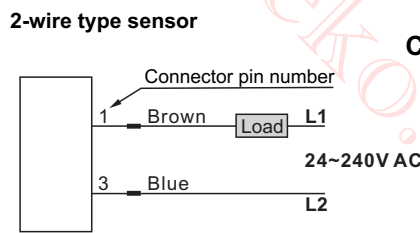


- 1. Brown (+)
- 2. Not used
- 3. Blue (-)
- 4. Black (t)

SPST Solid-state output (AC)



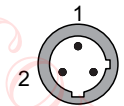
3-wire type sensor



2-wire type sensor

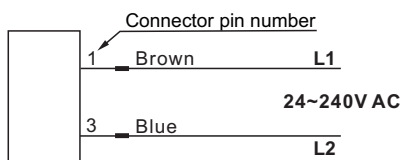
Connector face view

Micro-style



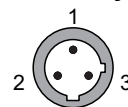
- 1. Brown(L1)
- 2. Black (For 3-wire type)
- 3. Blue (L2)

Emitter of Thru-beam Mode (AC)



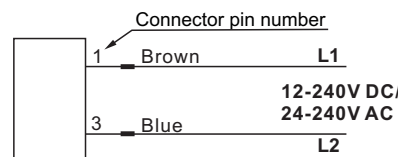
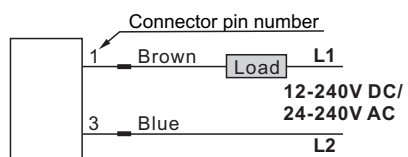
Connector face view

Micro-style



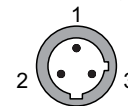
- 1. Brown(L1)
- 2. Not used
- 3. Blue (L2)

SPST Solid-state output (AC/DC) Emitter of Thru-beam Mode (AC/DC)



Connector face view

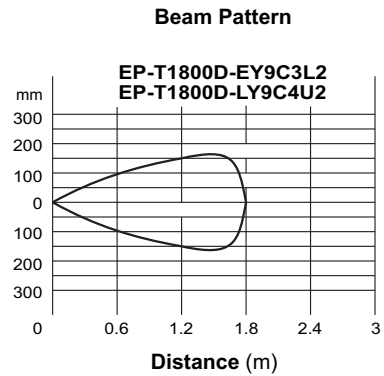
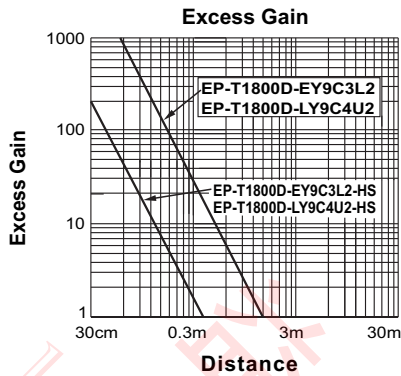
Micro-style



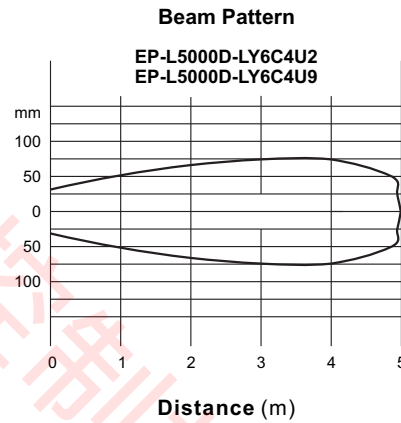
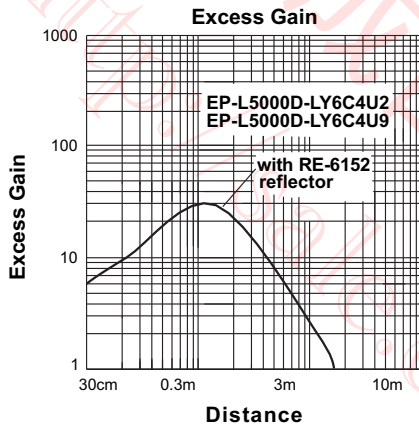
- 1. Brown(L1)
- 2. Not used
- 3. Blue (L2)

Sensing Characteristics (Typical)

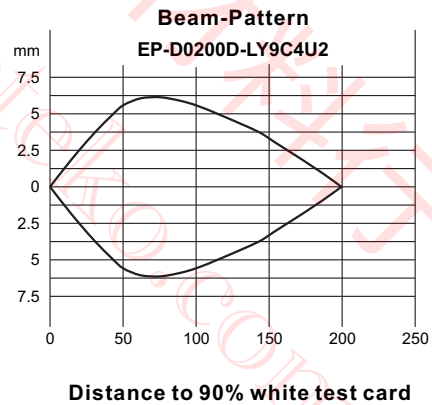
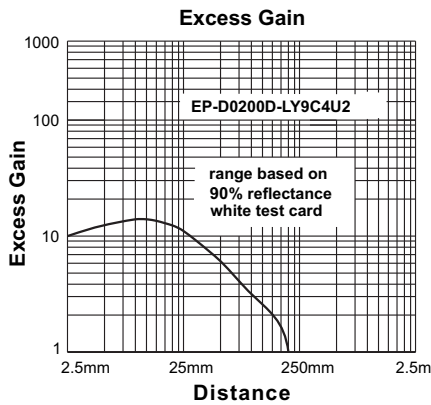
Opposed Mode (Sn=1.8m)



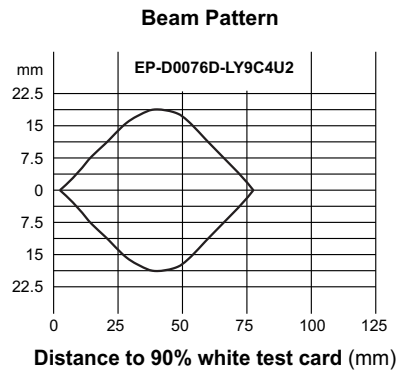
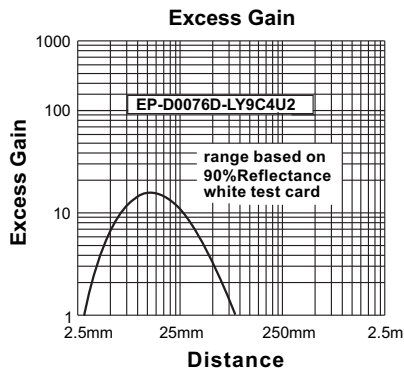
Retroreflective Mode (Sn=5m)



Diffused Mode (Sn=200mm)

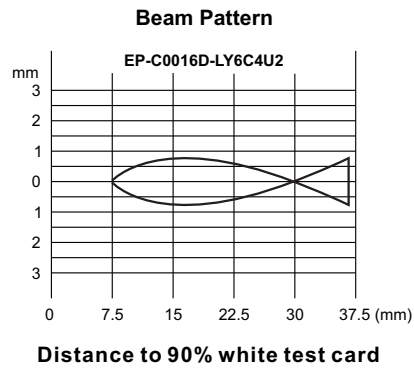
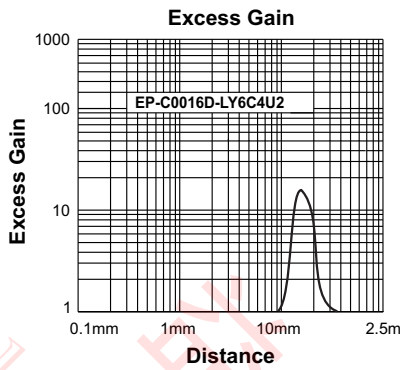


Diffused Mode (Sn=76mm)

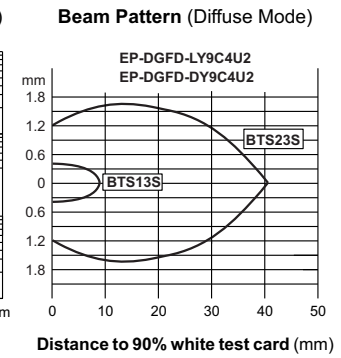
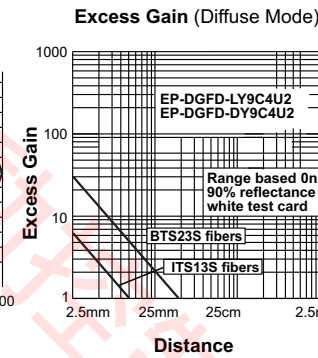
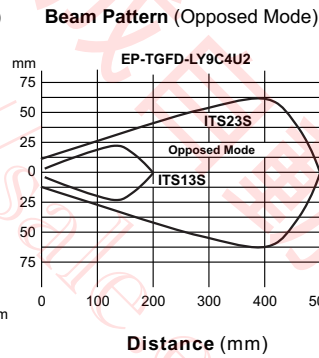
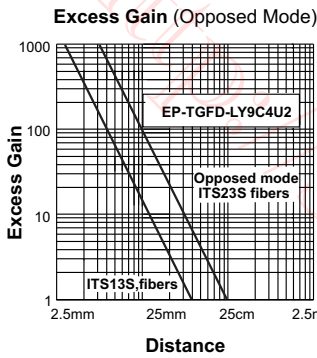


Sensing Characteristics (Typical)

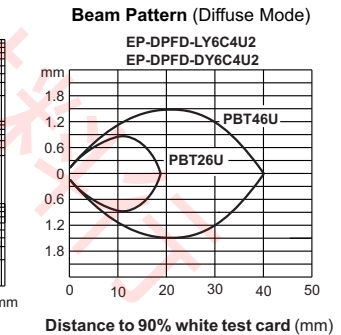
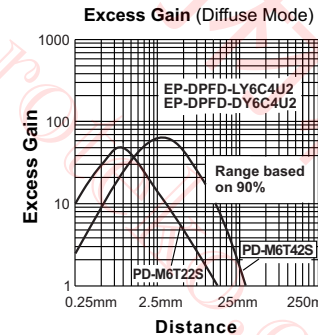
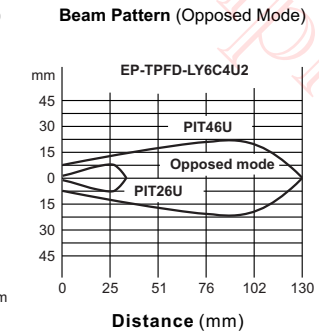
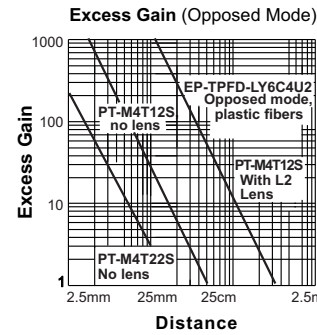
Convergent Mode



Glass Fiber Optic



Plastic Fiber Optic



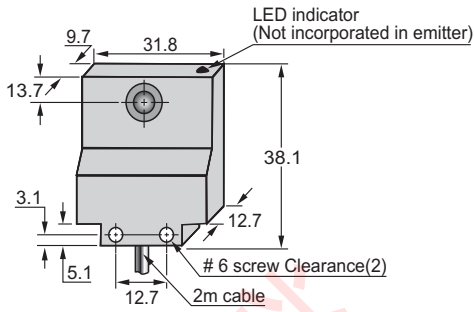
U : EP SERIES

EP SERIES

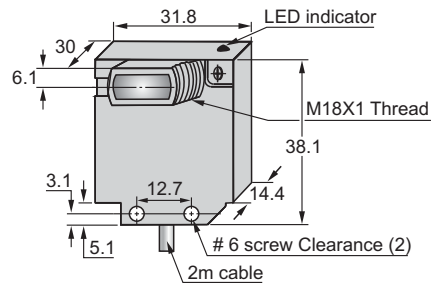
Dimensions (Unit: mm)

U: EP SERIES

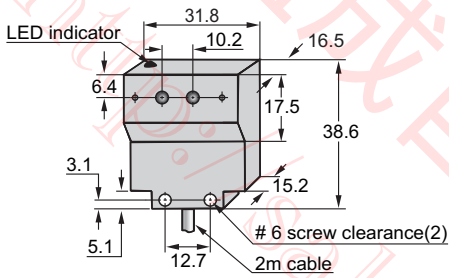
Opposed Sensor



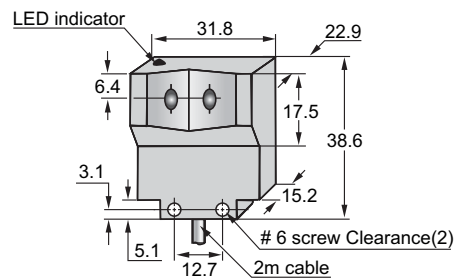
Retroreflective Sensor



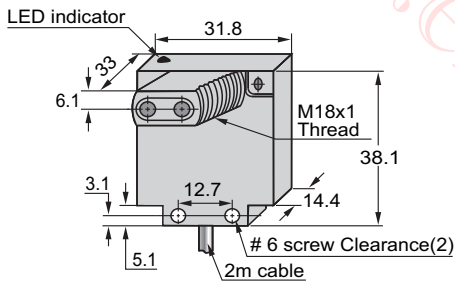
Diffuse Sensor



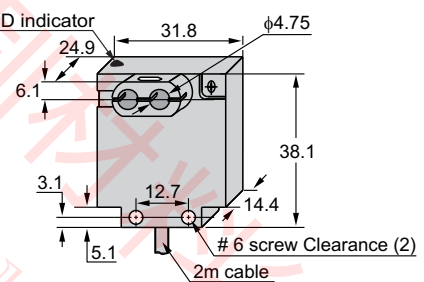
Convergent Sensor



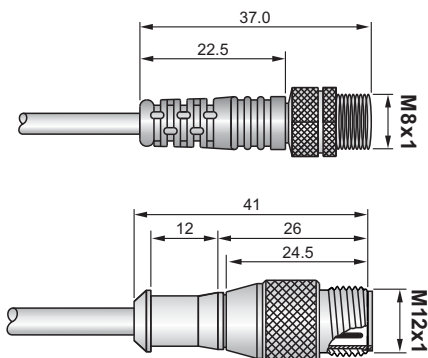
Glass Fiber Sensor



Plastic Fiber Sensor



Pigtail* Type




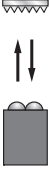


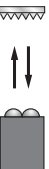




*: Please see **Pigtail Series** or our **Cables & Connectors** catalogue for more information.

UP SERIES

Opposed / Retroreflective Mode (non-polarized/polarized)

S: UP SERIES







Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
 Opposed Mode Sensing range: 4m Visible red 660nm	2m cable 	10-30V DC	Emitter	<u>UP-T4000D-EX6C3L2</u>
			NPN	<u>UP-T4000N-CX6C4U2</u>
			PNP	<u>UP-T4000P-CX6C4U2</u>
	4 Pin Pico-style 6" Pigtail QD 	10-30V DC	Emitter	<u>UP-T4000D-EX6P4LP</u>
			NPN	<u>UP-T4000N-CX6P4UP</u>
			PNP	<u>UP-T4000P-CX6P4UP</u>
 Retroreflective Mode Sensing range: 2m (Note) Visible red 660nm	2m cable 	10-30V DC	NPN	UP-L2000N-CX6C4U2
			PNP	UP-L2000P-CX6C4U2
			—	—
	4 Pin Pico-style 6" Pigtail QD 	10-30V DC	NPN	<u>UP-L2000N-CX6P4UP</u>
			PNP	<u>UP-L2000P-CX6P4UP</u>
			—	—
 Polarized Retroreflective Sensing range: 1m (Note) Visible red 680nm	2m cable 	10-30V DC	NPN	UP-L1000N-CX6C4U2-PF
			PNP	UP-L1000P-CX6C4U2-PF
			—	—
	4 Pin Pico-style 6" Pigtail QD 	10-30V DC	NPN	<u>UP-L1000N-CX6P4UP-PF</u>
			PNP	<u>UP-L1000P-CX6P4UP-PF</u>
			—	—

Note: Used with RE-6152 (supplied with sensor) reflector.
 Coming Soon : Part numbers with underline
 In Preparation: Part numbers with a line through the middle

UP SERIES

Diffuse Mode

S : UP SERIES







Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
Diffuse Mode Sensing range: 200mm Visible red 680nm	2m cable 	10-30V DC	NPN	<u>UP-D0200N-CX6C4U2</u>
			PNP	<u>UP-D0200P-CX6C4U2</u>
			—	—
	4 Pin Pico-style 6" Pigtail QD 	10-30V DC	NPN	<u>UP-D0200N-CX6P4UP</u>
			PNP	<u>UP-D0200P-CX6P4UP</u>
			—	—
Diffuse Mode (flush-front profile) Sensing range: 200mm Visible red 680nm	2m cable 	10-30V DC	NPN	<u>UP-D0200N-CX6C4U2-F</u>
			PNP	<u>UP-D0200P-CX6C4U2-F</u>
			—	—
	4 Pin Pico-style 6" Pigtail QD 	10-30V DC	NPN	<u>UP-D0200N-CX6P4UP-F</u>
			PNP	<u>UP-D0200P-CX6P4UP-F</u>
			—	—
Divergent Diffuse Mode (wide-angle) Sensing range: 50mm Visible red 660nm	2m cable 	10-30V DC	NPN	<u>UP-D0050N-CX6C4U2-W</u>
			PNP	<u>UP-D0050P-CX6C4U2-W</u>
			—	—
	4 Pin Pico-style 6" Pigtail QD 	10-30V DC	NPN	<u>UP-D0050N-CX6P4UP-W</u>
			PNP	<u>UP-D0050P-CX6P4UP-W</u>
			—	—

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

UP SERIES

S: UP SERIES

Convergent Mode

Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
 Convergent Mode Sensing range: 10mm Spot size at focus: 1mm Visible red 660nm	2m cable 	10-30V DC	NPN	<u>UP-C0010N-CX6C4U2</u>
			PNP	<u>UP-C0010P-CX6C4U2</u>
			—	—
	4 Pin Pico-style 6" Pigtail QD 	10-30V DC	NPN	<u>UP-C0010N-CX6P4UP</u>
			PNP	<u>UP-C0010P-CX6P4UP</u>
			—	—
 Convergent Mode Sensing range: 20mm Spot size at focus: 1.75mm Visible red 680nm	2m cable 	10-30V DC	NPN	<u>UP-C0020N-CX6C4U2</u>
			PNP	<u>UP-C0020P-CX6C4U2</u>
			—	—
	4 Pin Pico-style 6" Pigtail QD 	10-30V DC	NPN	<u>UP-C0020N-CX6P4UP</u>
			PNP	<u>UP-C0020P-CX6P4UP</u>
			—	—
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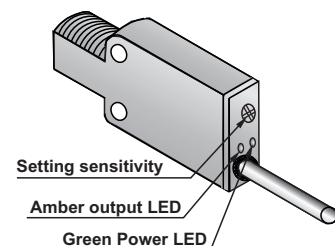
Note:
 Coming Soon : Part numbers with underline
 In Preparation: Part numbers with a line through the middle
 — S-03 —

Specifications

Supply Voltage	10 to 30V dc (10% maximum ripple) at less than 25mA, exclusive of load
Supply Protection Circuitry	Protected against reverse polarity and transient voltages
Output configuration	Solid state complementary (SPDT):NPN or PNP (current sinking or sourcing) output models available
Output Rating	150mA maximum each output at 25°C OFF- state leakage current: less than 10 μ A@ 30Vdc On-state saturation voltage: less than 2.0V@150mA
Output Protection Circuitry	Protected against false pulse on power-up and continuous overload or short circuit of outputs
Output Response	Opposed Mode: 8milliseconds ON, 4 milliseconds OFF All others: 1.5 milliseconds Note: 500millisecond delay on power-up, outputs do not conduct During this time
Repeatability	Opposed Mode: 1 millisecond All others: 175 microseconds
Adjustments	1-turn slotted GAIN(sensitivity) Adjustment Potentiometer.
Indicators	2 LEDs, visible from back and sides of sensor: 1 Green, 1 Amber Green steady: power ON Amber steady: light sensed
Construction	Black polycarbonate/ABS alloy housing; totally encapsulated circuitry
Environmental Rating	IEC IP 67
Connections	2 M 4-wire PVC Cable, 9 m PVC cable, or 4 pin pico-style 150mm pigtail QD
Operating Conditions	Temperature: -20 to +55°C Relative Humidity: 90% @ 50 C (non-condensing)
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 500VDC for one min, between all supply terminals connected together and enclosure
Insulation Resistance	>20M Ω , with 500V DC 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
Mounting Bracket	Miniature-beam2-A1(See accessories)
Certifications	CE
Cable	2M 3.4 ϕ 4X0.15 (Emitter :2X0.15) PUR.
Pigtail Type	See Pigtail Series or our Cables & Connectors catalogue.

