TAKEX

PHOTOSENSOR
with built-in amplifier

J SERIES Instruction Manual

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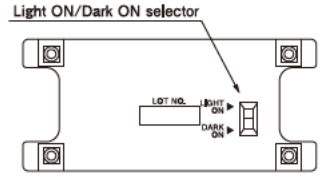
SPECIFICATIONS

Type		Normal function			Timer function		
Models	Relay output	JT10R	JRM3R	JR07	JT10RF	JRM3RF	JR07F
	Triac output	JT10R-SR	JRM3R-SR	JR07-SR	JT10RF-SR	JRM3RF-SR	JR07F-SR
Detection method		Through beam	Polarized retroreflective	Diffuse reflective	Through beam	Polarized retroreflective	Diffuse reflective
Range		10m	0.03 to 3m ※1	700mm ※2	10m	0.03 to 3m ※1	700mm ※2
Light source		Red LED		Infrared LED	Red LED		Infrared LED
Power supply		24V to 240V AC/DC ±10% 50/60Hz					
Consumption (Max.)		Trns. : 2W Rcvr. : 2W	2W		Trns. : 2W Rcvr. : 2W	2W	
Operating mode		Light ON/Dark ON selectable					
Timer		———			ON delay, OFF delay, One shot, or no timer		
Timer interval		———			0.1 to1s or 1 to 10s		
Output mode		Relay output 1a Triac output 1a					
Rating		Relay output models : AC250V, 2A, Resistive load Triac output models : AC250V, 100mA					
Obj. resolution		φ16mm (Max.)	———		φ16mm (Max.)	———	
Response time		Relay output : 5 ms (Max.) Triac output : 12ms (Max.)					
Ambient light		Withstands 10,000 l x					
LED indicators		(Trns.) Power (Red LED) (Rcvr.) Output (Red LED) Stability (Green LED)	Output (Red LED) Stability (Green LED)		(Trns.) Power (Red LED) (Rcvr.) Output (Red LED) Stability (Green LED)	Output (Red LED) Stability (Green LED)	
Sensitivity		None		Adjustable	None		Adjustable
Beam deviation		5°(Receiver)	30°(Reflector)	———	5°(Receiver)	30°(Reflector)	———
Hysteresis		———		10% (Max.)	———		10% (Max.)
Operating temp.		−25 to +55℃					
Humidity		Withstands 85%RH					
Case protection		I P66					
Dielectric withstanding		AC1500V, 1 min					
Insulation resistance		DC500V, 100MΩ					
Vibration		10 to 55Hz, 1.5mm Amplitude, 2 HR, 3 Directions					
Case material		Acrylic					
Connection		Terminal connections, (M3.5 Screw)					
Weight (Max.)		Trns. : 250g Rcvr. : 250g	250g		Trns. : 250g Rcvr. : 250g	250g	

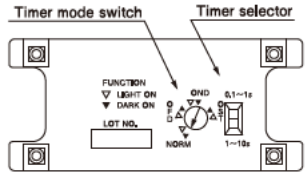
(※1) K−7 Reflector is used.
(※2) 200×200mm white paper

OPERATING MODE

● Normal function type

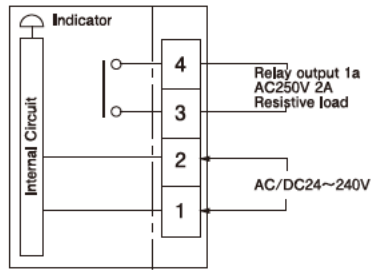


● Timer function type

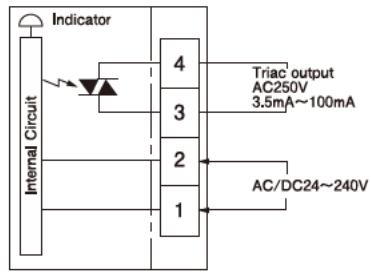


OUTPUT CIRCUIT AND WIRING

● Relay output models

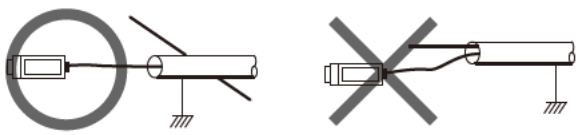


● Triac output models

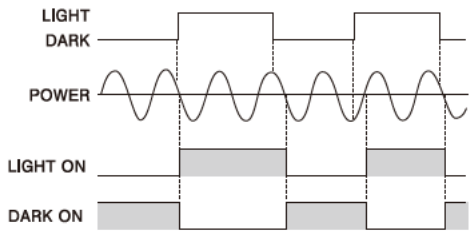


INSTALLATION AND WIRING

- Make sure all connections are correct before turning the power on.
- Use screws G1/2 when wiring with conduit.
- Use cables of 9mm to 11mm in diameter.
- When using a crimp terminal, use one fit to M3.5 screw. The tightening torque should be 0.5N·m or less.
- Use a metal conduit to avoid malfunction or damage chused by induction when the wiring should be laid close to high-voltage cables or power lines.

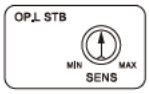


TIMING CHART (Triac output)

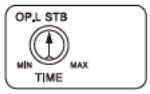


TIME & SENS. VOLUME

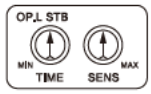
Model
・JR07
・JR07-SR



Model
・JRM3RF
・JRM3RF-SR
・JT10RF
・JT10RF-SR



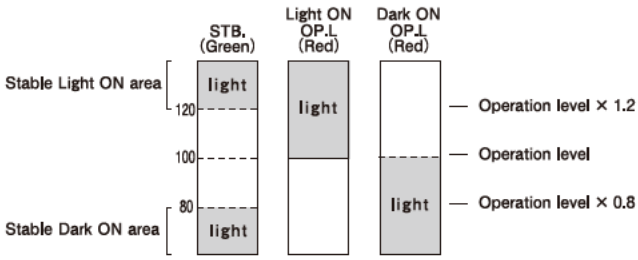
Model
・JR07F
・JR07F-SR



● TIME : Adjust timer from 0.1 to 1 or 1 to 10 seconds.
(Increase time by turning clockwise.)
● SENS. : Sensitivity adjustment.
(Higher sensitivity with Clockwise rotation.)

