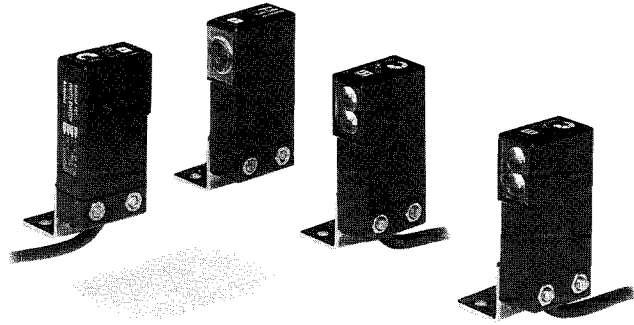


## Photoelectric sensor with high response.

### ■ Features

- Built-in protection circuit against reverse power polarity and over current.
- High response: 1mS Max.
- Selectable Light ON/Dark ON by wire.
- Built-in the adjuster in all models.



### ■ Ordering information

Type	Detecting distance	Model	Operating voltage	Operating mode	Output
Through	5m	BMS5M-TDT	DC	Selectable Light ON or Dark ON by control wire	NPN open collector
		BMS5M-TDT-P			PNP open collector
Retro reflective	0.1 to 2m	BMS2M-MDT			NPN open collector
		BMS2M-MDT-P			PNP open collector
Diffuse reflective	300mm	BMS300-DDT			NPN open collector
		BMS300-DDT-P			PNP open collector
	200mm	BMS200-DDTN			NPN open collector
		BMS200-DDTN-P			PNP open collector

### ■ Specification

Type	Through	Retroreflective	Diffuse reflective	
			Diffuse reflective	Narrow reflective
Model	BMS5M-TDT	BMS2M-MDT	BMS300-DDT	BMS200-DDTN
	BMS5M-TDT-P	BMS2M-MDT-P	BMS300-DDT-P	BMS200-DDTN-P
Detecting distance	5m	0.1 to 2m	300mm <small>(100 × 100mm white tissue)</small>	200mm <small>(50 × 50mm white tissue)</small>
Detecting target	Opaque materials of Min. $\phi$ 10mm	Opaque materials of Min. $\phi$ 60mm	Transparent, Translucent Opaque materials	
Hysteresis	Max. 20% at rated setting distance			
Response time	Max. 1mS			
Power supply	12 to 24VDC $\pm$ 10% (ripple P-P: Max. 10%)			
Power consumption	Max. 50mA	Max. 45mA		
Source of light	Emitter: infrared LED, receiver: photo TR			
Sensitivity	Adjustable			
Operating mode	Selectable Light ON or Dark ON by control wire			
Control output	· NPN open collector output $\leftrightarrow$ load voltage Max. 30VDC, load current Max. 200mA, residual voltage Max. 1V · PNP open collector output $\leftrightarrow$ output voltage Min. power supply-2.5V, load current Max. 200mA			
Protection circuit	Short-circuit protection, Reverse polarity protection			
Indicator	Operating indicator : red LED, Voltage indicator : red LED			
Connection	Cable connection			
Insulation resistance	Min. 20M $\Omega$ (500VDC)			
Noise strength	Power line $\pm$ 240V at pulse band 1 $\mu$ s of noise simulation			
Dielectric strength	1,000VAC 50/60Hz for 1minute			
Vibration	1.5mm amplitude at frequency of 10 to 55Hz in each of X,Y,Z directions for 2 hours			
Shock	500m/s <sup>2</sup> (50G) 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°C (non-freezing condition), Storage: -25 to 70°C			
Humidity	35 to 85% RH, Storage: 35 to 85% RH			
Protection	Case: ABS, Lens: Acryl			
Cable	4P, $\phi$ 4.8mm, length: 2m			
Weight	About 200g	About 110g	About 100g	
Accessories	Individual	Mirror (MS-2)		
	Common	Mounting Bracket, Cable holder, Ring, Rubber, Bolts/Nuts		

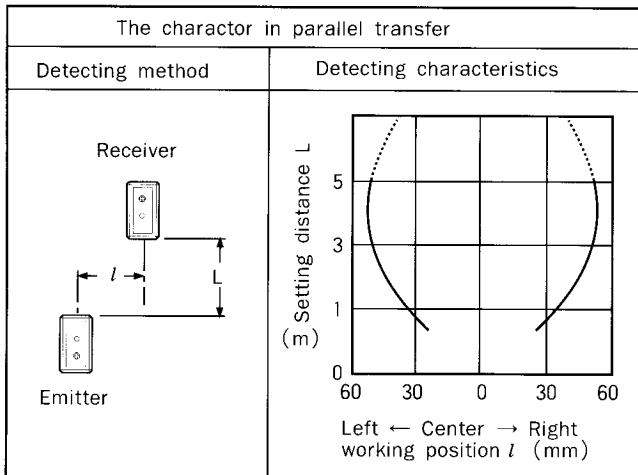
\* The weight of above chart is net weight.