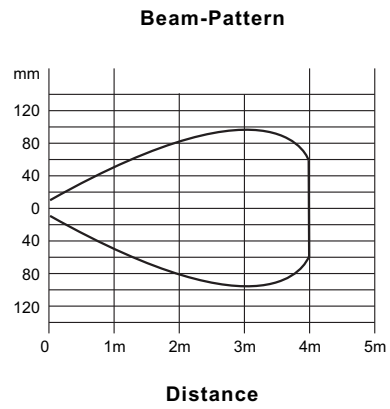
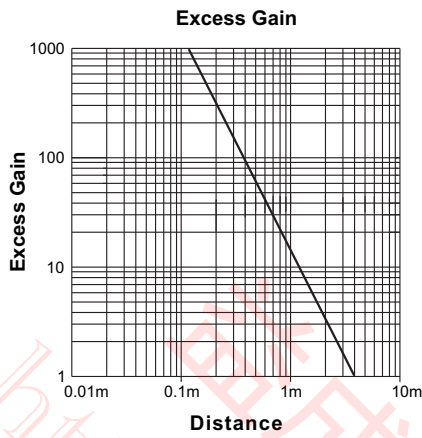
MINI-BEAM2 Features

- Designed after the popular MINI-BEAM , but only one-third the size of the original.
- 12mm threaded barrel on most models.
- Uses advanced miniaturized microprocessor-based circuitry.
- Available for opposed, retro reflective, diffuse, and convergent sensing modes.
- 10 to 30V dc operation.
- Complementary outputs (one normally open and one normally closed), each with 150mA switching capacity.
- IP 67 and NEMA 6 environmental ratings.
- Status indicators.
- Models with either integral, unterminated cable or 150mm pigtail with 4-pin Pico-style connector .

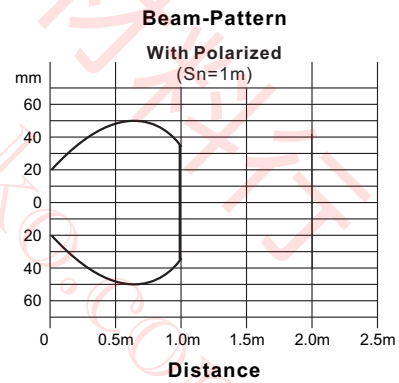
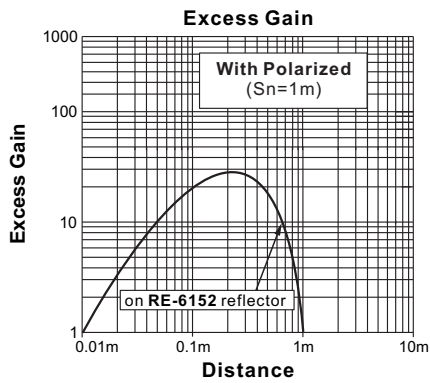
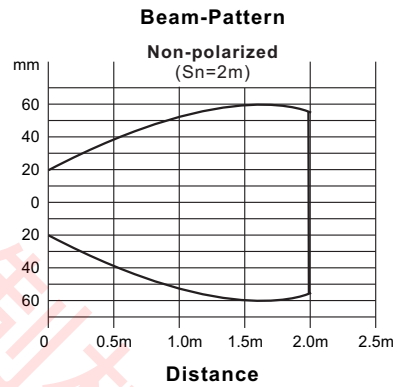
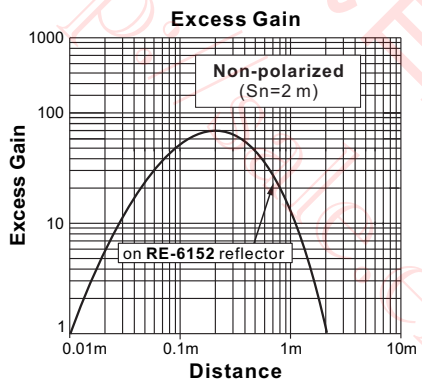


Sensing Characteristics (Typical)

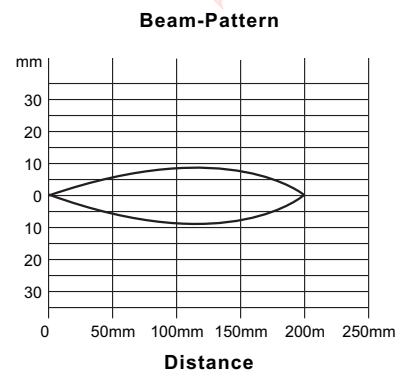
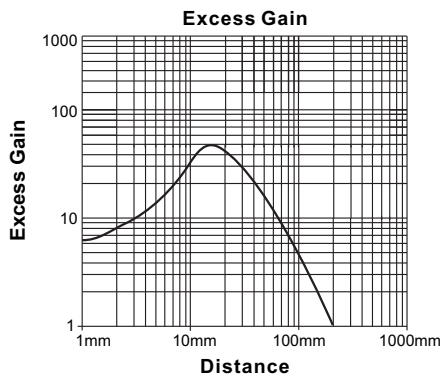
Opposed Mode (Sn=4m)



Retroreflective Mode



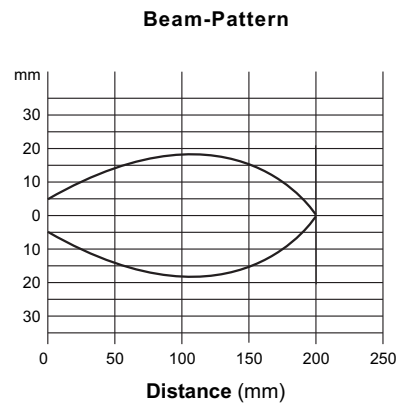
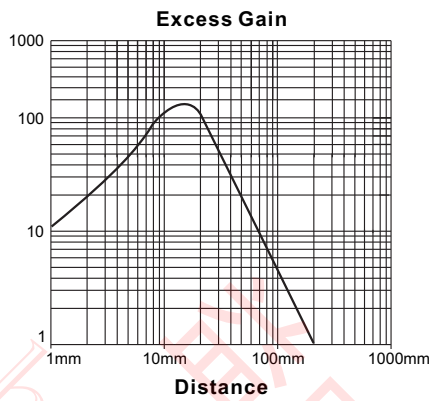
Standard Diffuse Mode (Sn=200mm)



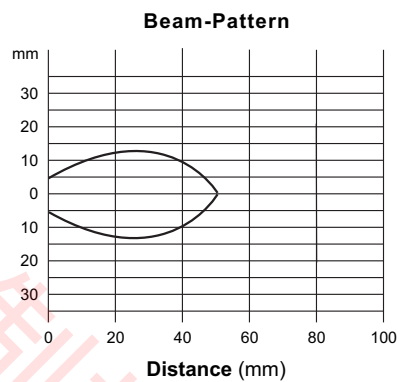
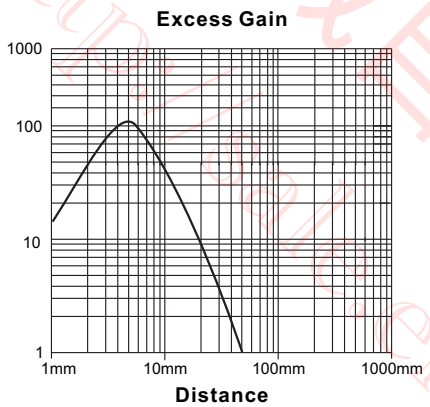
Sensing Characteristics (Typical)

S : UP SERIES

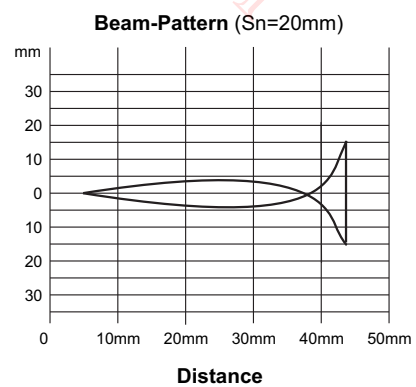
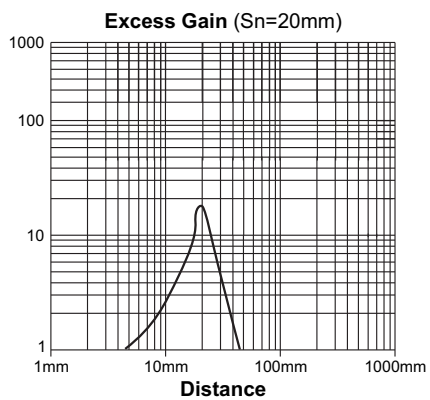
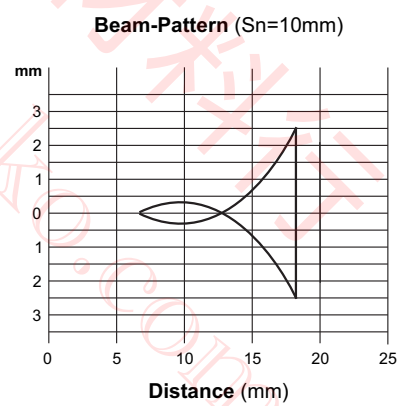
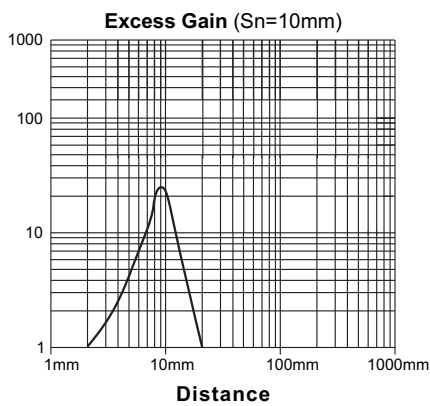
Diffuse (Flush-Front Profile Type, Sn=200mm)



Divergent Diffuse (Wide-Angle Type, Sn=50mm)



Converent mode

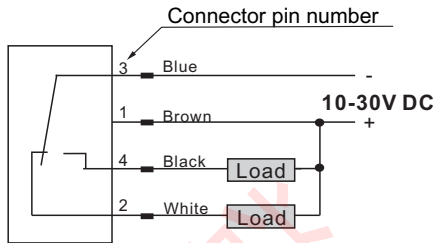


Connection Diagrams & Dimensions

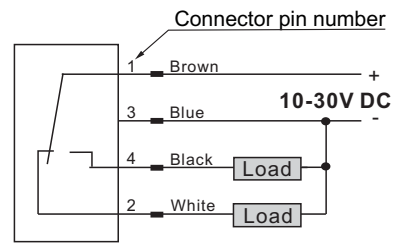
S: UP SERIES

Connection Diagrams

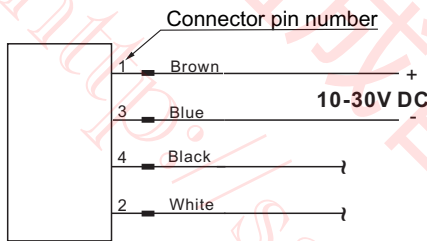
NPN output type



PNP output type



Emitter of Thru-beam Mode

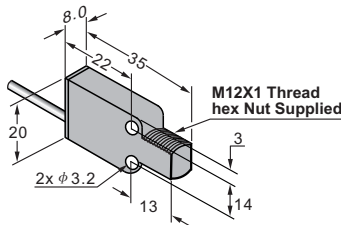


4-Pin Pico-Style Connector

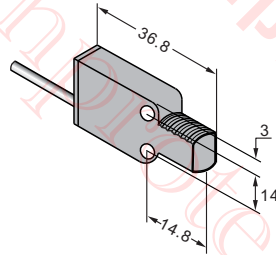


Dimensions (Unit: mm)

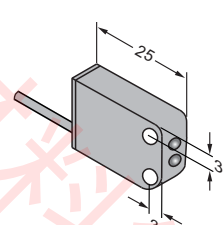
Retroreflective Mode/ Standard Diffuse Mode



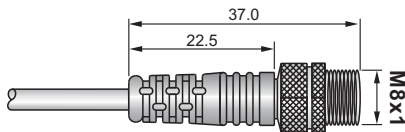
Opposed Mode/ Convergent Modes



Flush-front profile Diffuse/ Divergent Diffuse Mode

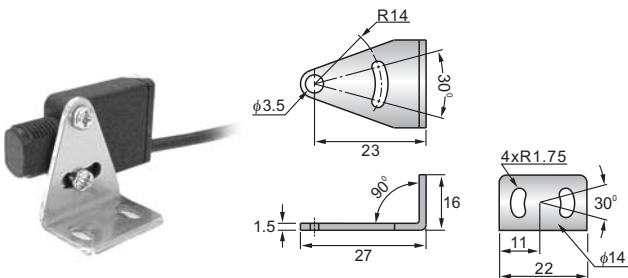


Pigtail* Type

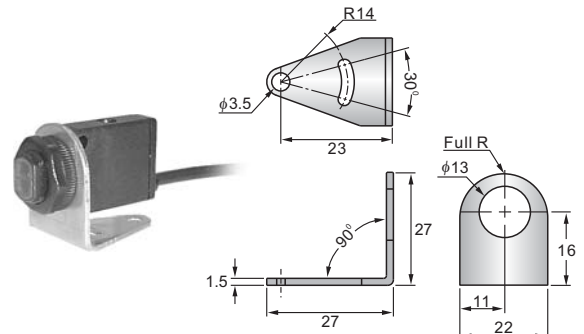


*: Please see **Pigtail Series** or our **Cables & Connectors** catalogue for more information.

MB-2722 (Sensor mounting bracket*-optional)



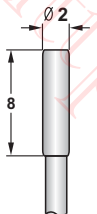
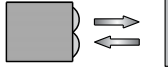
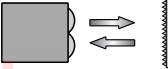
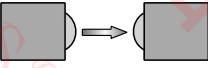
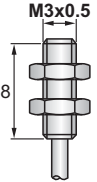
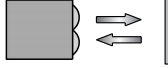
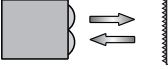
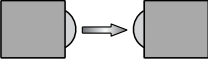
MB-2727 (Sensor mounting bracket*-optional)



*: Please see **Accessories** (Universal Mounting Brackets Series).

D02 M03 SERIES

Miniature Separate Sensor Head

Type	Sensing Mode	Sensing Distance	Part Number	Light Source	
D02 Series 2mm Smooth Tubular Housing Material: Stainless steel Suitable Amplifier: ASP5 Series 	Diffuse Mode 	12mm	D02S-D0012D-CX9C4U1	Infrared 880nm	
			D02S-D0012D-CX6C4U1	Visible red 660nm	
	Retroreflective Mode 	250 mm	D02S-L0250D-CX9C4U1	Infrared 880nm	
			D02S-L0250D-CX6C4U1	Visible red 660nm	
	Thru-beam Mode 	200 mm	D02S-T0200D-EX9C4U1 (E*) D02S-T0200D-CX9C4U1 (R*)	Infrared 880nm	
			D02S-T0200D-EX6C4U1 (E*) D02S-T0200D-CX6C4U1 (R*)	Visible red 660nm	
		300 mm	D02S-T0300D-EX9C4U1 (E*) D02S-T0300D-CX9C4U1 (R*)	Infrared 880nm	
			D02S-T0300D-EX6C4U1 (E*) D02S-T0300D-CX6C4U1 (R*)	Visible red 660nm	
		500mm	D02S-T0500D-EX9C4U1 (E*) D02S-T0500D-CX9C4U1 (R*)	Infrared 880nm	
			D02S-T0500D-EX6C4U1 (E*) D02S-T0500D-CX6C4U1 (R*)	Visible red 660nm	
	800mm	D02S-T0800D-EX9C4U1 (E*) D02S-T0800D-CX9C4U1 (R*)	Infrared 880nm		
		D02S-T0800D-EX6C4U1 (E*) D02S-T0800D-CX6C4U1 (R*)	Visible red 645nm		
	M03 Series 3mm Threaded Tubular Housing Material: Stainless steel Suitable Amplifier: ASP5 Series 	Diffuse Mode 	12mm	M03S-D0012D-CX9C4U1	Infrared 880nm
				M03S-D0012D-CX6C4U1	Visible red 660nm
Retroreflective Mode 		250 mm	M03S-L0250D-CX9C4U1	Infrared 880nm	
			M03S-L0250D-CX6C4U1	Visible red 660nm	
Thru-beam Mode 		200 mm	M03S-T0200D-EX9C4U1 (E*) M03S-T0200D-CX9C4U1 (R*)	Infrared 880nm	
			M03S-T0200D-EX6C4U1 (E*) M03S-T0200D-CX6C4U1 (R*)	Visible red 660nm	
		300 mm	M03S-T0300D-EX9C4U1 (E*) M03S-T0300D-CX9C4U1 (R*)	Infrared 880nm	
			M03S-T0300D-EX6C4U1 (E*) M03S-T0300D-CX6C4U1 (R*)	Visible red 660nm	
		500mm	M03S-T0500D-EX9C4U1 (E*) M03S-T0500D-CX9C4U1 (R*)	Infrared 880nm	
			M03S-T0500D-EX6C4U1 (E*) M03S-T0500D-CX6C4U1 (R*)	Visible red 660nm	
800mm		M03S-T0800D-EX9C4U1 (E*) M03S-T0800D-CX9C4U1 (R*)	Infrared 880nm		
		M03S-T0800D-EX6C4U1 (E*) M03S-T0800D-CX6C4U1 (R*)	Visible red 645nm		

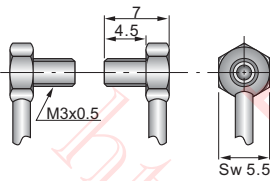
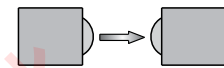
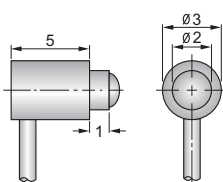

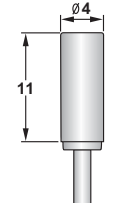
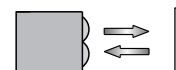

Note: E*: Emitter, R*: Receiver.

