





Q25 SERIES

Thru-beam Mode / Retroreflective Mode







Sensing Mode	Appearance	Supply Voltage	Output Mode	Part Number
Thru-beam Mode Sensing Distance: 20m Infrared: 950nm	2m Cable 	10-30V DC	Emitter	<u>Q25-T020MD-EY9G2L2</u>
			NPN	<u>Q25-T020MN-CY9C4U2</u>
			PNP	<u>Q25-T020MP-CY9C4U2</u>
			NPN/PNP	<u>Q25-T020MD-CY9C4U2</u>
	Quick Disconnect 	10-30V DC (Euro Style)	Emitter	<u>Q25-T020MD-EY9Q4LE</u>
			NPN	<u>Q25-T020MN-CY9Q4UE</u>
			PNP	<u>Q25-T020MP-CY9Q4UE</u>
			NPN/PNP	<u>Q25-T020MD-CY9Q4UE</u>
	6" Pig tail 	10-30V DC (Euro Style)	Emitter	<u>Q25-T020MD-EY9P4LE</u>
			NPN	<u>Q25-T020MN-CY9P4UE</u>
			PNP	<u>Q25-T020MP-CY9P4UE</u>
			NPN/PNP	<u>Q25-T020MD-CY9P4UE</u>
Retroreflective Mode Sensing Distance: 2 m (Note) Infrared: 950nm	2m Cable 	10-30V DC	NPN	<u>Q25-L2000N-CY9C4U2</u>
			PNP	<u>Q25-L2000P-CY9C4U2</u>
			NPN/PNP	<u>Q25-L2000D-CY9C4U2</u>
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	Quick Disconnect 	10-30V DC (Euro Style)	NPN	<u>Q25-L2000N-CY9Q4UE</u>
			PNP	<u>Q25-L2000P-CY9Q4UE</u>
			NPN/PNP	<u>Q25-L2000D-CY9Q4UE</u>
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	6" Pig tail 	10-30V DC (Euro Style)	NPN	<u>Q25-L2000N-CY9P4UE</u>
			PNP	<u>Q25-L2000P-CY9P4UE</u>
			NPN/PNP	<u>Q25-L2000D-CY9P4UE</u>
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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

Y: Q25 SERIES

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Polarized Retroreflective Mode / Diffuse Mode







Sensing Mode	Appearance	Supply Voltage	Output Mode	Part Number
Retroreflective Mode (with polarizing filter) Sensing Distance: 2 m (Note) LED Red: 680nm	2m Cable 	10-30V DC	NPN	<u>Q25-L2000N-CY6C4U2-PF</u>
			PNP	<u>Q25-L2000P-CY6C4U2-PF</u>
			NPN/PNP	<u>Q25-L2000D-CY6C4U2-PF</u>
			—	—
	Quick Disconnect 	10-30V DC (Euro Style)	NPN	<u>Q25-L2000N-CY6Q4UE-PF</u>
			PNP	<u>Q25-L2000P-CY6Q4UE-PF</u>
			NPN/PNP	<u>Q25-L2000D-CY6Q4UE-PF</u>
			—	—
	6" Pig tail 	10-30V DC (Euro Style)	NPN	<u>Q25-L2000N-CY6P4UE-PF</u>
			PNP	<u>Q25-L2000P-CY6P4UE-PF</u>
			NPN/PNP	<u>Q25-L2000D-CY6P4UE-PF</u>
			—	—
Diffuse Mode Sensing Distance: 500mm Infrared: 880nm	2m Cable 	10-30V DC	NPN	<u>Q25-D0500N-CY9C4U2</u>
			PNP	<u>Q25-D0500P-CY9C4U2</u>
			NPN/PNP	<u>Q25-D0500D-CY9C4U2</u>
			—	—
	Quick Disconnect 	10-30V DC (Euro Style)	NPN	<u>Q25-D0500N-CY9Q4UE</u>
			PNP	<u>Q25-D0500P-CY9Q4UE</u>
			NPN/PNP	<u>Q25-D0500D-CY9Q4UE</u>
			—	—
	6" Pig tail 	10-30V DC (Euro Style)	NPN	<u>Q25-D0500N-CY9P4UE</u>
			PNP	<u>Q25-D0500P-CY9P4UE</u>
			NPN/PNP	<u>Q25-D0500D-CY9P4UE</u>
			—	—

Note: Used with RE-6152 (supplied with sensor) reflector.
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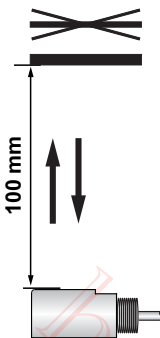



Diffuse Mode with Background Suppression

Sensing Mode	Appearance	Supply Voltage	Output Mode	Part Number
<p>Diffuse Mode with Background Suppression</p> <p>Sensing Distance: 25mm</p> <p>Infrared: 880nm</p>	<p>2m Cable</p> 	10-30V DC	NPN	<u>Q25-D0025N-CY9C4U2-BS</u>
			PNP	<u>Q25-D0025P-CY9C4U2-BS</u>
			NPN/PNP	<u>Q25-D0025D-CY9C4U2-BS</u>
			—	—
	<p>Quick Disconnect</p> 	10-30V DC (Euro Style)	NPN	<u>Q25-D0025N-CY9Q4UE-BS</u>
			PNP	<u>Q25-D0025P-CY9Q4UE-BS</u>
			NPN/PNP	<u>Q25-D0025D-CY9Q4UE-BS</u>
			—	—
	<p>6" Pig tail</p> 	10-30V DC (Euro Style)	NPN	<u>Q25-D0025N-CY9P4UE-BS</u>
			PNP	<u>Q25-D0025P-CY9P4UE-BS</u>
			NPN/PNP	<u>Q25-D0025D-CY9P4UE-BS</u>
			—	—
<p>Diffuse Mode with Background Suppression</p> <p>Sensing Distance: 50mm</p> <p>Infrared: 880nm</p>	<p>2m Cable</p> 	10-30V DC	NPN	<u>Q25-D0050N-CY9C4U2-BS</u>
			PNP	<u>Q25-D0050P-CY9C4U2-BS</u>
			NPN/PNP	<u>Q25-D0050D-CY9C4U2-BS</u>
			—	—
	<p>Quick Disconnect</p> 	10-30V DC (Euro Style)	NPN	<u>Q25-D0050N-CY9Q4UE-BS</u>
			PNP	<u>Q25-D0050P-CY9Q4UE-BS</u>
			NPN/PNP	<u>Q25-D0050D-CY9Q4UE-BS</u>
			—	—
	<p>6" Pig tail</p> 	10-30V DC (Euro Style)	NPN	<u>Q25-D0050N-CY9P4UE-BS</u>
			PNP	<u>Q25-D0050P-CY9P4UE-BS</u>
			NPN/PNP	<u>Q25-D0050D-CY9P4UE-BS</u>
			—	—

Note:
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Diffuse Mode with Background Suppression

Sensing Mode	Appearance	Supply Voltage	Output Mode	Part Number
 <p>Diffuse Mode with Background Suppression Sensing Distance: 100 mm Infrared: 880nm</p>	2m Cable 	10-30V DC	NPN	<u>Q25-D0100N-CY9C4U2-BS</u>
			PNP	<u>Q25-D0100P-CY9C4U2-BS</u>
			NPN/PNP	<u>Q25-D0100D-CY9C4U2-BS</u>
			—	—
	Quick Disconnect 	10-30V DC (Euro Style)	NPN	<u>Q25-D0100N-CY9Q4UE-BS</u>
			PNP	<u>Q25-D0100P-CY9Q4UE-BS</u>
			NPN/PNP	<u>Q25-D0100D-CY9Q4UE-BS</u>
			—	—
	6" Pig tail 	10-30V DC (Euro Style)	NPN	<u>Q25-D0100N-CY9P4UE-BS</u>
			PNP	<u>Q25-D0100P-CY9P4UE-BS</u>
			NPN/PNP	<u>Q25-D0100D-CY9P4UE-BS</u>
			—	—

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Specifications

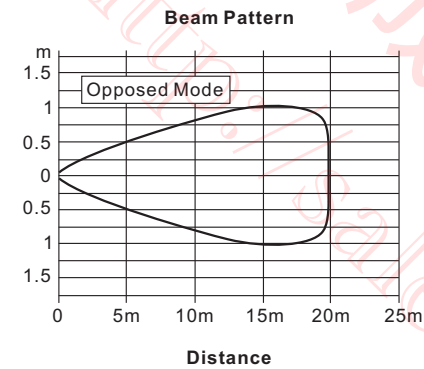
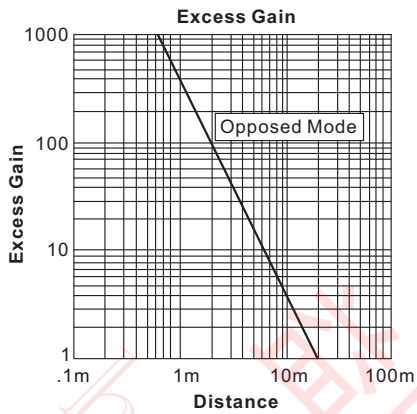
Item	Type Model No.	Thru-beam	Diffuse reflective			Retroreflective		
			(with background suppression)			with polarizing filters		
		Q25-T020Mx-xX9xxxx	Q25-D0500x-xX9xxxx	Q25-D0025x-xX9xxxx-BS	T18-D0050x-xX9xxxx-BS	T18-D0100x-xX9xxxx-BS	Q25-L2000x-xX9xxxx	Q25-L2000x-xX6xxxx-PF
Sensing Range		20m	500mm	25mm	50mm	100mm	2m (Note)	
Sensing Object		Opaque object of ϕ 8mm or more	White paper			3-way mirror		
Hysteresis		—	20% or less of operation distance			—		
Supply Voltage	10 to 30V DC, Ripple P-P 10% or less							
Current Consumption	30mA or less							
Output	<NPN> output type NPN open-collector transistor <ul style="list-style-type: none"> • Applied voltage: 30V DC or less • Maximum sink current: 150mA • Voltage drop: 2.5V or less 				<PNP> output type PNP open-collector transistor <ul style="list-style-type: none"> • Applied voltage: 30V DC or less • Maximum sourcing current: 150mA • Voltage drop: 2.5V or less 			
Output Operation	Selectable either Light-ON Dark-ON by the control input wire							
Short-circuit Protection	Yes							
Reverse Polarity Protection	Yes							
Overload Current Protection	Yes							
Response Time	1.5ms							
Operation Indicator	Red LED (light up when the output is activated), Thru-beam sensor is provided it on the receiver							
Pollution Degree	3(Industrial environment)							
Protection	IP67 (IEC)							
Ambient Temperature	-25°C to +55°C							
Ambient Humidity	35 to 85% RH, Storage: 35 to 85% RH							
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 1500V AC 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							
Emitting Element	Infrared LED (modulated)						Red LED (modulated)	
Housing Material	Plastic housing: PBT							
Cable	Standard length 2m, other length based on request.							
Connector	Euro-style connector(M12x1 thread)							
Pigtail Type	See Pigtail Series or our Cables & Connectors catalogue.							

Note: Used with RE-6152 (supplied with sensor) reflector.

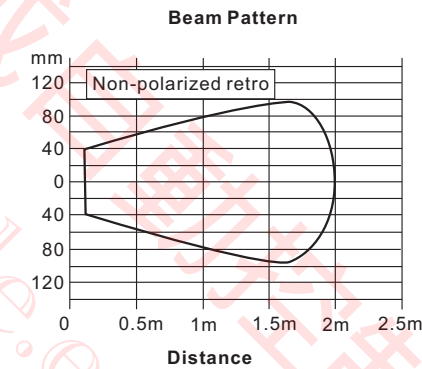
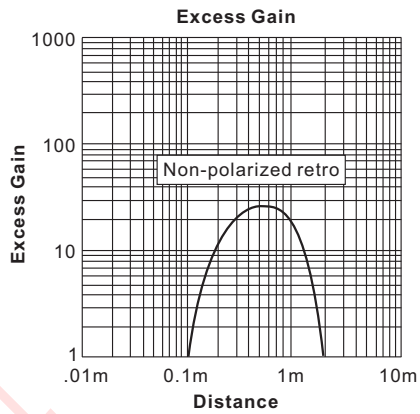
Q25 SERIES

Sensing Characteristics (Typical)

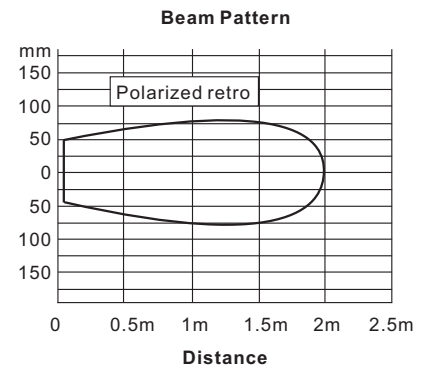
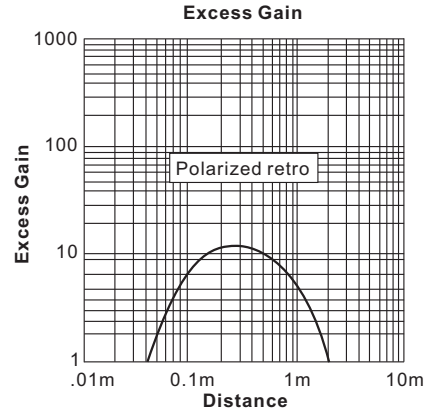
Opposed Mode (Sn=20m)



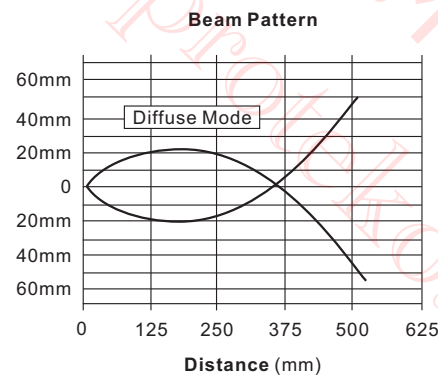
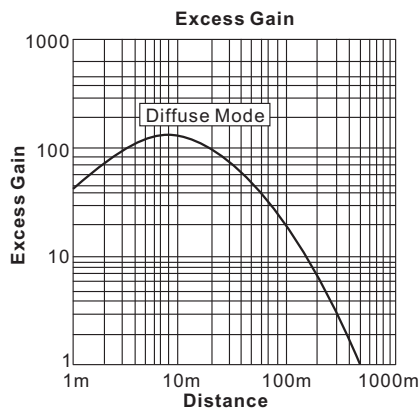
Retroreflective Mode (Sn=2m)



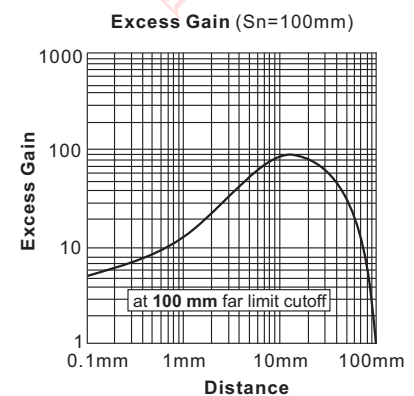
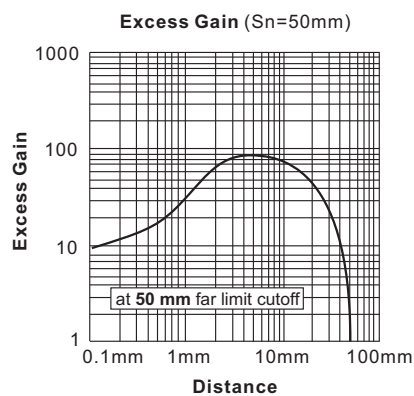
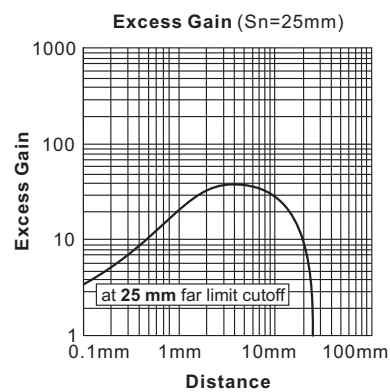
Polarized Retroreflective (Sn=2m)



Diffuse Mode (Sn=500mm)



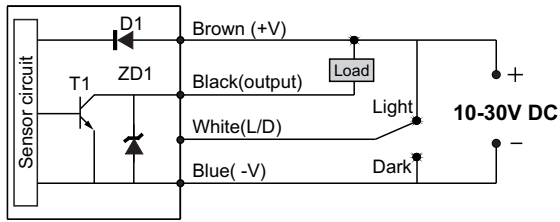
Diffuse Mode with Background Suppression (Sn=25/50/100mm)



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Connection Diagrams

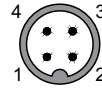
NPN output type



Symbol D1: Reverse polarity protection diode
 ZD1: Surge absorption zener diode
 T1: NPN output transistor

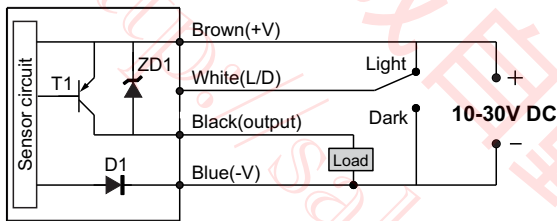
Connector pin position

Euro-style



- 1. Brown (+)
- 2. White (Light/Dark control)
- 3. Blue (-)
- 4. Black (Output)

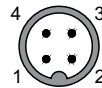
PNP output type



Symbol D1: Reverse polarity protection diode
 ZD1: Surge absorption zener diode
 T1: PNP output transistor

