



Photoelectric Sensor  
**V SERIES** AC/DC Type  
DC Type

- AC/DC Type DC Type
- VT-4000  · VT-3000
  - VR-1000  · VR-800
  - VD-130  · VD-100
  - VD-300  · VD-250

**INSTRUCTION  
MANUAL**

- Confirm if the item meets your needs.
- Before the use, you should first thoroughly read this manual and operate correctly as mentioned.
- You should keep this manual at hand for proper use.

**SPECIFICATIONS**

Type	Terminal M12 connector	AC/DC type								DC type			
		Through Beam		Retro Reflection (with Polarizing filter)		Diffused Reflection		Diffused Reflection (Long Range type)		Through Beam	Retro Reflection (with Polarizing filter)	Diffused Reflection	Diffused Reflection (Long Range type)
		without timer	with timer	without timer	with timer	without timer	with timer	without timer	with timer	VT-3000N VT-3000P VT-3000CN VT-3000CP	VR-800N VR-800P VR-800CN VR-800CP	VD-100N VD-100P VD-100CN VD-100CP	VD-250N VD-250P VD-250CN VD-250CP
Detecting distance		40m		10m		1.3m		3m		30m	8m	1m	2.5m
Supply Voltage		DC12~240V±10%		AC24~240V±10%		50/60Hz				DC10~30V±10%			
Power/Current Consumption		8.5VA		5VA						35mA max.			
Detecting Object		φ30mm		φ50mm		□20cm		□40cm		φ30mm	φ50mm	□20cm	□40cm
Response Time				20ms max.						1.5ms max.		5ms max.	
Hysteresis						20% max.						20% max.	
Light Source				Red LED		IR LED		IR LED		Red LED		IR LED	
Sensitivity Adjustment Indicator								1 rotation volume (240°)					
Timer function		-	ON/OFF Delay 0.1~10sec	-	ON/OFF Delay 0.1~10sec	-	ON/OFF Delay 0.1~10sec	-	ON/OFF Delay 0.1~10sec	Output indicator (Orange) Power indicator for Emitter (Red)			
Operating Mode				Light ON						Light ON/dark ON selectable by volume			
Control Output		Relay output 1c AC240V 3A max./DC30V 3A max. (Resistive load)								NPN/PNP Open collector DC30V 100mA max.			
Connection		Terminal base(Diameter of applicable cable: φ6~φ10mm)								Terminal base (Diameter of applicable cable: φ6~φ10mm)/M12 Connector			
Ambient Temperature				-25~+55°C (No freezing)									
Ambient Humidity				35~85% RH									
Environmental Illuminance				Sun Light : 10,000lux max. Halogen light : 3,000lux max.									
Insulation Resistor				20MΩ/DC500V									
Withstand Voltage		AC2700V 1 minute											
Vibration Resistance				10~55Hz amplitude 1.5mm X.Y.Z each 2 hours									
Shock Resistance				50G (500m/s) X.Y.Z each 2 hours									
Protection category				IEC144 IP67									
Material				Case/Cover : ABS (glass fiber Included) Lens : PMMA									

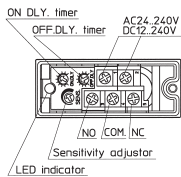
**OTHER PRECAUTIONS**

- Be careful not to install the sensor at the following locations, as it may otherwise malfunction.
  - Where a lot of dust, vapor, or the like is present.
  - Where corrosive gas is produced.
  - Where water, oil or the like flies directly onto the sensor.
  - Where strong vibration or shock is caused to the sensor.
- Do not use organic solvent, such as thinner, to remove contaminants from the body case, lid, and lens which are all of plastics. Using a dry rag, just wipe clean.
- When a switching regulator is to be used with a power supply, be sure to ground the Frame Ground Terminal.
- Do not use the sensor in a transient state at power on.(about 100ms)
- Do not run sensor cable near a high-voltage lines, or power lines or put them together in the same raceway. This warning should be strictly observed to prevent malfunctions caused by inductive interference.

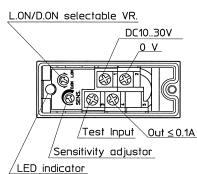
**Must not use this item as safety equipment for the purpose of human body protection**

**NAME OF PARTS**

○ AC/DC type



○ DC type

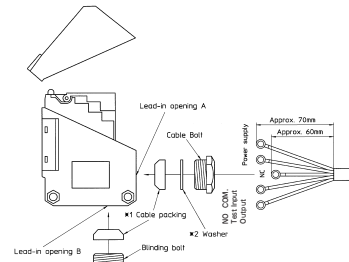


※Test Input function for through-beam type is equipped to emitter.

