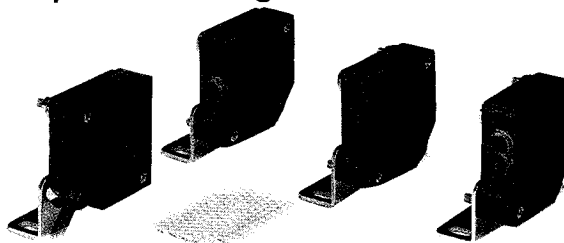


Slim-type photoelectric sensor with free power voltage.

■ Features

- Free power voltage, DC power.
- Selectable Light ON/Dark ON by the DIP switch.(DC power)
- Built-in protection circuit against reverse power polarity(DC power)
- NPN and PNP output to be applied at the same time in DC power type, relay output



■ Ordering information

Type	Detecting distance		Model	Operating voltage	Operating mode	Output
Through	↑ ↓	5m	BE5M-TFRL	AC ⊖ DC ⊕	Light ON	Relay output
			BE5M-TFRD		Dark ON	
			BE5M-TDT	DC ⊕	Selectable L/D ON	TR output
Retro reflective	↑ ↓	0.1 to 3m	BE3M-MFRL	AC ⊖ DC ⊕	Light ON	Relay output
			BE3M-MFRD		Dark ON	
			BE3M-MDT	DC ⊕	Selectable L/D ON	TR output
Diffuse reflective	↑ ↓	300mm	BE300-DFRL	AC ⊖ DC ⊕	Light ON	Relay output
			BE300-DFRD		Dark ON	
			BE300-DDT	DC ⊕	Selectable L/D ON	TR output

■ Specification

Type	Through	Retroreflective	Diffuse reflective	Through	Retroreflective	Diffuse reflective	
Model	Light ON	BE5M-TFRL	BE3M-MFRL	BE300-DFRL	BE5M-TDT	BE3M-MDT	BE300-DDT
	Dark ON	BE5M-TFRD	BE3M-MFRD	BE300-DFRD			
Detecting distance	5m	0.1 to 3m	300mm (100×100mm white tissue)	5m	0.1 to 3m	300mm (100×100mm white tissue)	
Detecting target	Opaque materials of Min. φ16mm	Opaque materials of Min. φ60mm	Transparent, Translucent Opaque materials	Opaque materials of Min. φ16mm	Opaque materials of Min. φ60mm	Transparent, Translucent Opaque materials	
Hysteresis	—————		Max.15% at rated setting distance	—————		Max.15% at rated setting distance	
Response time	Max. 20mS			Max. 3mS			
Power supply	24 to 240VAC ±10% 50/60Hz, 12 to 240VDC ±10% (ripple P-P:Max. 10%)			12 to 24VDC ±10% (ripple P-P:Max. 10%)			
Power consumption	Max. 3VA			Max. 50mA	Max. 40mA		
Source of light	Emitter:infrared LED, receiver:photo TR						
Sensitivity	Fixed		Adjustable	Fixed		Adjustable	
Operating mode	Selectable Light ON or Dark ON by slide switch			Selectable Light ON or Dark ON by control wire			
Control output	★(Note 1) Control output 250VAC 1A, 1a resistive load			<ul style="list-style-type: none"> ● NPN/PNP 2 output · NPN universal output ⇔load current Max. 200mA, resistive load:4.7K Ω, residual voltage:Max. 1V · PNP open collector output ⇔output voltage Min. power supply 2.5V, load current:Max. 200mA 			
Indicator	Operating indicator : red LED, Voltage indicator : red LED(BE5M-TFR1, BE5M-TDT1 type)						
Connection	Cable connection						
Insulation resistance	Min. 20M Ω (500VDC)						
Noise strength	Power line ±1000V at pulse band 1μs of noise simulation			Power line ±240V at pulse band 1μs of noise simulation			
Dielectric strength	1,000VAC 50/60Hz for 1minute						
Vibration	Mechanical durability	1.5mm amplitude at frequency of 10 to 55Hz in each of X,Y,Z directions for 2 hours					
	Malfunction durability	1.5mm amplitude at frequency of 10 to 55Hz in each of X,Y,Z directions for 2 hours					
Shock	Mechanical durability	500m/s ² (50G) in X,Y,Z directions for 3 times					
	Malfunction durability	100m/s ² (10G) in X,Y,Z directions for 3 times					
Ambient operating illumination	Sunlight:11,000 Lux. Max., Incandescent lamp:3,000 Lux. Max.						
Ambient temperature	Operating:-10 to 60℃(non-freezing condition), Storage:-25 to 70℃						
Humidity	35 to 85% RH, Storage:35 to 85% RH						
Protection	IP65(IEC specification)						
Material	Case:ABS, Lens:Acryl, Lens case:Acryl						
Cable	5P, φ6mm, length: 2m						
Weight	About 366g	About 198g	About 188g	About 362g	About 202g	About 180g	
Accessories	Individual	—————	Mirror(MS-1)	Driver	—————	Mirror(MS-1)	Driver
	Common	Mounting Bracket,Cable holder,Ring,Rubber,Bolts/Nuts					

*The weight of above chart is net weight.