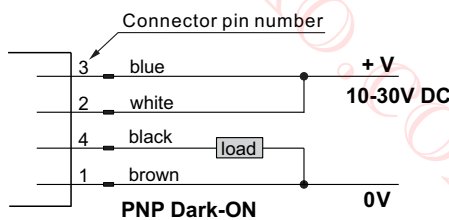
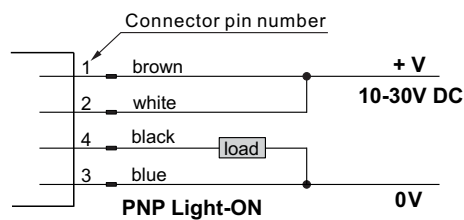
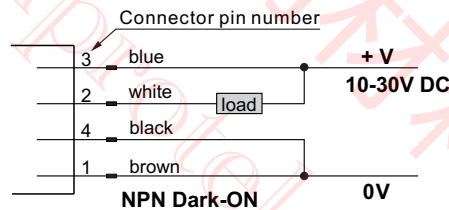
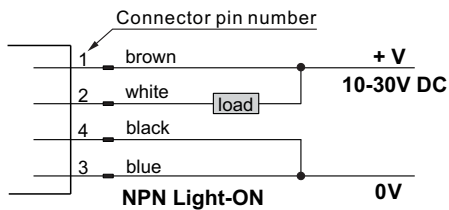
Connector pin position

Euro-style



- 1. Brown (+)
- 2. White (Light/Dark control)
- 3. Blue (-)
- 4. Black (Output)

NPN/PNP output type

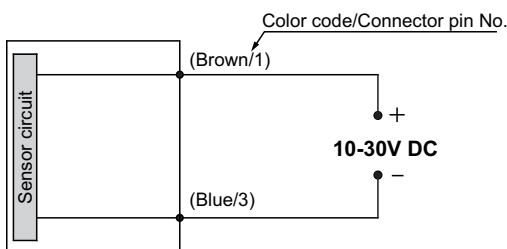


Connector pin position

Euro-style

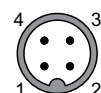


Emitter of Thru-beam Mode



Connector pin position

Euro-style



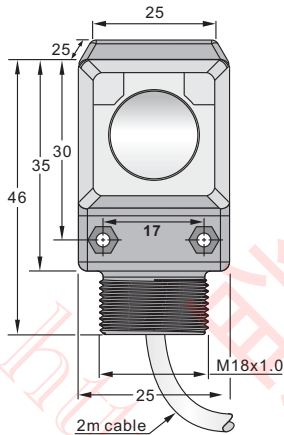
- 1.+V
- 2.not used
- 3.0V
- 4.not used

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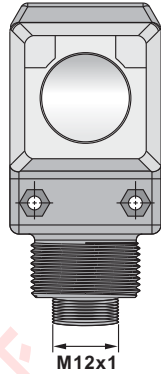
Dimensions (Unit: mm)

Sensor Type

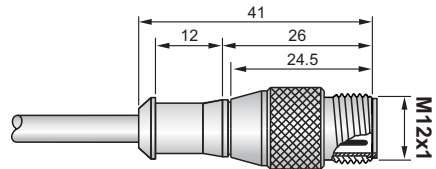
Cable Type



Connector Type



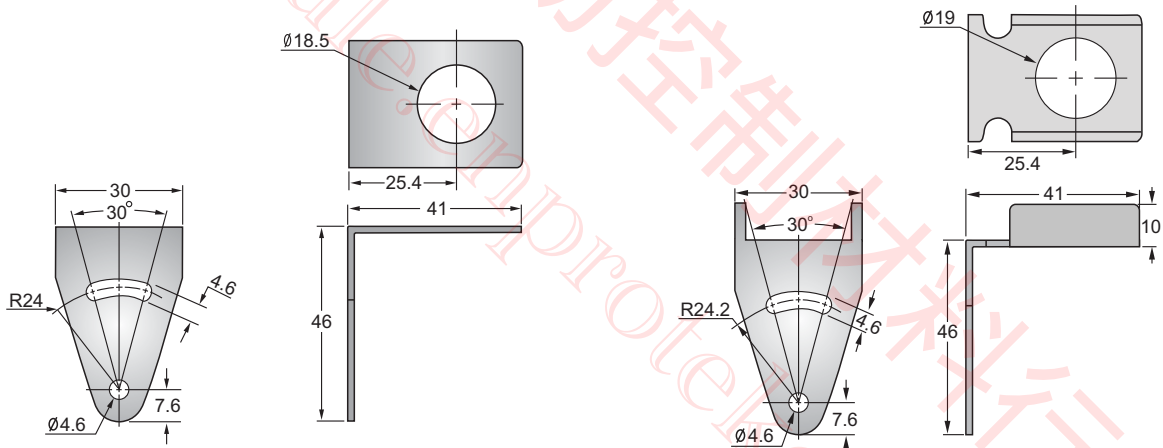
Pigtail* Type



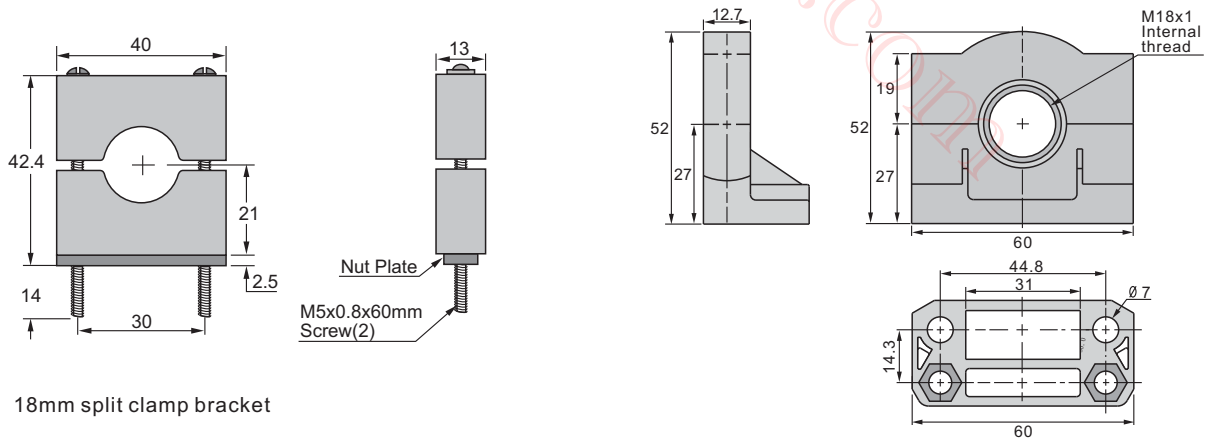
*: Please see **Pigtail Series** or our **Cables & Connectors** catalogue for more information.

Mounting Brackets *

MB-4630A (optional) MB-4630B (optional)



MB-4240 (optional) MB-6052 (optional)



18mm split clamp bracket

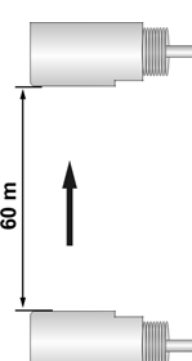




Mounting Bracket to Provide 360° Rotation

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

Y: Q25 SERIES

Q40 SERIES

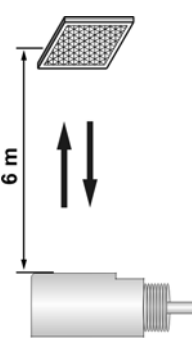




Thru-beam Mode

Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number	
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Infrared: 950nm</p>  <p style="writing-mode: vertical-rl; transform: rotate(180deg);">Thru-beam Mode Sensing Distance: 60 m</p>	2m Cable	10-30V DC	Emitter	<u>Q40-T060MD-EY9C2L2</u>	
			NPN	<u>Q40-T060MN-CY9C4U2</u>	
			PNP	<u>Q40-T060MP-CY9C4U2</u>	
			NPN/PNP	<u>Q40-T060MD-CY9C4U2</u>	
		12-240V DC/ 24-240V AC	Emitter (2-wire)	<u>Q40-T060MC-EY9C2L2</u>	
	Solid State Isolated Relay (4-wire)		<u>Q40-T060MS-CY9C4L2</u>		
	Light-ON (2-wire)		<u>Q40-T060MC-LY9C2U2</u>		
	Dark-ON (2-wire)		<u>Q40-T060MC-DY9C2U2</u>		
	Quick Disconnect		10-30V DC (Euro Style)	Emitter	<u>Q40-T060MD-EY9Q4LE</u>
				NPN	<u>Q40-T060MN-CY9Q4UE</u>
				PNP	<u>Q40-T060MP-CY9Q4UE</u>
				NPN/PNP	<u>Q40-T060MD-CY9Q4UE</u>
		12-240V DC/ 24-240V AC (Micro Style)	Emitter (2-wire)	<u>Q40-T060MC-EY9Q4LM</u>	
			Solid State Isolated Relay (4-wire)	<u>Q40-T060MS-CY9Q4LM</u>	
			Light-ON (2-wire)	<u>Q40-T060MC-LY9Q4UM</u>	
			Dark-ON (2-wire)	<u>Q40-T060MC-DY9Q4UM</u>	
	Quick Disconnect(Mini Style)		10-30V DC	Emitter	<u>Q40-T060MD-EY9Q4LN</u>
				NPN	<u>Q40-T060MN-CY9Q4UN</u>
				PNP	<u>Q40-T060MP-CY9Q4UN</u>
				NPN/PNP	<u>Q40-T060MD-CY9Q4UN</u>
12-240V DC/ 24-240V AC		Emitter (2-wire)	<u>Q40-T060MC-EY9Q4LN</u>		
		Solid State Isolated Relay (4-wire)	<u>Q40-T060MS-CY9Q4LN</u>		
		Light-ON (2-wire)	<u>Q40-T060MC-LY9Q4UN</u>		
		Dark-ON (2-wire)	<u>Q40-T060MC-DY9Q4UN</u>		
6" Pigtail		10-30V DC (Euro Style)	Emitter	<u>Q40-T060MD-EY9P4LE</u>	
			NPN	<u>Q40-T060MN-CY9P4UE</u>	
			PNP	<u>Q40-T060MP-CY9P4UE</u>	
			NPN/PNP	<u>Q40-T060MD-CY9P4UE</u>	
	12-240V DC/ 24-240V AC (Micro Style)	Emitter (2-wire)	<u>Q40-T060MC-EY9P4LM</u>		
		Solid State Isolated Relay (4-wire)	<u>Q40-T060MS-CY9P4LM</u>		
		Light-ON (2-wire)	<u>Q40-T060MC-LY9P4UM</u>		
		Dark-ON (2-wire)	<u>Q40-T060MC-DY9P4UM</u>		

Note:
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Q40 SERIES

Retroreflective Mode with Polarizing Filter

Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
<p>LED red: 680nm</p>  <p>6 m</p> <p>Retroreflective Mode with Polarizing Filter Sensing Distance: 6 m (Note)</p>	<p>2m Cable</p> 	10-30V DC	NPN	<u>Q40-L6000N-CY6C4U2-PF</u>
			PNP	<u>Q40-L6000P-CY6C4U2-PF</u>
			NPN/PNP	<u>Q40-L6000D-CY6C4U2-PF</u>
		12-240V DC/ 24-240V AC	Solid State Isolated Relay (4-wire)	<u>Q40-L6000S-CY6C4L2-PF</u>
			Light-ON (2-wire)	<u>Q40-L6000C-LY6C2U2-PF</u>
			Dark-ON (2-wire)	<u>Q40-L6000C-DY6C2U2-PF</u>
	<p>Quick Disconnect</p> 	10-30V DC (Euro Style)	NPN	<u>Q40-L6000N-CY6Q4UE-PF</u>
			PNP	<u>Q40-L6000P-CY6Q4UE-PF</u>
			NPN/PNP	<u>Q40-L6000D-CY6Q4UE-PF</u>
		12-240V DC/ 24-240V AC (Micro Style)	Solid State Isolated Relay (4-wire)	<u>Q40-L6000S-CY6Q4LM-PF</u>
			Light-ON (2-wire)	<u>Q40-L6000C-LY6Q4UM-PF</u>
			Dark-ON (2-wire)	<u>Q40-L6000C-DY6Q4UM-PF</u>
	<p>Quick Disconnect (Mini Style)</p> 	10-30V DC	NPN	<u>Q40-L6000N-CY6Q4UN-PF</u>
			PNP	<u>Q40-L6000P-CY6Q4UN-PF</u>
			NPN/PNP	<u>Q40-L6000D-CY6Q4UN-PF</u>
		12-240V DC/ 24-240V AC	Solid State Isolated Relay (4-wire)	<u>Q40-L6000S-CY6Q4LN-PF</u>
			Light-ON (2-wire)	<u>Q40-L6000C-LY6Q4UN-PF</u>
			Dark-ON (2-wire)	<u>Q40-L6000C-DY6Q4UN-PF</u>
	<p>6" Pigtail</p> 	10-30V DC (Euro Style)	NPN	<u>Q40-L6000N-CY6P4UE-PF</u>
			PNP	<u>Q40-L6000P-CY6P4UE-PF</u>
NPN/PNP			<u>Q40-L6000D-CY6P4UE-PF</u>	
12-240V DC/ 24-240V AC (Micro Style)		Solid State Isolated Relay (4-wire)	<u>Q40-L6000S-CY6P4LM-PF</u>	
		Light-ON (2-wire)	<u>Q40-L6000C-LY6P4UM-PF</u>	
		Dark-ON (2-wire)	<u>Q40-L6000C-DY6P4UM-PF</u>	

Note: Used with RE-D82 (supplied with sensor) reflector.

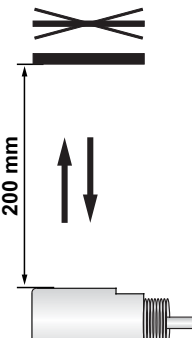




Coming Soon : Part numbers with underline

In Preparation: Part numbers with a line through the middle

Z: Q40 SERIES

Q40 SERIES






Diffuse Mode with Background Suppression (Sn=200mm)

Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
<p>Infrared: 880nm</p>  <p>200 mm</p> <p>Diffuse Mode with Background Suppression Sensing Distance: 200mm</p>	<p>2m Cable</p> 	10-30V DC	NPN	<u>Q40-D0200N-CY9C4U2-BS</u>
			PNP	<u>Q40-D0200P-CY9C4U2-BS</u>
			NPN/PNP	<u>Q40-D0200D-CY9C4U2-BS</u>
		12-240V DC/ 24-240V AC	Solid State Isolated Relay (4-wire)	<u>Q40-D0200S-CY9C4L2-BS</u>
			Light-ON (2-wire)	<u>Q40-D0200C-LY9C2U2-BS</u>
			Dark-ON (2-wire)	<u>Q40-D0200C-DY9C2U2-BS</u>
	<p>Quick Disconnect</p> 	10-30V DC (Euro Style)	NPN	<u>Q40-D0200N-CY9Q4UE-BS</u>
			PNP	<u>Q40-D0200P-CY9Q4UE-BS</u>
			NPN/PNP	<u>Q40-D0200D-CY9Q4UE-BS</u>
		12-240V DC/ 24-240V AC (Micro Style)	Solid State Isolated Relay (4-wire)	<u>Q40-D0200S-CY9Q4LM-BS</u>
			Light-ON (2-wire)	<u>Q40-D0200C-LY9Q4UM-BS</u>
			Dark-ON (2-wire)	<u>Q40-D0200C-DY9Q4UM-BS</u>
	<p>Quick Disconnect(Mini Style)</p> 	10-30V DC	NPN	<u>Q40-D0200N-CY9Q4UN-BS</u>
			PNP	<u>Q40-D0200P-CY9Q4UN-BS</u>
			NPN/PNP	<u>Q40-D0200D-CY9Q4UN-BS</u>
		12-240V DC/ 24-240V AC	Solid State Isolated Relay (4-wire)	<u>Q40-D0200S-CY9Q4LN-BS</u>
			Light-ON (2-wire)	<u>Q40-D0200C-LY9Q4UN-BS</u>
			Dark-ON (2-wire)	<u>Q40-D0200C-DY9Q4UN-BS</u>
	<p>6" Pigtail</p> 	10-30V DC (Euro Style)	NPN	<u>Q40-D0200N-CY9P4UE-BS</u>
			PNP	<u>Q40-D0200P-CY9P4UE-BS</u>
NPN/PNP			<u>Q40-D0200D-CY9P4UE-BS</u>	
12-240V DC/ 24-240V AC (Micro Style)		Solid State Isolated Relay (4-wire)	<u>Q40-D0200S-CY9P4LM-BS</u>	
		Light-ON (2-wire)	<u>Q40-D0200C-LY9P4UM-BS</u>	
		Dark-ON (2-wire)	<u>Q40-D0200C-DY9P4UM-BS</u>	

Note:
 Coming Soon : Part numbers with underline
 In Preparation: Part numbers with a line through the middle
 — Z-03 —

Q40 SERIES

Diffuse Mode with Background Suppression (Sn=400mm)

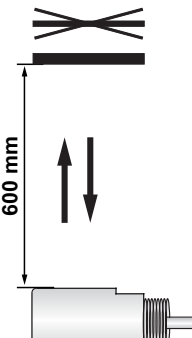




Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
<p>Infrared: 880nm</p>  <p>400 mm</p> <p>Diffuse Mode with Background Suppression Sensing Distance: 400mm</p>	<p>2m Cable</p> 	10-30V DC	NPN	<u>Q40-D0400N-CY9C4U2-BS</u>
			PNP	<u>Q40-D0400P-CY9C4U2-BS</u>
			NPN/PNP	<u>Q40-D0400D-CY9C4U2-BS</u>
		12-240V DC/ 24-240V AC	Solid State Isolated Relay (4-wire)	<u>Q40-D0400S-CY9C4L2-BS</u>
			Light-ON (2-wire)	<u>Q40-D0400C-LY9C2U2-BS</u>
			Dark-ON (2-wire)	<u>Q40-D0400C-DY9C2U2-BS</u>
	<p>Quick Disconnect</p> 	10-30V DC (Euro Style)	NPN	<u>Q40-D0400N-CY9Q4UE-BS</u>
			PNP	<u>Q40-D0400P-CY9Q4UE-BS</u>
			NPN/PNP	<u>Q40-D0400D-CY9Q4UE-BS</u>
		12-240V DC/ 24-240V AC (Micro Style)	Solid State Isolated Relay (4-wire)	<u>Q40-D0400S-CY9Q4LM-BS</u>
			Light-ON (2-wire)	<u>Q40-D0400C-LY9Q4UM-BS</u>
			Dark-ON (2-wire)	<u>Q40-D0400C-DY9Q4UM-BS</u>
	<p>Quick Disconnect(Mini Style)</p> 	10-30V DC	NPN	<u>Q40-D0400N-CY9Q4UN-BS</u>
			PNP	<u>Q40-D0400P-CY9Q4UN-BS</u>
			NPN/PNP	<u>Q40-D0400D-CY9Q4UN-BS</u>
		12-240V DC/ 24-240V AC	Solid State Isolated Relay (4-wire)	<u>Q40-D0400S-CY9Q4LN-BS</u>
Light-ON (2-wire)			<u>Q40-D0400C-LY9Q4UN-BS</u>	
Dark-ON (2-wire)			<u>Q40-D0400C-DY9Q4UN-BS</u>	
<p>6" Pigtail</p> 	10-30V DC (Euro Style)	NPN	<u>Q40-D0400N-CY9P4UE-BS</u>	
		PNP	<u>Q40-D0400P-CY9P4UE-BS</u>	
		NPN/PNP	<u>Q40-D0400D-CY9P4UE-BS</u>	
	12-240V DC/ 24-240V AC (Micro Style)	Solid State Isolated Relay (4-wire)	<u>Q40-D0400S-CY9P4LM-BS</u>	
		Light-ON (2-wire)	<u>Q40-D0400C-LY9P4UM-BS</u>	
		Dark-ON (2-wire)	<u>Q40-D0400C-DY9P4UM-BS</u>	