# BMS SERIES

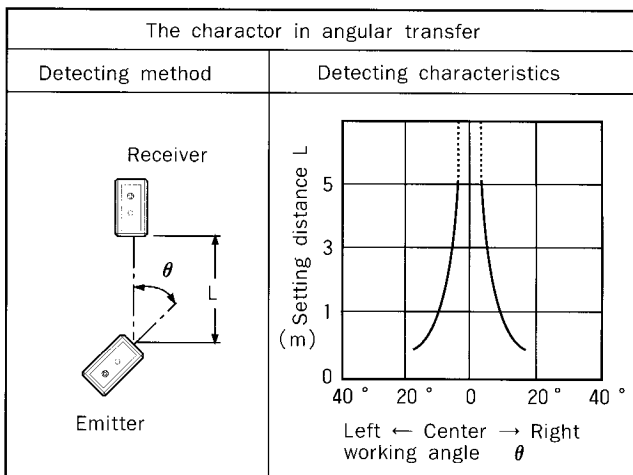
## ■ Detecting characteristics

### ◎ Through type

- BMS5M-TDT
- BMS5M-TDT-P

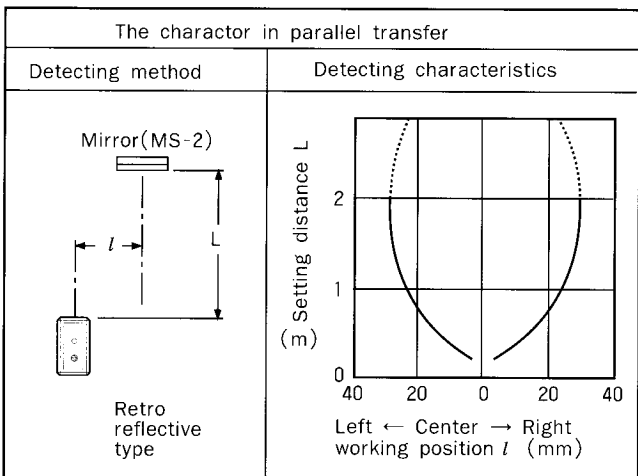


- BMS5M-TDT
- BMS5M-TDT-P

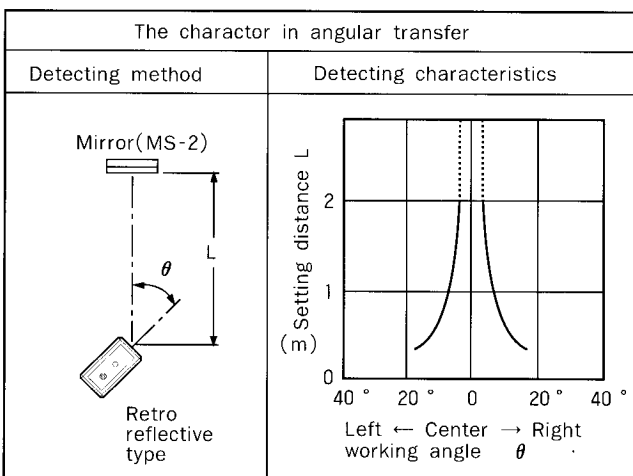


### ◎ Retroreflective type

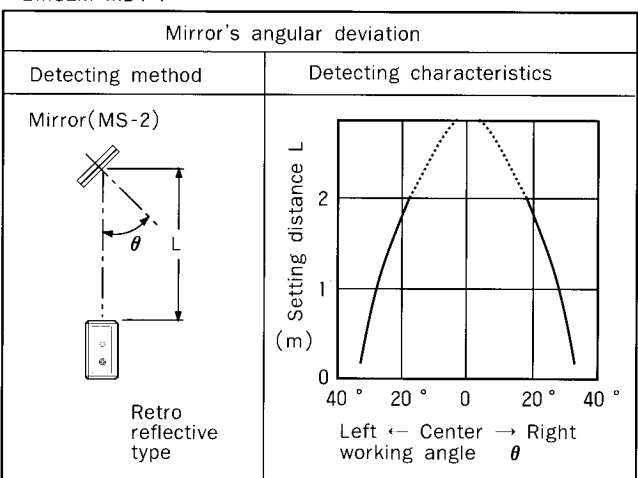
