

BY Series

Ultra small size Through-beam type

■ Features

- Micro size : W12×H16×D30mm
- Minimizing malfunction by extraneous light by synchronizing emitter and receiver.
- Reverse power polarity protection and over current protection built in.
- Fast response speed : Under 1ms



⚠ Please read "Caution for your safety" in operation manual before using.

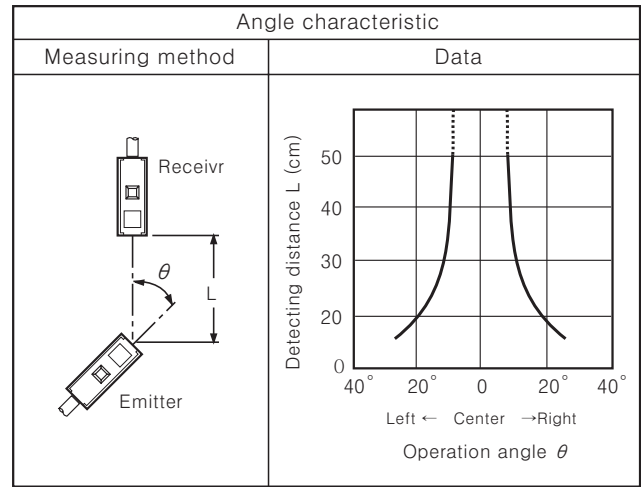
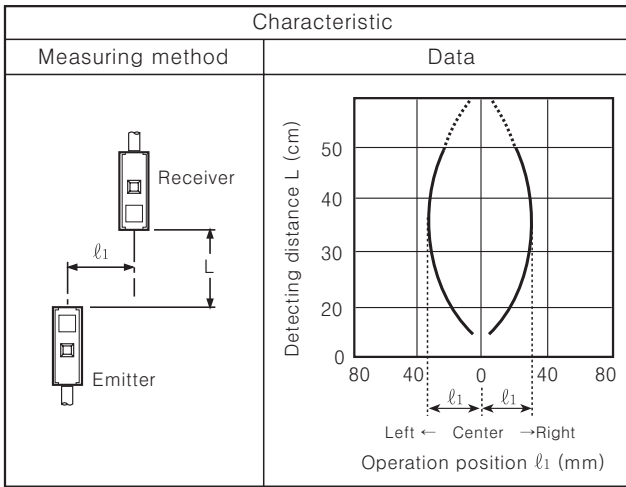
■ Specifications

Model	Standard type	Side detection type
	BY500-TDT	BYS500-TDT
Type	Through-beam	
Detecting distance	500mm	
Detecting target	Opaque materials of Min. ϕ 5mm	
Response time	Max. 1ms	
Power supply□	12-24VDC \pm 10% (Ripple P-P : Max. 10%)	
Current consumption	Max. 30mA	
Light source	Infrared LED(modulated)	
Operation mode	Dark ON	
Control output	NPN open collector output \Rightarrow Load voltage : 30VDC, Load current : Max. 100mA, Residual voltage : Max. 1V	
Protection circuit	Reverse polarity protection, Short-circuit protection	
Indication	Operation indicator : Red LED	
Connection	Outgoing cable(2m)	
Insulation resistance	Min. 20M Ω (at 500VDC)	
Noise strength	\pm 240V the square wave noise (pulse width:1 μ s) by the noise simulator	
Dielectric strength	1000VAC 50/60Hz for 1minute	
Vibration	1.5mm amplitude at frequency of 10 ~ 55Hz in each of X, Y, Z directions for 2 hours	
Shock	500m/s ² (50G) in X, Y, Z directions for 3 times	
Ambient illumination	Sunlight : Max. 11,000 lx, Incandescent lamp : Max. 3,000 lx	
Ambient temperature	-10 ~ +60°C (at non-freezing status), Storage : -25 ~ +70°C	
Ambient humidity	35 ~ 85%RH, Storage : 35 ~ 85%RH	
Protection	IP50 (IEC specification)	
Material□	Case : ABS, Lens : Acryl□	
Cable	4P, ϕ 4mm, Length : 2m	
Accessories	Mounting bracket, Bolts/nuts	
Weight	Approx. 150g	