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

Z: Q40 SERIES

Q40 SERIES

Diffuse Mode with Background Suppression (Sn=600mm)

Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
<p>Infrared: 880nm</p>  <p>600 mm</p> <p>Diffuse Mode with Background Suppression Sensing Distance: 600mm</p>	<p>2m Cable</p> 	10-30V DC	NPN	<u>Q40-D0600N-CY9C4U2-BS</u>
			PNP	<u>Q40-D0600P-CY9C4U2-BS</u>
			NPN/PNP	<u>Q40-D0600D-CY9C4U2-BS</u>
		12-240V DC/ 24-240V AC	Solid State Isolated Relay (4-wire)	<u>Q40-D0600S-CY9C4L2-BS</u>
			Light-ON (2-wire)	<u>Q40-D0600C-LY9C2U2-BS</u>
			Dark-ON (2-wire)	<u>Q40-D0600C-DY9C2U2-BS</u>
	<p>Quick Disconnect</p> 	10-30V DC (Euro Style)	NPN	<u>Q40-D0600N-CY9Q4UE-BS</u>
			PNP	<u>Q40-D0600P-CY9Q4UE-BS</u>
			NPN/PNP	<u>Q40-D0600D-CY9Q4UE-BS</u>
		12-240V DC/ 24-240V AC (Micro Style)	Solid State Isolated Relay (4-wire)	<u>Q40-D0600S-CY9Q4LM-BS</u>
			Light-ON (2-wire)	<u>Q40-D0600C-LY9Q4UM-BS</u>
			Dark-ON (2-wire)	<u>Q40-D0600C-DY9Q4UM-BS</u>
	<p>Quick Disconnect(Mini Style)</p> 	10-30V DC	NPN	<u>Q40-D0600N-CY9Q4UN-BS</u>
			PNP	<u>Q40-D0600P-CY9Q4UN-BS</u>
			NPN/PNP	<u>Q40-D0600D-CY9Q4UN-BS</u>
		12-240V DC/ 24-240V AC	Solid State Isolated Relay (4-wire)	<u>Q40-D0600S-CY9Q4LN-BS</u>
			Light-ON (2-wire)	<u>Q40-D0600C-LY9Q4UN-BS</u>
			Dark-ON (2-wire)	<u>Q40-D0600C-DY9Q4UN-BS</u>
<p>6" Pigtail</p> 	10-30V DC (Euro Style)	NPN	<u>Q40-D0600N-CY9P4UE-BS</u>	
		PNP	<u>Q40-D0600P-CY9P4UE-BS</u>	
		NPN/PNP	<u>Q40-D0600D-CY9P4UE-BS</u>	
	12-240V DC/ 24-240V AC (Micro Style)	Solid State Isolated Relay (4-wire)	<u>Q40-D0600S-CY9P4LM-BS</u>	
		Light-ON (2-wire)	<u>Q40-D0600C-LY9P4UM-BS</u>	
		Dark-ON (2-wire)	<u>Q40-D0600C-DY9P4UM-BS</u>	

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

Specifications (DC)

Item	Type	Thru-beam	Retroreflective (with polarizing filters)	Diffuse Mode (with background suppression)		
	Model No.	Q40-T060Mx- xX9xxxx	Q40-L6000x- xX6xxxx-PF	Q40-D0200x- xX9xxxx-BS	Q40-D0400x- xX9xxxx-BS	Q40-D0600x- xX9xxxx-BS
Sensing Range		60m	6m (Note)	200mm	400mm	600mm
Sensing Object		Opaque object of φ 8mm or more	3-way mirror	White paper		
Hysteresis		—			20% or less of operation distance	
Supply Voltage		10 to 30V DC, Ripple P-P 10% or less				
Current Consumption		30mA or less				
Output		<NPN> output type NPN open-collector transistor <ul style="list-style-type: none"> Applied voltage: 30V DC or less Maximum sink current: 150mA Voltage drop: 2.5V or less 		<PNP> output type PNP open-collector transistor <ul style="list-style-type: none"> Applied voltage: 30V DC or less Maximum sourcing current: 150mA Voltage drop: 2.5V or less 		
Output Operation		Selectable either Light-ON Dark-ON by the control input wire				
Short-circuit Protection		Yes				
Reverse Polarity Protection		Yes				
Overload Current Protection		Yes				
Response Time		1.5ms				
Operation Indicator		Red LED (light up when the output is activated), Thru-beam sensor is provided it on the receiver				
Pollution Degree		3(Industrial environment)				
Protection		IP67(IEC)				
Ambient Temperature		-40°C to +70°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 1500V AC 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				
Emitting Element		Infrared LED (modulated)	Red LED (modulated)	Infrared LED (modulated)		
Housing Material		Plastic housing: PBT				
Cable		Standard length 2m, other length based on request.				
Connector		Euro-style connector, Mini-style connector				
Pigtail Type		See Pigtail Series or our Cables & Connectors catalogue				

Note: Used with RE-D82 (supplied with sensor) reflector.

Specifications (AC/DC)

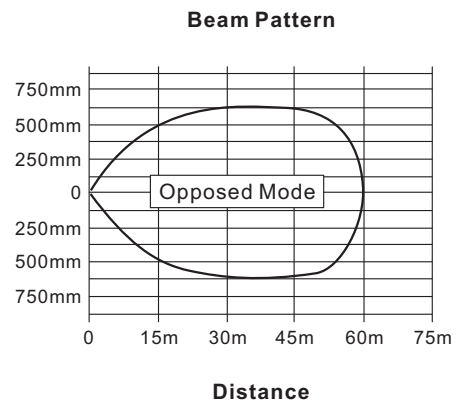
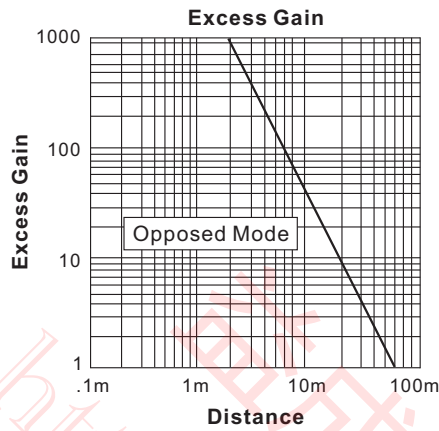
Type Model No.		Thru-beam	Retroreflective (with polarizing filters)	Diffuse Mode (with background suppression)		
		Q40-T060Mx- xX9xxxx	Q40-L6000x- xX6xxxx-PF	Q40-D0200x- xX9xxxx-BS	Q40-D0400x- xX9xxxx-BS	Q40-D0600x- xX9xxxx-BS
Sensing Range		60m	6m (Note)	200mm	400mm	600mm
Sensing Object		Opaque object of φ 8mm or more	3-way mirror	White paper		
Hysteresis		—		20% or less of operation distance		
Supply Voltage		12-240V DC / 24-240V AC				
Current Consumption		30mA or less				
Output		Solid state Isolated Relay, 4-wire hookup; SPST solid-state switch, 2-wire hookup; ● Applied voltage: 12 to 240V DC or 24 to 240V AC ● Max. Load current: 300 mA; ● Voltage drop: 3V or less				
Output Operation		Light or dark switching selectable via switch(Solid state Isolated Relay) , Selectable either Light-ON Dark-ON by type number(SPST Solid-state)				
Short-circuit Protection		Yes (Except Solid state Isolated Relay output)				
Overload Current Protection		Yes				
Response Time		15ms				
Operation Indicator		Red LED(light up when the output is activated), Thru-beam sensor is provided it on the receiver				
Pollution Degree		3(Industrial environment)				
Protection		IP67(IEC)				
Ambient Temperature		-40°C to +70°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 1500V AC 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				
Emitting Element		Infrared LED (modulated)	Red LED (modulated)	Infrared LED (modulated)		
Housing Material		Plastic housing: PBT				
Cable		Standard length 2m, other length based on request.				
Connector		Micro-style connector, Mini-style connector				
Pigtail Type		See Pigtail Series or our Cables & Connectors catalogue				

Note: Used with RE-D82 (supplied with sensor) reflector.

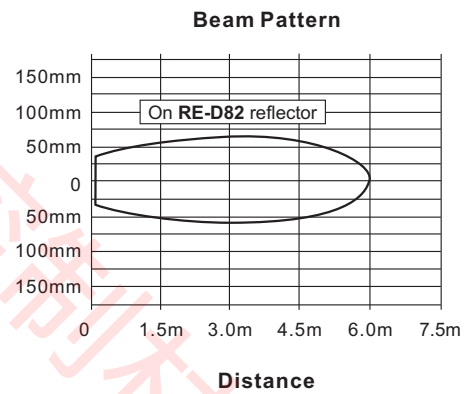
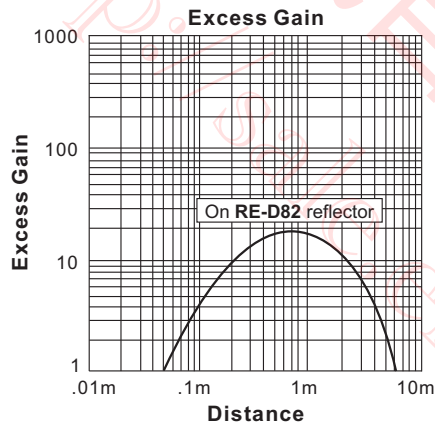
Q40 SERIES

Sensing Characteristics (Typical)

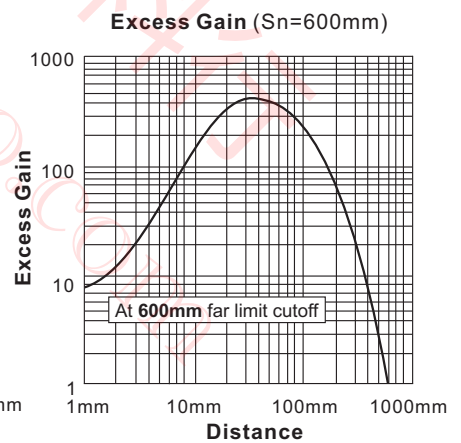
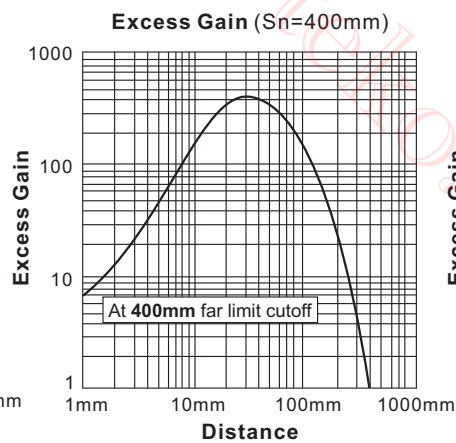
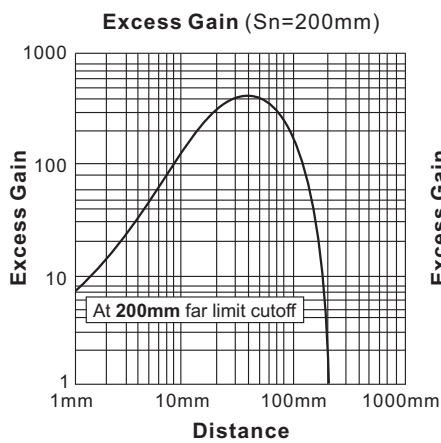
Opposed Mode (Sn=60m)



Polarized Retroreflective Mode (Sn=6 m)



Diffuse Mode with Background Suppression (Sn=200/400/600mm)

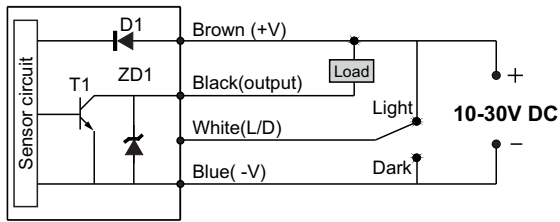


Z: Q40 SERIES

Q40 SERIES

Connection Diagrams (DC)

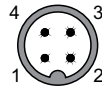
NPN output type



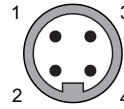
Symbol D1: Reverse polarity protection diode
 ZD1: Surge absorption zener diode
 T1: NPN output transistor

Connector pin position

Euro-style

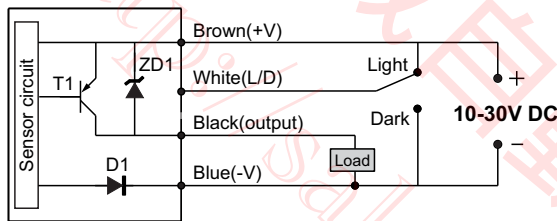


Mini-style



1. Brown (+)
2. White (Light/Dark control)
3. Blue (-)
4. Black (Output)

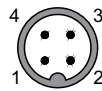
PNP output type



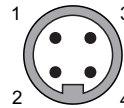
Symbol D1: Reverse polarity protection diode
 ZD1: Surge absorption zener diode
 T1: PNP output transistor

Connector pin position

Euro-style

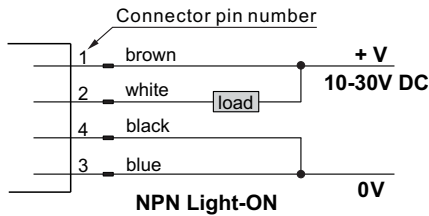


Mini-style

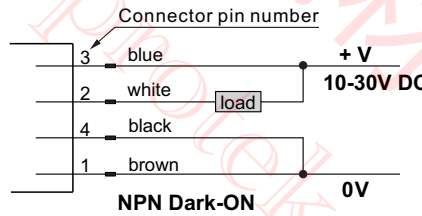


1. Brown (+)
2. White (Light/Dark control)
3. Blue (-)
4. Black (Output)

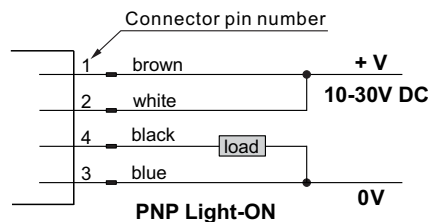
NPN/PNP output type



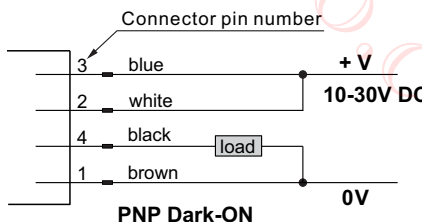
NPN Light-ON



NPN Dark-ON



PNP Light-ON



PNP Dark-ON

Connector pin position

Euro-style

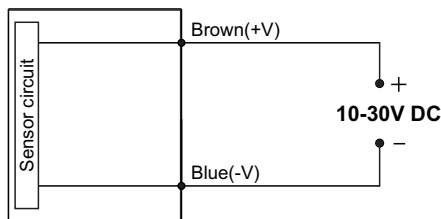


Mini-style



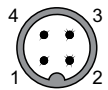
1. Brown
2. White
3. Blue
4. Black

Emitter of Thru-beam Mode



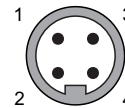
Connector pin position

Euro-style



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

Mini-style

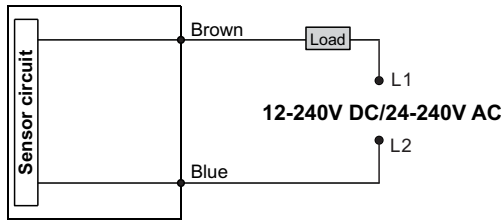


1. Brown (+)
3. Blue (-)
2. Not used
4. Not used

Q40 SERIES

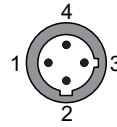
Connection Diagrams (AC/DC)

SPST Solid State output



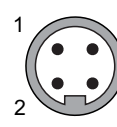
Connector pin position

Micro-style



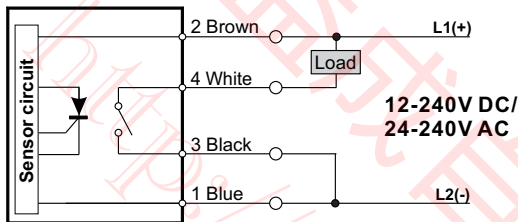
- 1.Red/black(L1)
- 2.Red/white(L2)
- 3.Not used
- 4.Not used

Mini-style



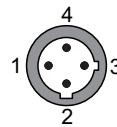
- 1.Brown (L1)
- 2.Not used
- 3.Blue (L2)
- 4.Not used

Solid State Isolated Relay



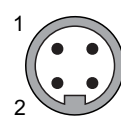
Connector pin position

Micro-style



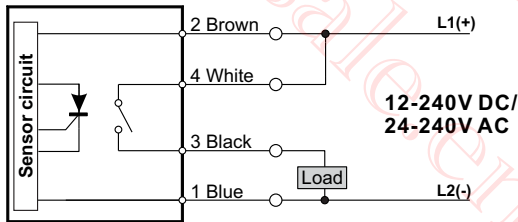
- 1.Red/black(L2)
- 2.Red/white(L1)
- 3.Red (Output)
- 4.Green (Output)