- BMS2M-MDT
- BMS2M-MDT-P



- BMS2M-MDT
- BMS2M-MDT-P

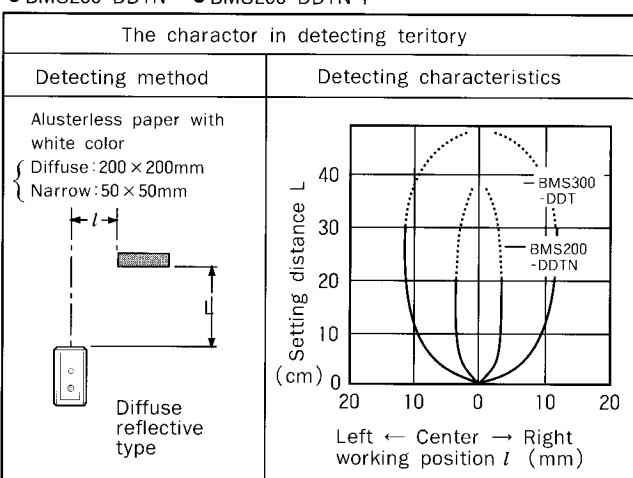


- BMS2M-MDT
- BMS2M-MDT-P



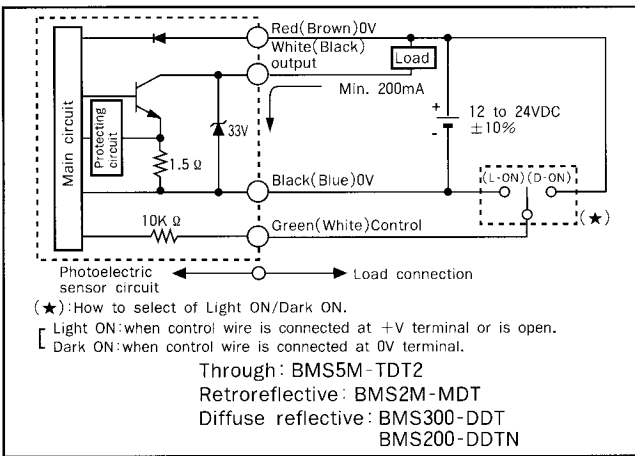
### ◎ Diffuse reflective type

- BMS300-DDT
- BMS300-DDT-P
- BMS200-DDTN
- BMS200-DDTN-P

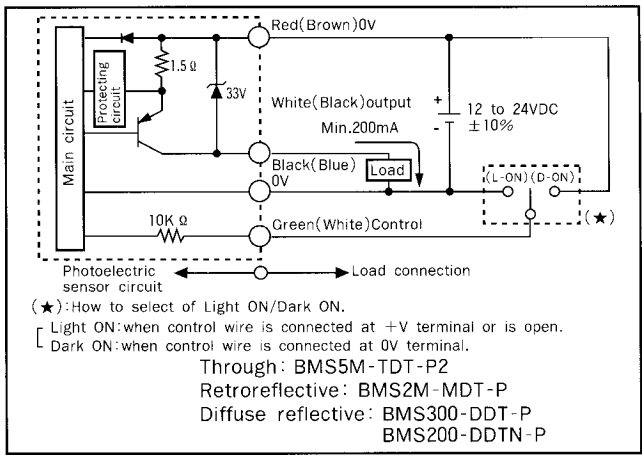


