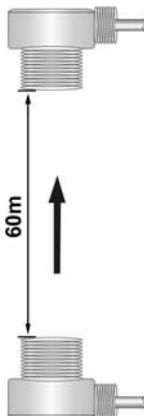









## Thru-beam Mode

Sensing Mode	Appearance	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: 60m</p>	<p>2m Cable</p> 	10-30V DC	Emitter	<u>T30-T060MD-EY9C2L2</u>
			NPN	<u>T30-T060MN-CY9C4U2</u>
			PNP	T30-T060MP-CY9C4U2
			NPN/PNP	<del>T30-T060MD-CY9C4U2</del>
		12-240V DC/ 24-240V AC	Emitter (2-wire)	<del>T30-T060MC-EY9C2L2</del>
			Solid State Isolated Relay (4-wire)	<del>T30-T060MS-CY9C4L2</del>
			Light-ON (2-wire)	<del>T30-T060MC-LY9C2U2</del>
			Dark-ON (2-wire)	<del>T30-T060MC-DY9C2U2</del>
	<p>Quick Disconnect</p> 	<p>10-30V DC (Euro Style)</p>	Emitter	<u>T30-T060MD-EY9Q4LE</u>
			NPN	<u>T30-T060MN-CY9Q4UE</u>
			PNP	T30-T060MP-CY9Q4UE
			NPN/PNP	<del>T30-T060MD-CY9Q4UE</del>
12-240V DC/ 24-240V AC (Micro Style)			Emitter (2-wire)	<del>T30-T060MC-EY9Q4LM</del>
			Solid State Isolated Relay (4-wire)	<del>T30-T060MS-CY9Q4LM</del>
			Light-ON (2-wire)	<del>T30-T060MC-LY9Q4UM</del>
			Dark-ON (2-wire)	<del>T30-T060MC-DY9Q4UM</del>
<p>6" Pigtail</p> 		<p>10-30V DC (Euro Style)</p>	Emitter	<u>T30-T060MD-EY9P4LE</u>
			NPN	<u>T30-T060MN-CY9P4UE</u>
			PNP	T30-T060MP-CY9P4UE
			NPN/PNP	<del>T30-T060MD-CY9P4UE</del>
	12-240V DC/ 24-240V AC (Micro Style)		Emitter (2-wire)	<del>T30-T060MC-EY9P4LM</del>
			Solid State Isolated Relay (4-wire)	<del>T30-T060MS-CY9P4LM</del>
			Light-ON (2-wire)	<del>T30-T060MC-LY9P4UM</del>
			Dark-ON (2-wire)	<del>T30-T060MC-DY9P4UM</del>