Mini-style

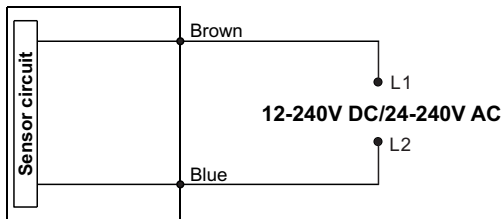


- 1.Brown (L1)
- 2.White (Output)
- 3.Blue (L2)
- 4.Black (Output)

OR

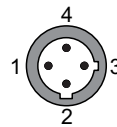


Emitter of Thru-beam Mode (AC/DC)



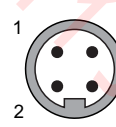
Connector pin position

Micro-style



- 1.Red/black(L1)
- 2.Red/white(L2)
- 3.Not used
- 4.Not used

Mini-style

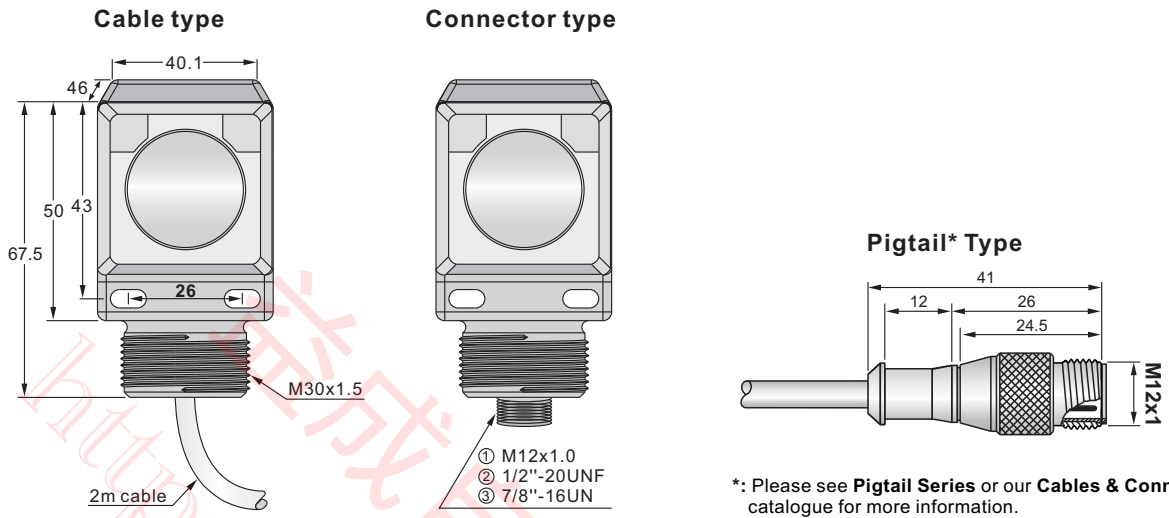


- 1.Brown (L1)
- 2.Not used
- 3.Blue (L2)
- 4.Not used

Q40 SERIES

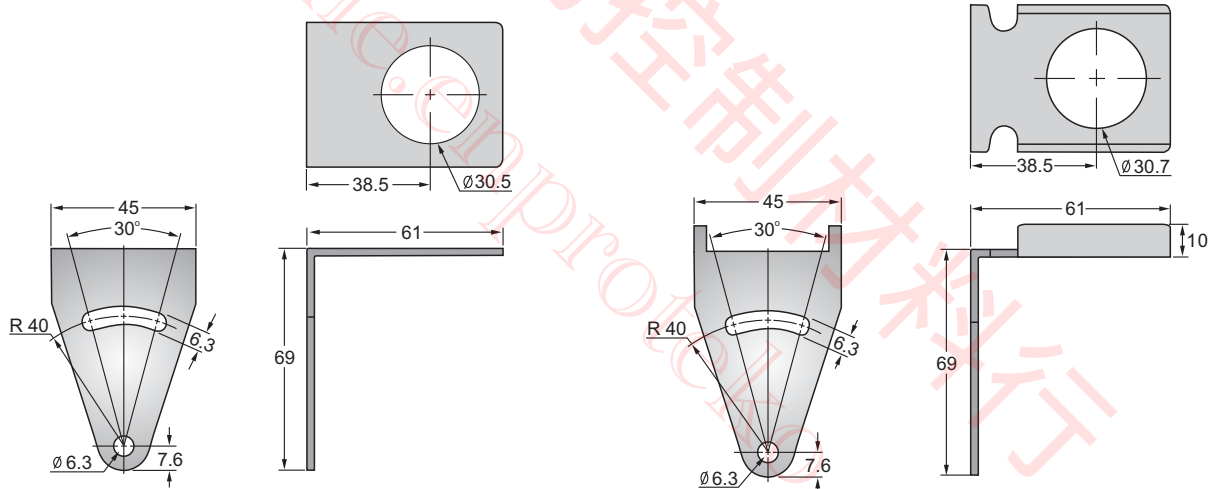
Dimensions (Unit: mm)

Sensor Type

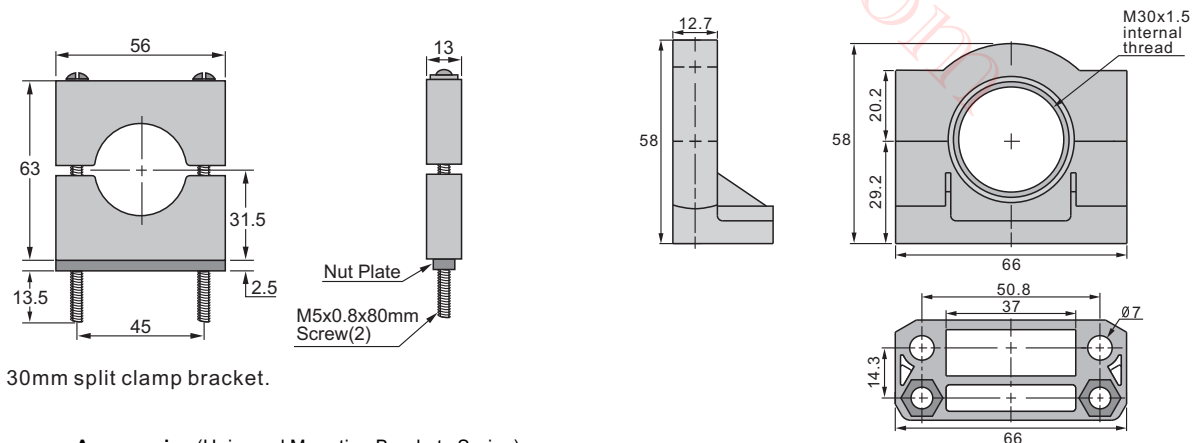


Mounting Bracket *

MB-6961A (optional) MB-6961B (optional)



MB-6356 (optional) MB-6658 (optional)









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

T18 SERIES

Thru-beam Mode / Retroreflective Mode







W: T18 SERIES

Sensing Mode	Appearance	Supply Voltage	Output Mode	Part Number
Thru-beam Mode Sensing Distance: 20m Infrared: 950nm	2m Cable 	10-30V DC	Emitter	T18-T020MD-EY9C2L2
			NPN	T18-T020MN-CY9C4U2
			PNP	T18-T020MP-CY9C4U2
			NPN/PNP	
	Quick Disconnect 	10-30V DC (Euro Style)	Emitter	T18-T020MD-EY9Q4LE
			NPN	T18-T020MN-CY9Q4UE
			PNP	T18-T020MP-CY9Q4UE
			NPN/PNP	
	6" Pig tail 	10-30V DC (Euro Style)	Emitter	T18-T020MD-EY9P4LE
			NPN	T18-T020MN-CY9P4UE
			PNP	T18-T020MP-CY9P4UE
			NPN/PNP	
Retroreflective Mode Sensing Distance: 2 m (Note) Infrared: 950nm	2m Cable 	10-30V DC	NPN	T18-L2000N-CY9C4U2
			PNP	T18-L2000P-CY9C4U2
			NPN/PNP	
			---	---
	Quick Disconnect 	10-30V DC (Euro Style)	NPN	T18-L2000N-CY9Q4UE
			PNP	T18-L2000P-CY9Q4UE
			NPN/PNP	
			---	---
	6" Pig tail 	10-30V DC (Euro Style)	NPN	T18-L2000N-CY9P4UE
			PNP	T18-L2000P-CY9P4UE
			NPN/PNP	
			---	---

Note:Used with RE-6152 (supplied with sensor) reflector.

T18 SERIES

Polarized Retroreflective Mode/ Diffuse Mode

Sensing Mode	Appearance	Supply Voltage	Output Mode	Part Number
Retroreflective Mode (with polarizing filter) Sensing Distance: 2 m (Note) Red Light 680nm	2m Cable 	10-30V DC	NPN	T18-L2000N-CY6C4U2-PF
			PNP	T18-L2000P-CY6C4U2-PF
			NPN/PNP	
			—	—
	Quick Disconnect 	10-30V DC (Euro Style)	NPN	T18-L2000N-CY6Q4UE-PF
			PNP	T18-L2000P-CY6Q4UE-PF
			NPN/PNP	
			—	—
	6" Pig tail 	10-30V DC (Euro Style)	NPN	
			PNP	
			NPN/PNP	
			—	—
Diffuse Mode Sensing Distance: 500mm Infrared: 880nm	2m Cable 	10-30V DC	NPN	T18-D0500N-CY9C4U2
			PNP	T18-D0500P-CY9C4U2
			NPN/PNP	
			—	—
	Quick Disconnect 	10-30V DC (Euro Style)	NPN	T18-D0500N-CY9Q4UE
			PNP	T18-D0500P-CY9Q4UE
			NPN/PNP	
			—	—
	6" Pig tail 	10-30V DC (Euro Style)	NPN	T18-D0500N-CY9P4UE
			PNP	T18-D0500P-CY9P4UE
			NPN/PNP	
			—	—

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

W: T18 SERIES

T18 SERIES

Specifications

Item	Type Model No.	Thru-beam	Diffuse reflective (with background suppression)			Retroreflective with polarizing filters	
			T18-T020Mx-xX9xxxx	T18-D0500x-xX9xxxx	T18-D0025x-xX9xxxx-BS	T18-D0050x-xX9xxxx-BS	T18-D0100x-xX9xxxx-BS
Sensing Range		20m	500mm	25mm	50mm	100mm	2m (Note)
Sensing Object		Opaque object of ϕ 8mm or more	White paper			3-way mirror	
Hysteresis		—	20% or less of operation distance			—	
Supply Voltage	10 to 30V DC, Ripple P-P 10% or less						
Current Consumption	30mA or less						
Output	<NPN> output type NPN open-collector transistor <ul style="list-style-type: none"> Applied voltage: 30V DC or less Maximum sink current: 150mA Voltage drop: 2.5V or less 			<PNP> output type PNP open-collector transistor <ul style="list-style-type: none"> Applied voltage: 30V DC or less Maximum sourcing current: 150mA Voltage drop: 2.5V or less 			
Output Operation	Selectable either Light-ON Dark-ON by the control input wire						
Short-circuit Protection	Yes						
Reverse Polarity Protection	Yes						
Overload Current Protection	Yes						
Response Time	1.5ms						
Operation Indicator	Red LED (light up when the output is activated), Thru-beam sensor is provided it on the receiver						
Pollution Degree	3(Industrial environment)						
Protection	IP67 (IEC)						
Ambient Temperature	-40°C to +70°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 1500V AC for one min, between all supply terminals connected together and enclosure						
Insulation Resistance	$> 20M\Omega$, 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						
Emitting Element	Infrared LED (modulated)					Red LED (modulated)	
Housing Material	Plastic housing: PBT						
Cable	Standard length 2m, other length based on request.						
Connector	Euro-style connector (M12x1 thread)						
Pigtail Type	See Pigtail Series or our Cables & Connectors catalogue						

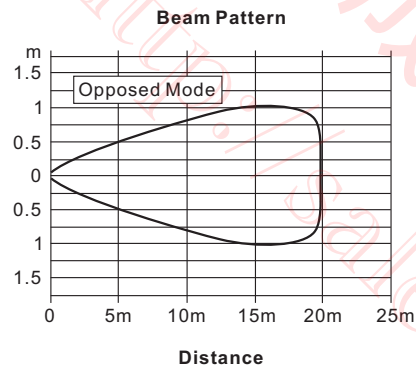
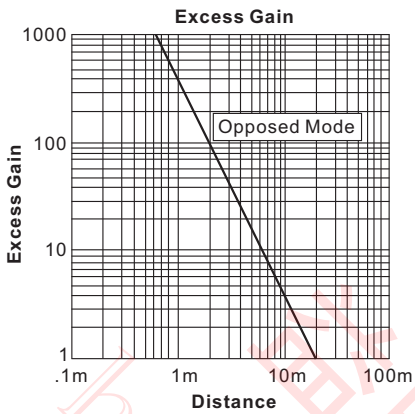
Note: Used with RE-6152 (supplied with sensor) reflector.

T18 SERIES

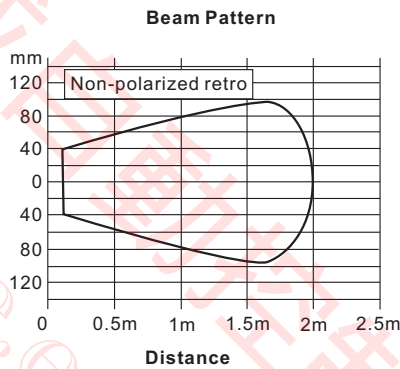
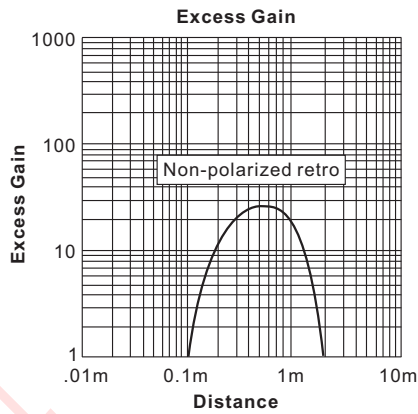
Sensing Characteristics (Typical)

W: T18 SERIES

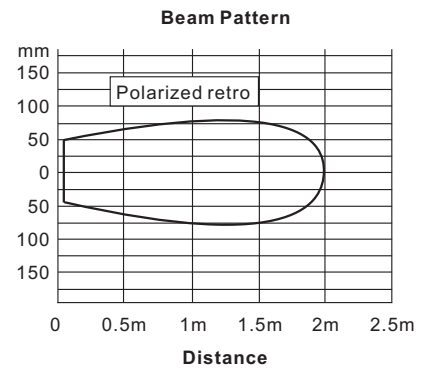
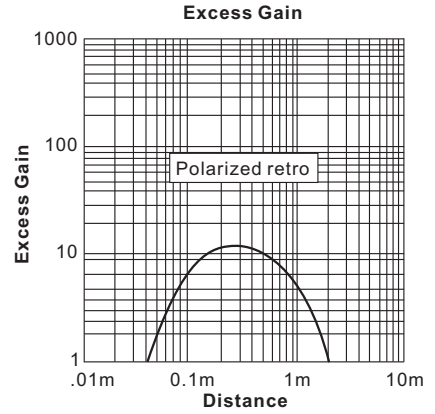
Opposed Mode (Sn=20m)



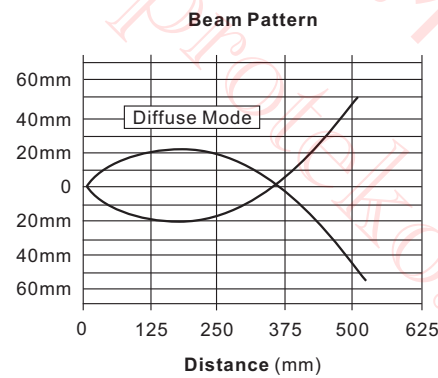
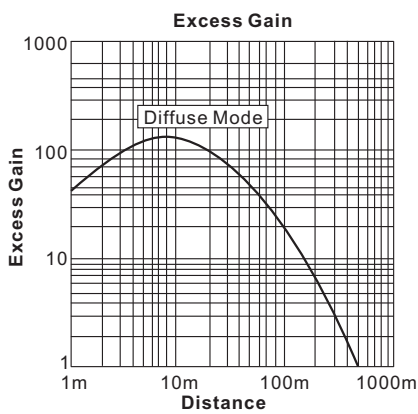
Retroreflective Mode (Sn=2m)



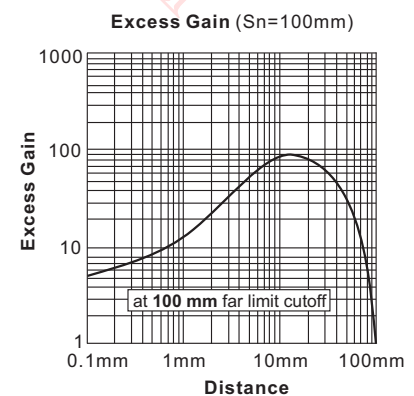
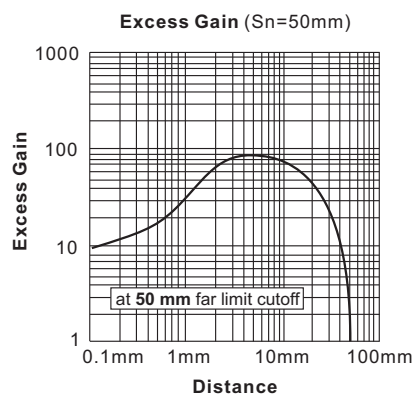
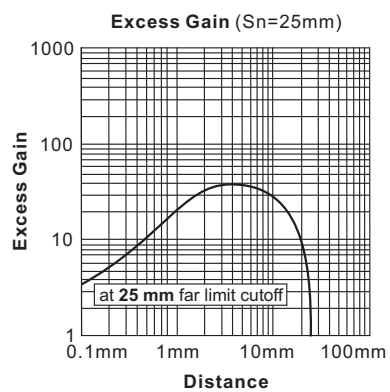
Polarized Retroreflective (Sn=2m)



Diffuse Mode (Sn=500mm)



