

Installation Instructions

We would like to extend our thanks to you for purchasing this product. Before using this product, please read the following instructions carefully.

⚠ WARNING This symbol indicates extremely dangerous situations. If users ignore this symbol and handle the device wrong way, serious injury or death can result.

⚠ CAUTION This symbol indicates dangerous situations. If users ignore this symbol and handle the wrong way, injury or damage to the equipment can result.

Model	Controller	Sensor	Beam Q'ty
HTP-21C	HTP-20C	P-09F	1 beam
HTP-22C	HTP-20C	P-09F	2 beams

1. Parts Identification

<p>«Controller» [HTP-20C]</p>	<p>«Sensor» [P-09F]</p> <p>Transmitter: Black Cable</p> <p>Receiver: Grey Cable</p> <p>«Accessories»</p> <p>Controller Fitting Screw (2 pcs.)</p> <p>Sensor Holder (2 pcs. × beam q'ty)</p>
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2. Mounting Caution:

⚠ CAUTION Before mounting this sensor, please confirm the following remarks.

- Do not connect sensor cable half way, which may cause errors.
- Be careful not to shield the light by moving objects such as garden plants etc., which may cause errors.

3. Sensor Mounting Method① (Penetration)

⚠ WARNING When mounting this product, holes have to be made at fixing portion. Confirm that there is no wiring for other devices around the fixing portion to prevent electric shock beforehand.

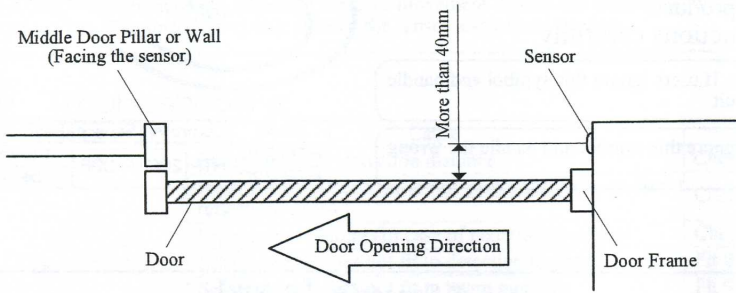
- Drill a $\phi 0.47$ "(12mm) hole at the mounting point of door pillar.
- After inserting the Sensor Holder into the drilled hole, push the Sensor Head into the Sensor Holder until the flange meets the door frame.
- Another sensor should be mounted the same way so that the height may be the same as the facing sensor mounted in above 2.

⚠ CAUTION Confirm that the distance between a transmitter and a receiver is within 7m without fail. Adjust both sensors to the same height.

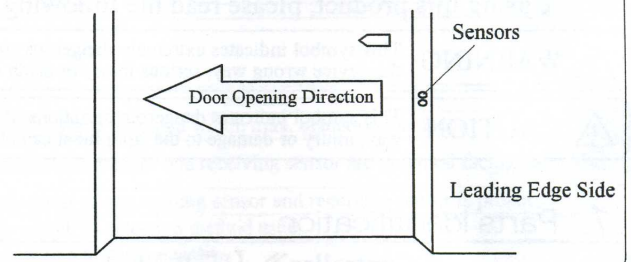
4. Sensor Mounting Method② (Direct Reflection)

⚠ WARNING When mounting this product, holes have to be made at fixing portion. Confirm that there is no wiring for other devices around the fixing portion to prevent electric shock beforehand.

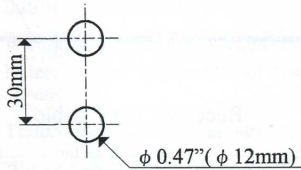
Mount a sensor at the place more than 40mm from the door leaf.
When reflection rate of middle door pillar or wall facing the sensor is high, or when door frame is of mirror finish, the sensor cannot be used.



