OPTEX FA

Photoelectric Sensor

V SERIES

AC/DC Type
DC Type

AC/DC Type
- VT-4000□
- VR-1000□
- VD-130□
- VD-300□

DC Type
- VT-3000□□
- VR-800□□
- VD-100□□
- 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

		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				
Type	Terminal	VT-4000	VT-4000T	VR-1000	VR-1000T	VD-130	VD-130T	VD-300	VD-300T	VT-3000N VT-3000P	VR-800N VR-800P	VD-100N VD-100P	VD-250N VD-250P
	M12 connector	–	–	–	–	–	–	–	–	VT-3000CN VT-3000CP	VR-800CN VR-800CP	VD-100CN VD-100CP	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				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℃ (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/s²) X,Y,Z each 2 hours											
Protection category		IEC144 IP67											
Material		Case/Cover : ABS (glass fiber included) Lens : PMMA											

OTHER PRECAUTIONS

○ Be carefull not to install the sensor at the follwing 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 prastics. Using a dry rag, just wipe clean.

○ When a swiching 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)

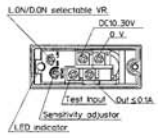
○ Do not run sensor cable near a high-voltage lines, or power lines or put them together in the same raceway. This warning should be strictly observed to prevent malfuncdtions caused by inductive interference.

⚠ 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

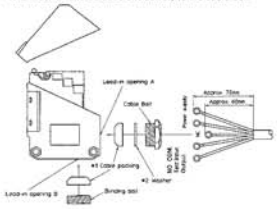
○ Install the cables to match the connection terminal No. as shown below.

○ Use either lead-in opening A or B according to the installation method involved.

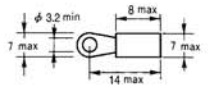
○ Install a vlinding bolt at the lead-in opening not to be used.
- The figure below shows how the cables are installed when lead-in opening A is used.

※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 waterightness.

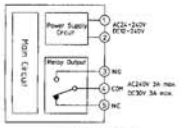
○ Wrong wiring may be a cause of burned or damaged sensor. Pay due attention to wiring.

○ Be careful not to install the cable near power lines, for otherwise the sensor may mulfunction.

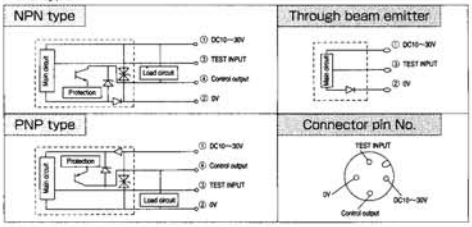
○ Using the mounting accessories suppld, the sensor can be installed on either floor or wall.

INPUT AND OUTPUT CIRCUIT DIAGRAMS

○ AC/DC type

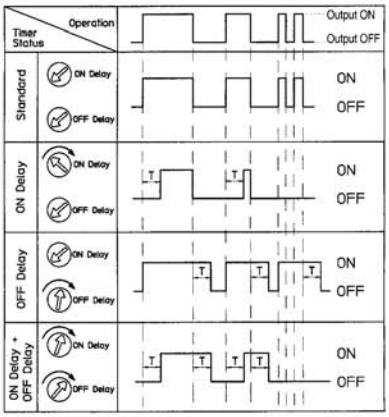


○ DC type



TIMER CHART

Timer period (0.1 ~ 10S)

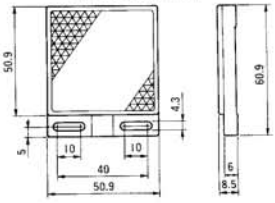


TEST INPUT FUNCTION

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.

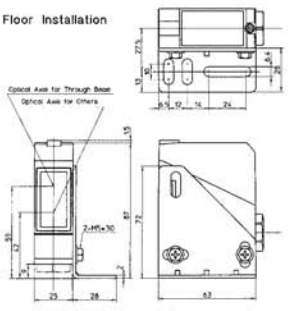
ACCESORIES

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

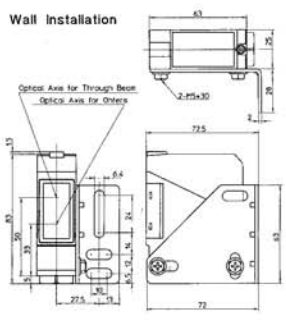


DIMENSIONS

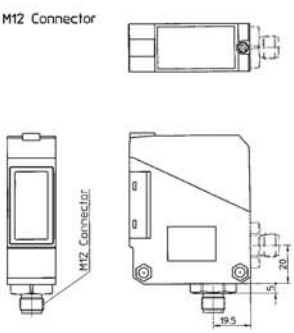
Floor Installation



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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