In Preparation: Part numbers with a line through the middle

O: SEPARATE
AMPLIFIER

M03 D03 D04 SERIES

Miniature Separate Sensor Head

Type	Sensing Mode	Sensing Distance	Part Number	Light Source	
M03 Series (Side sensing) 3mm Threaded Tubular Housing Material: Stainless steel Suitable Amplifier: ASP5 Series 	Thru-beam Mode 	500mm	M03S-T0500D-EY9C4U1 (E*) M03S-T0500D-CY9C4U1 (R*)	Infrared 880nm	
			M03S-T0500D-EY6C4U1 (E*) M03S-T0500D-CY6C4U1 (R*)	Visible red 660nm	
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D03 Series (Side sensing) 3mm Smooth Tubular Housing Material: Stainless steel Suitable Amplifier: ASP5 Series 	Thru-beam Mode 	500mm	D03S-T0500D-EY9C4U1 (E*) D03S-T0500D-CY9C4U1 (R*)	Infrared 880nm	
			D03S-T0500D-EY6C4U1 (E*) D03S-T0500D-CY6C4U1 (R*)	Visible red 660nm	
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D04 Series 4mm Smooth Tubular Housing Material: Stainless steel Suitable Amplifier: ASP5 Series 	Diffuse Mode 	40mm	D04S-D0040D-CX9C4U1	Infrared 880nm	
			D04S-D0040D-CX6C4U1	Visible red 660nm	
	Thru-beam Mode 	800mm	D04S-T0800D-EX9C4U1 (E*) D04S-T0800D-CX9C4U1 (R*)	Infrared 880nm	
			D04S-T0800D-EX6C4U1 (E*) D04S-T0800D-CX6C4U1 (R*)	Visible red 660nm	
		1000mm	D04S-T1000D-EX9C4U1 (E*) D04S-T1000D-CX9C4U1 (R*)	Infrared 880nm	
			D04S-T1000D-EX6C4U1 (E*) D04S-T1000D-CX6C4U1 (R*)	Visible red 660nm	
		1500mm	D04S-T1500D-EX9C4U1 (E*) D04S-T1500D-CX9C4U1 (R*)	Infrared 880nm	
			D04S-T1500D-EX6C4U1 (E*) D04S-T1500D-CX6C4U1 (R*)	Visible red 645nm	
		2000mm	D04S-T2000D-EX9C4U1 (E*) D04S-T2000D-CX9C4U1 (R*)	Infrared 880nm	
			D04S-T2000D-EX6C4U1 (E*) D04S-T2000D-CX6C4U1 (R*)	Visible red 660nm	

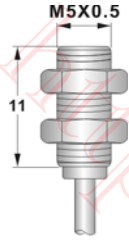
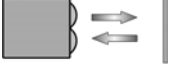
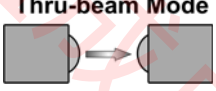
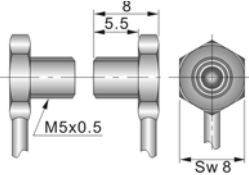

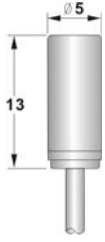
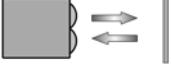
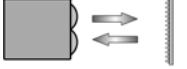

Note: E*: Emitter, R*: Receiver.

In Preparation: Part numbers with a line through the middle

O: SEPARATE
AMPLIFIER

M05 D05 SERIES

Miniature Separate Sensor Head

Type	Sensing Mode	Sensing Distance	Part Number	Light Source	
<p>M05 Series 5mm Threaded Tubular Housing Material: Stainless steel Suitable Amplifier: ASP2/3/4, PS900A Series</p> 	<p>Diffuse Mode</p> 	40mm	M05S-D0040D-CX9C4U1	Infrared 880nm	
			M05S-D0040D-CX6C4U1	Visible red 660nm	
	<p>Thru-beam Mode</p> 	800mm	M05S-T0800D-EX9C4U1 (E*) M05S-T0800D-CX9C4U1 (R*)	Infrared 880nm	
			M05S-T0800D-EX6C4U1 (E*) M05S-T0800D-CX6C4U1 (R*)	Visible red 660nm	
		1000mm	M05S-T1000D-EX9C4U1 (E*) M05S-T1000D-CX9C4U1 (R*)	Infrared 880nm	
			M05S-T1000D-EX6C4U1 (E*) M05S-T1000D-CX6C4U1 (R*)	Visible red 660nm	
		1500mm	M05S-T1500D-EX9C4U1 (E*) M05S-T1500D-CX9C4U1 (R*)	Infrared 880nm	
			M05S-T1500D-EX6C4U1 (E*) M05S-T1500D-CX6C4U1 (R*)	Visible red 645nm	
	2000mm	M05S-T2000D-EX9C4U1 (E*) M05S-T2000D-CX9C4U1 (R*)	Infrared 880nm		
		M05S-T2000D-EX6C4U1 (E*) M05S-T2000D-CX6C4U1 (R*)	Visible red 660nm		
	<p>M05 Series (Side sensing type) 5mm Threaded Tubular Housing Material: Stainless steel Suitable Amplifier: ASP2/3/4, PS900A Series</p> 	<p>Thru-beam Mode</p> 	1000mm	M05S-T1000D-EY9C4U1 (E*) M05S-T1000D-CY9C4U1 (R*)	Infrared 880nm
				M05S-T1000D-EY6C4U1 (E*) M05S-T1000D-CY6C4U1 (R*)	Visible red 660nm
—			—	—	—
—			—	—	—
—			—	—	—
<p>D05 Series 5mm Smooth Tubular Housing Material: Stainless steel Suitable Amplifier: ASP2/3/4, PS900A Series</p> 	<p>Diffuse Mode</p> 	63mm	D05S-D0063D-CX9C4U1	Infrared 880nm	
			D05S-D0063D-CX6C4U1	Visible red 660nm	
	<p>Retroreflective Mode</p> 	800mm	D05S-L0800D-CX9C4U1	Infrared 880nm	
			D05S-L0800D-CX6C4U1	Visible red 660nm	
	<p>Thru-beam Mode</p> 	800mm	D05S-T0800D-EX9C4U1 (E*) D05S-T0800D-CX9C4U1 (R*)	Infrared 880nm	
			D05S-T0800D-EX6C4U1 (E*) D05S-T0800D-CX6C4U1 (R*)	Visible red 660nm	
		4000mm	D05S-T4000D-EX9C4U1 (E*) D05S-T4000D-CX9C4U1 (R*)	Infrared 880nm	
			D05S-T4000D-EX6C4U1 (E*) D05S-T4000D-CX6C4U1 (R*)	Visible red 660nm	

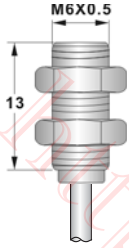
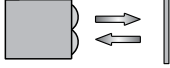
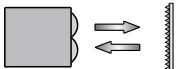
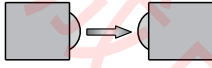
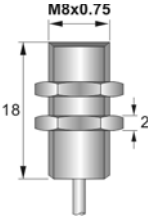
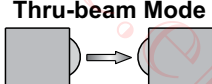
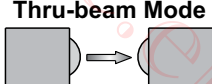
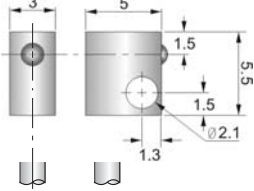
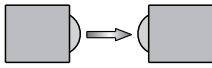
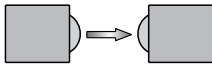
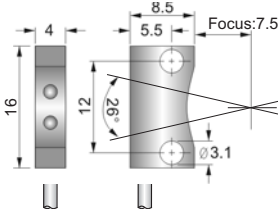
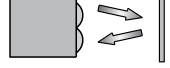
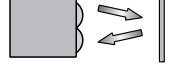
Note: E*: Emitter, R*: Receiver.

In Preparation: Part numbers with a line through the middle

O: SEPARATE
AMPLIFIER

M06 M08 Q3 Q4 SERIES

Miniature Separate Sensor Head

Type	Sensing Mode	Sensing Distance	Part Number	Light Source	
M06 Series 6mm Threaded Tubular Housing Material: Nickel-plated Brass Suitable Amplifier: ASP2/3/4, PS900A Series 	Diffuse Mode 	63mm	M06B-D0063D-CX9C4U1	Infrared 880nm	
			M06B-D0063D-CX6C4U1	Visible red 660nm	
	Retroreflective Mode 	800mm	M06B-L0800D-CX9C4U1	Infrared 880nm	
			M06B-L0800D-CX6C4U1	Visible red 660nm	
	Thru-beam Mode 	800mm	M06B-T0800D-EX9C4U1 (E*) M06B-T0800D-CX9C4U1 (R*)	Infrared 880nm	
			M06B-T0800D-EX6C4U1 (E*) M06B-T0800D-CX6C4U1 (R*)	Visible red 660nm	
		4000mm	M06B-T4000D-EX9C4U1 (E*) M06B-T4000D-CX9C4U1 (R*)	Infrared 880nm	
			M06B-T4000D-EX6C4U1 (E*) M06B-T4000D-CX6C4U1 (R*)	Visible red 660nm	
M08 Series 8mm Threaded Tubular Housing Material: Nickel-plated Brass Suitable Amplifier: ASP2/3/4, PS900A Series 	Thru-beam Mode 	4000mm	M08B-T4000D-EX9C4U1 (E*) M08B-T4000D-CX9C4U1 (R*)	Infrared 880nm	
			M08B-T4000D-EX6C4U1 (E*) M08B-T4000D-CX6C4U1 (R*)	Visible red 660nm	
	Thru-beam Mode 	_____	_____	_____	_____
		_____	_____	_____	_____
		_____	_____	_____	_____
		_____	_____	_____	_____
Q3x5x5.5 Series Housing Material: Nickel-plated Brass Suitable Amplifier: ASP2/3/4, PS900A Series 	Thru-beam Mode 	500 mm	Q03B-T0500D-EY9C4U1 (E*) Q03B-T0500D-CY9C4U1 (R*)	Infrared 880nm	
			Q03B-T0500D-EY6C4U1 (E*) Q03B-T0500D-CY6C4U1 (R*)	Visible red 660nm	
	Thru-beam Mode 	_____	_____	_____	_____
		_____	_____	_____	_____
Q4x8.5x16 Series Housing Material: Nickel-plated Brass Suitable Amplifier: ASP2/3/4, PS900A Series 	Convergent Mode 	3...15 mm	Q04B-C0015D-CY9C4U1	Infrared 880nm	
			Q04B-C0015D-CY6C4U1	Visible red 660nm	
	Convergent Mode 	_____	_____	_____	_____
		_____	_____	_____	_____

Note: E*: Emitter, R*: Receiver.

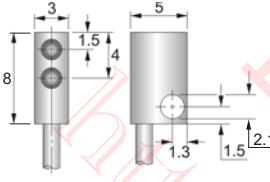
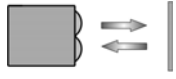
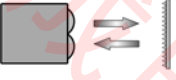
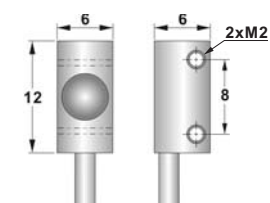
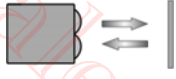
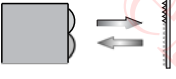
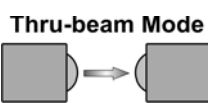
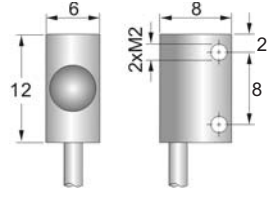
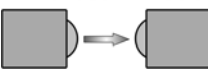
In Preparation: Part numbers with a line through the middle

O: SEPARATE
AMPLIFIER

Q3 Q6 SERIES

Miniature Separate Sensor Head

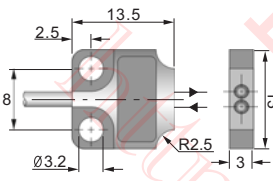
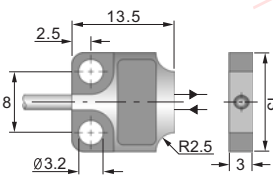

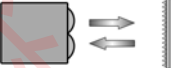

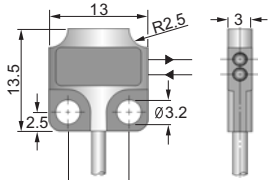
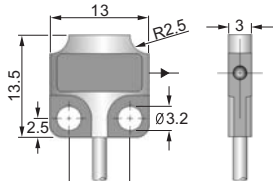
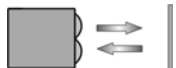
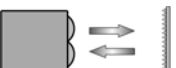

O: SEPARATE AMPLIFIER

Type	Sensing Mode	Sensing Distance	Part Number	Light Source	
Q3x5x8 Series Housing Material: Nickel-plated Brass Suitable Amplifier: ASP2/3/4, PS900A Series 	Diffuse Mode 	5...20mm	Q03B-D0020D-CY9C4U1	Infrared 880nm	
			Q03B-D0020D-CY6C4U1	Visible red 660nm	
		70mm	Q03B-D0070D-CY9C4U1	Infrared 880nm	
			Q03B-D0070D-CY6C4U1	Visible red 660nm	
	Retroreflective Mode 	500mm	Q03B-L0500D-CY9C4U1	Infrared 880nm	
			Q03B-L0500D-CY6C4U1	Visible red 660nm	
		800mm	Q03B-L0800D-CY9C4U1	Infrared 880nm	
			Q03B-L0800D-CY6C4U1	Visible red 660nm	
Q6x6x12 Series Housing Material: Nickel-plated Brass Suitable Amplifier: ASP2/3/4, PS900A Series 	Diffuse Mode 	63mm	Q06B-D0063D-CY9C4U1	Infrared 880nm	
			Q06B-D0063D-CY6C4U1	Visible red 660nm	
	Retroreflective Mode 	800mm	Q06B-L0800D-CY9C4U1	Infrared 880nm	
			<u>Q06B-L0800D-CY6C4U1</u>	Visible red 660nm	
	Thru-beam Mode 	800mm	Q06B-T0800D-EY9C4U1 (E*) Q06B-T0800D-CY9C4U1 (R*)	Infrared 880nm	
			Q06B-T0800D-EY6C4U1 (E*) Q06B-T0800D-CY6C4U1 (R*)	Visible red 660nm	
		1000mm	Q06B-T1000D-EY9C4U1 (E*) Q06B-T1000D-CY9C4U1 (R*)	Infrared 880nm	
			Q06B-T1000D-EY6C4U1 (E*) Q06B-T1000D-CY6C4U1 (R*)	Visible red 660nm	
		2000mm	Q06B-T2000D-EY9C4U1 (E*) Q06B-T2000D-CY9C4U1 (R*)	Infrared 880nm	
			Q06B-T2000D-EY6C4U1 (E*) Q06B-T2000D-CY6C4U1 (R*)	Visible red 660nm	
	Q6x8x12 Series Housing Material: Nickel-plated Brass Suitable Amplifier: ASP2/3/4, PS900A Series 	Thru-beam Mode 	4000mm	Q06B-T4000D-EY9C4U1 (E*) Q06B-T4000D-CY9C4U1 (R*)	Infrared 880nm
				Q06B-T4000D-EY6C4U1 (E*) Q06B-T4000D-CY6C4U1 (R*)	Visible red 660nm
_____		_____	_____	_____	
			_____	_____	
			_____	_____	
			_____	_____	

Note: E*: Emitter, R*: Receiver
 Coming Soon : Part numbers with underline
 In Preparation: Part numbers with a line through the middle

R13 SERIES

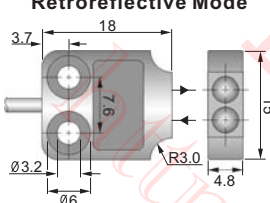
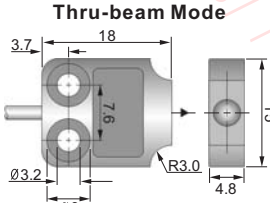
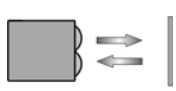
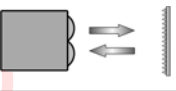
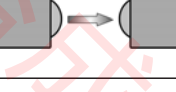
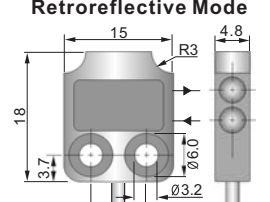
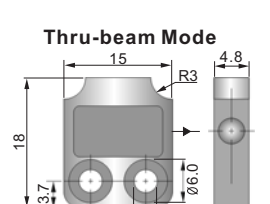
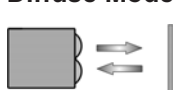
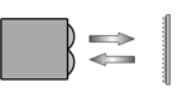
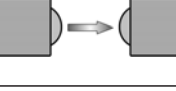
Miniature Separate Sensor Head

Type	Sensing Mode	Sensing Distance	Part Number	Light Source/ Light Spot Size
<p>R13x13.5x3 Series (Front Sensing type) Housing Material: Die-cast Suitable Amplifier: ASP2/3/4, PS900A Series</p> <p>Diffuse Mode / Retroreflective Mode</p>  <p>Thru-beam Mode</p> 	<p>Diffuse Mode</p> 	<p>2...25 mm (white 90%, 100x100mm)</p>	R13A-D0025D-CX6C4U4	Visible red 645nm/ 1.5mm @ 20mm
		<p>3.5...60 mm (white 90%, 50x50mm)</p>	R13A-D0060D-CX6C4U4	Visible red 645nm/ 10mm @ 100mm
		<p>3.5...24 mm (gray 90%, 50x50mm)</p>	R13A-D0024D-CX6C4U4	Visible red 645nm/ 10mm @ 100mm
	<p>Retroreflective Mode</p> 	<p>600 mm</p>	R13A-L0600D-CX6C4U4	Visible red 645nm/ 1.5mm @ 20mm
		<p>1000 mm</p>	R13A-L1000D-CX6C4U4	Visible red 645nm/ 10mm @ 100mm
	<p>Thru-beam Mode</p> 	<p>500 mm</p>	<p>R13A-T0500D-EX6C4U1 (E*) R13A-T0500D-CX6C4U1 (R*)</p>	Visible red 645nm/ 10mm @ 100mm
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<p>R13x13.5x3 Series (Side Sensing type) Housing Material: Die-cast Suitable Amplifier: ASP2/3/4, PS900A Series</p> <p>Diffuse Mode / Retroreflective Mode</p>  <p>Thru-beam Mode</p> 	<p>Diffuse Mode</p> 	<p>2...25 mm (white 90%, 100x100mm)</p>	R13A-D0025D-CY6C4U4	Visible red 645nm/ 1.5mm @ 20mm
		<p>3.5...60 mm (white 90%, 50x50mm)</p>	R13A-D0060D-CY6C4U4	Visible red 645nm/ 10mm @ 100mm
		<p>3.5...24 mm (gray 90%, 50x50mm)</p>	R13A-D0024D-CY6C4U4	Visible red 645nm/ 10mm @ 100mm
	<p>Retroreflective Mode</p> 	<p>600 mm</p>	R13A-L0600D-CY6C4U4	Visible red 645nm/ 1.5mm @ 20mm
		<p>1000 mm</p>	R13A-L1000D-CY6C4U4	Visible red 645nm/ 10mm @ 100mm
	<p>Thru-beam Mode</p> 	<p>500 mm</p>	<p>R13A-T0500D-EY6C4U1 (E*) R13A-T0500D-CY6C4U1 (R*)</p>	Visible red 645nm/ 10mm @ 100mm
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Note: E*: Emitter, R*: Receiver.
Coming Soon : Part numbers with underline
In Preparation: Part numbers with a line through the middle