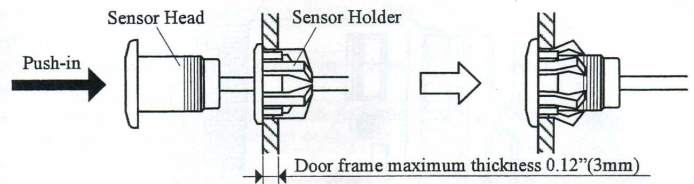
⚠ CAUTION In case of single sliding door, mount sensor on leading edge side.



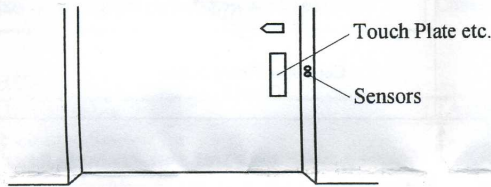
1. Drill a $\phi 0.47''$ (12mm) hole at the mounting point of door pillar.



2. After inserting the Sensor Holder into the drilled hole, push the Sensor Head into the Sensor Holder until the flange meets the door frame.



- In case of direct reflection setting, sensitivity adjustment by LED indicator is not available.
- In case of direct reflection setting, if the door does not close or opens just before closing, it means that the sensor detects door movement. Decrease the sensitivity by turning the sensitivity volume to [Low] side or move the sensor away from the door.
- Paste the mark(touch plate etc.) at the position on the door where the sensor can detect the object.



※ Detection Distance:

Detection distance varies depending on color or material of the object to be detected or mounting environment. Detection distances below are standard figures. Confirm the actual detection distance after mounting the sensor without fail.

Detection distance when sensitivity volume is maximum:

- ⌋ When the object is white: Approx. 1m
- ⌋ When the object is black: Approx. 0.4m

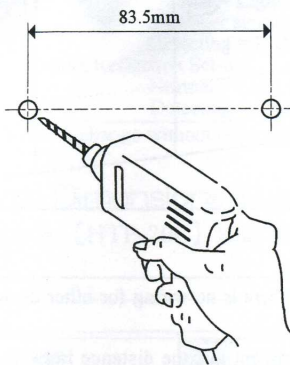
Detection distance when sensitivity volume is minimum:

- ⌋ When the object is white: Approx. 0.3m
- ⌋ When the object is black: Approx. 0.1m

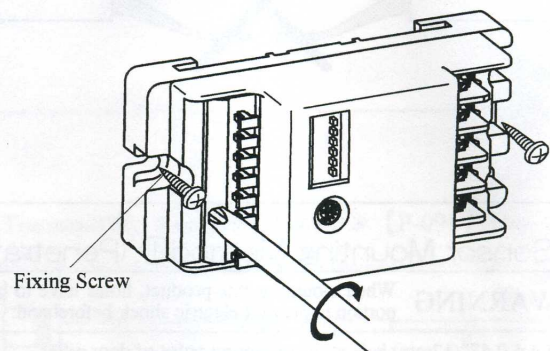
5. Installation Method of Controller:

⚠ WARNING When mounting this product, holes have to be made at fixing portion. Confirm that there is no wiring for other devices around the fixing portion to prevent electric shock beforehand. Never make mounting work while power supply is applied as it may cause accident such as electric shock etc.

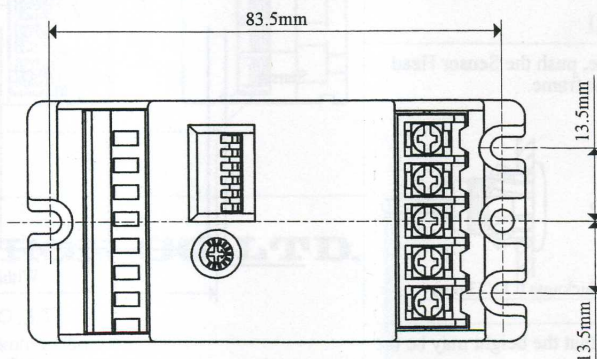
1. Drill $\phi 3.5$ mm holes at the mounting position.



2. Fix the controller with accessory fixing screws.



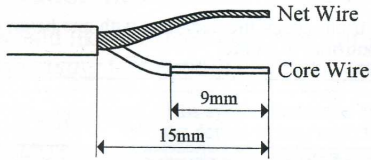
※ In case the fixing pitch(83.5mm) cannot be secured, fix the controller by referring to the below fixing position. Fix 2 spots with screws without fail.