INDICATORS

STB. : Stable indicator (Green), OP.L : Operating indicator (Red).



ADJUSTMENT

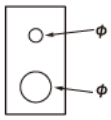
● Through beam type

Select Light ON mode and install the transmitter and the receiver linearly. Swing the transmitter upward/downward and left/right and find the range where the stability indicator (green) turns on while the operation indicator (red) turns on, then direct the sensor in the center of the range to align the optical axis.

(Pinhole plate)

Pinhole plate reduces the size of activation area and detection objects.

Pinhole stickers shown below are separately available for through beam models. Put the pinhole sticker on the optical window of the transmitter and/or the receiver.



Model : JP37

Pinhole	φ 3 mm	φ 7 mm
Detecting distance	2.5m	6m

● Polarized retroreflective type

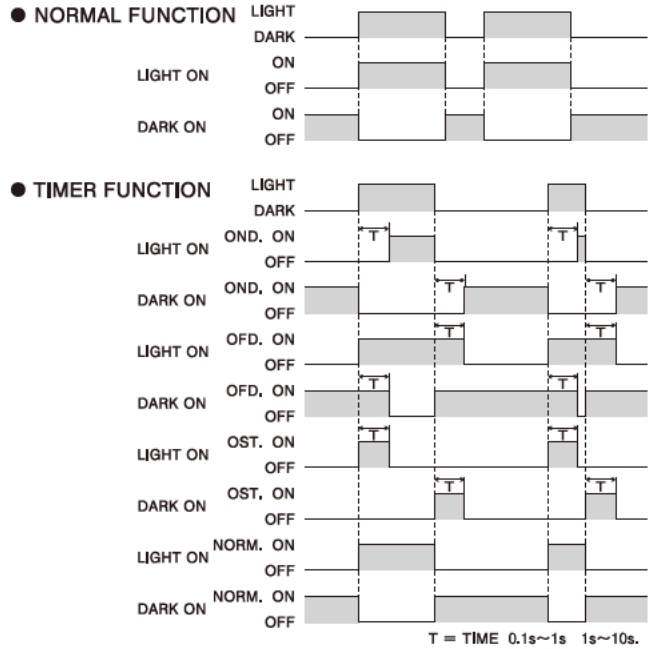
Align the optical axis in the same way as the Through beam type. Mirror like objects like steel, aluminum or plastic plates may be stably detected by installing the sensor at a slight angle against the horizontal and/or vertical lines.

● Diffuse reflective type

When any light reflecting object is in the background.

1. Place a detection object at a given position and turn up the sensitivity adjustment volume from MIN until the Operation indicator (red LED) turns on (Point A).
2. Remove the object and turn down the sensitivity adjustment volume from MAX until the operation indicator turns off (Point B).
3. Set the volume at the middle point between Points A and B.
4. Make sure both the operation indicator and the stability indicator (green LED) turn on when the detection object is placed at the given position.

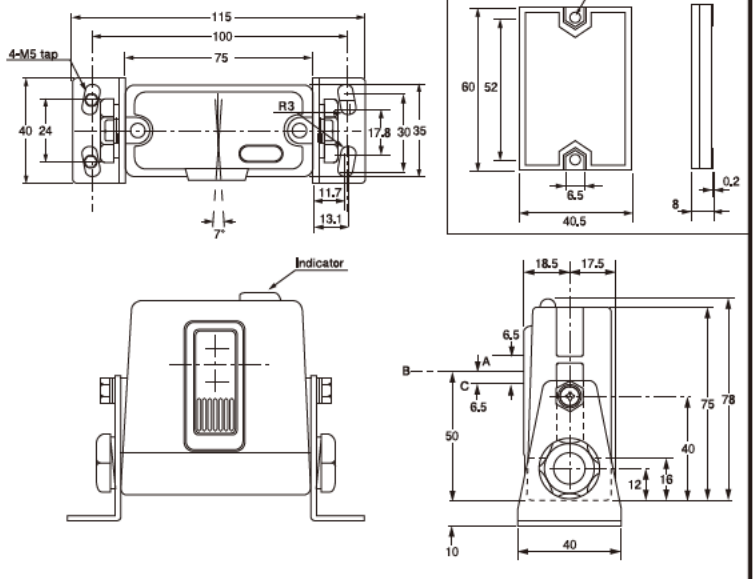
TIMING CHART



NOTES

- Fix the sensor housing and the base firmly by the screws.
- Clean the lens and case by a soft cloth. Do not use organic solvent such as alcohol or thinner.
- Avoid switching on and off the power consequtively.
- Though this sensor has IP66 rated housing do not use the sensor where water being sprayed at all times or under the water.
- Connect an auxiliary relay. The internal relay cannot be replaced.
- Use power supply which is limited the current in accordance with the lead wire size of the sensor.

DIMENSIONS (unit : mm)



- The guarantee period of this product is one year after the delivery.
- If any defect is found during the guarantee period, Takenaka will repair or replace the defective product.
- This product is an industrial sensor which issues an output upon detecting an object. It does not have any function to prevent accidents, death or injuries.
- Takenaka will not held responsible for any damage or loss incurred due to accidents, faulty installation, abuse, misuse, improper maintenance or acts of God including lightning surge.