★(Note1) Relay contact capacity for 250VAC 5A resistive load,contact of 1a is optional.

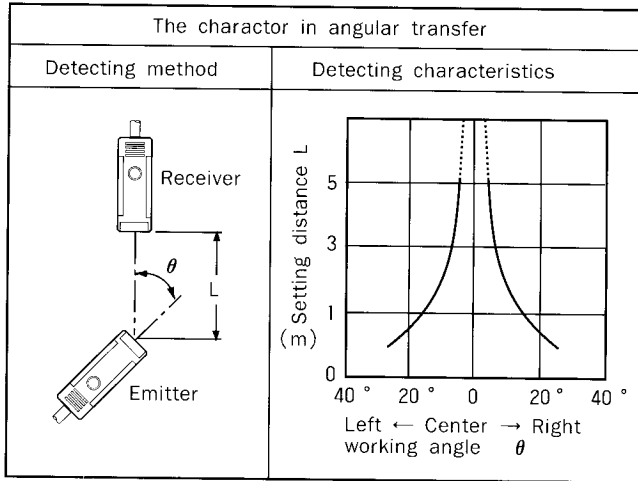
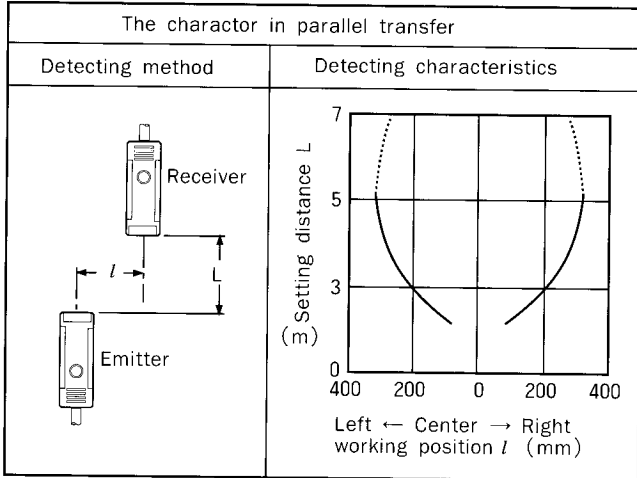
BE SERIES

■ Detecting characteristics

◎ Through type

- BE5M-TFRL ● BE5M-TFRD
- BE5M-TDT

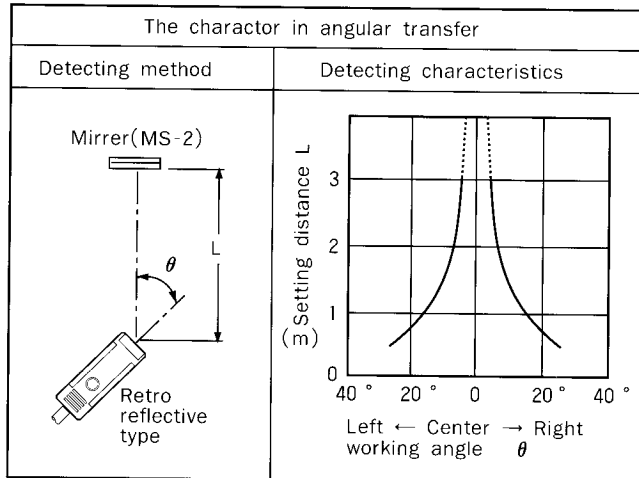
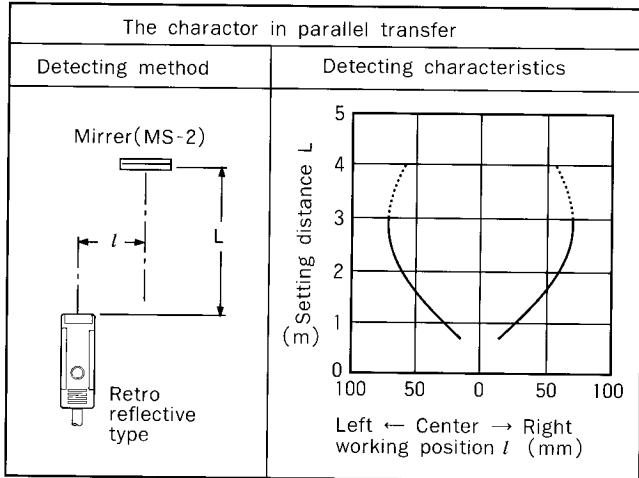
- BE5M-TFRL ● BE5M-TFRD
- BE5M-TDT



