Small, diffuse reflective type with long sensing distance

Upgrade

▣Features

- ●Realization of long sensing distance (2m) by special optical design.
- ●Protection structure IP64 (IEC standard) (Upgrade)
- ●Built-in stable light ON indicator.
- ●Includes sensitivity adjustment function.
- ●2 color LED display.

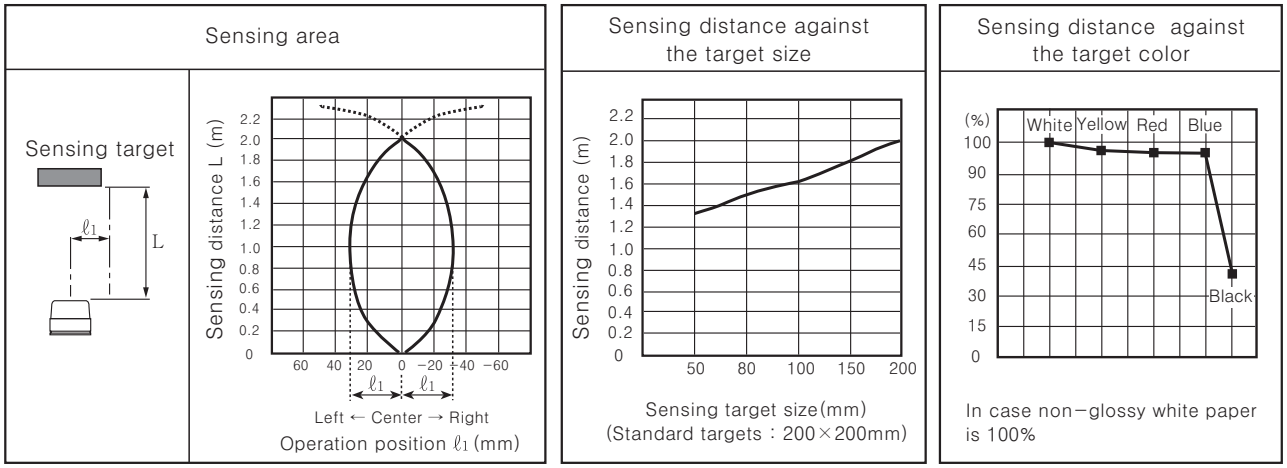
⚠ **Please read "Caution for your safety" in operation manual before using.**