X: T30 SERIES

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

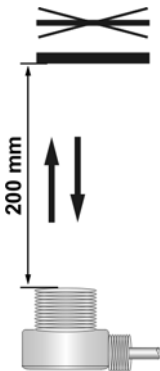



## Retroreflective Mode with Polarizing Filter

Sensing Mode	Appearance	Supply Voltage	Output Mode	Part Number	
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">LED red 680nm</p>  <p style="writing-mode: vertical-rl; transform: rotate(180deg);">Retroreflective Mode with Polarizing Filter Sensing Distance: 6 m (Note)</p>	<p>2m Cable</p> 	10-30V DC	NPN	<u>T30-L6000N-CY6C4U2-PF</u>	
			PNP	<u>T30-L6000P-CY6C4U2-PF</u>	
			NPN/PNP	<u>T30-L6000D-CY6C4U2-PF</u>	
		12-240V DC/ 24-240V AC	Solid State Isolated Relay (4-wire)	<del>T30-L6000S-CY6C4L2-PF</del>	
			Light-ON (2-wire)	<del>T30-L6000C-LY6C2U2-PF</del>	
			Dark-ON (2-wire)	<del>T30-L6000C-DY6C2U2-PF</del>	
		<p>Quick Disconnect</p> 	10-30V DC (Euro Style)	NPN	<u>T30-L6000N-CY6Q4UE-PF</u>
				PNP	<u>T30-L6000P-CY6Q4UE-PF</u>
				NPN/PNP	<u>T30-L6000D-CY6Q4UE-PF</u>
	12-240V DC/ 24-240V AC (Micro Style)		Solid State Isolated Relay (4-wire)	<del>T30-L6000S-CY6Q4LM-PF</del>	
			Light-ON (2-wire)	<del>T30-L6000C-LY6Q4UM-PF</del>	
			Dark-ON (2-wire)	<del>T30-L6000C-DY6Q4UM-PF</del>	
	<p>6" Pigtail</p> 	10-30V DC (Euro Style)	NPN	<u>T30-L6000N-CY6P4UE-PF</u>	
			PNP	<u>T30-L6000P-CY6P4UE-PF</u>	
			NPN/PNP	<u>T30-L6000D-CY6P4UE-PF</u>	
12-240V DC/ 24-240V AC (Micro Style)		Solid State Isolated Relay (4-wire)	<del>T30-L6000S-CY6P4LM-PF</del>		
		Light-ON (2-wire)	<del>T30-L6000C-LY6P4UM-PF</del>		
		Dark-ON (2-wire)	<del>T30-L6000C-DY6P4UM-PF</del>		

**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

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## Diffuse Mode with Background Suppression (Sn=200mm)

Sensing Mode	Appearance	Supply Voltage	Output Mode	Part Number
<b>Infrared 950nm</b>    <b>Diffuse Mode with Background Suppression</b> <b>Sensing Distance: 200mm</b>	<b>2m Cable</b>  	10-30V DC	NPN	<u>T30-D0200N-CY9C4U2-BS</u>
			PNP	<u>T30-D0200P-CY9C4U2-BS</u>
			NPN/PNP	<u>T30-D0200D-CY9C4U2-BS</u>
		12-240V DC/ 24-240V AC	Solid State Isolated Relay (4-wire)	<u>T30-D0200S-CY9C4L2-BS</u>
			Light-ON (2-wire)	<u>T30-D0200C-LY9C2U2-BS</u>
			Dark-ON (2-wire)	<u>T30-D0200C-DY9C2U2-BS</u>
	<b>Quick Disconnect</b>  	10-30V DC (Euro Style)	NPN	<u>T30-D0200N-CY9Q4UE-BS</u>
			PNP	<u>T30-D0200P-CY9Q4UE-BS</u>
			NPN/PNP	<u>T30-D0200D-CY9Q4UE-BS</u>
		12-240V DC/ 24-240V AC (Micro Style)	Solid State Isolated Relay (4-wire)	<u>T30-D0200S-CY9Q4LM-BS</u>
			Light-ON (2-wire)	<u>T30-D0200C-LY9Q4UM-BS</u>
			Dark-ON (2-wire)	<u>T30-D0200C-DY9Q4UM-BS</u>
<b>6" Pigtail</b>  	10-30V DC (Euro Style)	NPN	<u>T30-D0200N-CY9P4UE-BS</u>	
		PNP	<u>T30-D0200P-CY9P4UE-BS</u>	
		NPN/PNP	<u>T30-D0200D-CY9P4UE-BS</u>	
	12-240V DC/ 24-240V AC (Micro Style)	Solid State Isolated Relay (4-wire)	<u>T30-D0200S-CY9P4LM-BS</u>	
		Light-ON (2-wire)	<u>T30-D0200C-LY9P4UM-BS</u>	
		Dark-ON (2-wire)	<u>T30-D0200C-DY9P4UM-BS</u>	