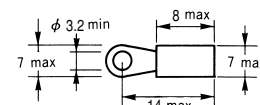
**HOW TO USE**

● Connection

- Install the cables to match the connection terminal No. as shown below.
- Use either lead-in opening A or B according to the installation method involved.
- Install a binding bolt at the lead-in opening not to be used.
  - The figure below shows how the cables are installed when lead-in opening A is used.
- ※1 Cable packing is selected separately either for cable or binding bolt according to cable diameter.
- Large : φ8~φ10 Small : φ6~φ8
- ※2 Washer is to be used exclusively to the cable bolt.



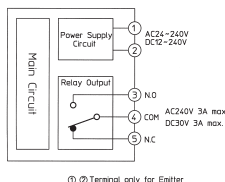
○ Dimensions of applicable solderless terminals



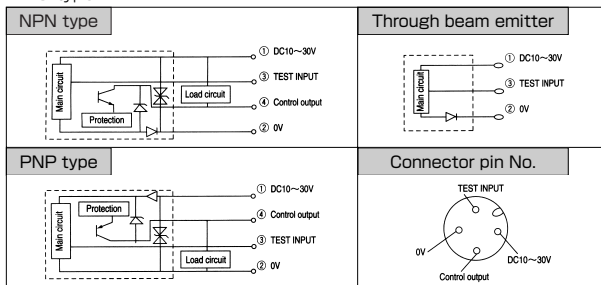
- Use solderless terminals with insulating tube.
- Use 6 to 10 mm diameter cables circular in section to maintain watertightness.
- Wrong wiring may be a cause of burned or damaged sensor. Pay due attention to wiring.
- Be careful not to install the cable near power lines, for otherwise the sensor may malfunction.
- Using the mounting accessories supplied, the sensor can be installed on either floor or wall.

**INPUT AND OUTPUT CIRCUIT DIAGRAMS**

○ AC/DC type



○ DC type



**TIMER CHART**

Timer period (0.1 ~ 10S)

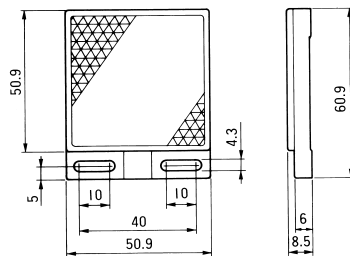
Timer Status	Operation	Output ON	Output OFF
Standard	ON Delay	[Graph]	ON
	OFF Delay	[Graph]	OFF
ON Delay	ON Delay	[Graph]	ON
	OFF Delay	[Graph]	OFF
OFF Delay	ON Delay	[Graph]	ON
	OFF Delay	[Graph]	OFF
ON Delay + OFF Delay	ON Delay	[Graph]	ON
	OFF Delay	[Graph]	OFF

**TEST INPUT FUNCTION**

When the No.③terminal is connected to 0V (NPN type) or 10~30VDC (PNP type), an interrupted status is electrically invented by stoppage of emission. This function can be used as the operational check of the sensor by electric interrupted state without detectable object.

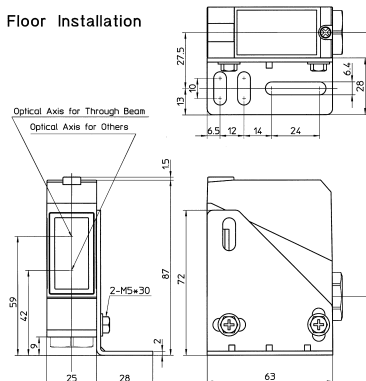
**ACCESSORIES**

- Standard reflection mirror Type V-61 (for Retro-reflection model)

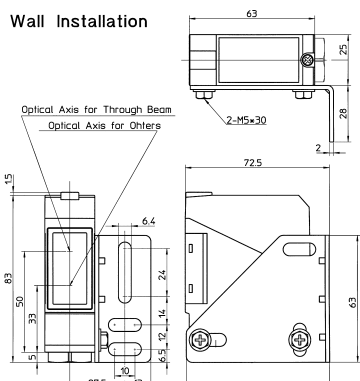


**DIMENSIONS**

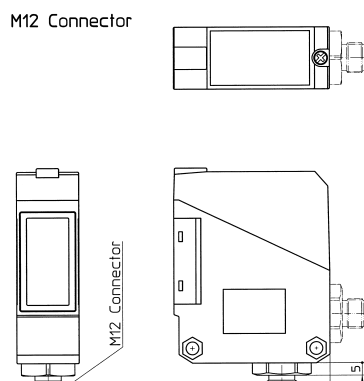
Floor Installation



Wall Installation



M12 Connector



- Specifications and equipment are subject to change without any obligations on the part of manufacture.
- For more information, questions and comments regarding products, please contact us below.

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