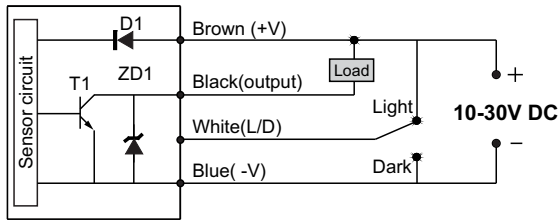
Diffuse Mode with Background Suppression (Sn=25/50/100mm)



T18 SERIES

Connection Diagrams

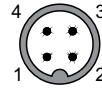
NPN output type



Symbol D1: Reverse polarity protection diode
ZD1: Surge absorption zener diode
T1: NPN output transistor

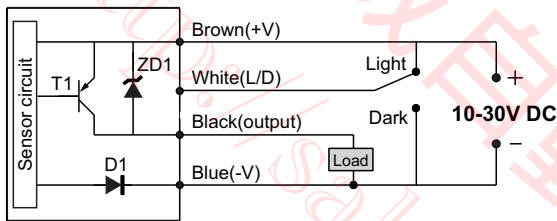
Connector pin position

Euro-style



1. Brown (+)
2. White (Light/Dark control)
3. Blue (-)
4. Black (Output)

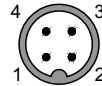
PNP output type



Symbol D1: Reverse polarity protection diode
ZD1: Surge absorption zener diode
T1: PNP output transistor

Connector pin position

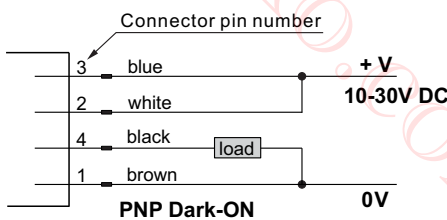
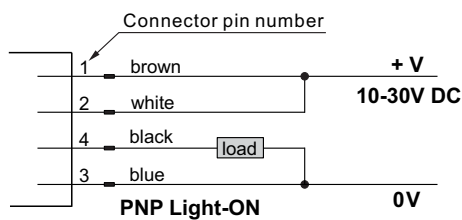
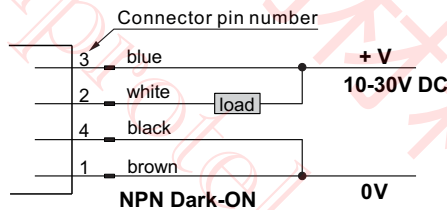
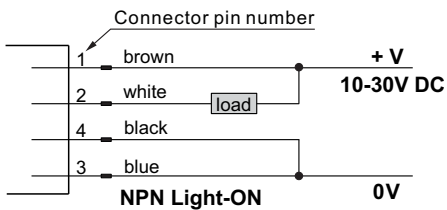
Euro-style



1. Brown (+)
2. White (Light/Dark control)
3. Blue (-)
4. Black (Output)

W: T18 SERIES

NPN/PNP output type

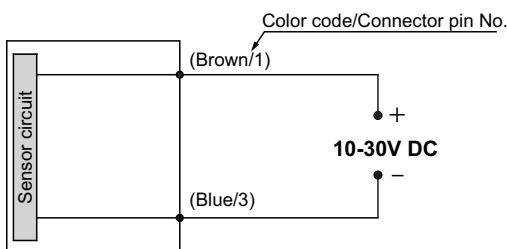


Connector pin position

Euro-style

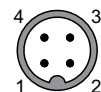


Emitter of Thru-beam Mode



Connector pin position

Euro-style

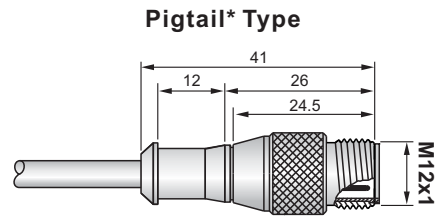
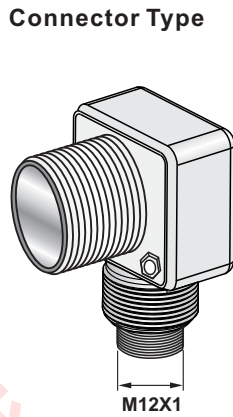
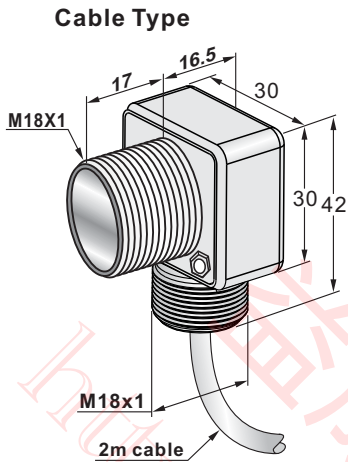


- 1.+V
- 2.not used
- 3.0V
- 4.not used

T18 SERIES

Dimensions (Unit: mm)

Sensor Type

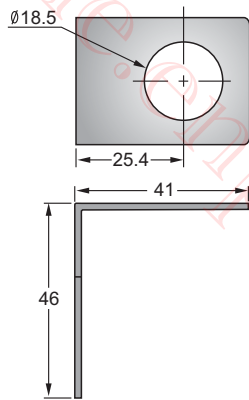
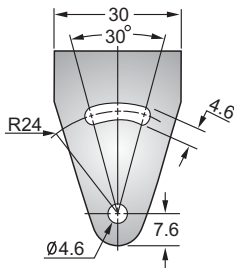


*: Please see **Pigtail Series** or our **Cables & Connectors** catalogue for more information.

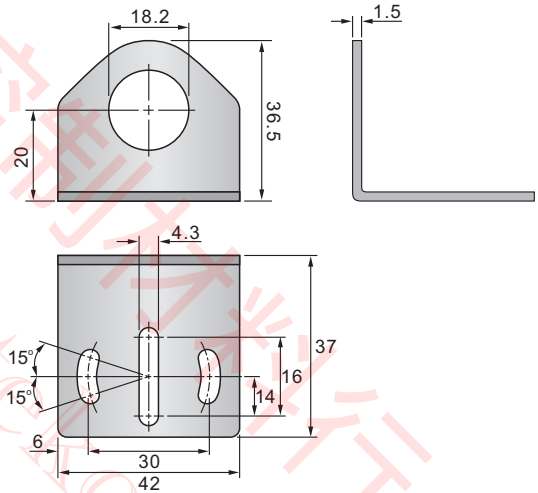
Mounting Brackets *

MB-4630 (optional)

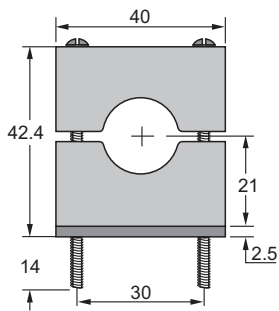
*Use 4mm(#8)screws to mount bracket. Drill screws holes 24.2mm apart.



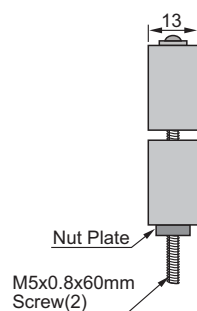
MB-4237 (optional)



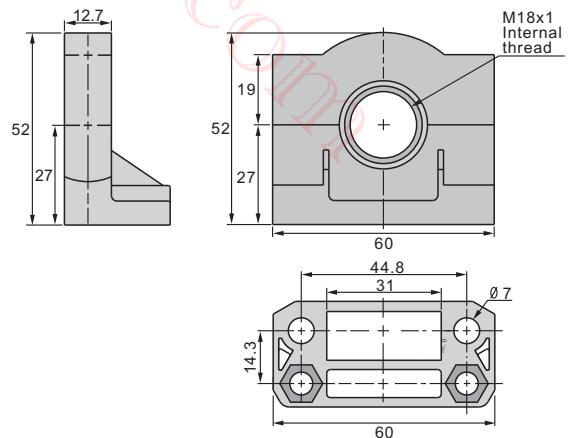
MB-4240 (optional)



18mm split clamp bracket



MB-6052 (optional)



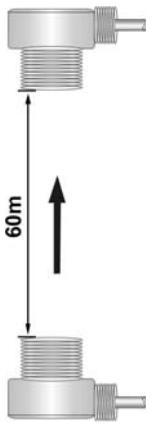



Mounting Bracket to Provide 360° Rotation

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

W: T18 SERIES

T30 SERIES

Thru-beam Mode

Sensing Mode	Appearance	Supply Voltage	Output Mode	Part Number
<p>Infrared 950nm</p>  <p>60m</p> <p>Thru-beam Mode Sensing Distance: 60m</p>	<p>2m Cable</p> 	<p>10-30V DC</p>	Emitter	<u>T30-T060MD-EY9C2L2</u>
			NPN	<u>T30-T060MN-CY9C4U2</u>
			PNP	<u>T30-T060MP-CY9C4U2</u>
			NPN/PNP	<u>T30-T060MD-CY9C5U2</u>
		<p>12-240V DC/ 24-240V AC</p>	Emitter (2-wire)	
			Solid State Isolated Relay (4-wire)	
			Light-ON (2-wire)	
			Dark-ON (2-wire)	
	<p>Quick Disconnect</p> 	<p>10-30V DC (Euro Style)</p>	Emitter	<u>T30-T060MD-EY9Q4LE</u>
			NPN	<u>T30-T060MN-CY9Q4UE</u>
			PNP	<u>T30-T060MP-CY9Q4UE</u>
			NPN/PNP	<u>T30-T060MD-CY9Q5UE</u>
<p>12-240V DC/ 24-240V AC (Micro Style)</p>		Emitter (2-wire)		
		Solid State Isolated Relay (4-wire)		
		Light-ON (2-wire)		
		Dark-ON (2-wire)		
<p>6" Pigtail</p> 		<p>10-30V DC (Euro Style)</p>	Emitter	<u>T30-T060MD-EY9P4LE</u>
			NPN	<u>T30-T060MN-CY9P4UE</u>
			PNP	<u>T30-T060MP-CY9P4UE</u>
			NPN/PNP	<u>T30-T060MD-CY9P5UE</u>
	<p>12-240V DC/ 24-240V AC (Micro Style)</p>	Emitter (2-wire)		
		Solid State Isolated Relay (4-wire)		
		Light-ON (2-wire)		
		Dark-ON (2-wire)		

X: T30 SERIES

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

T30 SERIES

Specifications (DC)

Item	Type	Thru-beam	Retroreflective (with polarizing filters)	Diffuse reflective (with background suppression)		
	Model No.	T30-T060Mx-xX9xxxx	T30-L6000x-xX6xxxx-PF	T30-D0200x-xX9xxxx-BS	T30-D0400x-xX9xxxx-BS	T30-D0600x-xX9xxxx-BS
Sensing Range		60m	6m (Note)	200mm	400mm	600mm
Sensing Object		Opaque object of ϕ 8mm or more	3-way mirror	White paper		
Hysteresis		—		20% or less of operation distance		
Supply Voltage	10 to 30V DC, Ripple P-P 10% or less					
Current Consumption	30mA or less					
Output	<NPN> output type> NPN open-collector transistor <ul style="list-style-type: none"> • Applied voltage: 30V DC or less • Maximum sink current: 150mA • Voltage drop: 2.5V or less 			<PNP> output type> PNP open-collector transistor <ul style="list-style-type: none"> • Applied voltage: 30V DC or less • Maximum sourcing current: 150mA • Voltage drop: 2.5V or less 		
Output Operation	Selectable either Light-ON Dark-ON by the control input wire					
Short-circuit Protection	Yes					
Reverse Polarity Protection	Yes					
Overload Current Protection	Yes					
Response Time	1.5ms					
Operation Indicator	Red LED (light up when the output is activated), Thru-beam sensor is provided it on the receiver					
Pollution Degree	3(Industrial environment)					
Protection	IP67(IEC)					
Ambient Temperature	-40°C to +70°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 1500V AC 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					
Emitting Element	Infrared LED (modulated)	Red LED (modulated)	Infrared LED (modulated)			
Housing Material	Plastic housing: PBT					
Cable	Standard length 2m, other length based on request.					
Connector	Euro-style connector(M12x1 thread)					
Pigtail Type	See Pigtail Series or our Cables & Connectors catalogue.					

Note: Used with RE-D82 (supplied with sensor) reflector.

T30 SERIES

Specifications (AC/DC)

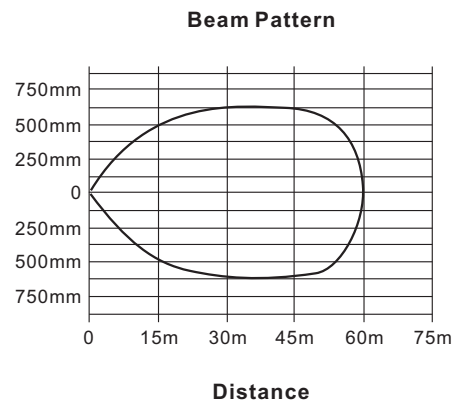
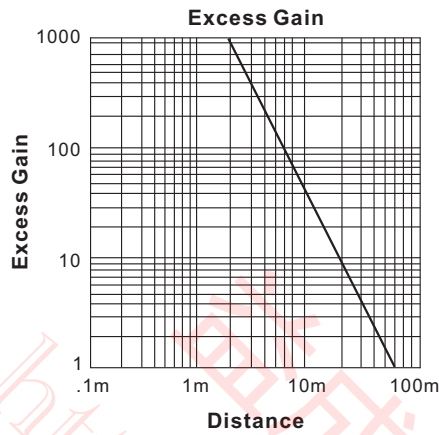
Type		Thru-beam	Retroreflective (with polarizing filters)	Diffuse Mode (with background suppression)		
Item	Model No.	T30-T060MC-xX9xxxx	T30-L6000C-xX6xxxx-PF	T30-D0200C-xX9xxxx-BS	T30-D0400C-xX9xxxx-BS	T30-D0600C-xX9xxxx-BS
Sensing Range		60m	6m (Note)	200mm	400mm	600mm
Sensing Object		Opaque object of ϕ 8mm or more	3-way mirror	White paper		
Hysteresis		—			20% or less of operation distance	
Supply Voltage		12-240V DC / 24-240V AC				
Current Consumption		30mA at DC or 5mA at AC or less				
Output		Solid state Isolated Relay, 4-wire hookup; SPST solid-state switch, 2-wire hookup; • Applied voltage: 12 to 240V DC or 24 to 240V AC • Max. Load current: 300 mA; • Voltage drop: 3V or less				
Output Operation		Light or dark switching selectable via control wire (Solid state Isolated Relay), Selectable either Light-ON Dark-ON by type number (SPST Solid-state)				
Short-circuit Protection		Yes (Except Solid state Isolated Relay output)				
Overload Current Protection		Yes				
Response Time		15ms				
Operation Indicator		Red LED (light up when the output is activated), Thru-beam sensor is provided it on the receiver				
Pollution Degree		3 (Industrial environment)				
Protection		IP67 (IEC)				
Ambient Temperature		-40°C to +70°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 1500V AC 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				
Emitting Element		Infrared LED (modulated)	Red LED (modulated)	Infrared LED (modulated)		
Housing Material		Plastic housing: PBT				
Cable		Standard length 2m, other length based on request.				
Connector		Micro-style connector				
Pigtail Type		See Pigtail Series or our Cables & Connectors catalogue.				

Note: Used with RE-D82 (supplied with sensor) reflector.

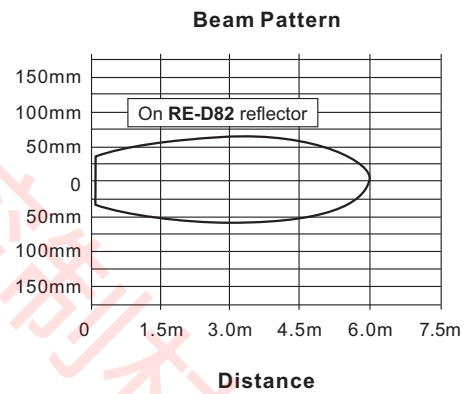
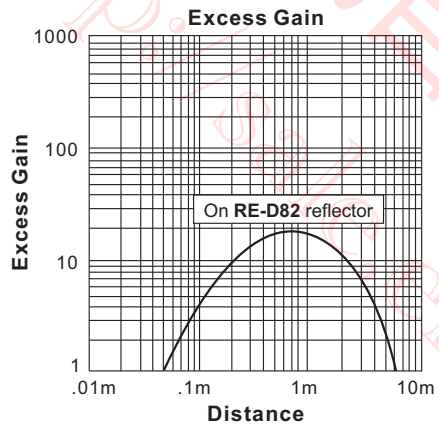
T30 SERIES

Sensing Characteristics (Typical)

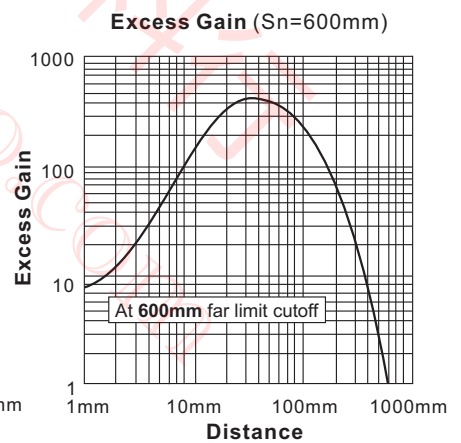
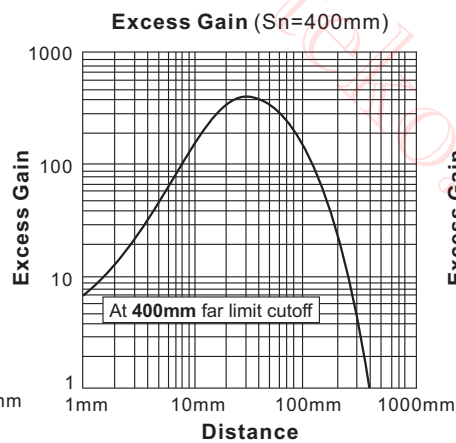
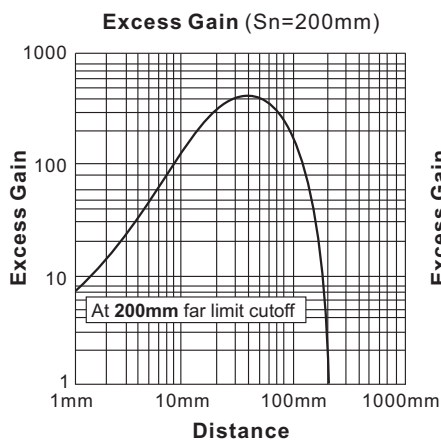
Opposed Mode (Sn=60m)