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

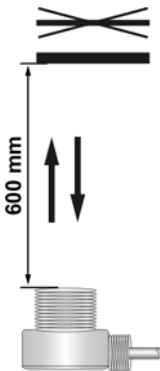



## Diffuse Mode with Background Suppression (Sn=400mm)

Sensing Mode	Appearance	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);">Diffuse Mode with Background Suppression Sensing Distance: 400mm</p>	<p>2m Cable</p> 	10-30V DC	NPN	<u>T30-D0400N-CY9C4U2-BS</u>	
			PNP	<u>T30-D0400P-CY9C4U2-BS</u>	
			NPN/PNP	<del>T30-D0400D-CY9C4U2-BS</del>	
		12-240V DC/ 24-240V AC	Solid State Isolated Relay (4-wire)	<del>T30-D0400S-CY9C4L2-BS</del>	
			Light-ON (2-wire)	<del>T30-D0400C-LY9C2U2-BS</del>	
			Dark-ON (2-wire)	<del>T30-D0400C-DY9C2U2-BS</del>	
		<p>Quick Disconnect</p> 	10-30V DC (Euro Style)	NPN	<u>T30-D0400N-CY9Q4UE-BS</u>
				PNP	<u>T30-D0400P-CY9Q4UE-BS</u>
				NPN/PNP	<del>T30-D0400D-CY9Q4UE-BS</del>
	12-240V DC/ 24-240V AC (Micro Style)		Solid State Isolated Relay (4-wire)	<del>T30-D0400S-CY9Q4LM-BS</del>	
			Light-ON (2-wire)	<del>T30-D0400C-LY9Q4UM-BS</del>	
			Dark-ON (2-wire)	<del>T30-D0400C-DY9Q4UM-BS</del>	
	<p>6" Pigtail</p> 	10-30V DC (Euro Style)	NPN	<u>T30-D0400N-CY9P4UE-BS</u>	
			PNP	<u>T30-D0400P-CY9P4UE-BS</u>	
			NPN/PNP	<del>T30-D0400D-CY9P4UE-BS</del>	
12-240V DC/ 24-240V AC (Micro Style)		Solid State Isolated Relay (4-wire)	<del>T30-D0400S-CY9P4LM-BS</del>		
		Light-ON (2-wire)	<del>T30-D0400C-LY9P4UM-BS</del>		
		Dark-ON (2-wire)	<del>T30-D0400C-DY9P4UM-BS</del>		

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

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## Diffuse Mode with Background Suppression (Sn=600mm)

Sensing Mode	Appearance	Supply Voltage	Output Mode	Part Number
<b>Infrared 950nm</b>    <b>Diffuse Mode with Background Suppression</b> <b>Sensing Distance: 600mm</b>	<b>2m Cable</b>  	10-30V DC	NPN	<u>T30-D0600N-CY9C4U2-BS</u>
			PNP	<u>T30-D0600P-CY9C4U2-BS</u>
			NPN/PNP	<del>T30-D0600D-CY9C4U2-BS</del>
		12-240V DC/ 24-240V AC	Solid State Isolated Relay (4-wire)	<del>T30-D0600S-CY9C4L2-BS</del>
			Light-ON (2-wire)	<del>T30-D0600C-LY9C2U2-BS</del>
			Dark-ON (2-wire)	<del>T30-D0600G-DY9C2U2-BS</del>
	<b>Quick Disconnect</b>  	10-30V DC (Euro Style)	NPN	<u>T30-D0600N-CY9Q4UE-BS</u>
			PNP	<u>T30-D0600P-CY9Q4UE-BS</u>
			NPN/PNP	<del>T30-D0600D-CY9Q4UE-BS</del>
		12-240V DC/ 24-240V AC (Micro Style)	Solid State Isolated Relay (4-wire)	<del>T30-D0600S-CY9Q4LM-BS</del>
			Light-ON (2-wire)	<del>T30-D0600C-LY9Q4UM-BS</del>
			Dark-ON (2-wire)	<del>T30-D0600G-DY9Q4UM-BS</del>
<b>6" Pigtail</b>  	10-30V DC (Euro Style)	NPN	<u>T30-D0600N-CY9P4UE-BS</u>	
		PNP	<u>T30-D0600P-CY9P4UE-BS</u>	
		NPN/PNP	<del>T30-D0600D-CY9P4UE-BS</del>	
	12-240V DC/ 24-240V AC (Micro Style)	Solid State Isolated Relay (4-wire)	<del>T30-D0600S-CY9P4LM-BS</del>	
		Light-ON (2-wire)	<del>T30-D0600C-LY9P4UM-BS</del>	
		Dark-ON (2-wire)	<del>T30-D0600G-DY9P4UM-BS</del>	