CE

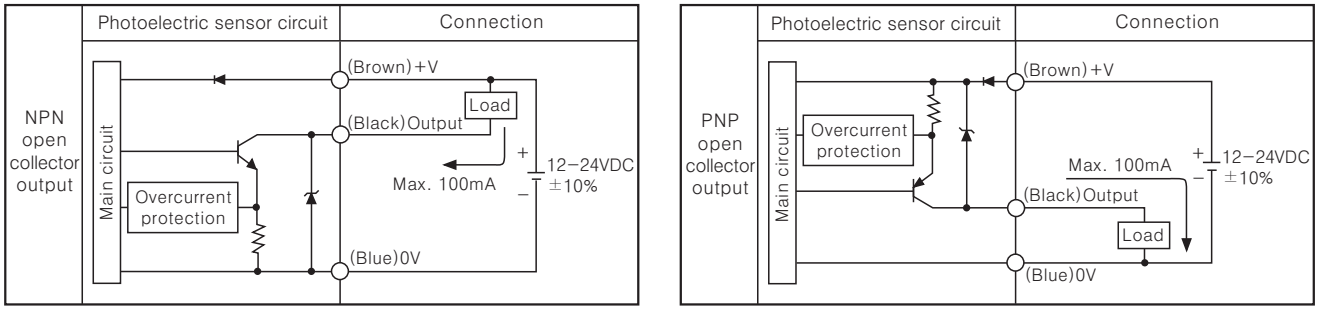
▣Specifications

Model		BA2M-DDT	BA2M-DDTD
	NPN open collector		
	PNP open collector	BA2M-DDT-P	BA2M-DDTD-P
Sensing type		Diffuse reflective	
Sensing distance		2m (Non-glossy white paper 200×200mm)	
Sensing target		Translucent, Opaque materials	
Hysteresis		Max. 20% at sensing distance	
Response time		Approx. 1ms	
Power supply		12-24VDC ±10% (Ripple P-P : Max. 10%)	
Current consumption		Max. 15mA (Max. 30mA when the output is ON)	
Light source		Infrared LED (850nm)	
Sensitivity adjustment		Built-in VR	
Operation mode		Light ON	Dark ON
Control output		NPN or PNP open collector output • Load voltage : Max. 26.4VDC • Load current : Max. 100mA • Residual voltage☞ NPN : Max. 1V, PNP : Min. (Power voltage -2.5V)	
Protection circuit		Reverse polarity protection, Output short-circuit protection	
Receiver		Photo diode (Built-in IC)	
Indicator		• Operation : Red • Stability : Orange (Light ON), Green (Dark ON)	
Connection		Outgoing cable	
Insulation resistance		Min. 20MΩ (at 500VDC megger)	
Noise strength		±240V the square wave noise (pulse width : 1㎲) by the noise simulator	
Dielectric strength		1000VAC 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		100m/s² (10G) in X, Y, Z directions for 3 times	
Ambient illumination		Sunlight : Max. 11,000lx, Incandescent lamp : Max. 3,000lx (Receiving illumination)	
Ambient temperature		Operation : -20 to 55℃, Storage : -25 to 70℃ (at non-freezing status)	
Ambient humidity		Operation, Storage : 35 to 85%RH (at non-dew status)	
Protection		IP64 (IEC standard)	
Material		Case : ABS, Lens : Acrylic	
Cable		3P, ϕ3mm, Length : 2m (AWG24, Core wire ϕ0.8㎜ annealed copper solid wire, 40 strands insulator, Outer diameter ϕ1㎜)	
Accessory		Adjustment driver	
Approval		CE	
Unit weight		Approx. 50g	