Polarized Retroreflective Mode (Sn=6 m)



Diffuse Mode with Background Suppression (Sn=200/400/600mm)

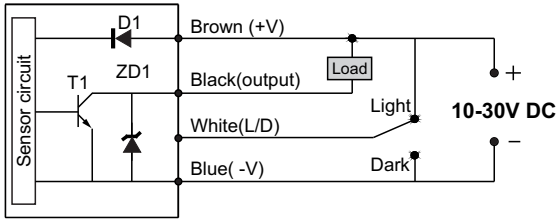


X : T30 SERIES

T30 SERIES

Connection Diagrams (DC)

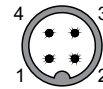
NPN output type



Symbol D1: Reverse polarity protection diode
ZD1: Surge absorption zener diode
T1: NPN output transistor

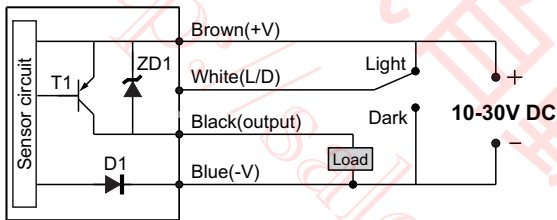
Connector pin position

Euro-style



- 1. Brown (+)
- 2. White (Light/Dark control)
- 3. Blue (-)
- 4. Black (Output)

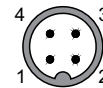
PNP output type



Symbol D1: Reverse polarity protection diode
ZD1: Surge absorption zener diode
T1: PNP output transistor

Connector pin position

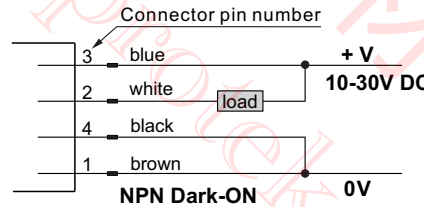
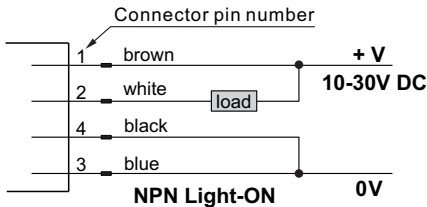
Euro-style



- 1. Brown (+)
- 2. White (Light/Dark control)
- 3. Blue (-)
- 4. Black (Output)

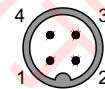
X: T30 SERIES

NPN/PNP output type

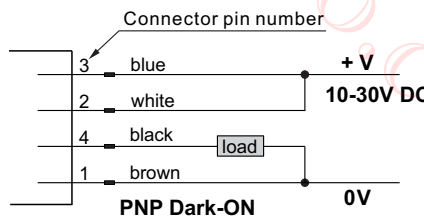
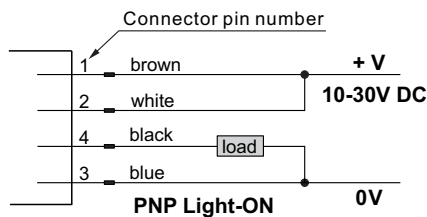


Connector pin position

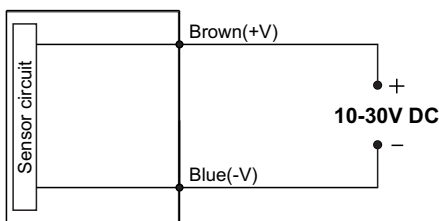
Euro-style



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

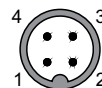


Emitter of Thru-beam Mode



Connector pin position

Euro-style

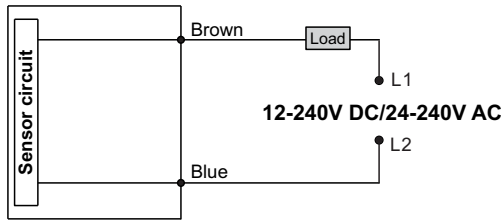


- 1. Brown (+)
- 2. Not used
- 3. Blue (-)
- 4. Not used

T30 SERIES

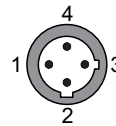
Connection Diagrams (AC/DC)

SPST Solid State output



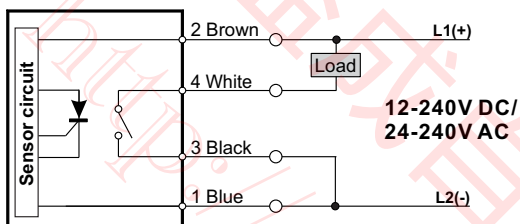
Connector pin position

Micro-style



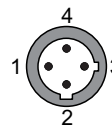
- 1.Red/black(L1)
- 2.Red/white (L2)
- 3.Not used
- 4.Not used

Solid State Isolated Relay



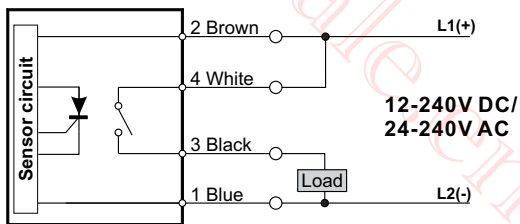
Connector pin position

Micro-style

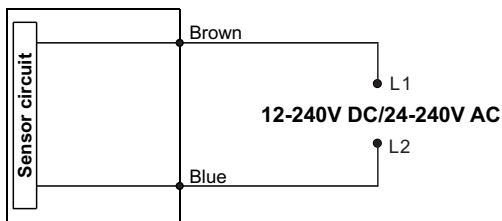


- 1.Red/black(L2)
- 2.Red/white (L1)
- 3.Red (Output)
- 4.Green (Output)

OR



Emitter of Thru-beam Mode



Connector pin position

Micro-style



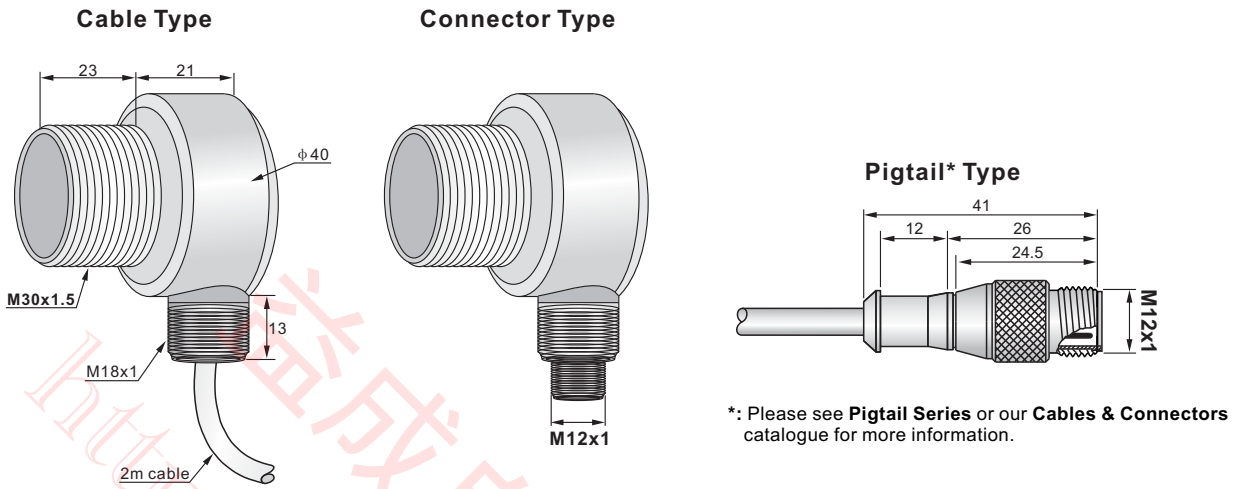
- 1.Red/black(L1)
- 2.Red/white (L2)
- 3.Not used
- 4.Not used

X: T30 SERIES

T30 SERIES

Dimensions (Unit: mm)

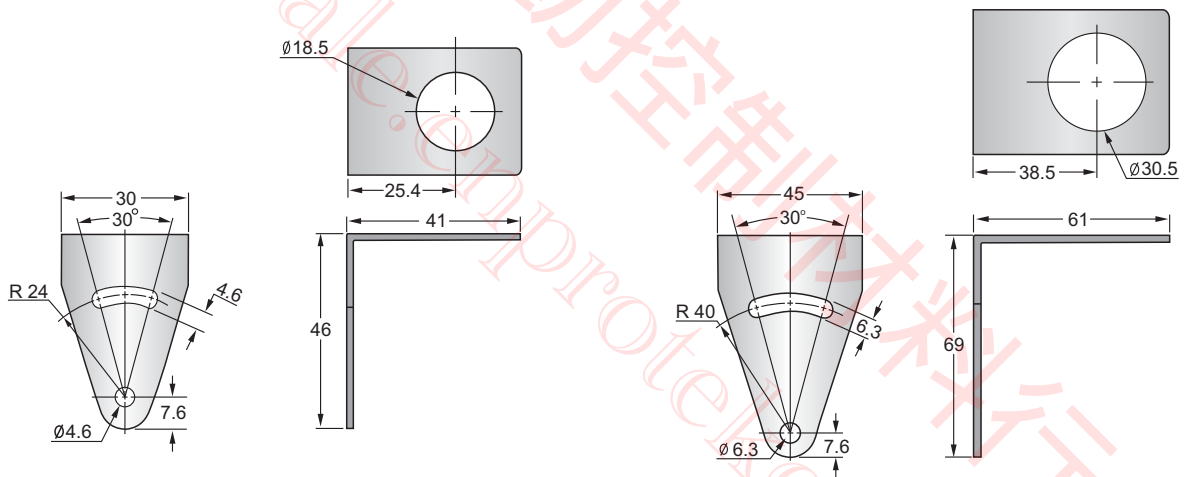
Sensor Type



Mounting Brackets *

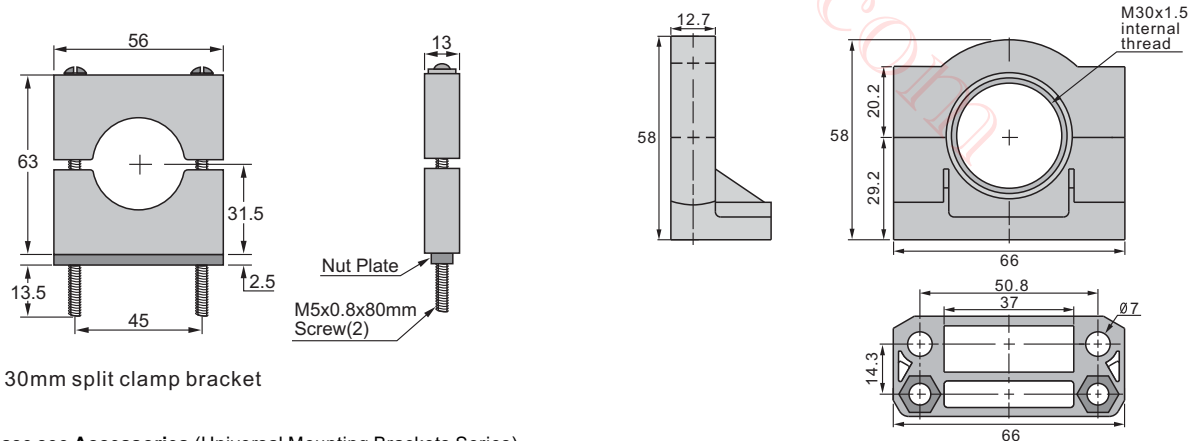
MB-4630 (optional)

MB-6961 (optional)



MB-6356 (optional)

MB-6658 (optional)



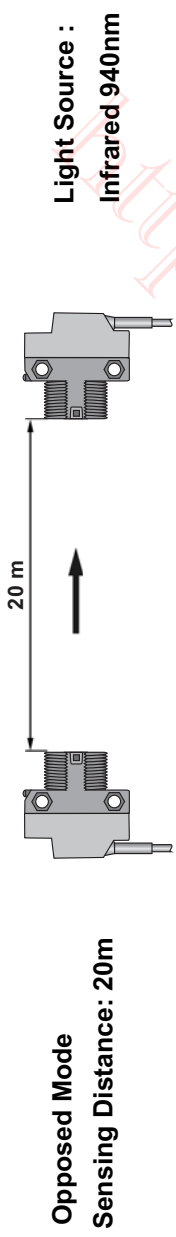





*: Please see **Accessories** (Universal Mounting Brackets Series).

Mounting Bracket to Provide 360° Rotation

TF18 SERIES

Opposed Mode (Long Range, Sn=20m)







V: TF18 SERIES

Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number	
<p>Light Source : Infrared 940nm</p>  <p>Opposed Mode Sensing Distance: 20m</p>	<p>2m Cable</p> 	10-30V DC	Emitter	<u>TF18-T020MD-EY9G2L2</u>	
			NPN	<u>TF18-T020MN-CY9G4U2</u>	
			PNP	<u>TF18-T020MP-CY9G4U2</u>	
		<p>Pico Style 4 Pins QD</p> 	10-30V DC	Emitter	<u>TF18-T020MD-EY9Q4LP</u>
		NPN		<u>TF18-T020MN-CY9Q4UP</u>	
		PNP		<u>TF18-T020MP-CY9Q4UP</u>	
		<p>Euro Style 4 Pins QD</p> 	10-30V DC	Emitter	<u>TF18-T020MD-EY9Q4LE</u>
		NPN		<u>TF18-T020MN-CY9Q4UE</u>	
		PNP		<u>TF18-T020MP-CY9Q4UE</u>	
		<p>Pico Style 4 Pins 6" Pigtail</p> 	10-30V DC	Emitter	<u>TF18-T020MD-EY9P4LP</u>
		NPN		<u>TF18-T020MN-CY9P4UP</u>	
		PNP		<u>TF18-T020MP-CY9P4UP</u>	
	<p>Euro Style 4 Pins 6" Pigtail</p> 	10-30V DC	Emitter	<u>TF18-T020MD-EY9P4LE</u>	
	NPN		<u>TF18-T020MN-CY9P4UE</u>		
	PNP		<u>TF18-T020MP-CY9P4UE</u>		

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

TF18 SERIES

Opposed Mode (Standard Range, Sn=3m)

Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
Light Source : infrared 940nm  Opposed Mode Sensing Distance: 3m	2m Cable 	10-30V DC	Emitter	<u>TF18-T3000D-EY9C2L2</u>
			NPN	<u>TF18-T3000N-CY9C4U2</u>
			PNP	<u>TF18-T3000P-CY9C4U2</u>
	Pico Style 4 Pins QD 	10-30V DC	Emitter	<u>TF18-T3000D-EY9Q4LP</u>
			NPN	<u>TF18-T3000N-CY9Q4UP</u>
			PNP	<u>TF18-T3000P-CY9Q4UP</u>
	Euro Style 4 Pins QD 	10-30V DC	Emitter	<u>TF18-T3000D-EY9Q4LE</u>
			NPN	<u>TF18-T3000N-CY9Q4UE</u>
			PNP	<u>TF18-T3000P-CY9Q4UE</u>
Pico Style 4 Pins 6" Pigtail 	10-30V DC	Emitter	<u>TF18-T3000D-EY9P4LP</u>	
		NPN	<u>TF18-T3000N-CY9P4UP</u>	
		PNP	<u>TF18-T3000P-CY9P4UP</u>	
	Euro Style 4 Pins 6" Pigtail 	10-30V DC	Emitter	<u>TF18-T3000D-EY9P4LE</u>
			NPN	<u>TF18-T3000N-CY9P4UE</u>
			PNP	<u>TF18-T3000P-CY9P4UE</u>

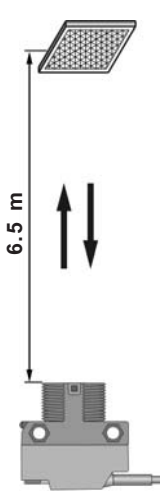





Note:
 Coming Soon : Part numbers with underline
 In Preparation: Part numbers with a line through the middle
 — V-02 —

V: TF18 SERIES

TF18 SERIES

Retroreflective Mode (Sn=6.5m)

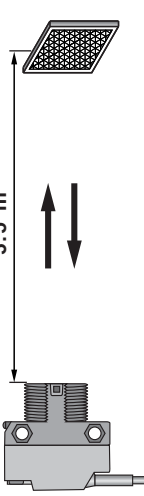





V: TF18 SERIES

Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 20px;"> <p>Light Source : Red Light 660nm</p>  <p>6.5 m</p> </div> <div> <p>Retroreflective Mode Sensing Distance: 6.5m (Note)</p> </div> </div>	2m Cable 	10-30V DC	NPN	<u>TF18-L6500N-CY6G4U2</u>
			PNP	<u>TF18-L6500P-CY6G4U2</u>
	Pico Style 4 Pins QD 	10-30V DC	NPN	<u>TF18-L6500N-CY6Q4UP</u>
			PNP	<u>TF18-L6500P-CY6Q4UP</u>
	Euro Style 4 Pins QD 	10-30V DC	NPN	<u>TF18-L6500N-CY6Q4UE</u>
			PNP	<u>TF18-L6500P-CY6Q4UE</u>
	Pico Style 4 Pins 6" Pigtail 	10-30V DC	NPN	<u>TF18-L6500N-CY6P4UP</u>
			PNP	<u>TF18-L6500P-CY6P4UP</u>
	Euro Style 4 Pins 6" Pigtail 	10-30V DC	NPN	<u>TF18-L6500N-CY6P4UE</u>
			PNP	<u>TF18-L6500P-CY6P4UE</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

TF18 SERIES

Retroreflective Mode with Polarizing Filter (Sn=3.5m)

Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 20px;"> <p style="margin: 0;">Light Source :</p> <p style="margin: 0;">Red Light 660nm</p>  <p style="margin: 0;">3.5 m</p> </div> <div> <p style="margin: 0;">Retroreflective Mode with Polarizing Filter Sensing Distance: 3.5m (Note)</p> </div> </div>	2m Cable	10-30V DC	NPN	TF18-L3500N-CY6C4U2-PF
			PNP	TF18-L3500P-CY6C4U2-PF
	Pico Style 4 Pins QD	10-30V DC	NPN	TF18-L3500N-CY6Q4UP-PF
			PNP	TF18-L3500P-CY6Q4UP-PF
	Euro Style 4 Pins QD	10-30V DC	NPN	TF18-L3500N-CY6Q4UE-PF
			PNP	TF18-L3500P-CY6Q4UE-PF
	Pico Style 4 Pins 6" Pigtail	10-30V DC	NPN	TF18-L3500N-CY6P4UP-PF
			PNP	TF18-L3500P-CY6P4UP-PF
	Euro Style 4 Pins 6" Pigtail	10-30V DC	NPN	TF18-L3500N-CY6P4UE-PF
			PNP	TF18-L3500P-CY6P4UE-PF

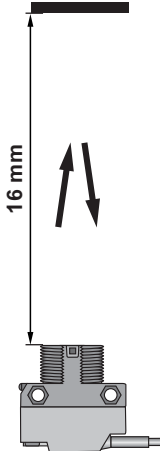





Note: Used with RE-6152 (supplied with sensor) reflector.
 Coming Soon : Part numbers with underline
 In Preparation: Part numbers with a line through the middle

V: TF18 SERIES

TF18 SERIES

Standard Convergent Mode (Sn=16mm)







V: TF18 SERIES

Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
<p>Light Source : Red Light 660nm</p>  <p>16 mm</p> <p>Convergent Mode Sensing Distance: 16mm</p>	2m Cable	10-30V DC	NPN	<u>TF18-C0016N-CY6G4U2</u>
			PNP	<u>TF18-C0016P-CY6G4U2</u>
	Pico Style 4 Pins QD	10-30V DC	NPN	<u>TF18-C0016N-CY6Q4UP</u>
			PNP	<u>TF18-C0016P-CY6Q4UP</u>
	Euro Style 4 Pins QD	10-30V DC	NPN	<u>TF18-C0016N-CY6Q4UE</u>
			PNP	<u>TF18-C0016P-CY6Q4UE</u>
	Pico Style 4 Pins 6" Pigtail	10-30V DC	NPN	<u>TF18-C0016N-CY6P4UP</u>
			PNP	<u>TF18-C0016P-CY6P4UP</u>
	Euro Style 4 Pins 6" Pigtail	10-30V DC	NPN	<u>TF18-C0016N-CY6P4UE</u>
			PNP	<u>TF18-C0016P-CY6P4UE</u>

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

TF18 SERIES

Long Range Convergent Mode (Sn=43mm)

Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
Light Source : Red Light 660nm  43 mm Convergent Mode Sensing Distance: 43mm	2m Cable	10-30V DC	NPN	<u>TF18-C0043N-CY6G4U2</u>
			PNP	<u>TF18-C0043P-CY6G4U2</u>
	Pico Style 4 Pins QD	10-30V DC	NPN	<u>TF18-C0043N-CY6Q4UP</u>
			PNP	<u>TF18-C0043P-CY6Q4UP</u>
	Euro Style 4 Pins QD	10-30V DC	NPN	<u>TF18-C0043N-CY6Q4UE</u>
			PNP	<u>TF18-C0043P-CY6Q4UE</u>
Convergent Mode Sensing Distance: 43mm	Pico Style 4 Pins 6" Pigtail	10-30V DC	NPN	<u>TF18-C0043N-CY6P4UP</u>
			PNP	<u>TF18-C0043P-CY6P4UP</u>
	Euro Style 4 Pins 6" Pigtail	10-30V DC	NPN	<u>TF18-C0043N-CY6P4UE</u>
			PNP	<u>TF18-C0043P-CY6P4UE</u>

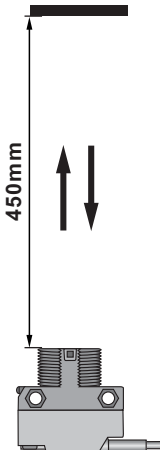





Note:
 Coming Soon : Part numbers with underline
 In Preparation: Part numbers with a line through the middle
 — V-06 —

V: TF18 SERIES

TF18 SERIES

Diffuse Mode (Sn=450mm)

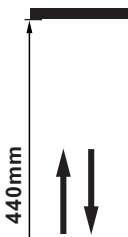





V: TF18 SERIES

Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
<p>Light Source : infrared 940nm</p>  <p>450mm</p> <p>Diffuse Mode Sensing Distance: 450mm</p>	2m Cable	10-30V DC	NPN	<u>TF18-D0450N-CY9G4U2</u>
			PNP	<u>TF18-D0450P-CY9G4U2</u>
	Pico Style 4 Pins QD	10-30V DC	NPN	<u>TF18-D0450N-CY9Q4UP</u>
			PNP	<u>TF18-T0450P-CY9Q4UP</u>
	Euro Style 4 Pins QD	10-30V DC	NPN	<u>TF18-D0450N-CY9Q4UE</u>
			PNP	<u>TF18-D0450P-CY9Q4UE</u>
	Pico Style 4 Pins 6" Pigtail	10-30V DC	NPN	<u>TF18-D0450N-CY9P4UP</u>
			PNP	<u>TF18-D0450P-CY9P4UP</u>
	Euro Style 4 Pins 6" Pigtail	10-30V DC	NPN	<u>TF18-D0450N-CY9P4UE</u>
			PNP	<u>TF18-D0450P-CY9P4UE</u>

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

TF18 SERIES

Diffuse Mode (Sn=440mm)

Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
Light Source : Infrared 940nm 	2m Cable 	10-30V DC	NPN	<u>TF18-D0440N-CY9G4U2</u>
			PNP	<u>TF18-D0440P-CY9G4U2</u>
	Pico Style 4 Pins QD 	10-30V DC	NPN	<u>TF18-D0440N-CY9Q4UP</u>
			PNP	<u>TF18-T0440P-CY9Q4UP</u>
	Euro Style 4 Pins QD 	10-30V DC	NPN	<u>TF18-D0440N-CY9Q4UE</u>
			PNP	<u>TF18-D0440P-CY9Q4UE</u>
Diffuse Mode Sensing Distance: 440mm	Pico Style 4 Pins 6" Pigtail 	10-30V DC	NPN	<u>TF18-D0440N-CY9P4UP</u>
			PNP	<u>TF18-D0440P-CY9P4UP</u>
	Euro Style 4 Pins 6" Pigtail 	10-30V DC	NPN	<u>TF18-D0440N-CY9P4UE</u>
			PNP	<u>TF18-D0440P-CY9P4UE</u>

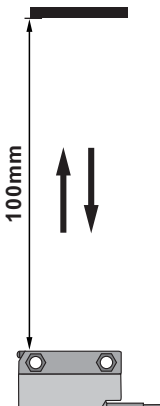





Note:
 Coming Soon : Part numbers with underline
 In Preparation: Part numbers with a line through the middle
 — V-08 —

V: TF18 SERIES

TF18 SERIES

Divergent Diffuse Mode (Sn=100mm)

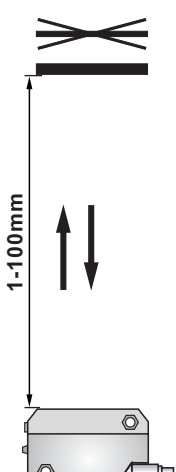





V: TF18 SERIES

Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
<p>Light Source : Infrared 940nm</p>  <p>Divergent Diffuse Mode Sensing Distance: 100mm</p>	2m Cable	10-30V DC	NPN	<u>TF18-D0100N-CY9G4U2</u>
			PNP	<u>TF18-D0100P-CY9G4U2</u>
	Pico Style 4 Pins QD	10-30V DC	NPN	<u>TF18-D0100N-CY9Q4UP</u>
			PNP	<u>TF18-D0100P-CY9Q4UP</u>
	Euro Style 4 Pins QD	10-30V DC	NPN	<u>TF18-D0100N-CY9Q4UE</u>
			PNP	<u>TF18-D0100P-CY9Q4UE</u>
	Pico Style 4 Pins 6" Pigtail	10-30V DC	NPN	<u>TF18-D0100N-CY9P4UP</u>
			PNP	<u>TF18-D0100P-CY9P4UP</u>
	Euro Style 4 Pins 6" Pigtail	10-30V DC	NPN	<u>TF18-D0100N-CY9P4UE</u>
			PNP	<u>TF18-D0100P-CY9P4UE</u>

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

TF18 SERIES

Diffuse Mode with Background Suppression (Sn=100mm)

Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 20px;"> <p>Light Source : Red 660nm</p>  <p>1-100mm</p> </div> <div> <p>Diffuse Mode (with background suppression)</p> <p>Sensing Distance: 1-100mm</p> </div> </div>	2m Cable 	10-30V DC	NPN	<u>TF18-D0100N-CY6C4U2-BS</u>
			PNP	<u>TF18-D0100P-CY6C4U2-BS</u>
	Pico Style 4 Pins QD 	10-30V DC	NPN	<u>TF18-D0100N-CY6Q4UP-BS</u>
			PNP	<u>TF18-D0100P-CY6Q4UP-BS</u>
	Euro Style 4 Pins QD 	10-30V DC	NPN	<u>TF18-D0100N-CY6Q4UE-BS</u>
			PNP	<u>TF18-D0100P-CY6Q4UE-BS</u>
	Pico Style 4 Pins 6" Pigtail 	10-30V DC	NPN	<u>TF18-D0100N-CY6P4UP-BS</u>
			PNP	<u>TF18-D0100P-CY6P4UP-BS</u>
	Euro Style 4 Pins 6" Pigtail 	10-30V DC	NPN	<u>TF18-D0100N-CY6P4UE-BS</u>
			PNP	<u>TF18-D0100P-CY6P4UE-BS</u>




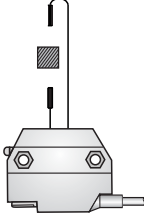


Note:
 Coming Soon : Part numbers with underline
 In Preparation: Part numbers with a line through the middle
 — V-10 —

V: TF18 SERIES

TF18 SERIES

Plastic Fiber Optic Opposed Mode

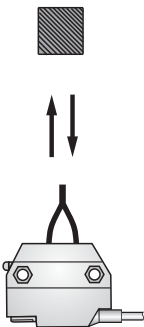





V: TF18 SERIES

Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
Light Source : Red 660nm	2m Cable 	10-30V DC	NPN	TF18-TPFN-CY6G4U2
			PNP	TF18-TPFP-CY6G4U2
	Pico Style 4 Pins QD 	10-30V DC	NPN	TF18-TPFN-CY6Q4UP
			PNP	TF18-TPFP-CY6Q4UP
	Euro Style 4 Pins QD 	10-30V DC	NPN	TF18-TPFN-CY6Q4UE
			PNP	TF18-TPFP-CY6Q4UE
Plastic Fiber Optic Opposed Mode Sensing Distance: (Note) 	Pico Style 4 Pins 6" Pigtail 	10-30V DC	NPN	TF18-TPFN-CY6P4UP
			PNP	TF18-TPFP-CY6P4UP
	Euro Style 4 Pins 6" Pigtail 	10-30V DC	NPN	TF18-TPFN-CY6P4UE
			PNP	TF18-TPFP-CY6P4UE

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

TF18 SERIES

Plastic Fiber Optic Diffuse Mode

Sensing Mode	Connection	Supply Voltage	Output Mode	Part Number
<p>Light Source : Red 660nm</p>  <p>Plastic Fiber Optic Diffuse Mode Sensing Distance: (Note)</p>	2m Cable	10-30V DC	NPN	TF18-DPFN-CY6G4U2
			PNP	TF18-DPFP-CY6G4U2
	Pico Style 4 Pins QD	10-30V DC	NPN	TF18-DPFN-CY6Q4UP
			PNP	TF18-DPFP-CY6Q4UP
	Euro Style 4 Pins QD	10-30V DC	NPN	TF18-DPFN-CY6Q4UE
			PNP	TF18-DPFP-CY6Q4UE
	Pico Style 4 Pins 6" Pigtail	10-30V DC	NPN	TF18-DPFN-CY6P4UP
			PNP	TF18-DPFP-CY6P4UP
	Euro Style 4 Pins 6" Pigtail	10-30V DC	NPN	TF18-DPFN-CY6P4UE
			PNP	TF18-DPFP-CY6P4UE

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

V: TF18 SERIES

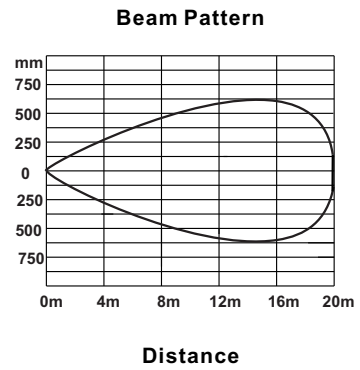
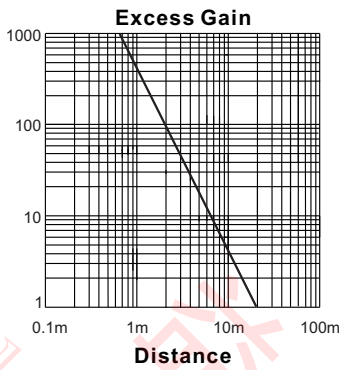
Specifications

Sensing Range	See each mode
Supply Voltage	10 to 30V DC
Ripple	< 10%
Voltage Drop	<1V @ 10mA; <1.5V@ 100mA
Max. Load Current	100mA
Leakage Current	<50uA @ 30V DC
Output Configuration	Solid-state complementary (SPDT), NPN(current sinking) or PNP (current sourcing)
Operation Mode	Light-ON/Dark-ON changeover
Adjustments	Convergent, diffuse, retroreflective mode models (only): Single-turn sensitivity (Gain) adjustment potentiometer; Background suppression diffuse Mode (only): Multi-turn adjustment screw sets cutoff distance between 20 to 100mm
Output Response Time	Opposed Mode: 750ms ON/ 375ms OFF Background suppression diffuse Mode: 700ms ON/OFF All others: 600ms ON/OFF (Note: 100ms delay on power-up; outputs do not conduct during this time)
Repeatability	Opposed Mode: 100ms, Background suppression Mode: 175ms, All others: 150ms
Indicators	Green steady: Power on Green flashing : Output overloaded Red steady: Light sensed Red flashing: Marginal excess gain
Transient Protection	Yes
Reverse Polarity Protection	Yes
Output Short Circuit Protection	Yes
Construction	Polycarbonate/ABS alloy housing, 3mm mounting hardware included
Environmental Rating	IEC IP67
Operating Condition	Temperature for Background suppression diffuse Mode: 0°C to 55°C Temperature for All other Modes: -20°C to + 70°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 1500V AC 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
Connections	2m 4-wire PVC cable ,9 m PVC cable , Euro-style(M12) connector, Euro-style(M12) Pigtail , Pico -style(M8) 150mm pigtail, Pico-style (M8) connector , depending on Model
Pigtail Type	See Pigtail Series or our Cables & Connectors catalogue.

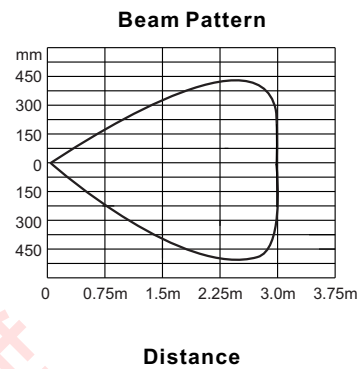
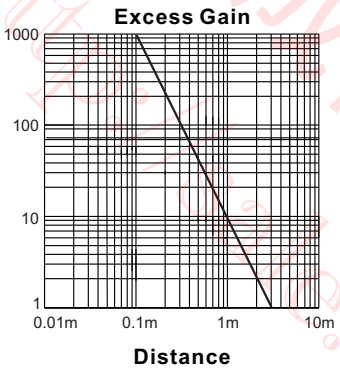
TF18 SERIES

Sensing Characteristics (Typical)

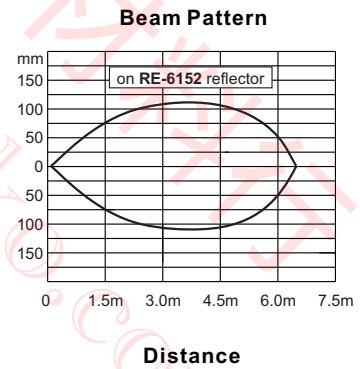
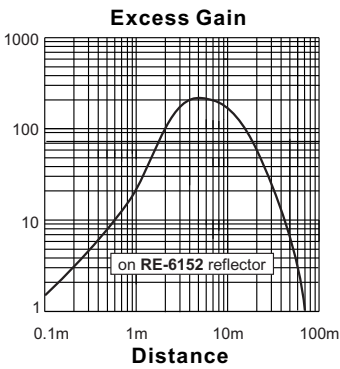
Opposed Mode (Sn=20m)



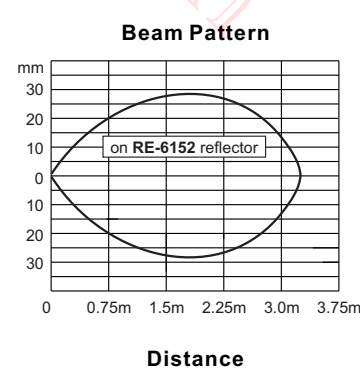
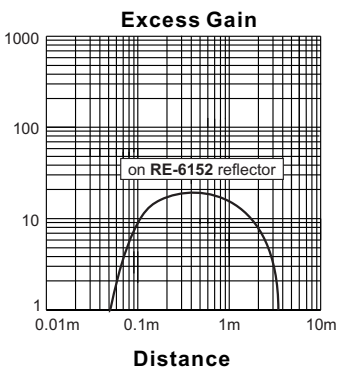
Opposed Mode (Sn=3m)



Retroreflective Mode (Sn=6.5 m)



Retroreflective with Polarizing Filter (Sn=3.5 m)