◎ Retroreflective type

- BE3M-MFRL ● BE3M-MFRD
- BE3M-MDT

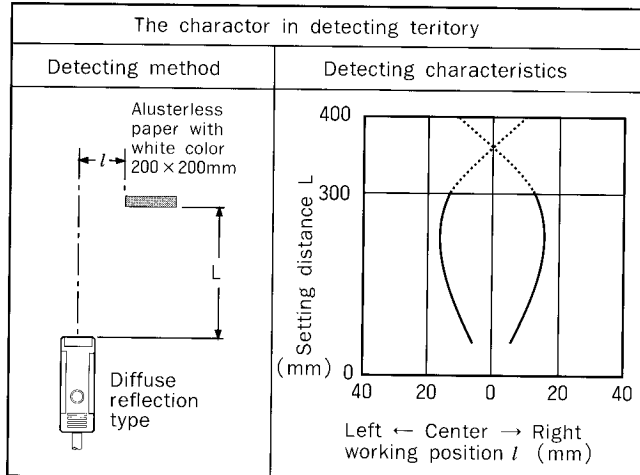
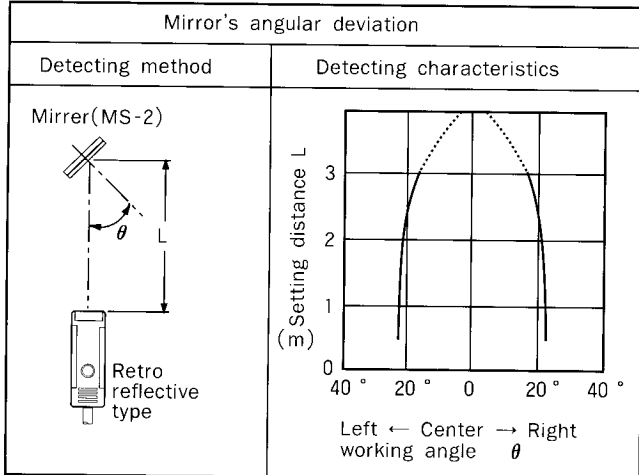
- BE3M-MFRL ● BE3M-MFRD
- BE3M-MDT