R15 SERIES

Miniature Separate Sensor Head


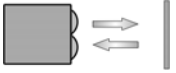

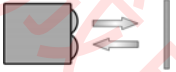

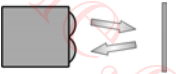

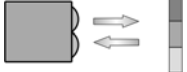




Type	Sensing Mode	Sensing Distance	Part Number	Light Source/ Light Spot Size	
R15x18x4.8 Series (Front Sensing type) Housing Material: Die-cast Suitable Amplifier: ASP2/3/4,PS900A Series Diffuse Mode / Retroreflective Mode  Thru-beam Mode 	Diffuse Mode 	1...50 mm (white 90%, 100x100mm)	R15A-D0050D-CX6C4U1	Visible red 645nm/ 1.5mm @ 20mm	
			3.5...100 mm (white 90%, 100x100mm)	R15A-D0100D-CX6C4U1	Visible red 645nm/ 10mm @ 100mm
		Retroreflective Mode 	1000 mm	R15A-L1000D-CX6C4U1	Visible red 645nm/ 1.5mm @ 20mm
			1200 mm	R15A-L1200D-CX6C4U1	Visible red 645nm/ 10mm @ 100mm
		Thru-beam Mode 	1500 mm	R15A-T1500D-EX6C4U1 (E*) R15A-T1500D-CX6C4U1 (R*)	Visible red 645nm/ 1.5mm @ 20mm
			2000 mm	R15A-T2000D-EX6C4U1 (E*) R15A-T2000D-CX6C4U1 (R*)	Visible red 645nm/ 10mm @ 100mm
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R15x18x4.8 Series (Side Sensing type) Housing Material: Die-cast Suitable Amplifier: ASP2/3/4,PS900A Series Diffuse Mode / Retroreflective Mode  Thru-beam Mode 	Diffuse Mode 	1...50 mm (white 90%, 100x100mm)	R15A-D0050D-CY6C4U1	Visible red 645nm/ 1.5mm @ 20mm	
			3.5...100 mm (white 90%, 100x100mm)	R15A-D0100D-CY6C4U1	Visible red 645nm/ 10mm @ 100mm
		Retroreflective Mode 	1000 mm	R15A-L1000D-CY6C4U1	Visible red 645nm/ 1.5mm @ 20mm
			1200 mm	R15A-L1200D-CY6C4U1	Visible red 645nm/ 10mm @ 100mm
		Thru-beam Mode 	1500 mm	R15A-T1500D-EY6C4U1 (E*) R15A-T1500D-CY6C4U1 (R*)	Visible red 645nm/ 1.5mm @ 20mm
			2000 mm	R15A-T2000D-EY6C4U1 (E*) R15A-T2000D-CY6C4U1 (R*)	Visible red 645nm/ 10mm @ 100mm
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Note: E*: Emitter, R*: Receiver.
 Coming Soon : Part numbers with underline
 In Preparation: Part numbers with a line through the middle — O-08 —

O: SEPARATE
AMPLIFIER

ASP1 SERIES

Miniature Separate Sensor Head



Appearance	Sensing Mode	Sensing Distance	Part Number	Light Source / Light Spot Size
2m Cable (Standard shape) 	Diffuse Mode 	200mm	<u>ASP1-D0200D-CY6C4U2</u>	Red Light / 13x13mm @150 mm
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2m Cable (Flat shape) 	Diffuse Mode 	60mm	<u>ASP1-D0060D-CY6C4U2-FL</u>	Red Light / 35 mm @ 150 mm
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2m Cable 	Convergent Mode 	6...35mm (White 90%)	<u>ASP1-C0035D-CY6C4U2-4</u>	Red Light / 1 x 4 mm @ 16 mm
		3...30mm (White 90%)	ASP1-C0030D-CY6C4U2-4	Red Light / 1 x 1 mm @ 16 mm
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2m Cable 	Mark Sensor 	16mm	<u>ASP1-M0016D-CY6C4U2-4</u>	Red Light / 1 x 4 mm @ 16 mm
		16mm	<u>ASP1-M0016D-CY5C4U2-4</u>	Green Light / 1 x 4 mm @ 16 mm
		16mm	<u>ASP1-M0016D-CY6C4U2-1</u>	Red Light / 1 x 1 mm @ 16 mm
		16mm	<u>ASP1-M0016D-CY5C4U2-1</u>	Green Light / 1 x 1 mm @ 16 mm
2m Cable (Standard shape) 	Opposed Mode 	2m	<u>ASP1-T2000D-EY6C2L2 (E*)</u> <u>ASP1-T2000D-CY6C2U2 (R*)</u>	Red Light / 180 mm @ 1.5 m
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2m Cable (Flat shape) 	Opposed Mode 	350mm	<u>ASP1-T0350D-EY6C2L2-FL (E*)</u> <u>ASP1-T0350D-CY6C2U2-FL (R*)</u>	Red Light / 200 mm @ 300 mm
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Note: E*: Emitter, R*: Receiver.
Coming Soon : Part numbers with underline
In Preparation: Part numbers with a line through the middle

O: SEPARATE AMPLIFIER

ASP2 ASP5 ASP3 ASP4 SERIES

Separate Amplifier Selection Guide

Product Highlights	Connection	Part Number
<ul style="list-style-type: none"> ▶ Rugged plastic housing ▶ Compatible with all miniature Series remote sensing heads ▶ Supports contrast sensing with red or green light sources ▶ Signal strength indicator ▶ Sensitivity adjustment ▶ Outputs short circuit and over current protected ▶ Power supply reverse polarity protected ▶ Light/Dark changeover ▶ Selectable off delay ▶ Cable or M8 quick disconnect versions ▶ Easy DIN rail mounting 	ASP2 / ASP5 (2m Cable) 	NPN: <u>ASP2-A0000N-CX0C3U2</u> <u>ASP5-A0000N-CX0C3U2</u>
		PNP: <u>ASP2-A0000P-CX0C3U2</u> <u>ASP5-A0000P-CX0C3U2</u>
	ASP2 / ASP5 Quick Disconnect (Pico style) 	NPN: <u>ASP2-A0000N-CX0Q4UP</u> <u>ASP5-A0000N-CX0Q4UP</u>
		PNP: <u>ASP2-A0000P-CX0Q4UP</u> <u>ASP5-A0000P-CX0Q4UP</u>
<ul style="list-style-type: none"> ▶ Rugged plastic housing ▶ Compatible with all miniature Series remote sensing heads ▶ Signal strength indicator ▶ Sensitivity adjustment ▶ Outputs short circuit and over current protected ▶ Power supply reverse polarity protected ▶ Easy DIN rail mounting ▶ Warning Output ▶ Light-ON/Dark-ON changeover 	ASP3 (6 terminals) 	NPN: <u>ASP3-A0000N-CX0T6U</u> PNP: <u>ASP3-A0000P-CX0T6U</u>
	ASP4 (8 terminals) 	Relay SPST: <u>ASP4-A0000U-CX0T8U</u>

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

O : SEPARATE AMPLIFIER

D02 M03 D04 D05 M05 M06... SERIES

Miniature Separate Sensor Head Specifications

Item	Series	D02	D03	M03	D04	D05	M05	M06	M08	Q3	Q4	Q6	Q9	R13	R15
	Sensing Mode	Diffuse Mode, Thru-beam Mode, Retroreflective Mode (See each series)													
Sensing Distance	See each mode														
Light source	Infrared 880nm, Visible red 660nm, Visible red 645n														
Ambient Operating Temperature	-10°C...+55°C														
Storage Temperature	-30°C...+70°C														
Environmental rating	IP65														
Relative humidity	90% at 20°C														
Connection	1m cable (other length on request) with amplifier connector														
Housing material	See each mode														
Sensing face material	PMMA														
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														

ASP1 SERIES

Specifications (Diffuse Mode/Convergent Mode)

Diffuse Mode	ASP1-D0200D-CY6C4U2 (Standard Shape)	ASP1-D0060D-CY6C4U2-FL (Flat Shape)
Sensing Range	200 mm	60 mm
Angle of Divergence	Approx. 5°	Approx. 38°
Light spot size	13x13mm @ 150mm	35mm @ 50mm
Light Source	LED Red	
Connecting Cable	PVC, 2m, pre-stripped, can be shortened to desired length	
Housing	Glass fiber reinforced plastic	
Circuit Protection	Reverse polarity protected	
Ambient Temperature	Operating: -25...55°C (-13...131°F), Storage: -40...70°C (-40...158°F)	
Enclosure Rating	IP 66 / NEMA 4	
Mounting Bracket	Included	_____
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 With Stand Ability	IEC 60947-5-2, Part 8.3.3.4 or 500VDC for one min, between all supply terminals connected together and enclosure	
Insulation Resistance	>20M Ω , with 500V DC 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 30min	
Shock Resistance	IEC 60947-5-2, Part 7.4.1 or 30g, 11ms in x, y and z directions for six time each	
Weight	approx. 23g	approx. 20g

O: SEPARATE
AMPLIFIER

Convergent Mode	ASP1-C0035D-CY6C4U2-4	ASP1-C0030D-CY6C4U2-1
Focus	16 mm	
Light spot size	1x4 mm @ 16 mm	1x1 mm @ 16 mm
Sensing Range	6...35 mm(White 90%) 12...19 mm(Black 6%)	3...30 mm (White 90%) 13...22 mm (Black 6%)
Light Source	LED Red	
Connecting Cable	PVC, 2m, pre-stripped, can be shortened to desired length	
Housing	Glass fiber reinforced plastic	
Circuit Protection	Reverse polarity protected	
Ambient Temperature	Operating: -25...55°C (-13...131°F), Storage: -40...70°C (-40...158°F)	
Enclosure Rating	IP 66 / NEMA 4	
Mounting Bracket	Included	
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 With Stand Ability	IEC 60947-5-2, Part 8.3.3.4 or 500VDC for one min, between all supply terminals connected together and enclosure	
Insulation Resistance	>20M Ω , with 500V DC 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 30min	
Shock Resistance	IEC 60947-5-2, Part 7.4.1 or 30g, 11ms in x, y and z directions for six time each	
Weight	approx. 20g	

ASP1 SERIES

Specifications (Mark Sensor/Thru-beam Mode)

Mark Sensor Mode	ASP1-M0016D-CY6C4U2-4	ASP1-M0016D-CY5C4U2-4	ASP1-M0016D-CY6C4U2-1	ASP1-M0016D-CY5C4U2-1
Focus	16 mm			
Light spot size	1x4 mm @ 16 mm		1x1 mm @ 16 mm	
Light Source	LED Red	LED Green	LED Red	LED Green
Sensing Range	16mm 2mm			
Connecting Cable	PVC, 2m, pre-stripped, can be shortened to desired length			
Housing	Glass fiber reinforced plastic			
Circuit Protection	Reverse polarity protected			
Ambient Temperature	Operating: -25...55°C (-13...131°F), Storage: -40...70°C (-40...158°F)			
Enclosure Rating	IP 66 / NEMA 4			
Mounting Bracket	Included			
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 With Stand Ability	IEC 60947-5-2, Part 8.3.3.4 or 500VDC for one min, between all supply terminals connected together and enclosure			
Insulation Resistance	>20M Ω , with 500V DC 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 30min			
Shock Resistance	IEC 60947-5-2, Part 7.4.1 or 30g, 11ms in x, y and z directions for six time each			
Weight	approx. 20g			

Thru-beam Mode	ASP1-T2000D-EY6C2L2 (Emitter) ASP1-T2000D-CY6C2U2 (Receiver)	ASP1-T0350D-EY6C2L2-FL (Emitter) ASP1-T0350D-CY6C2U2-FL (Receiver)
Sensing Range	2m (Standard shape)	350mm (Flat shape)
Light spot size	approx. 180mm@1.5m	approx. 200mm@300mm
Angle of Divergence	approx. 7° (SS) 18° (SE)	approx. 36° (SS) 20° (SE)
Light Source	LED Red	
Connecting Cable	PVC, 2m, pre-stripped, can be shortened to desired length	
Housing	Glass fiber reinforced plastic	
Circuit Protection	Reverse polarity protected	
Ambient Temperature	Operating: -25...55°C (-13...131°F), Storage: -40...70°C (-40...158°F)	
Enclosure Rating	IP 66 / NEMA 4	
Mounting Bracket	Included	—
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 With Stand Ability	IEC 60947-5-2, Part 8.3.3.4 or 500VDC for one min, between all supply terminals connected together and enclosure	
Insulation Resistance	>20M Ω , with 500V DC 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 30min	
Shock Resistance	IEC 60947-5-2, Part 7.4.1 or 30g, 11ms in x, y and z directions for six time each	
Weight	approx. 11g each.	

ASP2 ASP5 ASP3 ASP4 SERIES

Amplifier's Specifications

ASP2/ASP5 Series

Part Number	ASP2(5)-A0000P-CX0C3U2	ASP2(5)-A0000P-CX0Q4UP	ASP2(5)-A0000N-CX0C3U2	ASP2(5)-A0000N-CX0Q4UP
Response Time/Frequency	<= 500 us / 1.0 kHz (standard mode); 200 us / 2.5 kHz (mark mode)			
Supply Voltage	10...30V DC (Ripple<=10%)			
Current Consumption (no load)	<=35 mA			
Output Current Max.	100 mA			
Output Type	PNP		NPN	
Output Voltage High/Low	Vs - (<=1.5V) / approx. 0V		approx. Vs. / <=1.5V.	
Operation Mode	Light-ON / Dark-ON switching selectable via switch			
Connection	Cable	M8 4-pin connector	Cable	M8 4-pin connector
Connecting Cable	PVC,2m,3 x 24AWG	see accessories	PVC,2m,3 x 24AWG	see accessories
Housing	Glass fiber reinforced plastic			
Enclosure Rating	IP 50			
Circuit Protection	Outputs short circuit and over current protected, inputs, outputs, and Vs reverse polarity protected			
Time Settings	40 ms (fixed)			
Ambient Temperature	Operating:-25°C...55°C, Storage: -40°C...70°C			
EMC	IEC 801			
Voltage With Stand Ability	IEC 60947-5-2, Part 8.3.3.4 or 500VDC for one min, between all supply terminals connected together and enclosure			
Insulation Resistance	>20M Ω , with 500V DC 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			
Mounting Bracket	Included			
Weight	approx. 30 g for plug versions, 70 g for cable versions			

O: SEPARATE
AMPLIFIER

ASP3 ASP4 Series

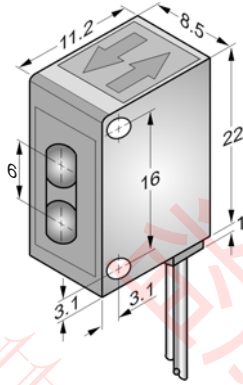
Type	ASP3 Series ASP3-A0000N-CX0T6U / ASP3-A0000P-CX0T6U	ASP4 Series ASP4-A0000U-CX0T8U
Power supply	10 to 30VDC	12 to 240VDC/24 to 240VAC
Current/Power consumption	45mA max	1.5VA max
Response time	1 ms	12ms
Sensitivity adjustment	By 1-turn trimmer(240°)	
Operation mode	Light-ON/Dark-ON (switch selectable)	
Indicator	Output: Red LED, Stable operation: Green LED	
Control output	NPN open-collector:200mA(40V)max Residual voltage:1V max.	SPST-NO Relay contact 250 VAC 2A (1a;resistive load)
Stability/disconnection alarm output	NPN open-collector:200 mA(40V)max Residual voltage:1V max	—————
Operating Environment	Temperature: -10°C ... +50°C (No freezing), Humidity: 35% ... 85% RH	
Weight (approx.)	50g	120g

ASP1 SERIES

Miniature Sensor Head Dimensions (Unit: mm)

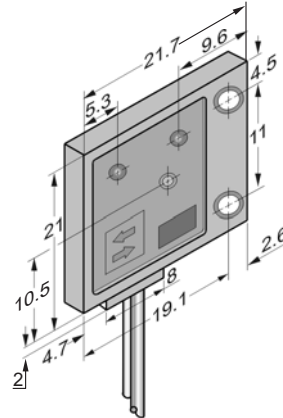
Diffuse Mode (Standard shape)

ASP1-D0200D-CY6C4U2



Diffuse Mode (Flat shape)

ASP1-D0060D-CY6C4U2-FL



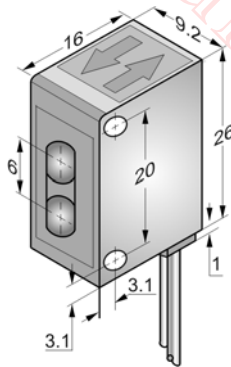
Convergent Mode

ASP1-C0035D-CY6C4U2-4

ASP1-C0035D-CY5C4U2-4

ASP1-C0030D-CY6C4U2-1

ASP1-C0030D-CY5C4U2-1



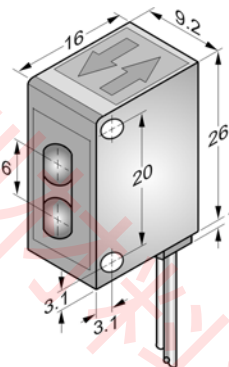
Mark Sensor

ASP1-M0016D-CY6C4U2-4

ASP1-M0016D-CY5C4U2-4

ASP1-M0016D-CY6C4U2-1

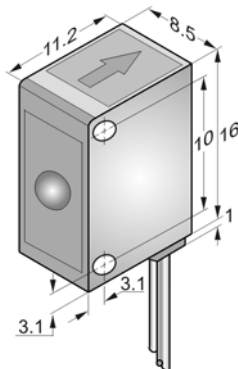
ASP1-M0016D-CY5C4U2-1



Thru-beam Mode (Standard shape)

ASP1-T2000D-EY6C2L2 (Emitter)

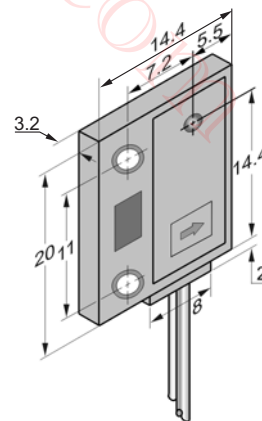
ASP1-T2000D-CY6C2U2 (Receiver)



Thru-beam Mode (Flat shape)

ASP1-T0350D-EY6C2L2-FL (Emitter)

ASP1-T0350D-CY6C2U2-FL (Receiver)



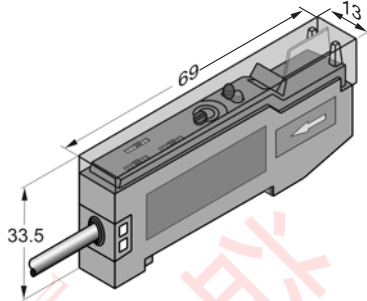
O: SEPARATE
AMPLIFIER

ASP2 ASP5 ASP3 ASP4 SERIES

Separate Amplifier & Mounting Bracket Dimensions (Unit: mm)

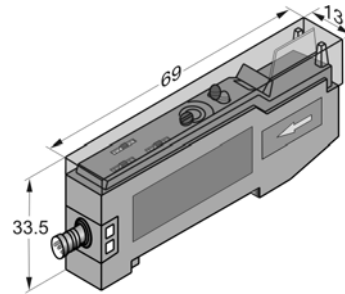
ASP2/ASP5 Series (Cable type)