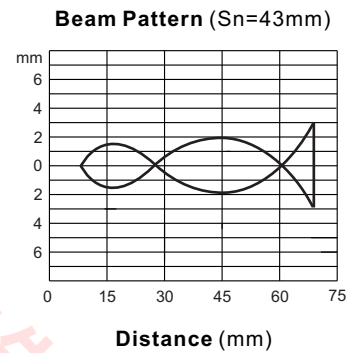
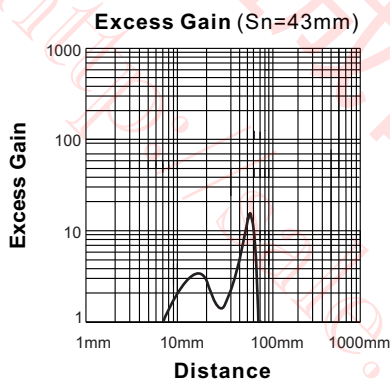
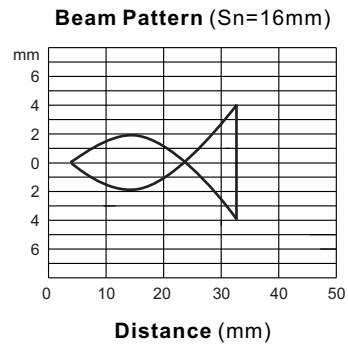
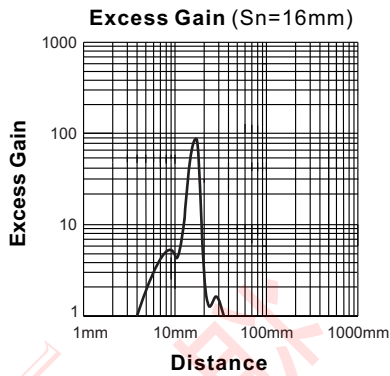


V: TF18 SERIES

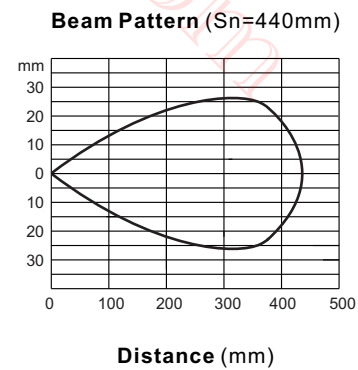
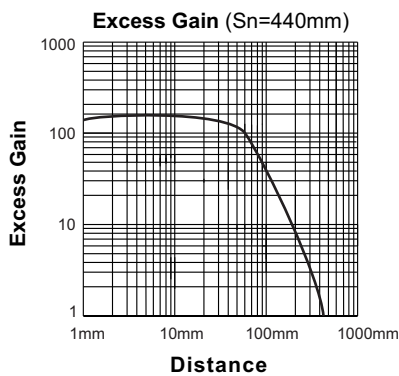
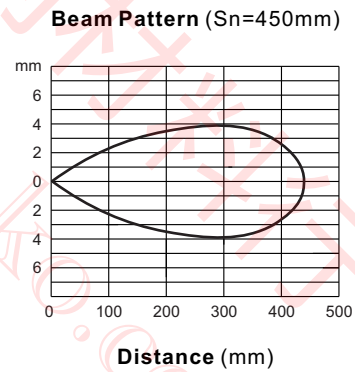
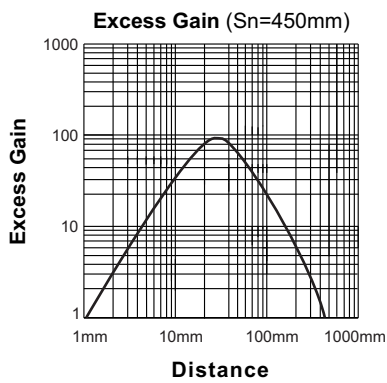
TF18 SERIES

Sensing Characteristics (Typical)

Convergent Mode



Diffuse Mode

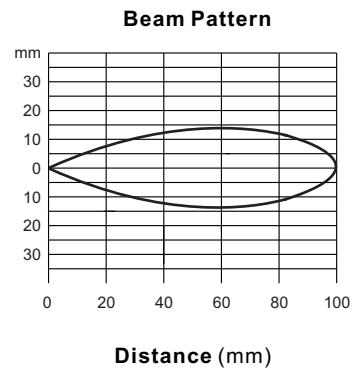
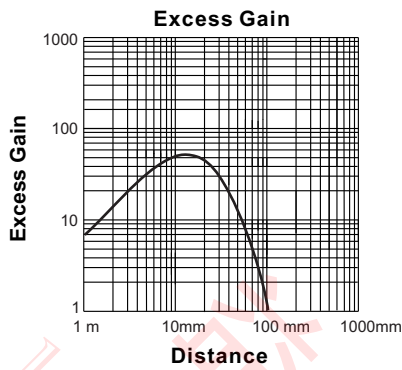


V: TF18 SERIES

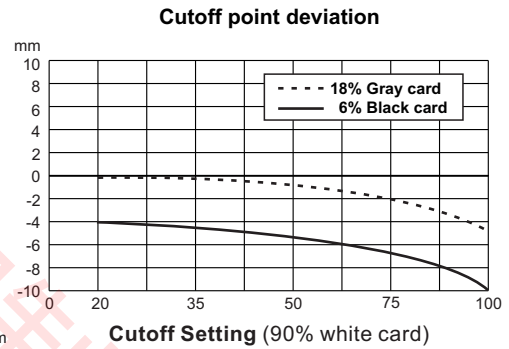
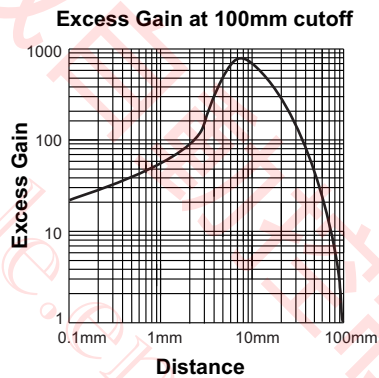
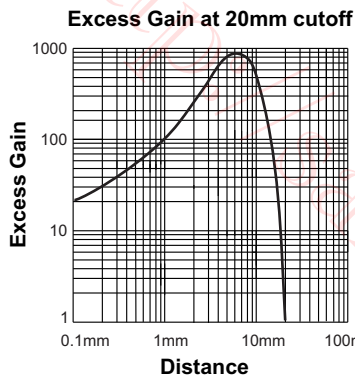
TF 18 SERIES

Sensing Characteristics (Typical)

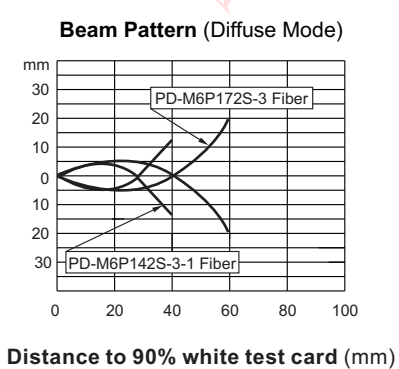
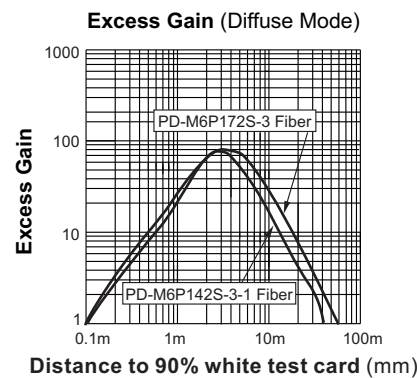
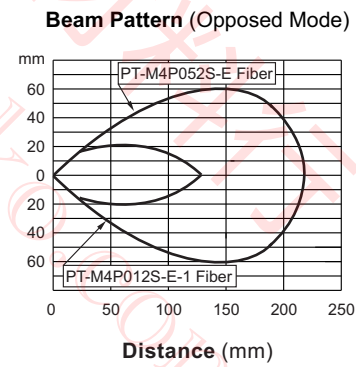
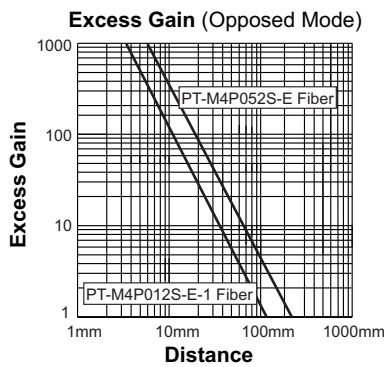
Divergent Diffuse Mode (Sn=100mm)



Diffuse with Background Suppression (Sn=100mm)



Plastic Fiber Optic Mode (Sensing distance depends on fiber optic used)

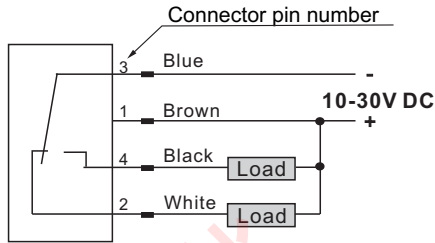


V: TF18 SERIES

TF 18 SERIES

Connection Diagrams

NPN output type



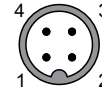
Connector pin position

Pico-style



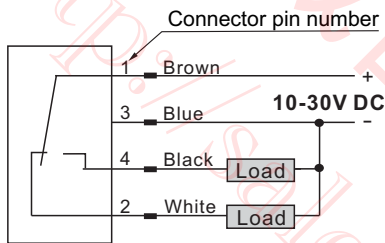
- 1. Brown
- 2. White
- 3. Blue
- 4. Black

Euro-style



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

PNP output type



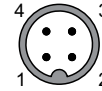
Connector pin position

Pico-style



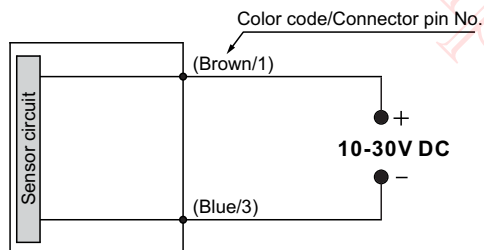
- 1. Brown
- 2. White
- 3. Blue
- 4. Black

Euro-style



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

Emitter of Thru-beam Mode



Connector pin position

Pico-style



- 1. Brown
- 2. Not used
- 3. Blue
- 4. Not used

Euro-style



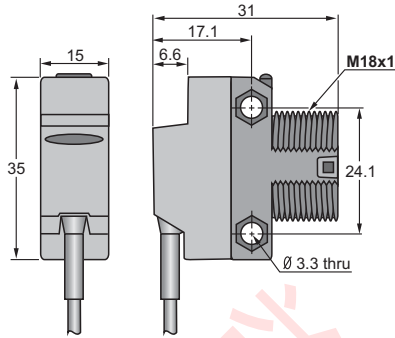
- 1. Brown
- 2. Not used
- 3. Blue
- 4. Not used

V: TF18 SERIES

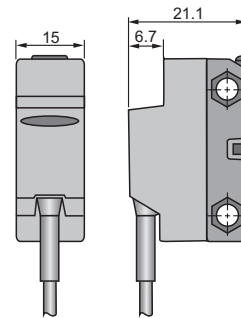
TF 18 SERIES

Dimensions (Unit: mm)

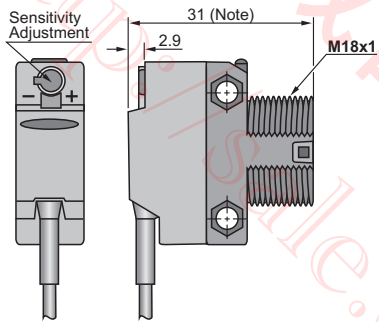
Opposed Mode (Sn=20m)



Opposed Mode (Sn=3m)

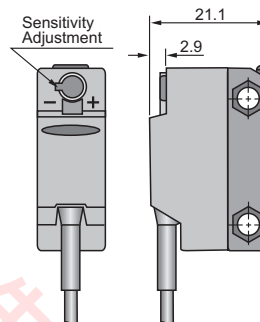


Retroreflective (Sn=6.5m) Polarizing Retroreflective Mode (Sn=3.5m) Convergent Mode (Sn=16mm, 43mm) Diffuse Mode (Sn=450mm)

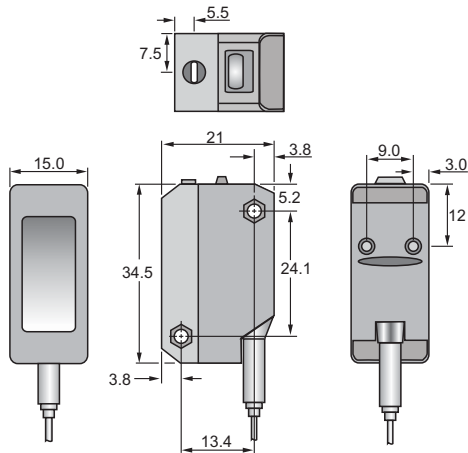


Note: Convergent mode sensor with 33.2mm.

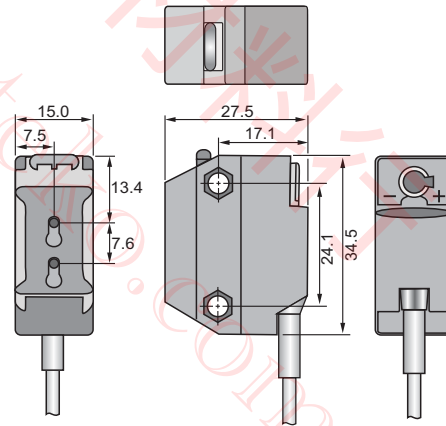
Diffuse Mode (Sn=440mm) Divergent Mode (Sn=100mm)



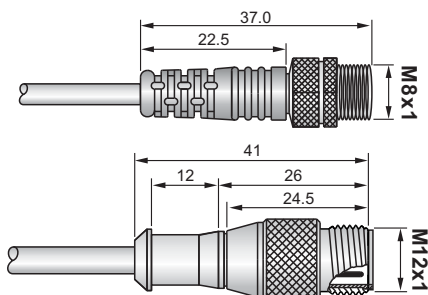
BGS type Diffuse Mode (Sn=100 mm)



Plastic Fiber Optic Mode



Pigtail* Type



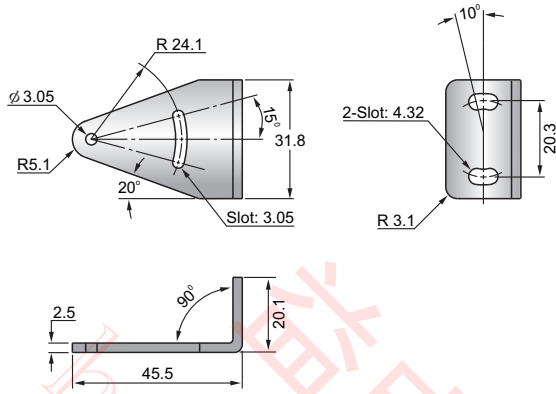
*: Please see **Pigtail Series** or our **Cables & Connectors** catalogue for more information.

V: TF18 SERIES

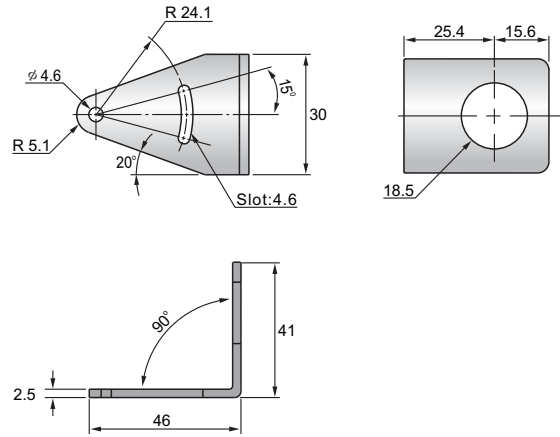
TF 18 SERIES

Mounting Bracket's* Dimensions (Unit: mm)

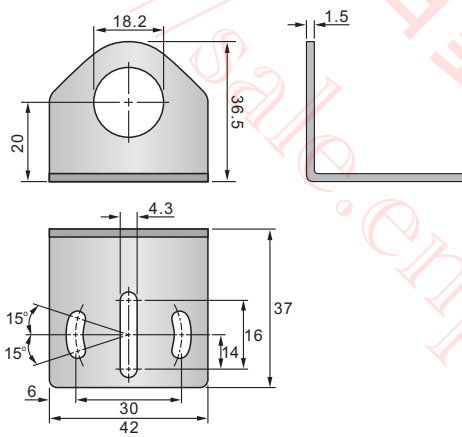
MB-3245 (optional)



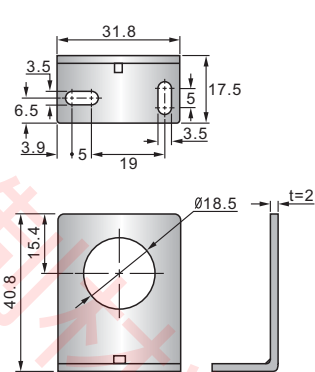
MB-4630 (Optional)



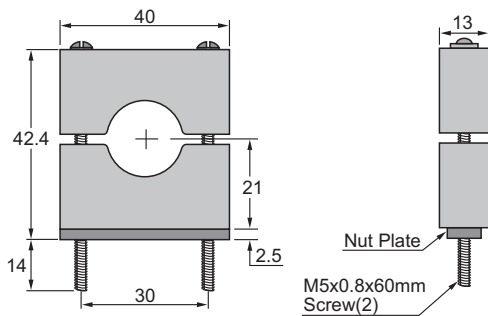
MB-4237 (optional)



MB-4032 (optional)

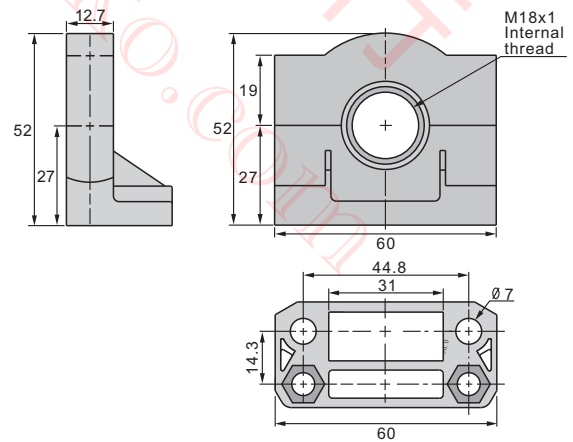


MB-4240 (optional)



18mm split clamp bracket

MB-6052 (optional)



Mounting Bracket to Provide 360° Rotation

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