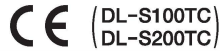


**INSTRUCTION MANUAL**

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FAX : +81-75-581-7118

Thank you for using **TAKEX** products.  
Please read this manual carefully prior to sensor use.

**SPECIFICATIONS**



Type	With built-in amplifier Open collector output type		With built-in power supply Relay output type	
	DL-S100TC	DL-S200TC	DL-S100P	DL-S200P
Detection Method	Distance limited reflection			
Range	0.2~1m ※1	0.2~2m ※1	0.2~1m ※1	0.2~2m ※1
Power supply	12~24VDC ±10% Ripple 10% MAX.		AC/DC 24~240V ±10% 50/60Hz	
Current Consumption	30mA MAX.		DC : 30mA MAX. · AC : 4W MAX.	
Output mode	Open collector NPN/PNP 2 output Rating : 100mA(30VDC) MAX. ※2		Relay output 1A : 3A 250V AC750VA MAX. 3A 30V DC90W MAX.	
Operation	Light-on/Dark-on Selectable			
Response	10 ms MAX.		20 ms (16 times/sec) MAX.	
Hysteresis	10% MAX.			
Light source	Infrared LED, Wave-length 880nm			
Sensing cell	Photodiode			
Indicator	OP.L : Operation indicator (Red LED) UP : Stability light indicator (Green LED)			
Sensitivity	NEAR-FAR : Built-in Optical distance adjustment VR			
Switch (SW)	Light-on, Dark-on switchable (L.ON side : Light-on, D.ON side : Dark-on)			
Circuit protection	Built in Short circuit protection		_____	
Material	Case : Polycarbonate, Front face & Terminal cover : Acryl			
Connection	Terminal connections			
Weight	170g (Within 60g of installing matel) MAX.			
NOTES	※1 200×200mm white paper ※2 NPN rating Sink current, PNP rating Source current.			

**ENVIRONMENT**

Models	DL-S100TC	DL-S200TC	DL-S100P	DL-S200P
Ambient light	Withstands 10,000 lx			
Operating temp.	-25~+55℃			
Humidity	Withstands 85%RH			
Case protection	IP65			
Vibration	10~55Hz 1.5mm Amplitude, 2 HR, X.Y.Z. Direction			
Dielectric withstanding	AC500V, 1 minute		AC2000V, 1 minute	
Insulation resistance	500VDC, 20MΩ MAX.		500VDC, 100MΩ MAX.	

**ADJUSTMENT**

(In case of Light-on operation)

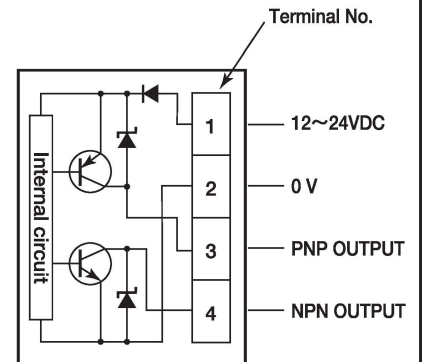
- Set the detecting surface of the photosensor in the detecting direction and temporarily fasten it.
- With no detectable object in the detection region, set the distance adjuster to maximum (FAR) and slowly turn to counterclockwise. Continue the adjuster to counterclockwise until the operation indicator lamp (OP.L) is extinguished. This is the adjustment position, if the indicator lamp is extinguished at the maximum position, that is the adjustment position.
- With the object in the detecting position, set the adjuster in the minimum position (NEAR) and turn the adjuster clockwise to locate the position where the indicating lamp turns ON. If the indicating lamp goes ON at the minimum position, then NEAR is the adjustment position.
- Set the adjuster to a point midway between locations found in 2. and 3. above
- Securely fasten the photoelectric switch. When fastening, the switch should be sufficiently secure so that it will not shift under vibration or shock.



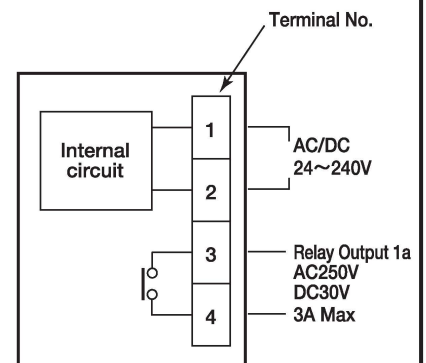
**LIGHT-ON/DARK-ON SWITCHING**

For Light-ON mode : Set the switch to L.ON.  
For Dark-ON mode : Set the switch to D.ON.

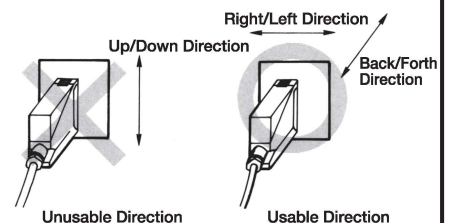
● With built-in amplifier  
Open collection output type



● With built-in power supply  
Relay output type



◆ Take care for the mounting direction of this sensor according to the movement direction of an object.



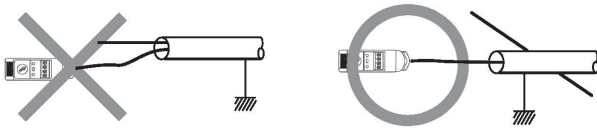
※ Unusable direction to use  
Take care for the up/down direction as like above picture except for the detection range, because it's impossible direction to use.