ASP2(5)-A0000N-CX0C3U2
ASP2(5)-A0000P-CX0C3U2



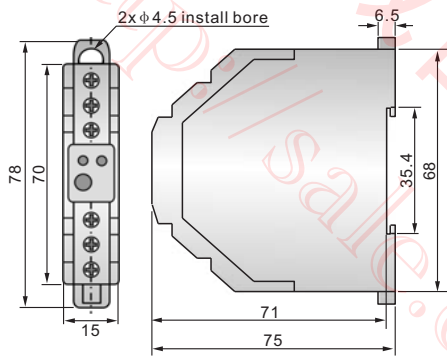
ASP2/ASP5 Series (Pico-style connector)

ASP2(5)-A0000N-CX0Q4UP
ASP2(5)-A0000P-CX0Q4UP



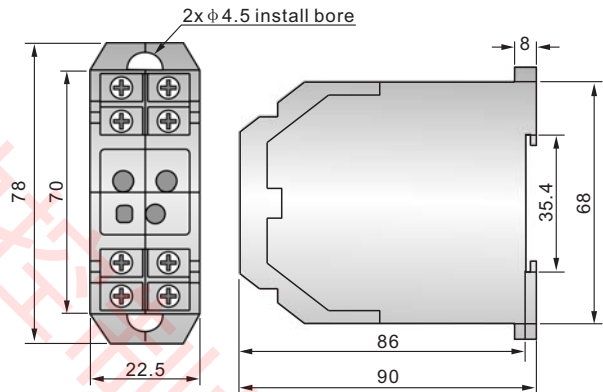
ASP3 Series

ASP3-A0000N-CX0T6U / ASP3-A0000P-CX0T6U



ASP4 Series

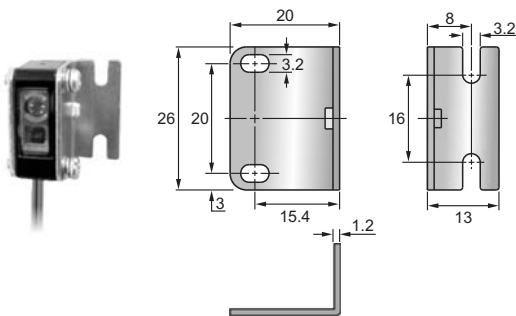
ASP4-A0000U-CX0T6U



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AMPLIFIER

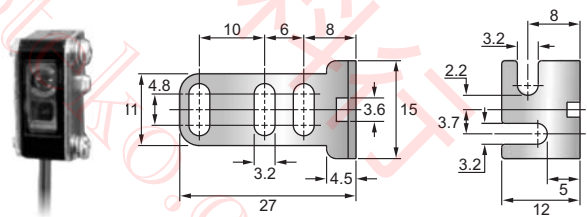
ASP1-A1 (ASP1 Series mounting bracket-optional)

For Convergent Mode & Mark Sensor type sensor



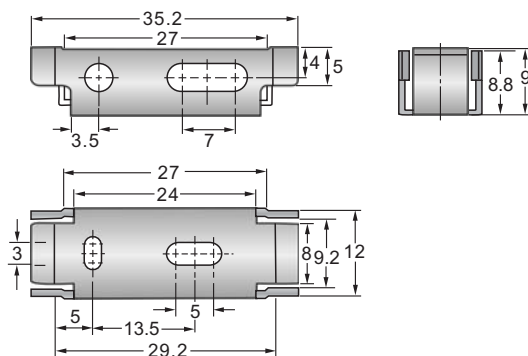
ASP1-A2 (ASP1 Series mounting bracket-optional)

For ASP1-T2000.../ASP1-D0200... type sensor



MB-3512 (Amplifier Mounting Bracket-optional)

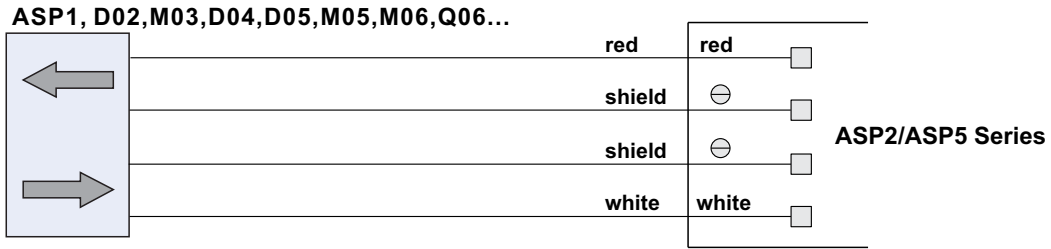
For ASP2 / ASP5 Series Amplifier



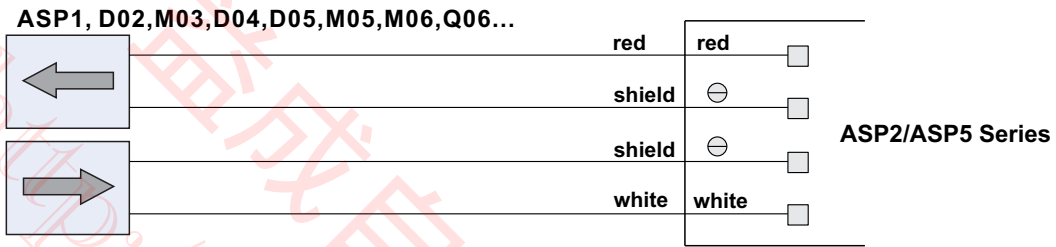
ASP1 D02... SERIES

Sensor Head with Amplifier Connection Diagrams

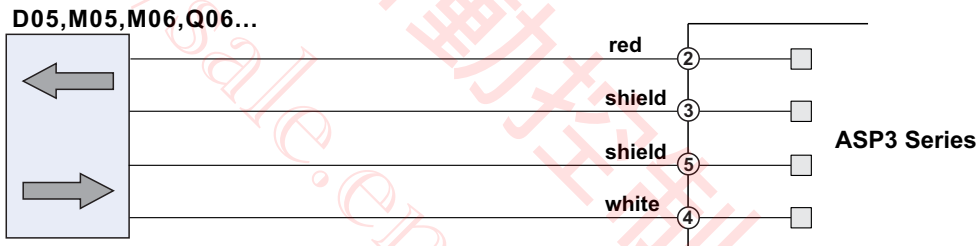
Diffuse & Retroreflective Type Sensor Head for ASP2/ASP5



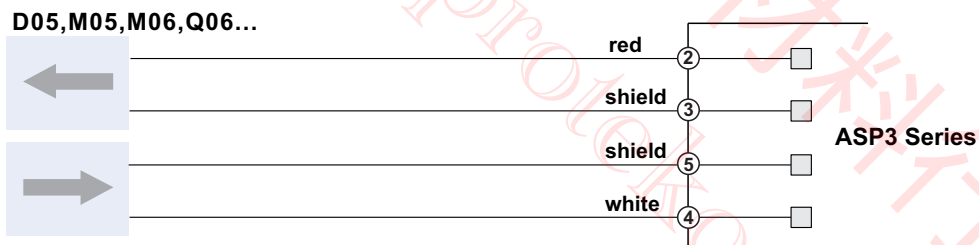
Thru-beam Type Sensor Head for ASP2/ASP5



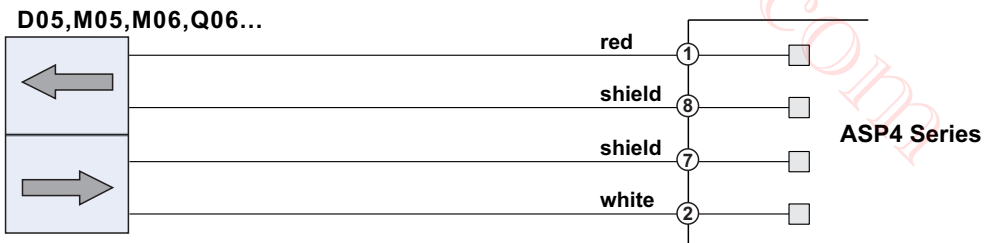
Diffuse & Retroreflective Type Sensor Head for ASP3



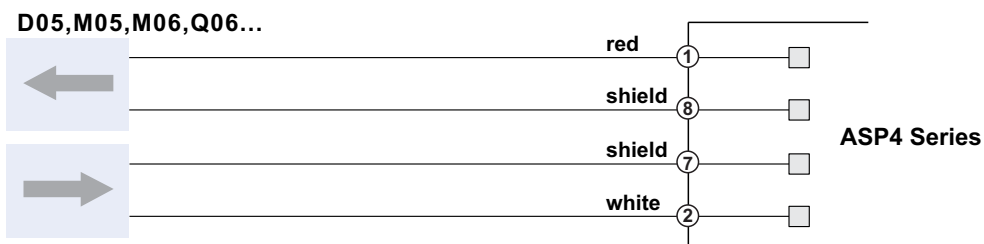
Thru-beam Type Sensor Head for ASP3



Diffuse & Retroreflective Type Sensor Head for ASP4



Thru-beam Type Sensor Head for ASP4



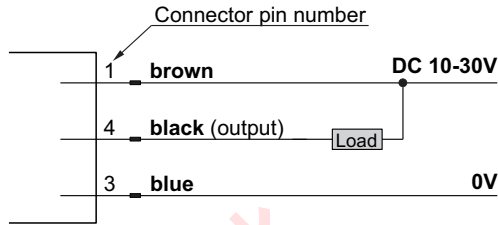
O: SEPARATE AMPLIFIER

ASP2 ASP5 ASP3 ASP4 SERIES

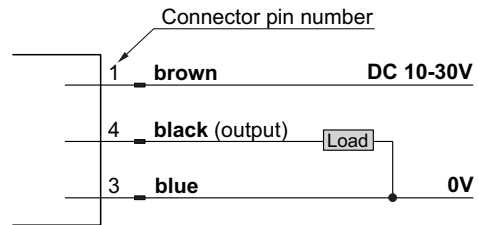
Amplifier Output Connection Diagrams

ASP2/ASP5 Series Connection diagram

NPN Output

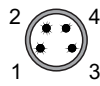


PNP Output



Connector face view

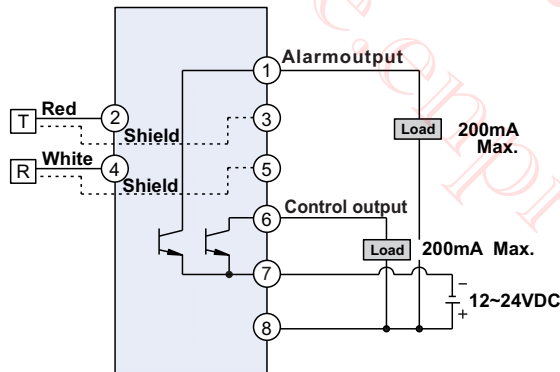
Pico-Style



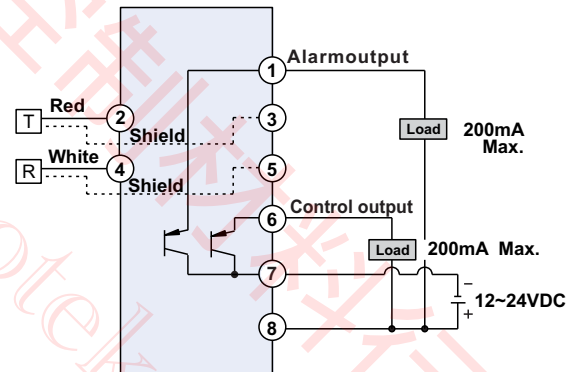
- 1. Brown (+)
- 2. Not used
- 3. Blue (-)
- 4. Black (Output)

ASP3, ASP4 Series Connection Diagram

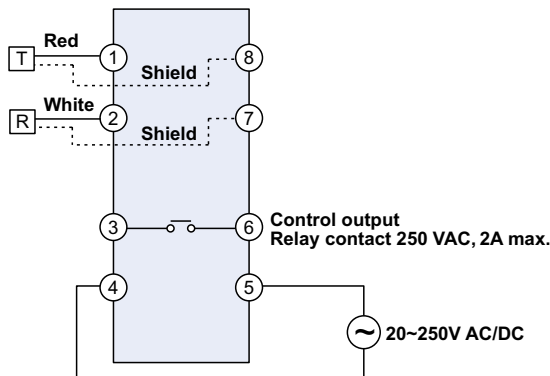
ASP3-A0000N-CX0T6U



ASP3-A0000P-CX0T6U



ASP4-A0000U-CX0T8U

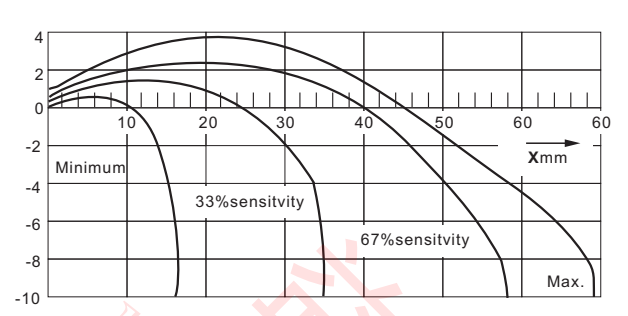


O: SEPARATE AMPLIFIER

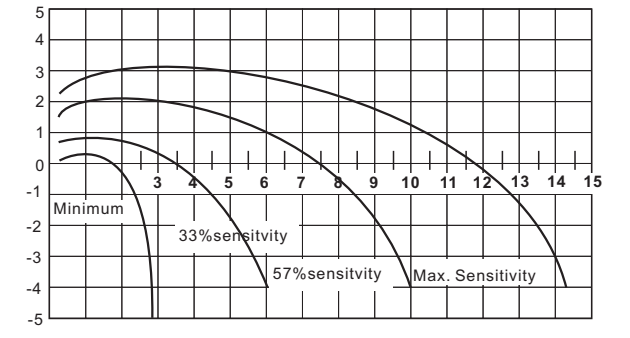
D02 M03 D04 D05 M05 M06 Q06 SERIES

Sensor Head Sensing Characteristics (Typical)

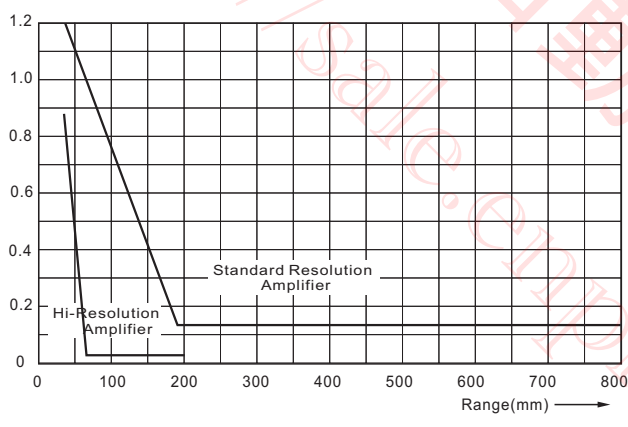
Diffuse Mode (D05, M06, Q06) Sensing Range=63mm



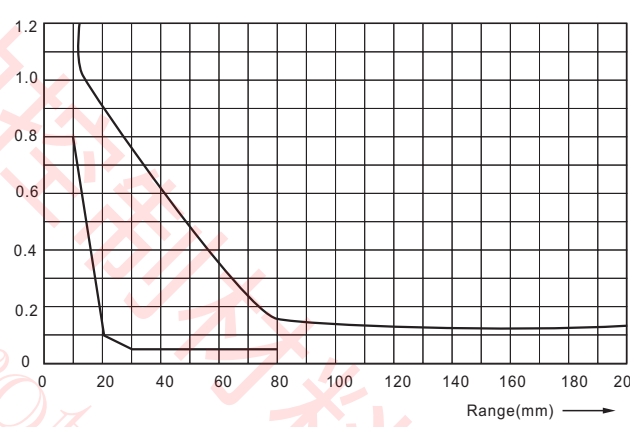
Diffuse Mode (D02, M03) Sensing Range=12mm



Opposed Mode (D04, D05, M05, Q06) Sn=800mm



Opposed Mode (D02, M03) Sn=200mm

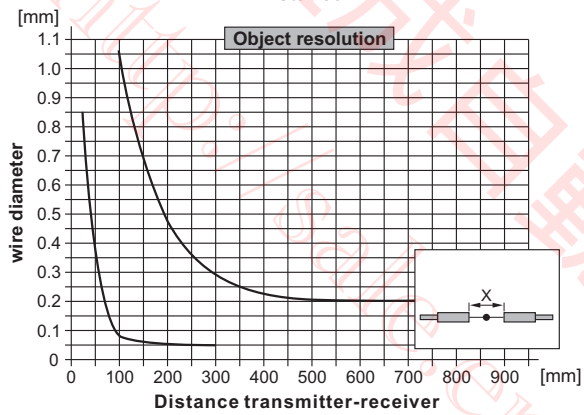
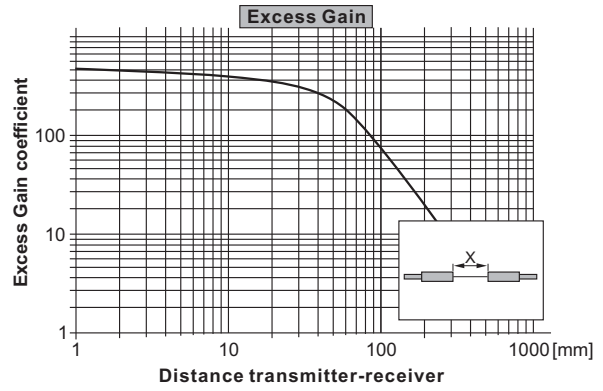
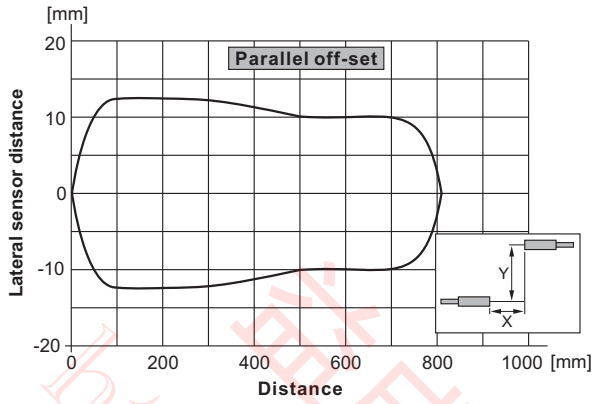


