

- CTD-1500□□
- CRD-300□□
- CRDF-100□□
- CDD-11□□
- CDD-40□□

INSTRUCTION MANUAL

- Confirm if the item meets your needs.
- Before the use, you should first thoroughly read this manual and operate correctly as mentioned.
- You should keep this manual at hand for proper use.

SPECIFICATIONS

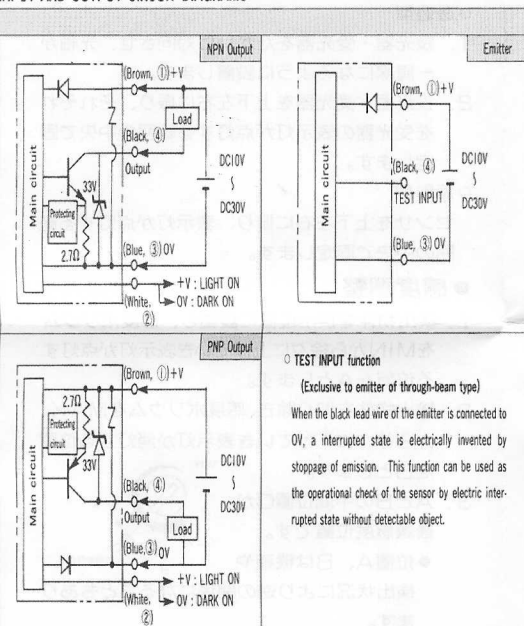
Item	Through beam type		Retro-reflection type		Diffused reflection type	
	CTD-1500(C) (N, P)	CRD-300(C) (N, P)	With polarizing filter		CDD-11(C) (N, P)	CDD-40(C) (N, P)
			CRDF-100(C) (N, P)			
Detecting distance	15m	0.05~3m	0.05~1m		※ 11cm	※ 40cm
Supply voltage	DC 10~30V					
Current consumption	40mA max.		30mA max.			
Detecting object	Opaque object □ 15mm min.	Opaque object □ 45mm min.			Transparent and opaque object.	
Response time	1.5ms max.					
Hysteresis				15% max. (at 11cm)		20% max. (at 40cm)
Light source	IR LED		Red LED		IR LED	
Sensitivity adjustment	I rotation volume				I rotation volume	
Indicator	Incident indicator (Red)		Power indicator for Emitter			
Control output	NPN or PNP open collector		100 mA max.		DC 30V	
Operation mode	LIGHT ON, DARK ON selectable by control cable					
Connection	Cable : PVC φ 5×2 m, 4×0.3 mm ²			Connector : M12×4 pins		
Noise resistance	1000 Vp, pulse width 1 μs (Noise simulator)					
Insulation resistor	20 MΩ min. (at DC 500 V)					
Ambient temperature/humidity	-25~55°C (There should be no freezing)/35~85 % RH					
Environmental luminance	Sunlight : 10000 lx max. Incandescent lamp : 3000 lx max.					
Vibration Shock resistance	Vibration : 10~55 Hz amplitude 1.5 mm X, Y, Z, each 2 hrs. Shock : 500 m/s ² (50 G) X, Y, Z, each 3 times					
Protection category, material	IP 66 (IEC 144)		Case : BSBM		Lens : PC (PMMA for polarizing filter type)	

※ □ 20cm white paper

OPERATION MODE

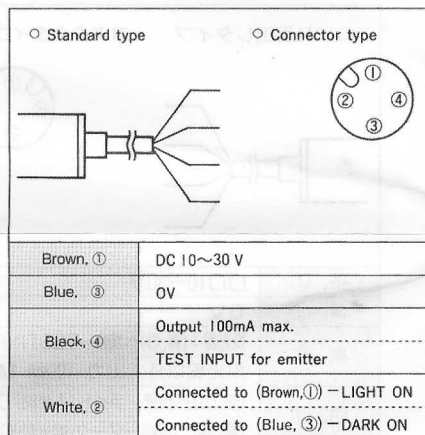
Operation	Mode	LIGHT ON (ON at incident)	DARK ON (ON at interruption)
	Operation status	Incident Interruption	
Incident indicator (red)	ON		
	OFF		
Transistor output	ON		
	OFF		
Load	Operation		
	Release		

INPUT AND OUTPUT CIRCUIT DIAGRAMS



HOW TO USE

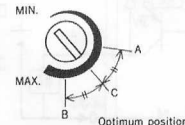
● Connection diagram



● Adjusting the optical axis.

- **Through-beam type**
 1. Install the emitter and the receiver opposite to each other so that the optical axis lines up.
 2. Swing the emitter and the receiver vertically and from side to side, and fix each at the mid-point in the range where the indicating lamp at the receiver lights up.
- **Reflection type**

Swing the sensor vertically and from side to side, and fix it at the mid-point in the range where the indicating lamp lights up.
- **Adjusting the sensitivity control**
 1. Set the detectable object at the detection position and turn the sensitivity control slowly from MIN toward MAX until the indicating lamp lights up. Call it position A.
 2. Remove detectable object and turn the sensitivity control from MAX toward MIN position where the indicating lamp is extinguished. Call it position B.
 3. Point C midway between A and B is the optimum sensitivity position.



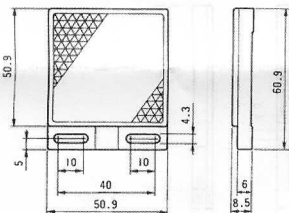
● Other precautions

- Be careful not to install the sensor at the following locations, for it may otherwise malfunction :
 - Where a lot of dust, vapor, or the like is present
 - Where corrosive gases are produced
 - Where water, oil or the like flies directly onto the sensor.
 - Where strong vibration or shock is caused to the sensor.
- Do not use organic solvent, such as thinner, to remove contaminants from the lens, which are all of plastics. Using a dry rag, just wipe clean.
- When a switching regulator is to be used with a power supply, be sure to ground the frame ground (F. G.) terminal.
- Do not use the sensor in a transient state at a turn-on (about 40 ms).

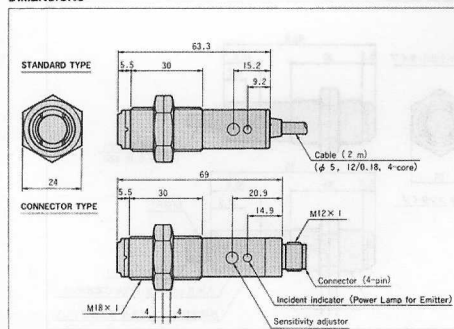
⚠ Must not use this item as safety equipment for the purpose of human body protection.

● Accessories

- Reflection mirror (for Retro-reflection type)



DIMENSIONS



- Specifications and equipment are subject to change without any obligations on the part of manufacture.

- For more information, questions and comments regarding products, please contact us below.

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