6. Wiring Method:

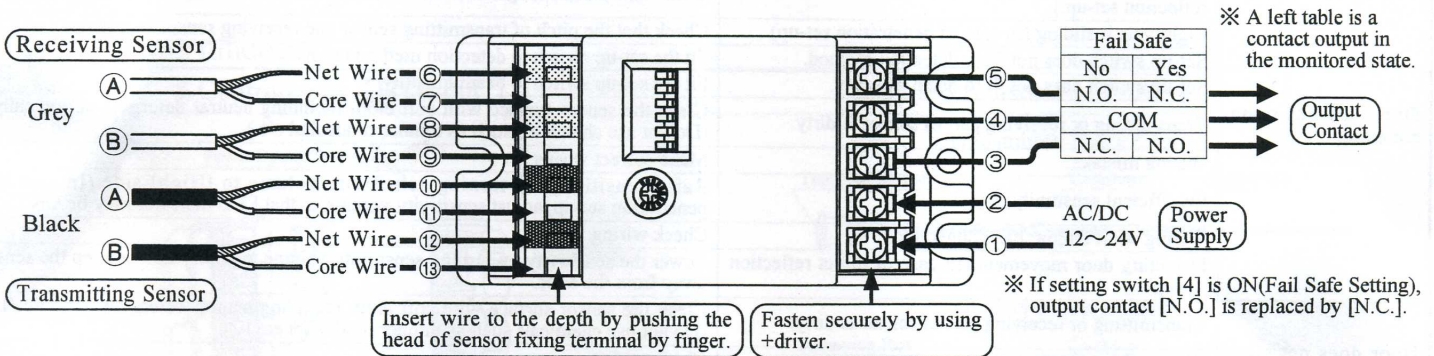
CAUTION Wire the controller terminal according to the diagram below. Ensure that the power supply to the controller is switched off. Ensure that the core wire and the net wire are not touching. If both wires come into contact, it will result in miss-operation of the controller.

1. Twist firmly the net wire and core wire for transmitting & receiving sensor.



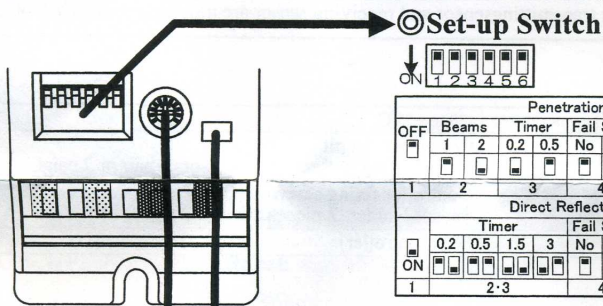
CAUTION If the wires are not twisted firmly, it may cause short-circuit. Wiring should be made securely. If wired wrong way, it may cause errors or trouble of the device.

2. Wire the controller terminals correctly by referring to the diagram below. (A) and (B) consists of each pair for connection of transmitting sensor and receiving sensor. In case of one beam, use (A) pair.



7. Set-UP Method:

CAUTION Before mounting this sensor, please confirm the following remarks.



LED Indicator:

In case of Penetration Set-up:	
Light ON:	Sensitivity is appropriate. (Monitoring State)
Light Blinks:	Adjust sensitivity volume by turning it to [High] direction. If light blinks after setting-up to [High], treat it by confirming [9 Trouble Shooting].
Light OFF:	Detecting objects.
In case of Direct Reflection Set-up:	
Light ON:	Monitoring State.
Light OFF:	Detecting objects.

Remark: In case of direct reflection setting-up, sensitivity adjustment by LED indicator is not available.

Sensitivity Volume



In case of Penetration Set-up:	
Set-up to [High], when the product is used for auxiliary sensor for automatic door. If the light is not shielded on account of environment, adjust sensitivity volume.	
In case of Direct Reflection Set-up:	
If sensitivity is turned to [High] side, detection distance becomes longer and if it is turned to [Low] side, it becomes shorter. Adjust it depending on the mounted environment.	