O: SEPARATE AMPLIFIER

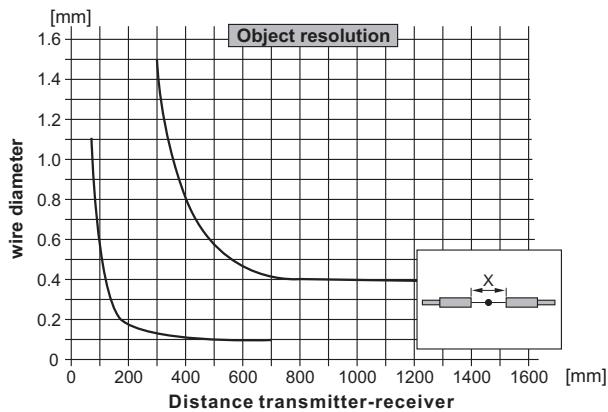
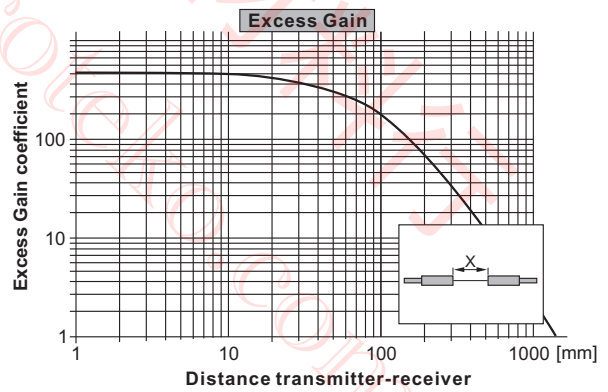
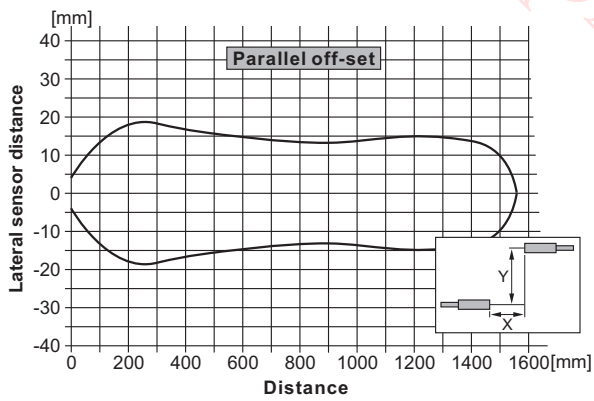
D02 M03 D04 M05 SERIES

Sensor Head Sensing Characteristics (Typical)

D02, M03 Series (Thru-beam Mode, sensing distance=800mm)



D04, M05 Series (Thru-beam Mode, sensing distance=1500mm)

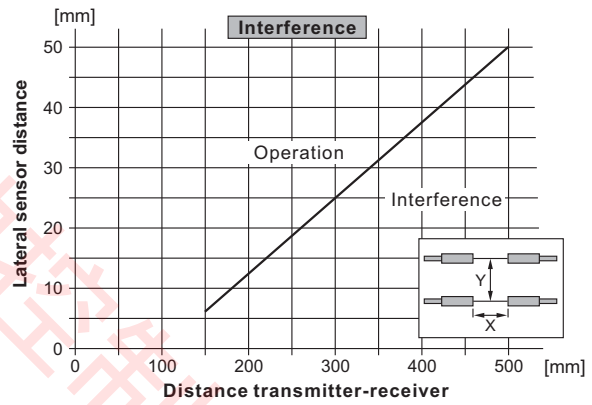
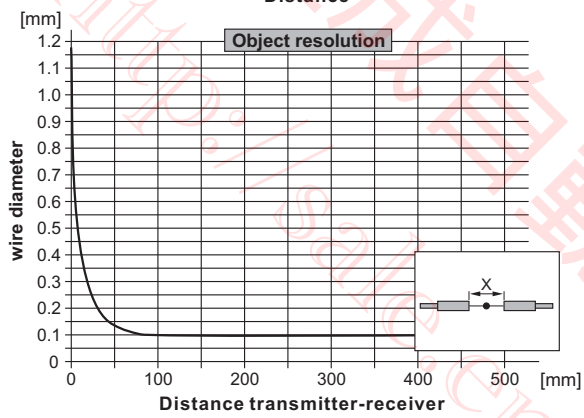
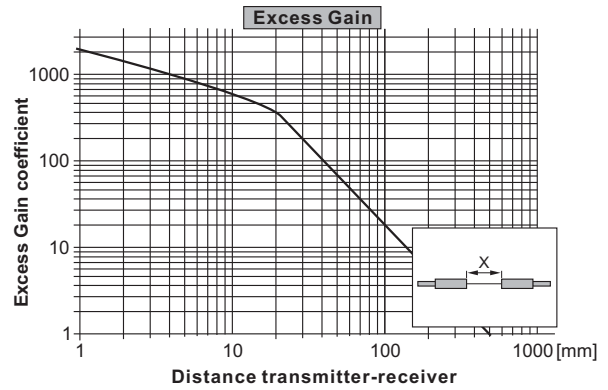
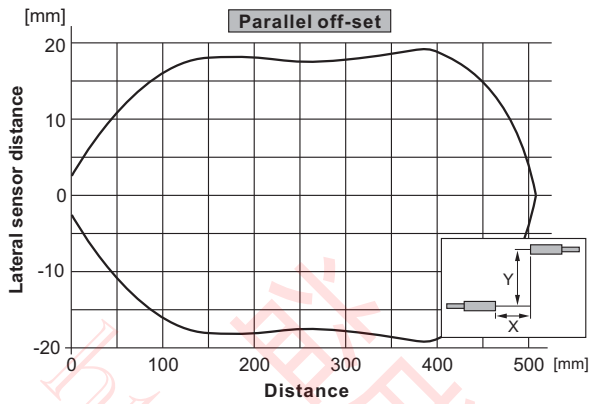


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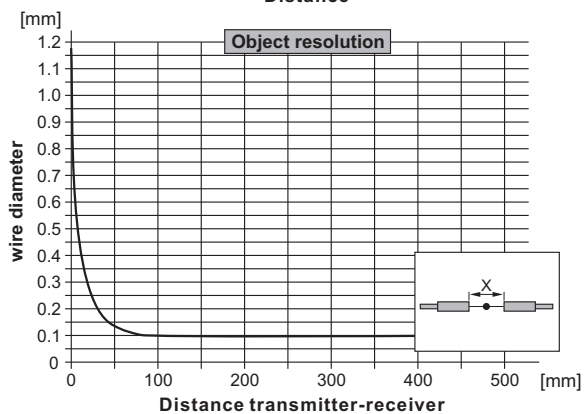
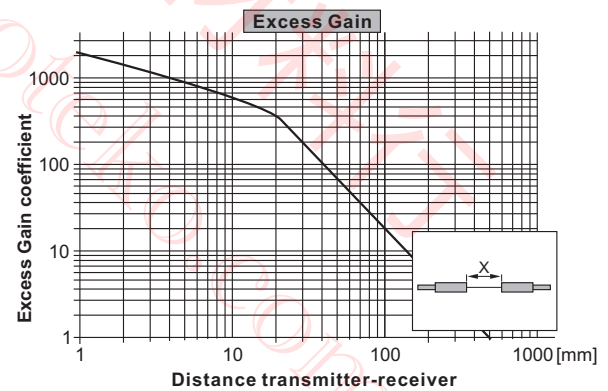
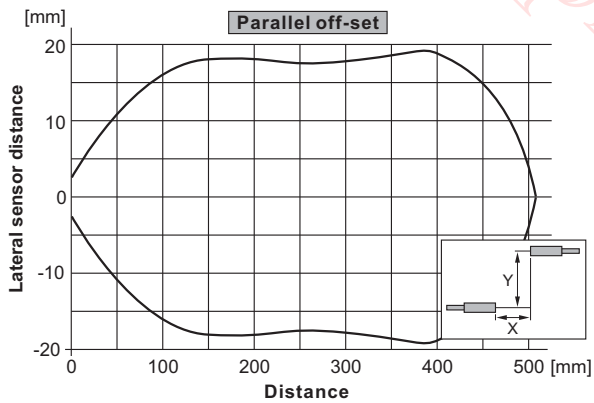
D03 M03 SERIES

Sensor Head Sensing Characteristics (Typical)

D03 Series (Side sensing type:D03S-T0500D-EY6C4U1, D03S-T0500D-CY6C4U1)



M03 Series (Side sensing type:M03S-T0500D-EY6C4U1, M03S-T0500D-CY6C4U1)

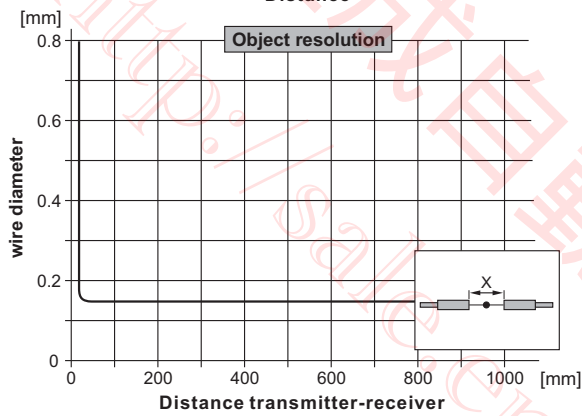
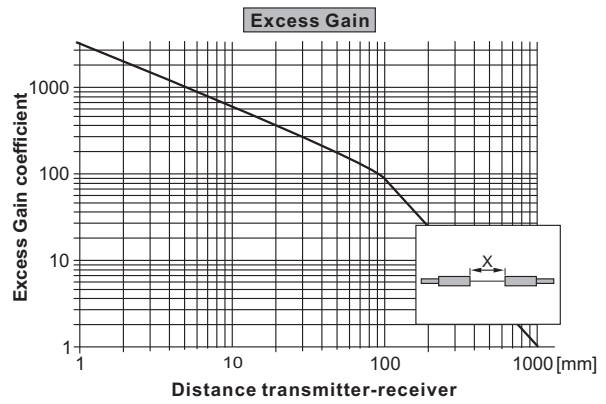
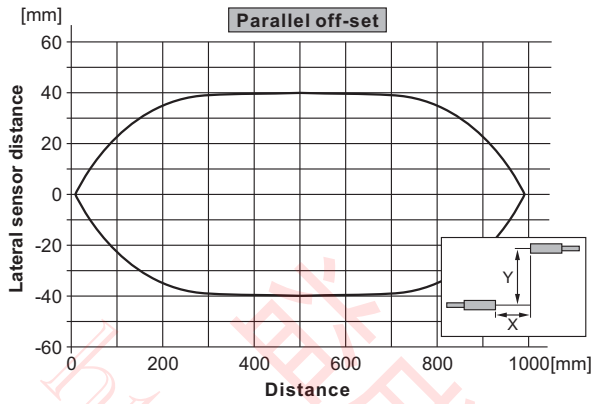


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M05 Q03 SERIES

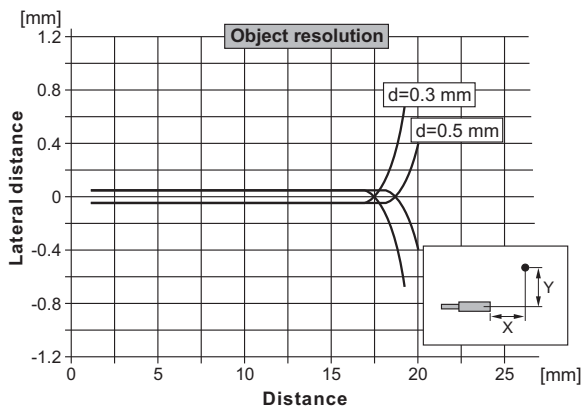
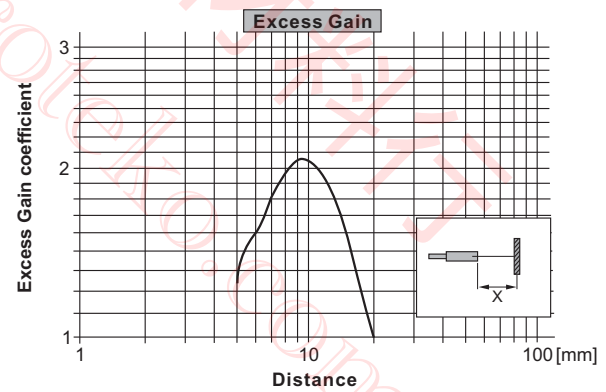
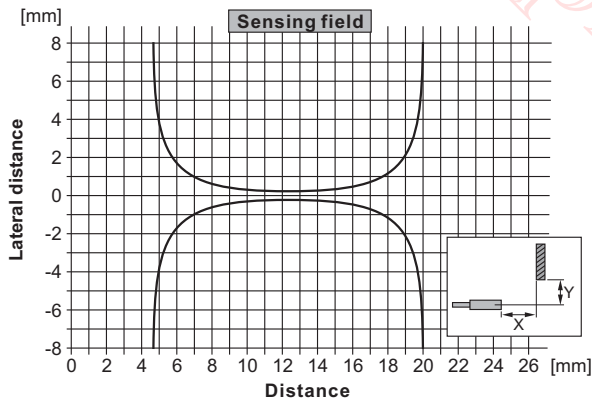
Sensor Head Sensing Characteristics (Typical)

M05 Series (Side sensing type: M05S-T1000D-EY6C4U1, M05S-T1000D-CY6C4U1)



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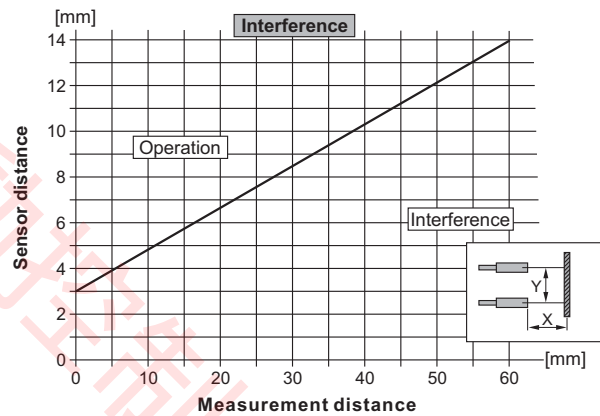
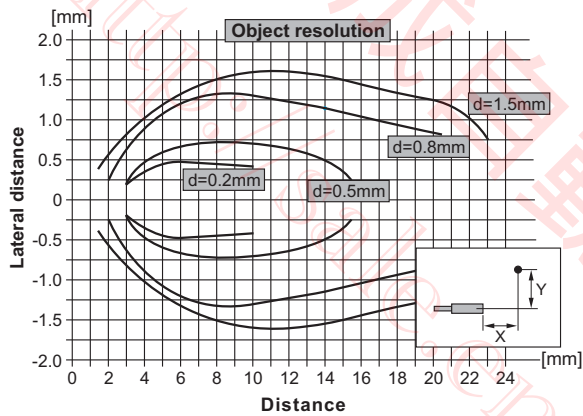
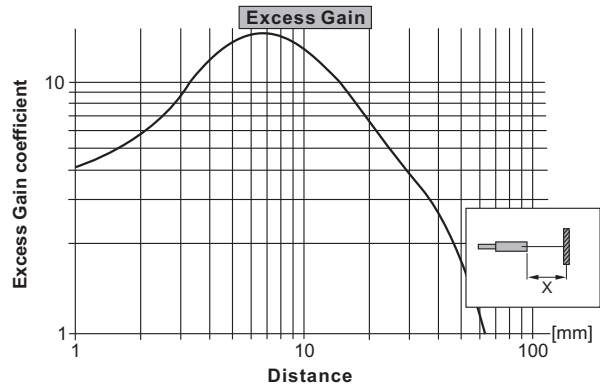
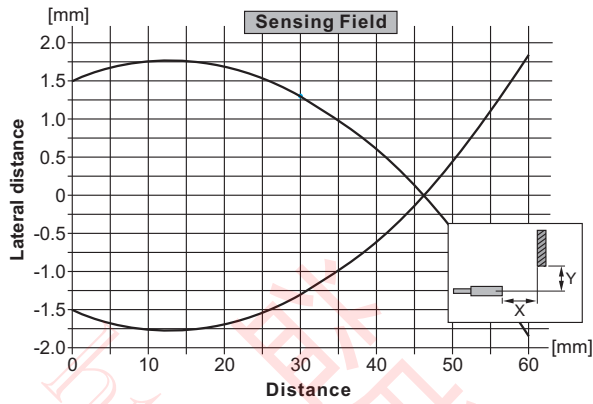
Q03 Series (Q03B-D0020D-CY6C4U1), Diffuse Mode, Sensing distance=20mm



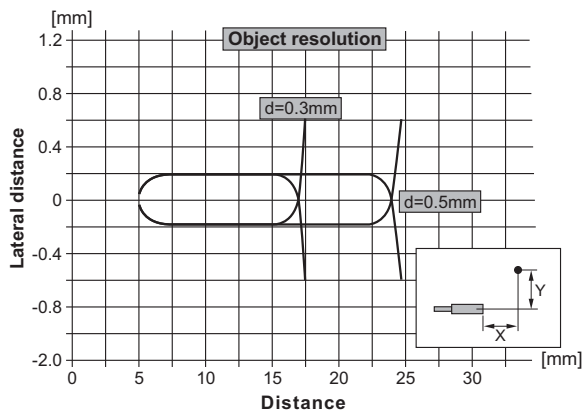
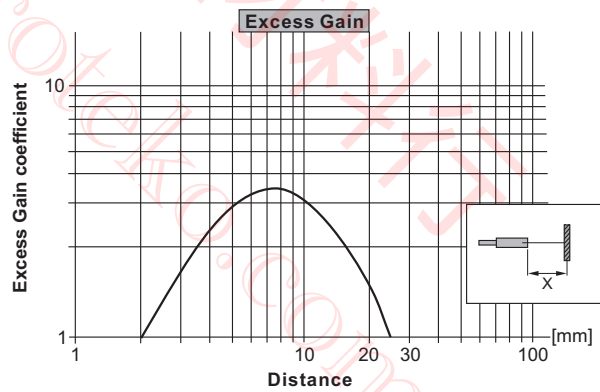
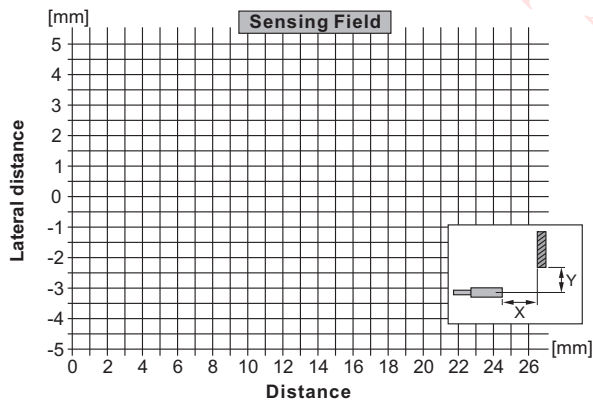
R13 SERIES

Sensor Head Sensing Characteristics (Typical)

R13 Series (R13A-D0060D-CX6C4U1, R13A-D0060D-CY6C4U1), Diffuse Mode, Sn=3.5...60 mm



R13 Series (R13A-D0025D-CX6C4U1, R13A-D0025D-CY6C4U1), Diffuse Mode, Sn=2...25 mm