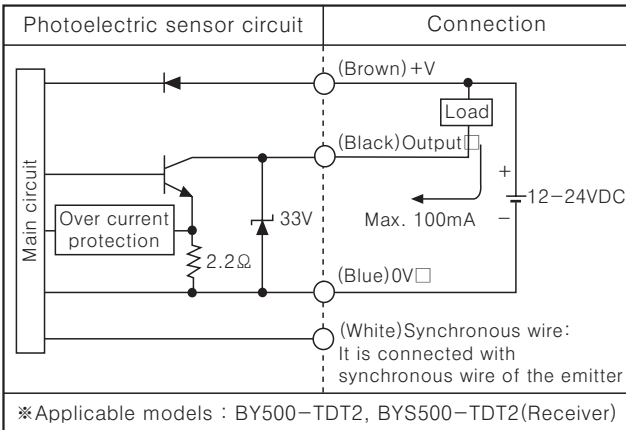
DC Miniature Through Beam Type

Characteristic

- BY500-TDT ●BYS500-TDT

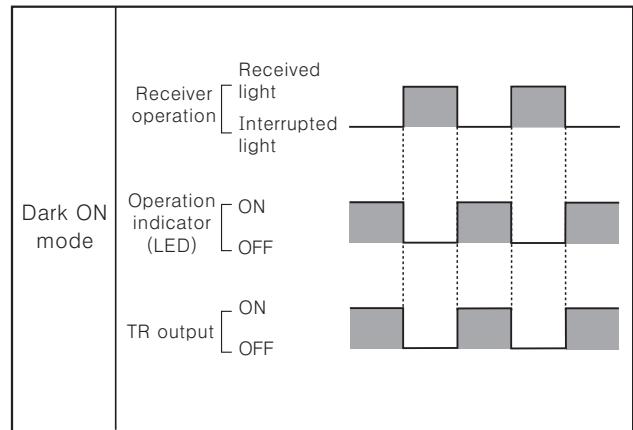


Control output diagram

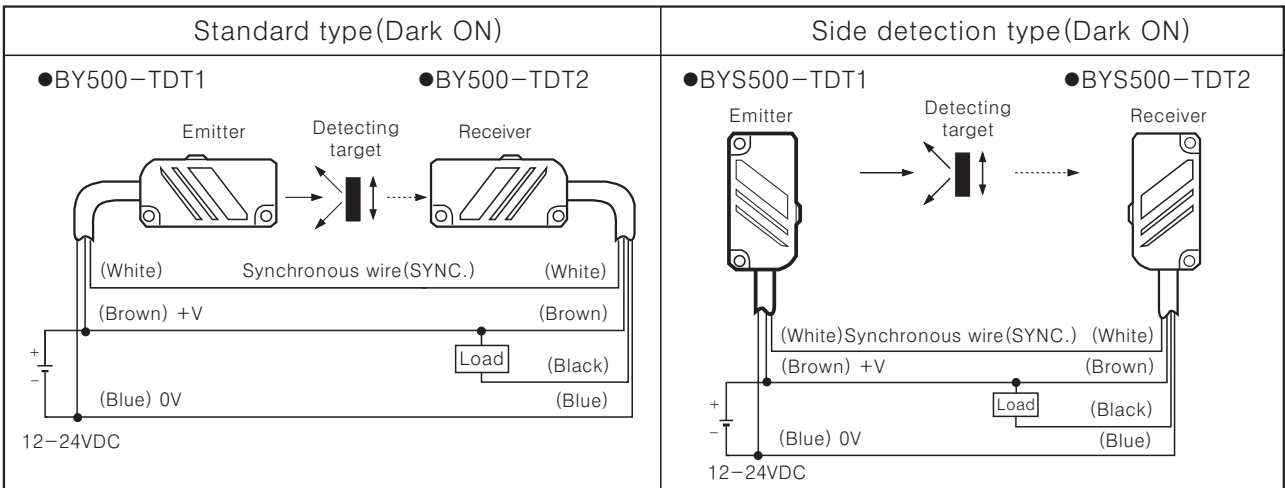


- ※If the control output terminal is short-circuited or if over current condition exists, the control output will turn off due to protection circuit.
- ※Please supply the power to Brown and Blue wire of emitter and Synchronous wire(White) of the receiver must be connected with that of the emitter.

Operation mode



Connections



- ※The power of the emitter and the receiver must be supplied from same power line.
- ※Synchronous wire(White) of the receiver must be connected with that of the emitter.
- ※Unused wires must be insulated.