## WIRING

- To maintain watertightness, the cord should have an outer diameter of 9 to 11mm with a smooth covering material that allows the bushing to be securely tightened.
- Optional bushing rubber "JV7" for an outer diameter of 6 to 9mm is available.
- The bushing used for this switch is PF 1/2 type.
- To wire to the terminal connections, please fasten the lead wire certainly without contacting to the neighboring terminals.

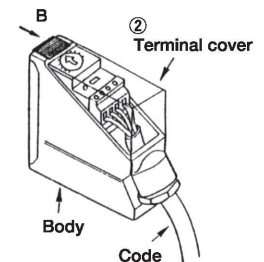
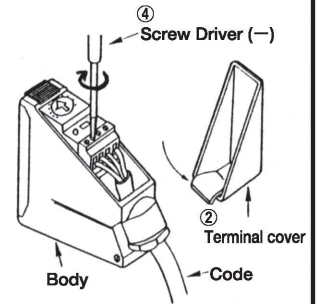
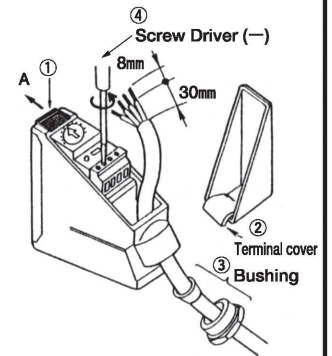
## NOTES

- Use in the ambient temperature range of  $-25^{\circ}\text{C}$  to  $+55^{\circ}\text{C}$ .
- If an external surge voltage exceeding 500V (with built-in amplifier type), or 4 KV (built-in power supply type) is impressed, the internal circuit will be damaged, and a surge suppressing element should be used.
- The Terminal Cover should certainly be put in so that the watertight construction is kept, and please lock by the Terminal Cover Lock.
- When a commercial available switching regulator is used, ground the frame ground FG.
- Available cable is outer diameter 0.3mm (Min), within 100m length for extension.
- Sole wiring through metal tube is required by high voltage or power line as preventing from mistaking and damage.
- In case of using this product as UL approved equipment, use UL Class 2 power supply which is limited the current in accordance with the lead wire size of the sensor.

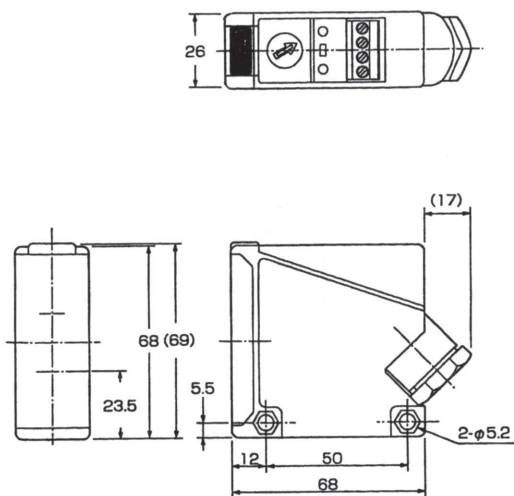


## HOW TO CONNECT

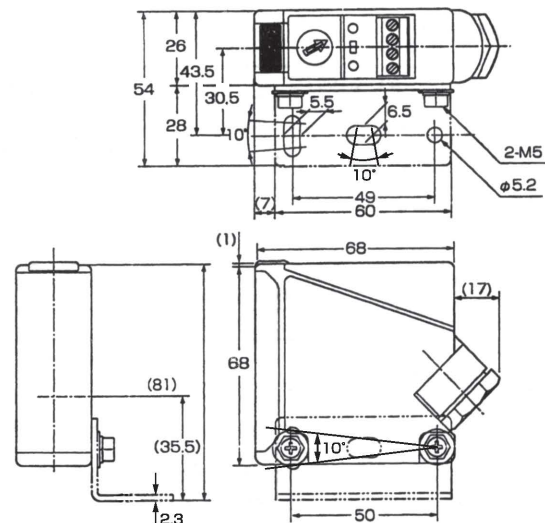
1. Take off the Terminal Cover ② by sliding the Terminal Cover Lock ① to [A] direction.
2. Take off the bushing ③ as like picture, and put the cord in.
3. Unfasten the Terminal connections by turning the driver ④ to counterclockwise.
4. Fasten with the cord wire putting into.
5. After correcting the over length of cord, fasten the bushing firmly.
6. After completing the adjustment, cover as applying the Terminal Cover ② to the case and push it from the upper part.
7. When pushing the Terminal Cover ② from the upper part, it makes a sound Click. Afterward, it has finished after sliding the Terminal Cover Lock ① to [B] direction.
8. In case of the adjustment, do in the same way.



## DIMENSIONS (unit : mm)



(with bracket)



- This sensor is designed to detect a specific object. It is not provided with control functions for prevention of injuries or accidents in itself.
- Takex will not held responsible for any damage or loss incurred due to accidents, faulty installation, abuse, misuse, improper maintenance or acts of God including lightning surge.
- Specifications and dimensions may be subject to change without notice.