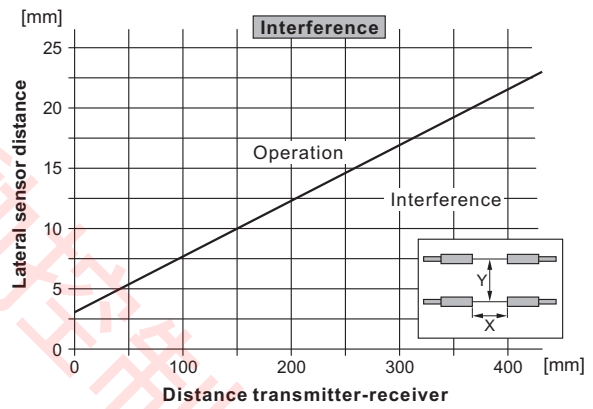
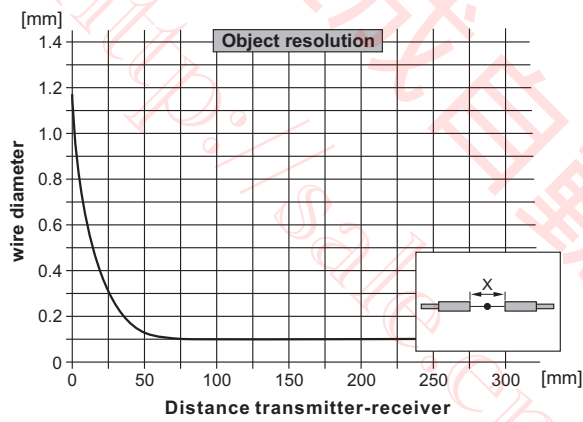
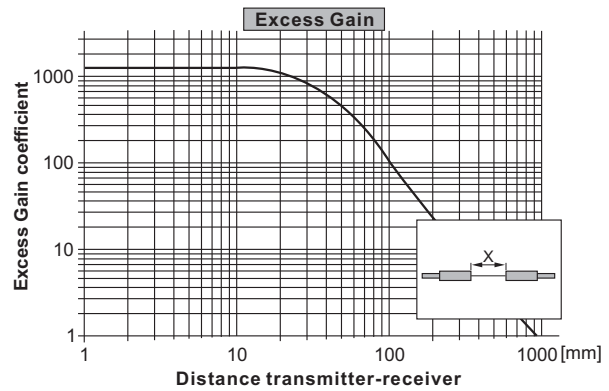
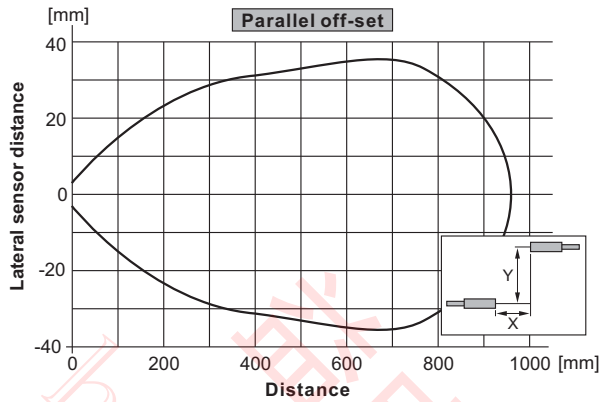


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R13 R15 SERIES

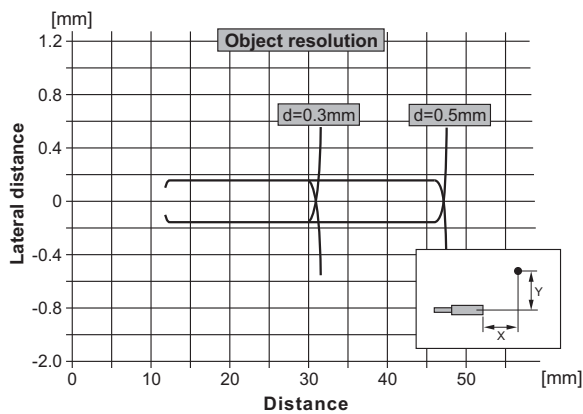
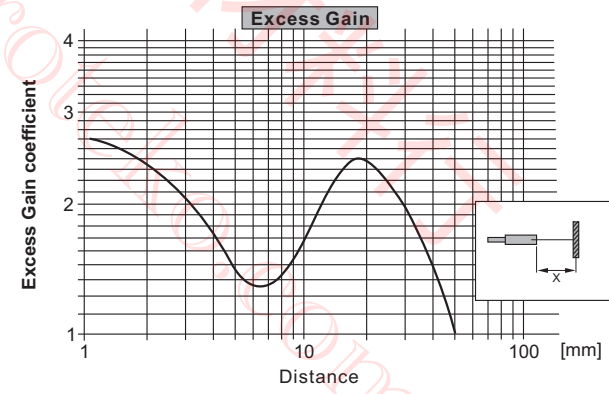
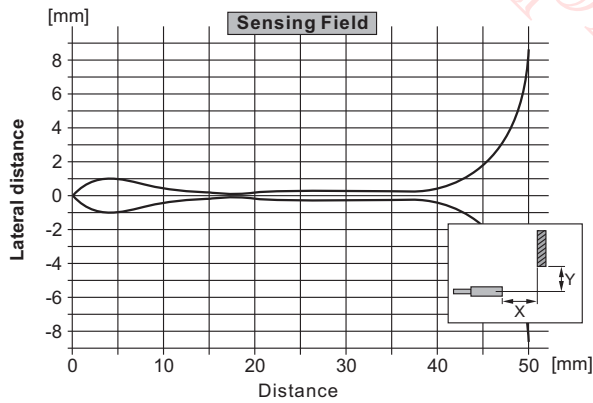
Sensor Head's Sensing Characteristics (Typical)

R13 Series (Thru-beam Mode, Sensing distance=500 mm)



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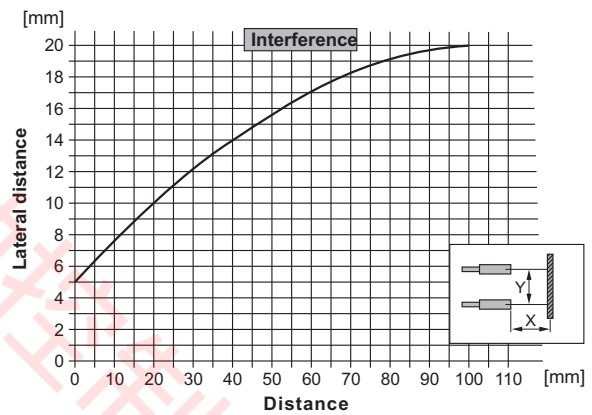
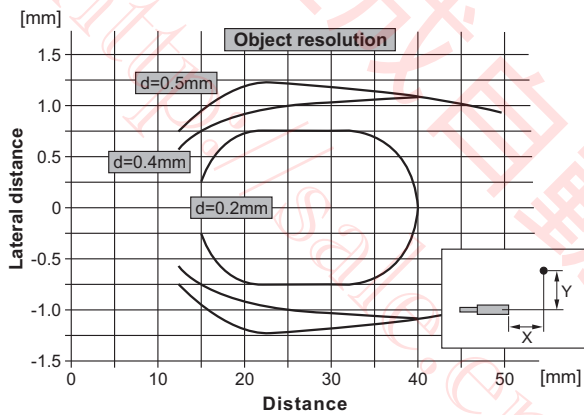
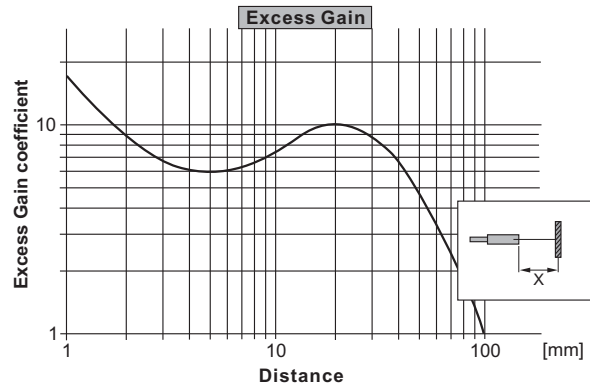
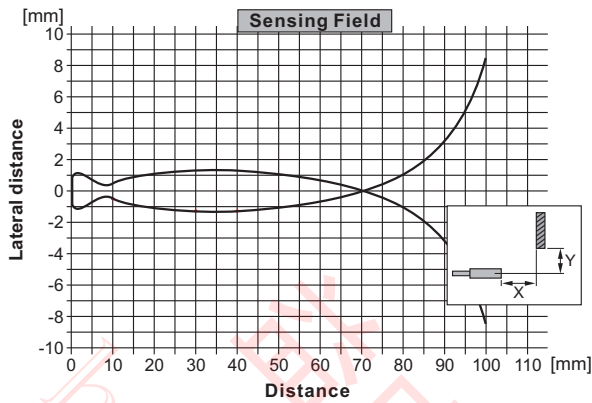
R15 Series (R15A-D0050D-CX6C4U1, R15A-D0050D-CY6C4U1), Diffuse Mode, Sn=1...50 mm



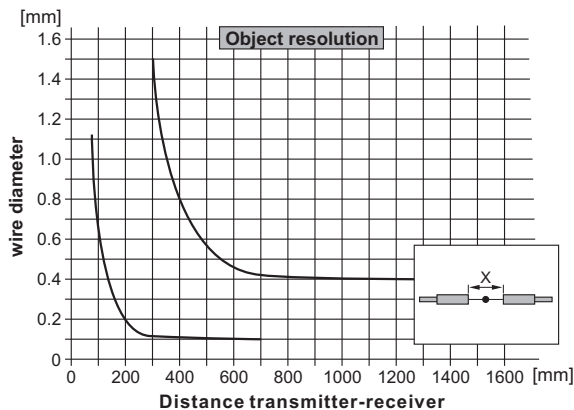
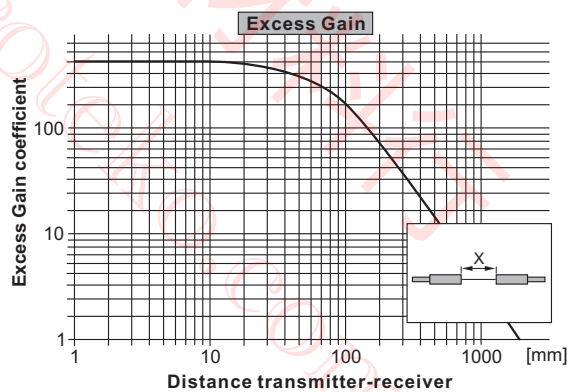
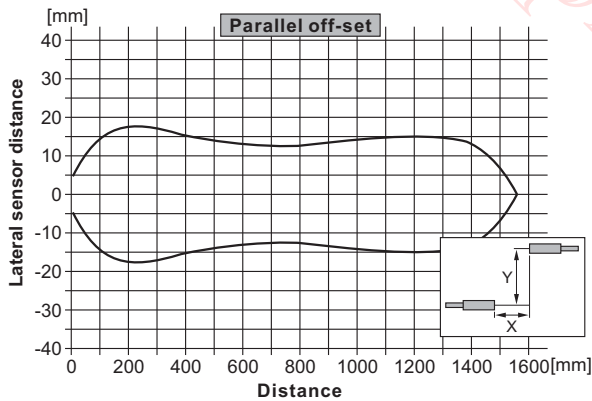
R15 SERIES

Sensor Head Sensing Characteristics (Typical)

R15 Series (R15A-D0100D-CX6C4U1, R15A-D0100D-CY6C4U1), Diffuse Mode, Sn=3.5...100 mm



R15 Series (Thru-beam Mode, Sensing distance=1500 mm)

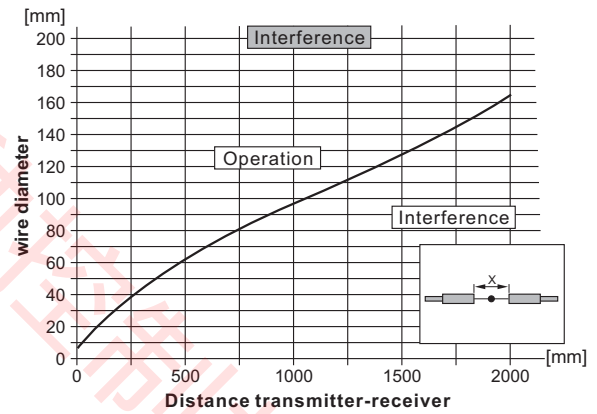
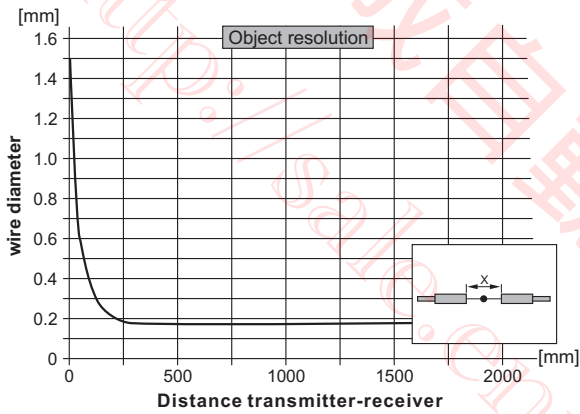
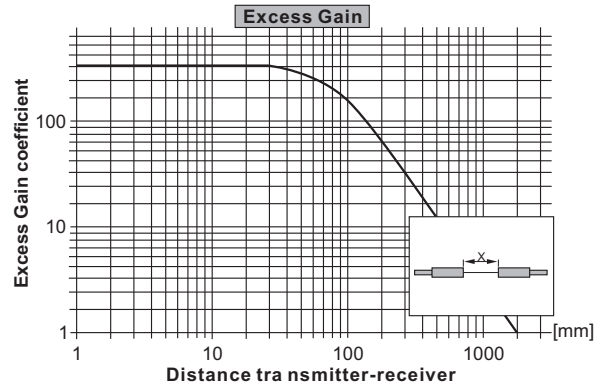
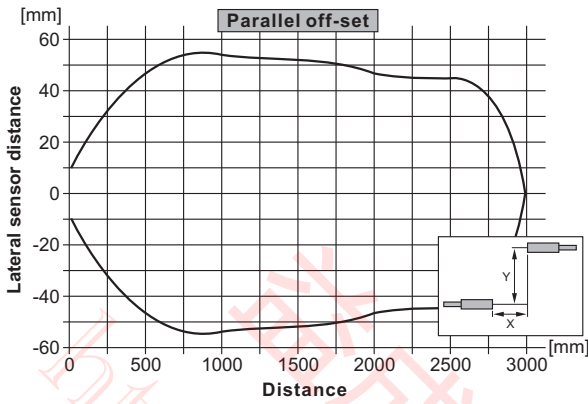


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R15 SERIES

Sensing Characteristics (Typical)

R15 Series (Thru-beam Mode, Sensing distance=2000 mm)

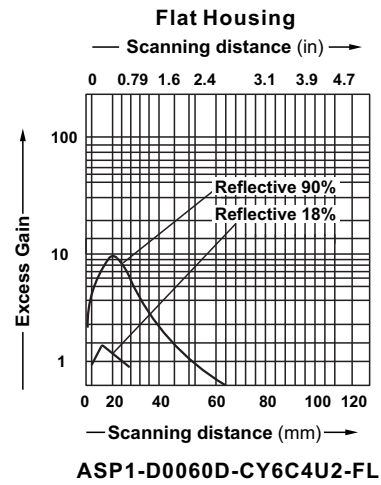
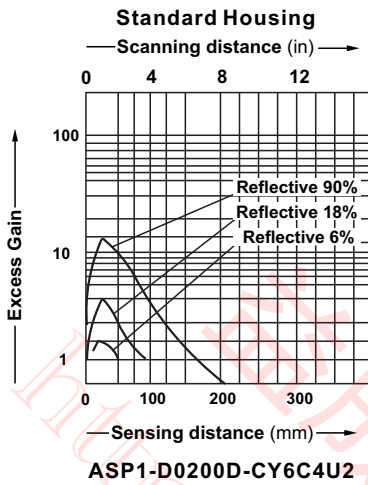


O: SEPARATE AMPLIFIER

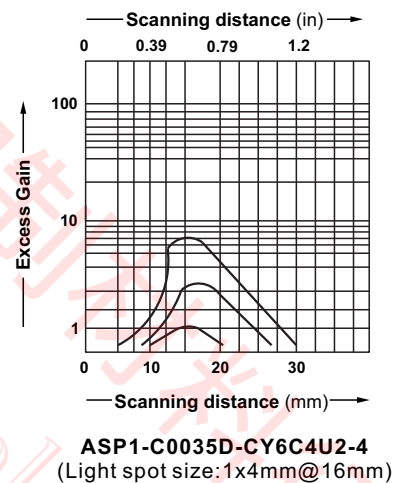
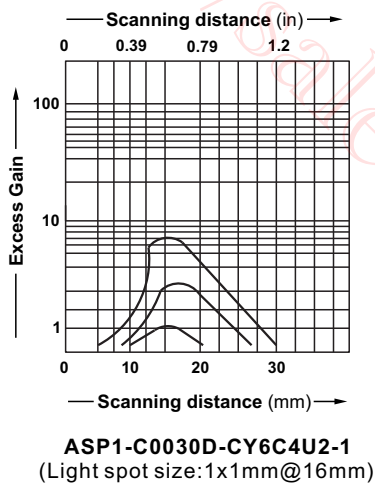
ASP1 SERIES

ASP1 Series Sensing Characteristics (Typical)

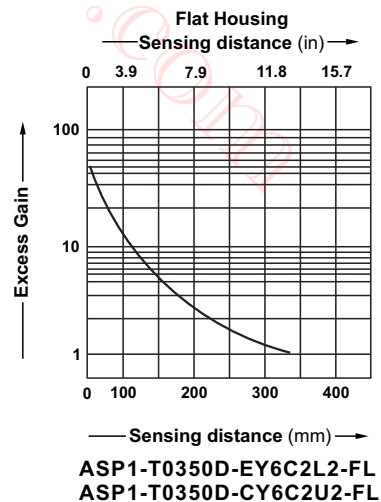
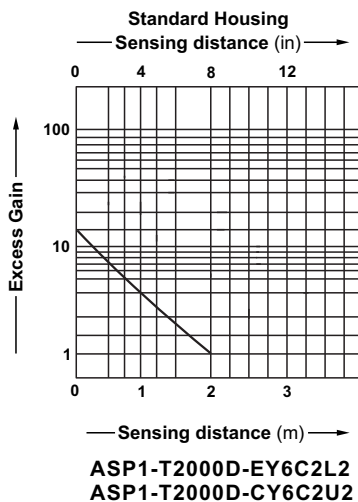
Diffuse Mode



Convergent Mode



Thru-beam Mode



O: SEPARATE AMPLIFIER

PS-900C SERIES

Separate Amplifier

This Unit is designed to provide a stabilized DC-Power and output signal control for the Amplifier Built-in type photoelectric sensor.



FEATURES

- Converting or inverting sensor output signal (relay contact output)
- Two basic models available: **PS-900C** and **PS-900C-D** the latter has time delay functions (ON - DELAY, OFF - DELAY and ONE - SHOT).
- Wide power input voltage: 110 - 120V and 220 - 240VAC.
- Easy-to-handle plug-in type.
- External synchronizing input signal.