(A) Counter

(B) Timer

(C) Temp. controller

(D) Power controller

(E) Panel meter

(F) Tacho/Speed/Pulse meter

(G) Display unit

(H) Sensor controller

(I) Proximity sensor

(J) Photo electric sensor

(K) Pressure sensor

(L) Rotary encoder

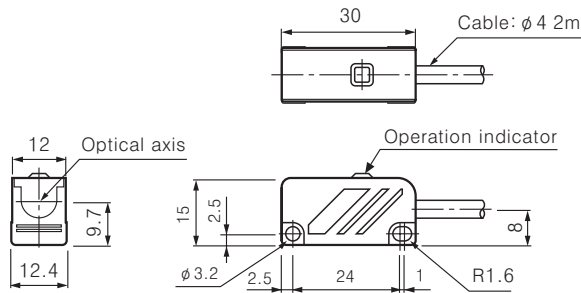
(M) 5-Phase stepping motor & Driver & Controller

BY Series

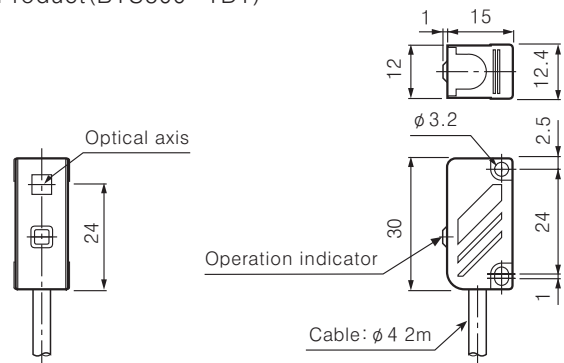
Dimensions

Unit:mm

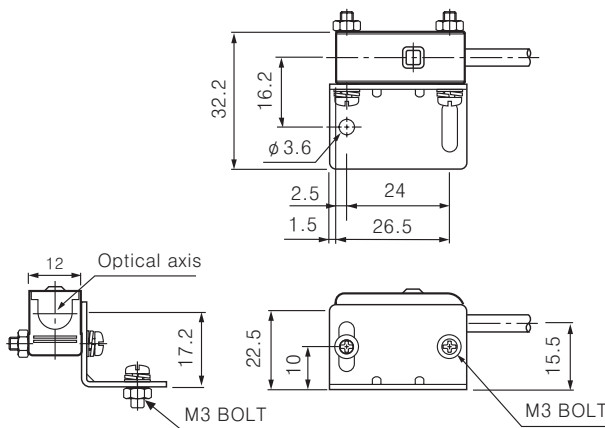
Product (BY500-TDT)



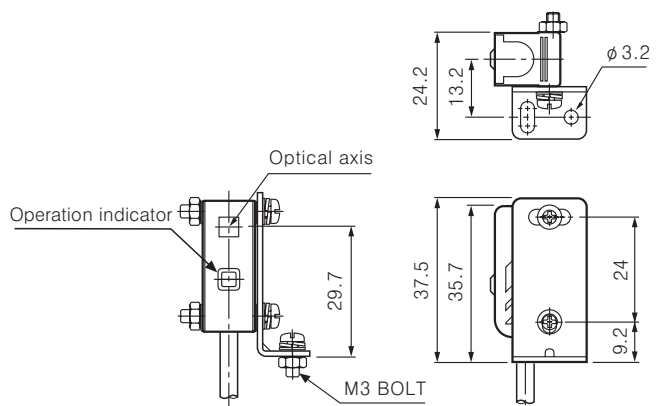
Product (BYS500-TDT)



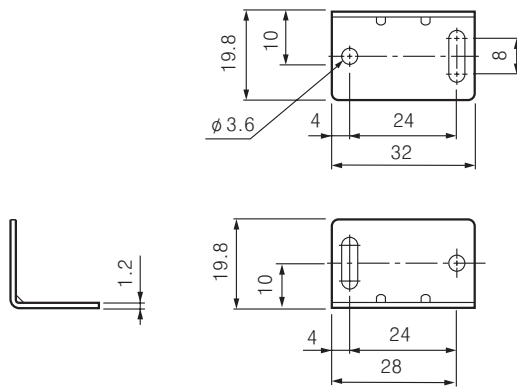
Bracket (BY500-TDT)



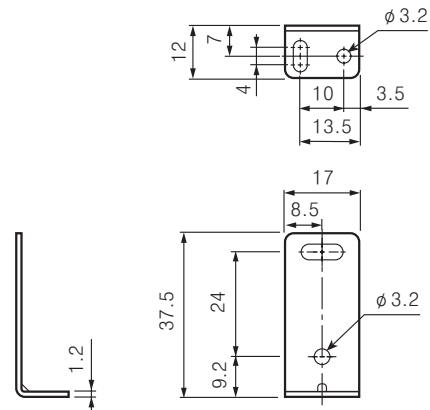
Bracket (BYS500-TDT)



Bracket (BY500-TDT)



Bracket (BYS500-TDT)



Mounting & Adjustment

1. Supply the power to the sensor, after installing the emitter and the receiver in face to face.
 2. Set the receiver in center of position where indicator turns on, as adjusting the receiver to the right and the left or up and down.
 3. Fix both units tightly after checking that the units detect the target.
- ※If the detecting target is translucent body or smaller than $\phi 5\text{mm}$, it might not be detected because the target allows too much light to pass.