X: T30 SERIES

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

## Specifications (DC)

Type		Thru-beam	Retroreflective (with polarizing filters)	Diffuse reflective (with background suppression)		
Item	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 $\phi$ 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"> <li>Applied voltage: 30V DC or less</li> <li>Maximum sink current: 150mA</li> <li>Voltage drop: 2.5V or less</li> </ul>		<PNP> output type PNP open-collector transistor <ul style="list-style-type: none"> <li>Applied voltage: 30V DC or less</li> <li>Maximum sourcing current: 150mA</li> <li>Voltage drop: 2.5V or less</li> </ul>		
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)	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.

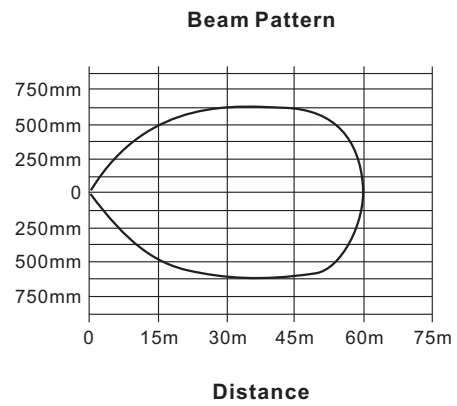
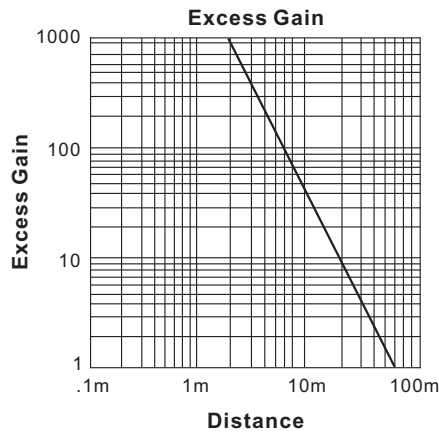
## Specifications (AC/DC)

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 $\phi$ 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 $\Omega$ , 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)	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.				

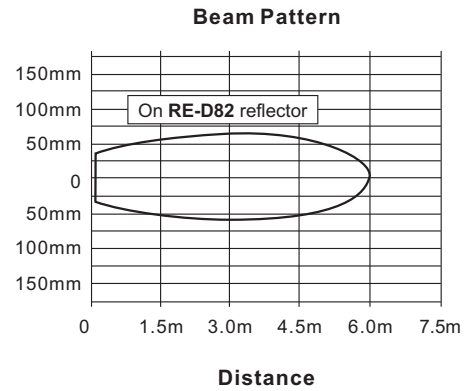
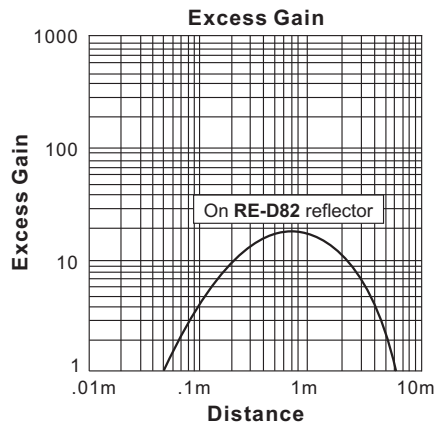
Note: Used with RE-D82 (supplied with sensor) reflector.