Technical Data

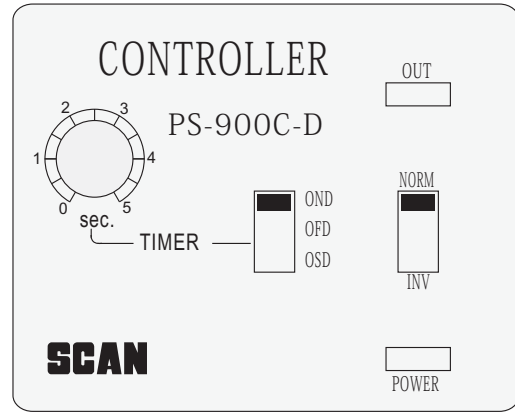
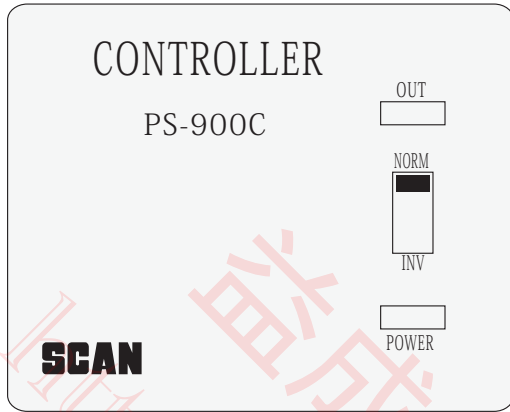
Items	Models	PS-900C	PS-900C-D
Supply voltage		110V to 120V/ 220V to 240V 10% AC	
Power consumption		8 VA	
DC power output		12V 10% DC, 100mA max.	
Output control		Relay contact SPDT 3A resistive at 250 VAC	
External synchronization		Yes	
Response time		<20ms	
Output mode		Normal or Invert (NORM / INV.)	
Delay timer		NO	Yes (0 to 5 sec.)
Power indicator		Green LED	
Output indicator		Red LED, turns on when output relay is energized (NORM mode)	
Enclosure		Blue resin	
Ambient temperature/ Humidity		-10 °C... +50°C / less than 85% RH	
Insulating resistance		More than 10 MΩ with 500VDC megger between AC - input and DC-output terminals	
Dielectric resistance		1,500V AC for one minute between AC - input and DC - output terminals	
Net weight / Accessories		Approx. 430g /A piece of socket with terminals and a pair of fixing clamps	

O: SEPARATE AMPLIFIER

PS-900C SERIES

Separate Amplifier

Panel Face

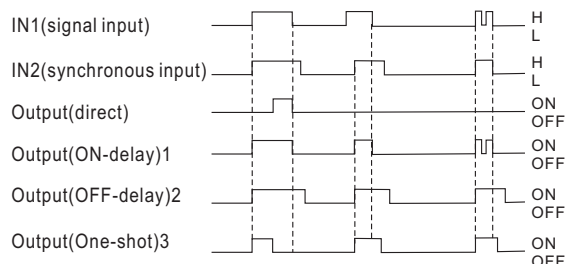


Function Instruction and Adjustment

Front Diagram	Condition	Functional Instruction and Adjustment
	—	Set as required. NORM means normal Mode and INV means inverse mode.
	—	The red LED indicates the status of output.
	—	The green LED indicates the status of power on.
	—	The functions of OND, OFD, OSD depend upon the requirement, the slide switch is set at the position required.
	Complete the selection of the OND, OFD, OSD.	This is a time setting trimmer, the time range is 0 to 5 sec.

Delay Instruction

- ON-Delay** Outputs for T seconds after the rising edge of the AND (IN1 and IN2) output, and turns off at the falling edge of the AND output.
- OFF-Delay** Continues output for T seconds after the the AND (IN1 and IN2) output turns off
- One-Shot** Outputs for T seconds after the rising edge of the AND(IN1 and IN2)output.

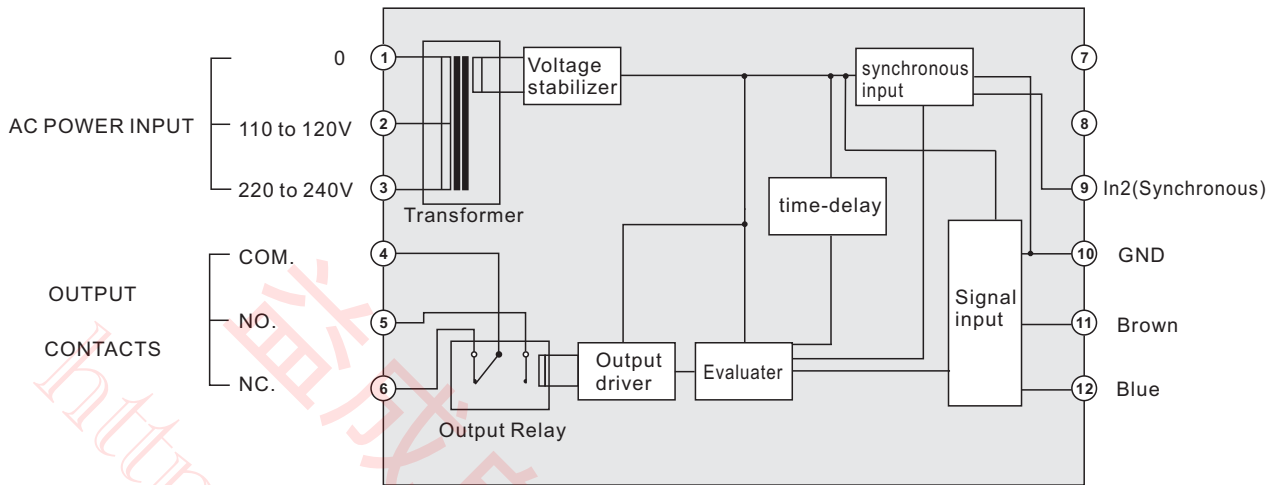


O: SEPARATE AMPLIFIER

PS-900C SERIES

Separate Amplifier

Functional Diagram



Output circuit	Wiring
----------------	--------

PS-900C, PS-900C-D

Relay Contact Output

- NO.
- NC.
- COM.

Contact capacity: 3A resistive at 250VAC

PS-900C, PS-900C-D

7	8	9	10	11	12
GND	+12V	SYN	GND	12V	IN
0	110V	220V	COM	NO	NC
1	2	3	4	5	6
AC INPUT			RELAY OUT		

Dimensions (Unit: mm)

Control Unit PS-900C-D

Socket with terminals

O: SEPARATE AMPLIFIER

PS-900A SERIES

Separate Amplifier

The Unit is designed to work with photoelectric sensor heads. The amplifier generates the transmitter pulses for the connected photoelectric sensors and amplifies their signals. The electric output of the amplifier drives relay directly.



FEATURES

- Two basic models available: PS-900A and PS-900A-D the latter has time delay functions (on - delay, off - delay and one shot).
- Light-on and Dark-on changeable.
- Wide power input voltage: from 110 to 120V and 220 to 240VAC.
- Easy - to - handle plug - in method.
- External synchronizing input signal acceptable.
- Operating indicator and sensitivity adjustment.
- Special sensor head on request.

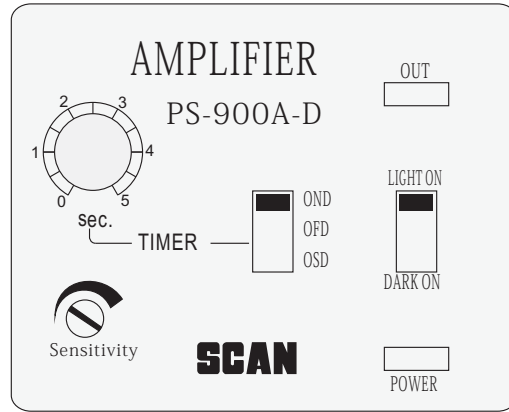
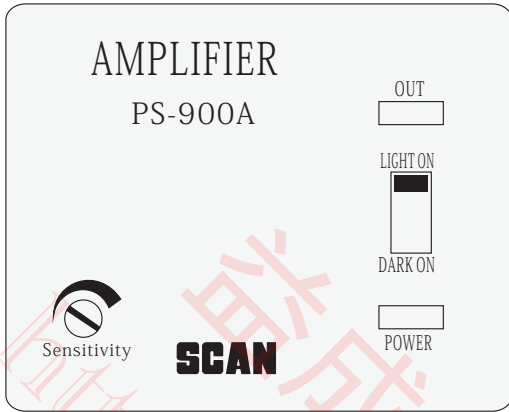
Technical Data

Items	Models	PS-900A	PS-900A-D
Supply voltage		110V to 120V 220V to 240V	10% AC
Power consumption		8 VA	
Control output		Relay contact SPDT 3A resistive at 250 VAC	
Output operation		Light-on and Dark-on changeable.	
External synchronization		Yes	
Response time		<20ms	
Delay time		NO	Yes (0 to 5 sec.)
Power indicator		Green LED	
Output indicator		Red LED, turns on when output relay is energized(Light-on mode)	
Enclosure		Blue colored resin	
Ambient temperature/ humidity		-10 to +50°C / less than 85%RH	
Insulating resistance		More than 10 MΩ with 500VDC megger between AC - input, DC-output terminals	
Dielectric resistance		1,500V AC for one minute between AC - input and DC - output terminals	
Net weight		Approx. 430g	
Accessories		Socket with terminals and fixing clamps	

PS-900A SERIES

Separate Amplifier

Panel Diagram



Function Instruction and Adjustment

Items	Condition	Functional Instruction and Adjustment
	—	Depending upon the requirement. LIGHT-ON means the relay is energized when light strikes the receiver. And DARK-ON is inverted to LIGHT -ON mode.
	—	The red LED indicates the status of output.
	—	The green LED indicates the status of power on.
	—	The functions with OND, OFD, OSD is the following in details. Depending upon the requirement, the slide switch is set at the position required.
	Finish the selection of the OND, OFD, OSD.	This is a time setting trimmer, the time range is from 0 to 5 seconds.
	Light-ON Mode The red LED is on	Turn counterclockwise(reduces sensitivity)until the LED turns off, then turn the potentiometer clockwise until the LED turns on, turn another half turn clockwise.
	Dark-ON Mode The red LED is Off	Turn clockwise (increases sensitivity) until the LED turns on, turn the potentiometer counterclockwise until the LED turns off, turn another half turn counterclockwise.

O: SEPARATE AMPLIFIER

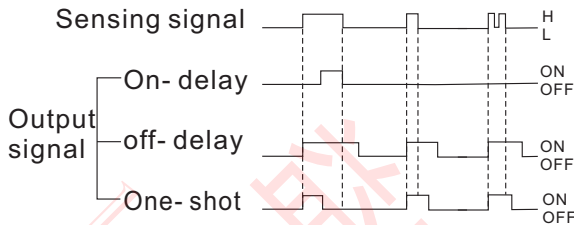
PS-900A SERIES

Separate Amplifier

Additional Functions

• Delay Timer

You may chose the delay function according to your purpose of controlling the output signal of the beam sensors. This function is incorporated in the PS-900A-D model.



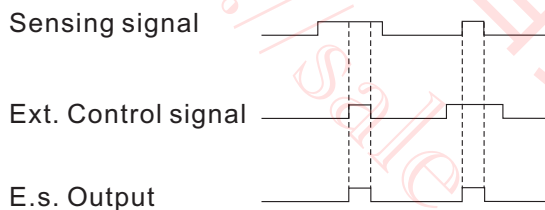
ON-Delay The output signal rises after a preset time, and drops immediately when the input signal is removed.

OFF-Delay The output signal rises immediately upon the receipt of sensing signal and is kept by the preset time after the input sensing signal was removed.

One-Shot The output signal rises immediately upon the receipt of sensing signal and is kept by the preset time independent of the input signal.

• External Synchronizing

The terminal of the Ext. Sync. Function is provided on PS-900A and PS-900A-D.



The Ext. Sync. Signal interlocks the sensor output signal; the control unit develops the output when the input signal from the sensor and the Ext. Sync. Input signals are fed into the unit at the same time.





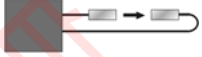

O: SEPARATE AMPLIFIER

Relay Contact Output	Wiring Diagrams
<p>PS-900A, PS-900A-D</p> <p>Contact capacity: 3A resistive at 250VAC</p>	<p>PS-900A, PS-900A-D</p>
Dimensions (Unit: mm)	
<p>Control unit PS-900A/PS-900A-D</p>	<p>Socket with terminals PS-900A, PS-900A-D</p>

FOS1 SERIES

Plastic Fiber Optic Amplifier

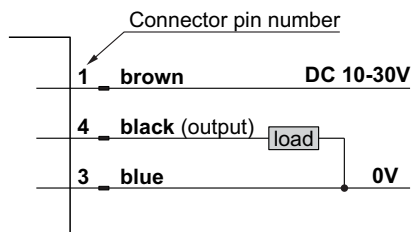
P: FOS1 SERIES

Connection	Sensing Mode (Note)	Output Mode	Part Number
2m Cable 	 Thru-beam Mode Sensing Distance: 400 mm	NPN L.O./D.O.	<u>FOS1-T0400N-CX6C3U2</u>
		PNP L.O./D.O.	<u>FOS1-T0400P-CX6C3U2</u>
	 Diffuse Mode Sensing Distance: 70 mm	NPN L.O./D.O.	<u>FOS1-D0070N-CX6C3U2</u>
		PNP L.O./D.O.	<u>FOS1-D0070P-CX6C3U2</u>
Quick Disconnect (Pico-style) 	 Thru-beam Mode Sensing Distance: 400 mm	NPN L.O./D.O.	<u>FOS1-T0400N-CX6Q4UP</u>
		PNP L.O./D.O.	<u>FOS1-T0400P-CX6Q4UP</u>
	 Diffuse Mode Sensing Distance: 70 mm	NPN L.O./D.O.	<u>FOS1-D0070N-CX6Q4UP</u>
		PNP L.O./D.O.	<u>FOS1-D0070P-CX6Q4UP</u>

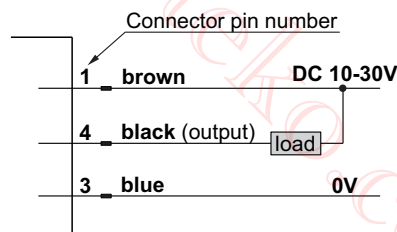
Note: Sensing mode & range Depends on fiber optic used (Please see our **Glass Fiber & Plastic Fiber** catalogue).

Connection Diagrams

PNP Output Type

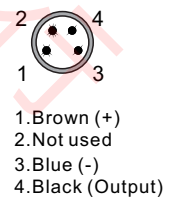


NPN Output Type

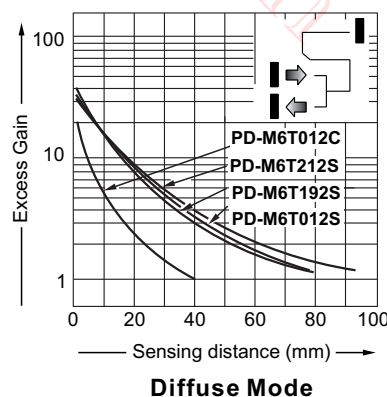
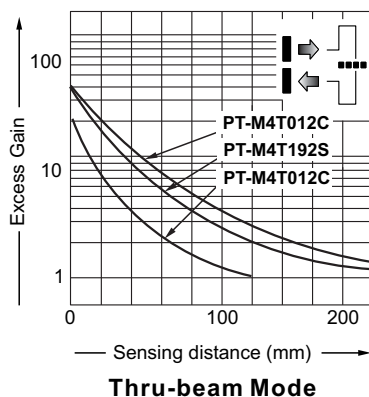


Connector face view

Pico-Style



Excess Gain Curve



Note:
In Preparation: Part numbers with a line through the middle
— P-01 —

FOS1 SERIES

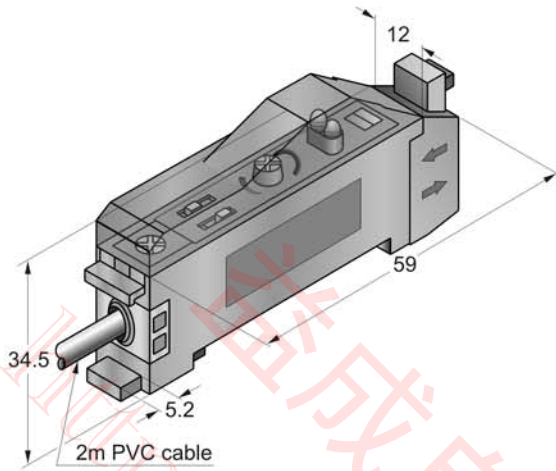
Specifications

Part Number	FOS1-T0400P-CX6C3U2 FOS1-D0070P-CX6C3U2	FOS1-T0400N-CX6C3U2 FOS1-D0070N-CX6C3U2	FOS1-T0400P-CX6Q4UP FOS1-D0070P-CX6Q4UP	FOS1-T0400N-CX6Q4UP FOS1-D0070N-CX6Q4UP
Sensing Range	Depends on fiber optics used (please see our Glass Fiber & Plastic Fiber catalogue).			
Light Source	LED Red, 680nm			
Response Time/Frequency	<= 350 ms / 1500Hz			
Supply Voltage	10...30V DC			
Current Consumption(no load)	<=30 mA			
Ripple (within Vs tolerance)	<=5V peak-to-peak			
Output Current Max.	100 mA			
Switching Mode	Light or dark switching selectable via switch			
Connection Type	Cable type: ϕ 3.5 PVC, 2m, 3 x 24 AWG		Connector type: M8 4-pin plug	
Output Type	PNP	NPN	PNP	NPN
Output Voltage High	Vs - (<=1.5V)	approx. Vs.	Vs - (<=1.5V)	approx. Vs.
Output Voltage Low	approx. 0V	<=1.5V.	approx. 0V	<=1.5V.
Housing	Glass fiber reinforced plastic			
Enclosure Rating	IP 66 / NEMA 4			
VDE Protection Class	II Double insulated			
Circuit Protection	Outputs short circuit and over current protected, Vs reverse polarity protected			
Timing Options	No delay or Off delay			
Time Settings	0 - 100ms adjustable			
Temperature	Ambient Operating Temperature: -25...55°C , Storage Temperature: -40...70°C			
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			
Mounting Bracket	Supplied with sensor			
Weight	approx. 80 g		approx. 30 g	

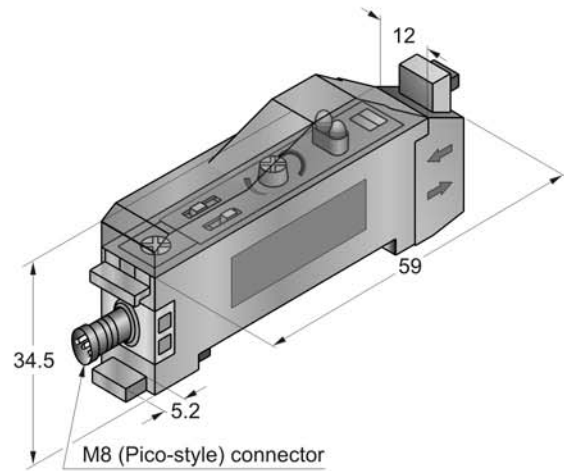
FOS1 SERIES

Plastic Fiber Optic Amplifier's Dimensions (Unit: mm)

Amplifier Type

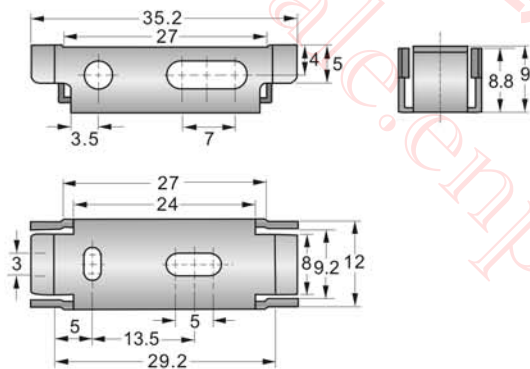


Cable Type



Connector Type

MB-3512 (Mounting bracket-optional)



P: FOS1 SERIES