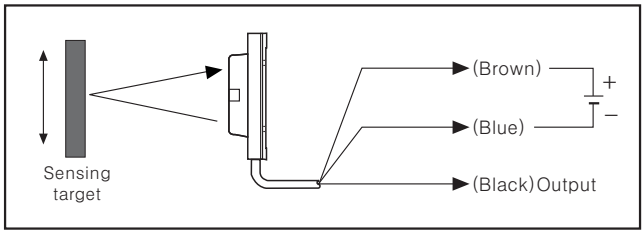
▣Feature data



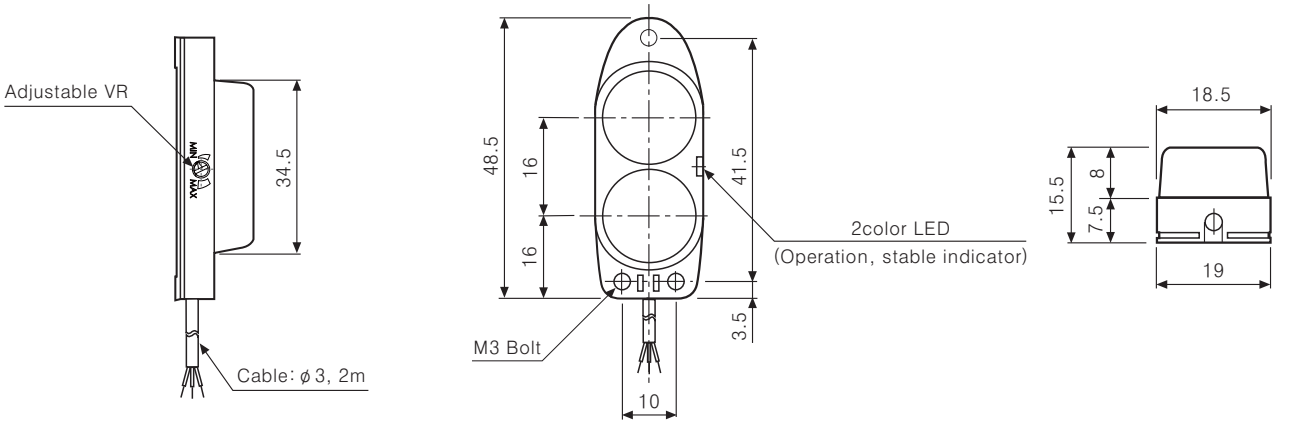
▣Control output diagram



▣Connections



▣Dimensions

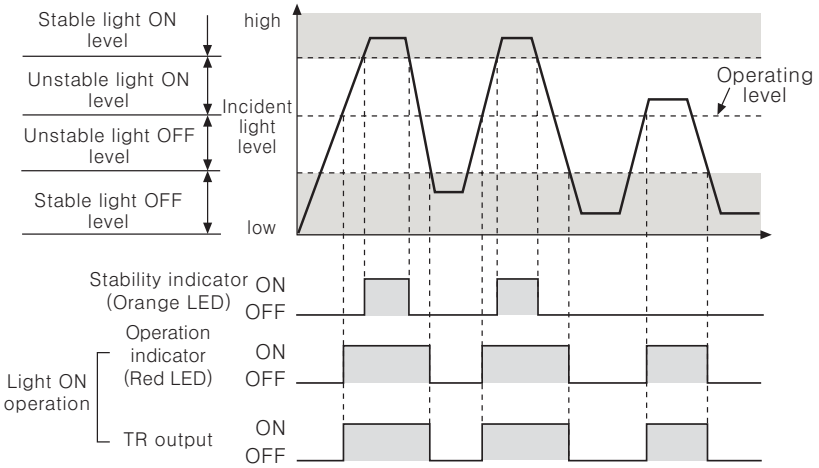


(Unit:mm)

▣Operation mode

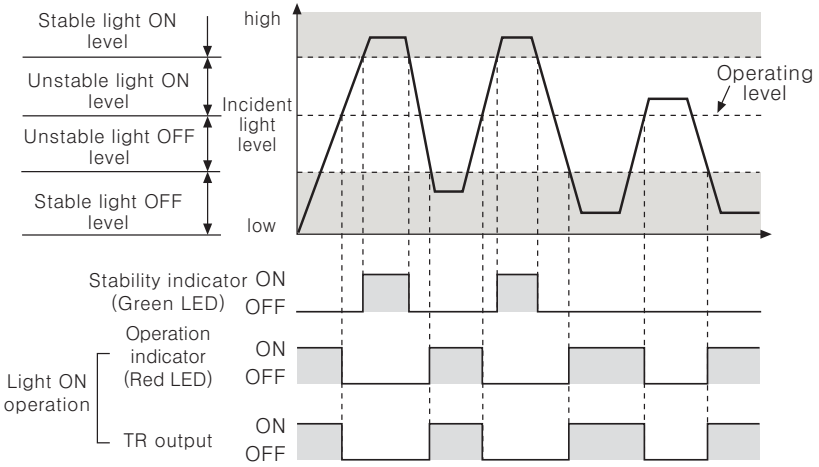
If the control output terminal is short-circuited or overcurrent condition exists, the control output will turn off due to protection circuit.

● Light ON mode



(Control output according to amount of receiving light)

● Dark ON mode

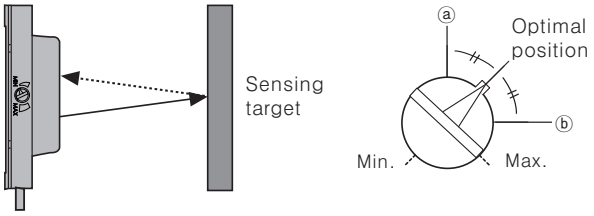


(Control output according to amount of receiving light)

▣Mounting and sensitivity adjustment

Please check wiring after setting the target and supply the power to this sensor.

●Optical axis adjustment



After place a sensing target, adjust the sensor to up or down, right or left. Then, fix the sensor in center of position where the indicator is operating.

●Adjustment

1. When sensing the object, set the sensitivity adjustment in stable Light ON area (orange: Light On, Green: Dark On) as shown '▣**Operation mode**'.
2. The sensitivity should be adjusted depending on a sensing target or mounting place.
3. Set the target at a position to be detected by the beam, then turn the adjuster until position ⓐ where the indicator turns on from min. position of the adjuster.
4. Take the target out of the sensing area, then turn the adjuster until position ⓑ where the indicator turns on. If the indicator dose not turn on, Max. position ⓑ.
5. Set the adjuster at the center of two switching position ⓐ, ⓑ.

※The sensing distance indicated on specification chart is for 200×200mm of non-glossy white paper. Be sure that it can be different by size, surface and gloss of target.