## Sensing Characteristics (Typical)

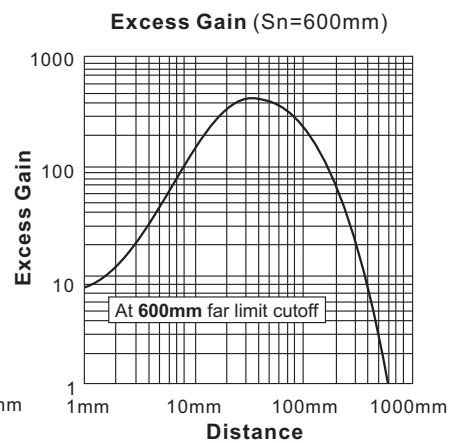
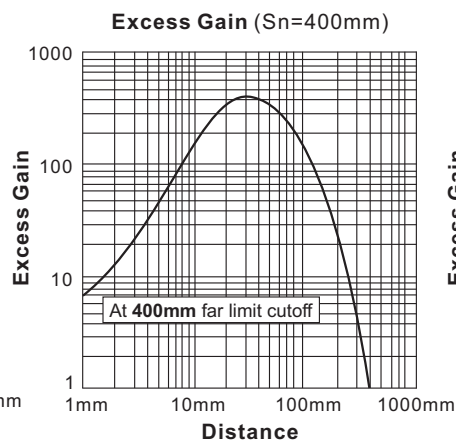
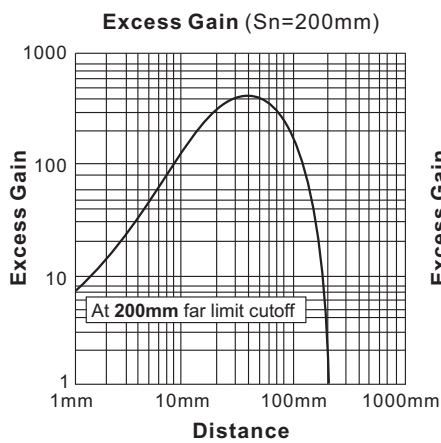
### Opposed Mode (Sn=60m)



### Polarized Retroreflective Mode (Sn=6 m)



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

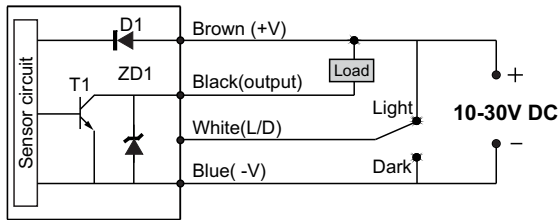


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## Connection Diagrams (DC)

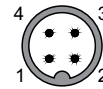
### NPN output type



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

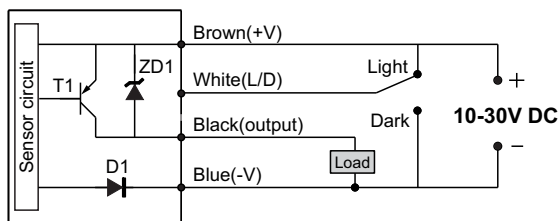
#### Connector pin position

##### Euro-style



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

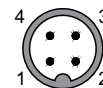
### PNP output type



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

#### Connector pin position

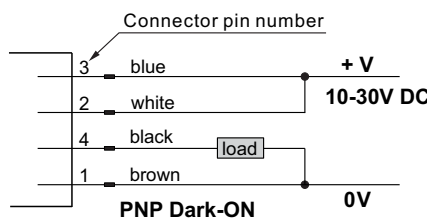
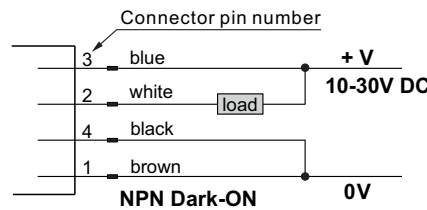
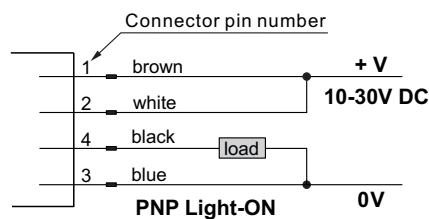
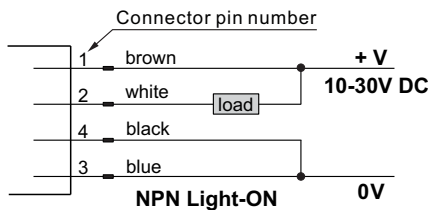
##### Euro-style