- BE3M-MFRL ● BE3M-MFRD
- BE3M-MDT

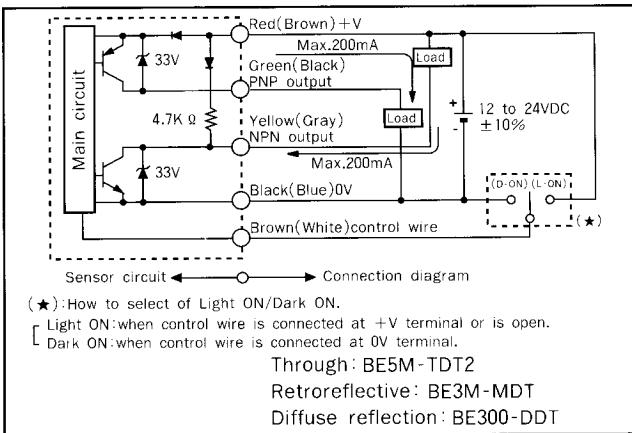
◎ Diffuse reflective type

- BE300-DFRL ● BE300-DFRD
- BE300-DDT

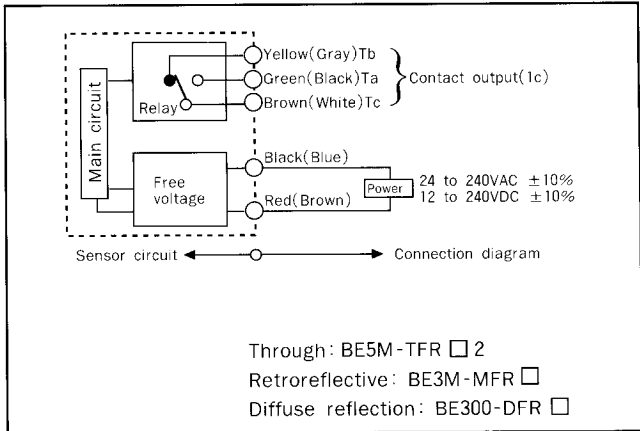


Control output circuit

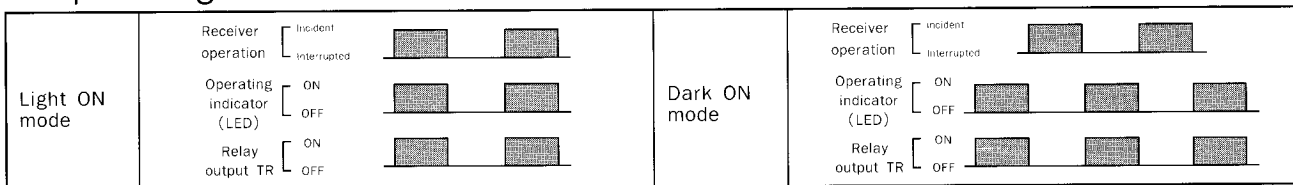
DC Voltage



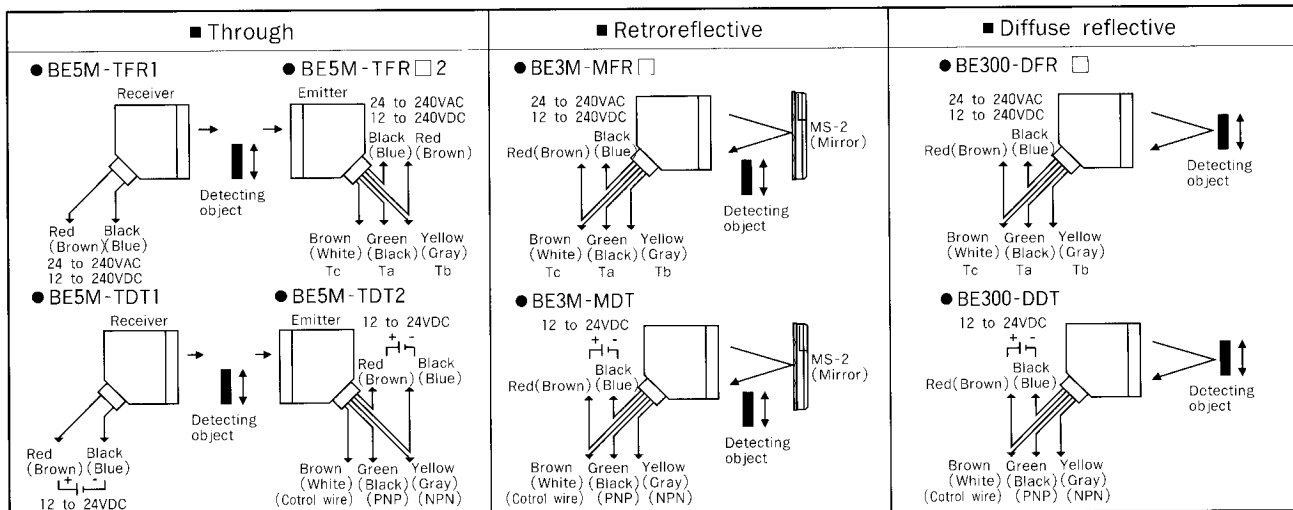
Free Voltage



Operating mode and time chart



Connection



Dimension

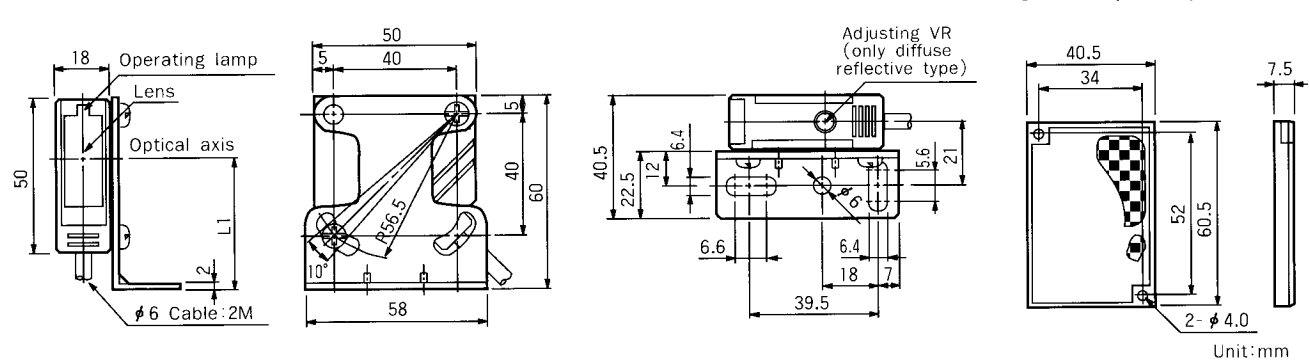


PHOTO SENSOR