

INSTRUCTION MANUAL

AC/DC, DC type PHOTOELECTRIC SENSOR V-SERIES

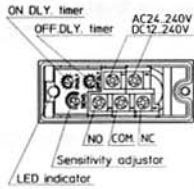
- Thank you for purchasing V series photoelectric sensor. Check that the specifications agree with yours.
- Please read this manual through before using the sensor, and retain it for future reference.

SPECIFICATIONS

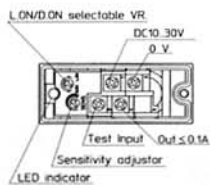
Type	Terminal	AC/DC type								DC type			
		Through Beam		Retro Reflection (with Polarizing filter)		Diffused Reflection		Diffused Reflection (Long Range type)		Through Beam	Retro Reflection (with Polarizing filter)	Diffused Reflection	Diffused Reflection (Long Range type)
		without timer	with timer	without timer	with timer	without timer	with timer	without timer	with timer				
	M12 connector	VT-4000	VT-4000T	VR-1000	VR-1000T	VD-130	VD-130T	VD-300	VD-300T	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	φ20cm	φ40cm	φ30mm	φ50mm	φ20cm	φ40cm				
Response Time		20ms max.				20% max.		1.5ms max.		5ms max.			
Hysteresis		-				20% max.		-		20% max.			
Light Source		Red LED				IR LED		Red LED		IR LED			
Sensitivity Adjustment		1 rotation volume (240°)											
Indicator		Output indicator (Orange) Power Indicator for Emitter (Red)											
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	-			
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					

NAME OF PARTS

○ AC/DC type



○ DC type



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

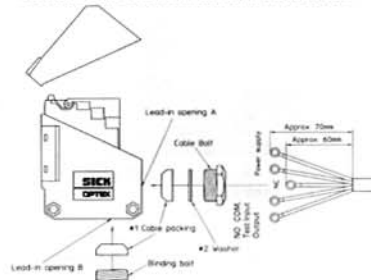
TEST INPUT FUNCTION

When the No.③ terminal 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.

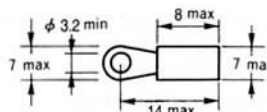
HOW TO USE

• 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 blinding 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 blinding 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



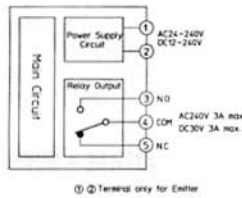
- Use solderless terminals with insulating tube.
- Use 6 to 10 mm diameter cables circular in section to maintain watertightness.

OTHER PRECAUTIONS

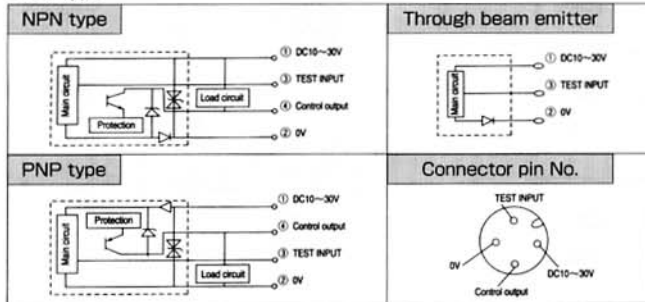
- Be careful not to install the sensor at the following locations, as it may otherwise malfunction.
 - Where a lot of dust, vapor, or the like is present.
 - Where corrosive gas is produced.
 - Where water, oil or the like flies directly onto the sensor.
 - Where strong vibration or shock is caused to 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.
- Do not use this product as a safety device for ensuring safety of persons.
- 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



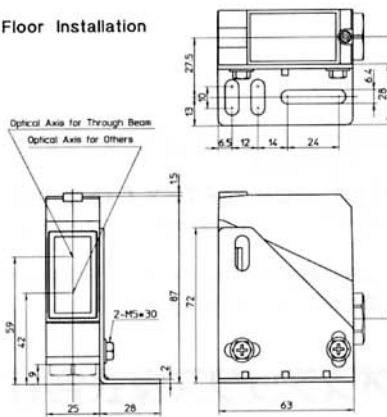
TIMER CHART

Timer period (0.1 ~ 10S)

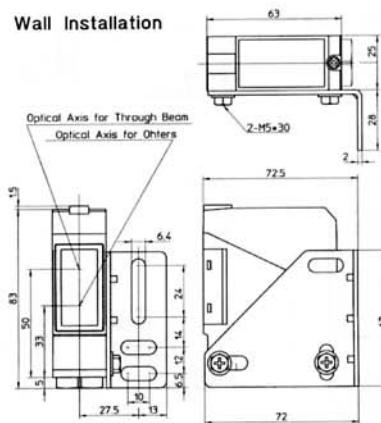
Timer Status	Operation	Output ON	Output OFF
Standard	ON Delay OFF Delay	ON	OFF
ON Delay	ON Delay OFF Delay	ON	OFF
OFF Delay	ON Delay OFF Delay	ON	OFF
ON Delay + OFF Delay	ON Delay OFF Delay	ON	OFF

DIMENSIONS

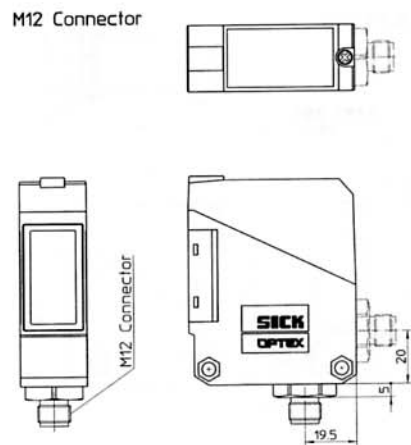
Floor Installation



Wall Installation

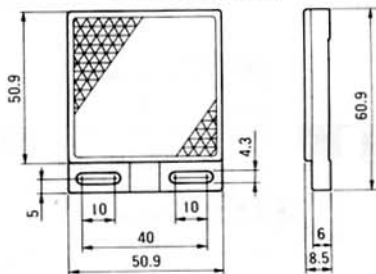


M12 Connector



ACCESSORIES

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



Developed by

● **OPTEX CO.,LTD.**

Manufactured by



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