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

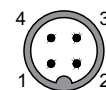
X: T30 SERIES

### NPN/PNP output type



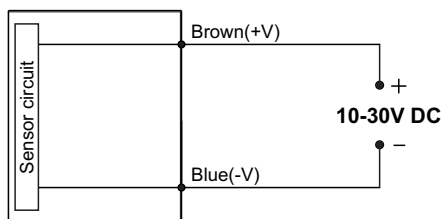
#### Connector pin position

##### Euro-style



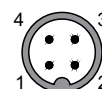
- 1. Brown
- 2. White
- 3. Blue
- 4. Black

### Emitter of Thru-beam Mode



#### Connector pin position

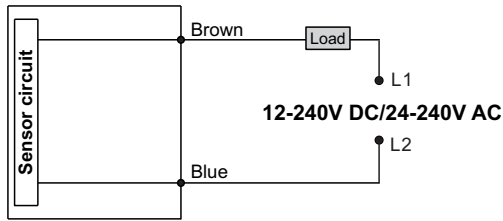
##### Euro-style



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

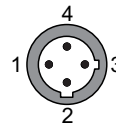
## Connection Diagrams (AC/DC)

### SPST Solid State output



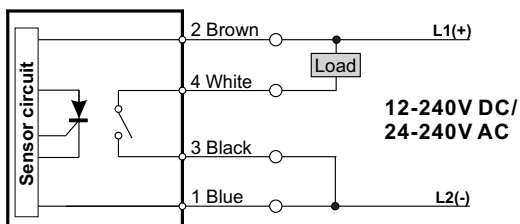
Connector pin position

Micro-style



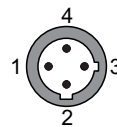
- 1.Red/black(L1)
- 2.Red/white (L2)
- 3.Not used
- 4.Not used

### Solid State Isolated Relay



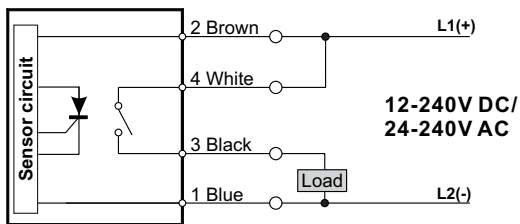
Connector pin position

Micro-style

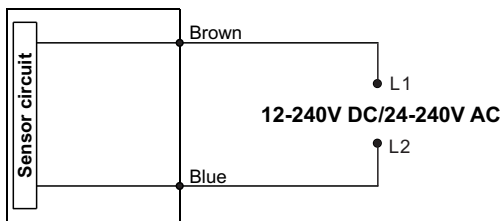


- 1.Red/black(L2)
- 2.Red/white (L1)
- 3.Red (Output)
- 4.Green (Output)