## Control output circuit

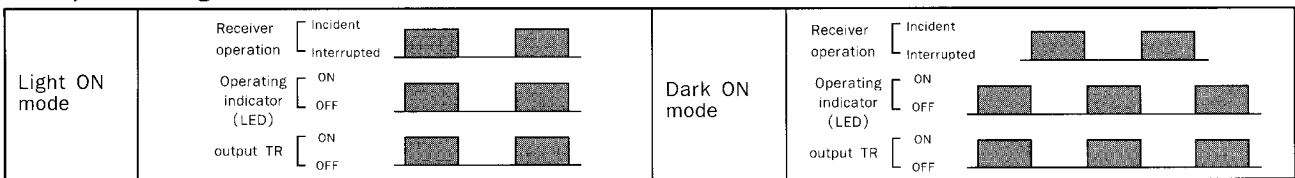
### ● NPN open collector output



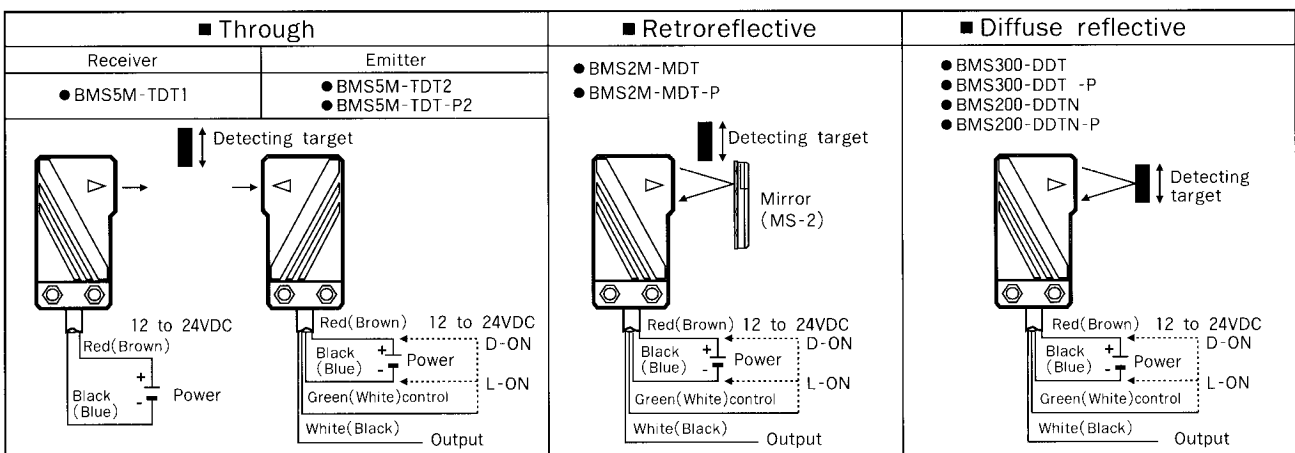
### ● PNP open collector output



## Operating mode and time chart



## Connection



\* Non-using wires must be insulated.

## Dimension

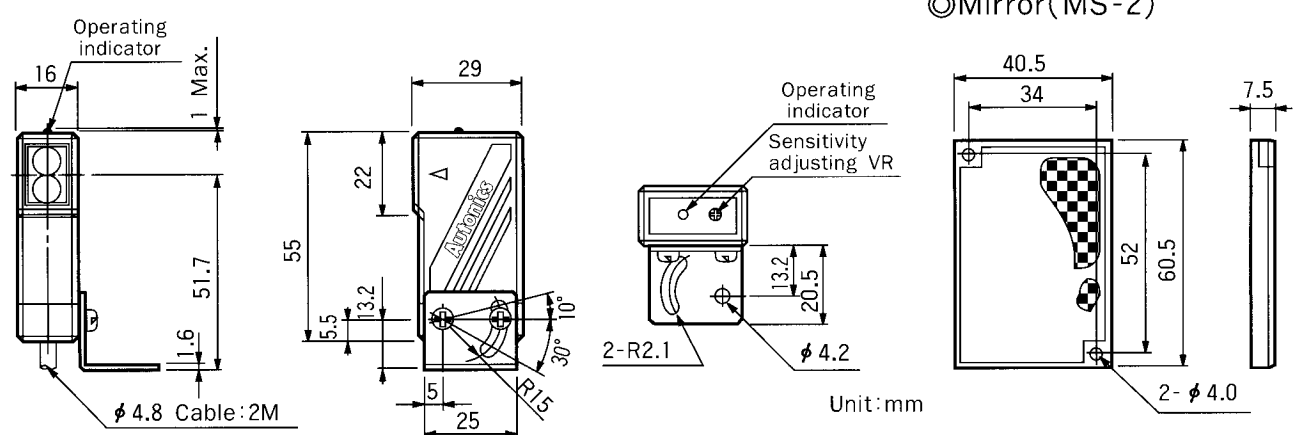


PHOTO SENSOR