OR

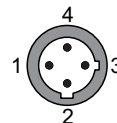


### Emitter of Thru-beam Mode



Connector pin position

Micro-style

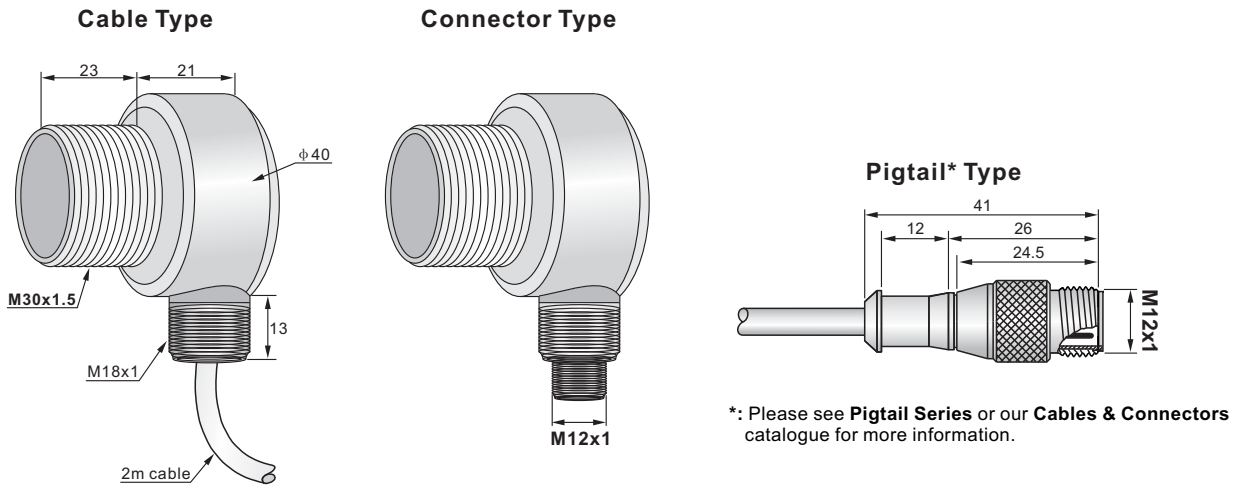


- 1.Red/black(L1)
- 2.Red/white (L2)
- 3.Not used
- 4.Not used

X: T30 SERIES

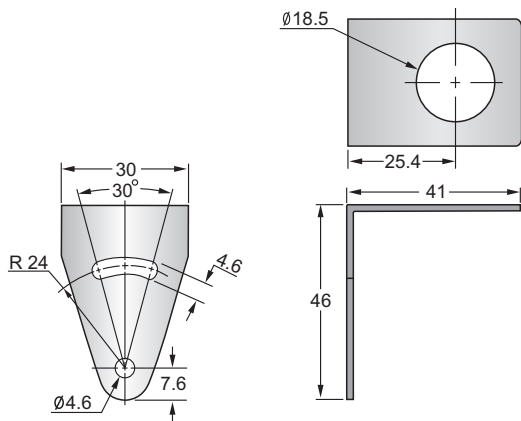
## Dimensions (Unit: mm)

### Sensor Type

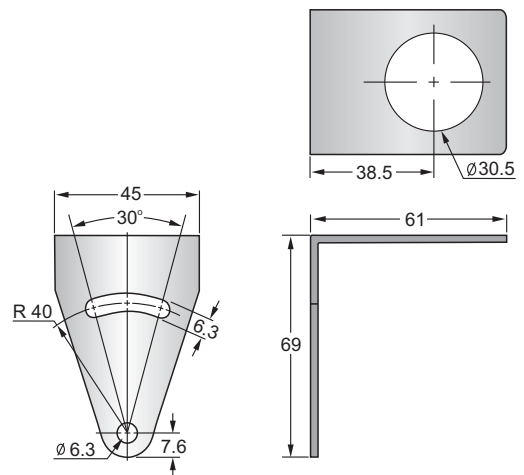


### Mounting Brackets \*

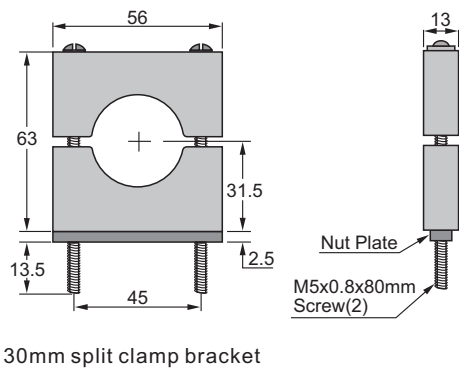
#### MB-4630 (optional)



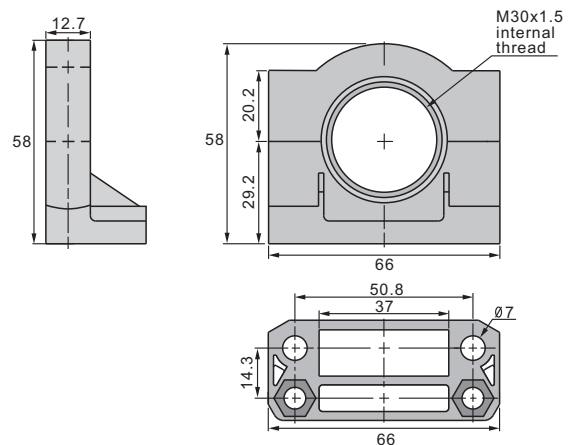
#### MB-6961 (optional)



#### MB-6356 (optional)



#### MB-6658 (optional)



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