Penetration						Interference Prevention	
Beams	Timer	Fail Safe	Fix			A	B
OFF	1 2	0.2 0.5	No Yes	OFF			
ON	1 2	0.2 0.5 1.5 3	No Yes	OFF		A	B

In case of Penetration Set-up:			
1	Penetration Set-up:	OFF	[OFF] when penetration set-up.
2	Beams Q'ty:	OFF	1 Beam
		ON	2 Beams
3	Off-Timer	ON	0.2 seconds
		OFF	0.5 seconds
4	Fail Safe:	OFF	No
		ON	Yes
5	Fix	OFF	[OFF] without fail.
6	Set-up Interference Prevention	OFF	A
		ON	B

In case of Direct Reflection Set-up:			
1	Direct Reflection Set-up:	ON	[ON] when direct reflection set-up.
2	Off-Timer	2	OFF
		3	ON
		2	OFF
		3	ON
		2	ON
		3	OFF
4	Fail Safe:	OFF	No
		ON	Yes
5	Fix	OFF	[OFF] without fail.
6	Set-up Interference Prevention	OFF	A
		ON	B

※ When used as direct reflection setting, there is no setting for beams quantity, but either 1 beam or 2 beams can be used.

	State	LED Indicator	Output Contact (Terminal No.)	
			④-⑤	④-③
Normal	When Power OFF	Light OFF	OFF	ON
	Power ON(Monitoring State)	Light ON	OFF	ON
Fail Safe	When Detecting	Light OFF	ON	OFF
	When Power OFF	Light ON	OFF	ON
Fail Safe	Power ON(Monitoring State)	Light ON	ON	OFF
	When Detecting	Light OFF	OFF	ON

8. Operation Check

⚠ CAUTION Before using, check the operation without fail.

- Check the operation after confirming that the wiring is connected correctly.
- Check that the door is operating normally.
- In case of direct reflection set-up, if the door does not close or opens just before closing, it means that the sensor is detecting the door movement. Lower the sensitivity by turning sensitivity volume to [Low] side or keep the sensor away from the door.

⚠ CAUTION

When 2 beams are used, check the operation with one beam each connected to the controller at a time.

9. Troubleshooting

Problems:	Cause	Solution
Doors do not open or close:	Exceeding max. detection distance.	Check that the sensor is mounted within max. detection distance.
	Pitch between sensors is not proper(In case of direct reflection set-up.)	Check that transmitting sensor and receiving sensor are mounted facing each other.
	Light axis is sliding.(In case of penetration set-up)	Check that the pitch of transmitting sensor and receiving sensor is proper.
	Set-up switch does not fit to detection method.	Fit the set-up switch to detection method used.
	Set-up switch does not fit to beam quantity.	Fit the set-up switch to beam quantity.
	Transmitting or receiving part of sensor is dirty.	Clean the sensor surface with soft cloth including neutral detergent periodically.(Do not use chemicals such as thinner or alcohol etc.)
	Wiring mistake.	Make correct wiring.
	Insufficient sensitivity	Raise sensitivity by turning sensitivity volume to [High] side.(In case of penetration set-up, adjust sensitivity volume so that LED indicator may be ON.)
Door does not open or close occasionally.	Wiring short circuit, bad connection.	Check wiring.
	Insufficient sensitivity	Raise sensitivity by turning sensitivity volume to [High] side.(In case of penetration set-up, adjust sensitivity volume so that LED indicator may be ON.)
	Transmitting or receiving part of sensor is dirty.	Clean the sensor surface with soft cloth including neutral detergent periodically.(Do not use chemicals such as thinner or alcohol etc.)
Door opens and closes by itself.	Transmitting or receiving part of sensor is dirty.	Clean the sensor surface with soft cloth including neutral detergent periodically.(Do not use chemicals such as thinner or alcohol etc.)
	A pot plant is shielding the beam light.	Keep away rocking objects from the door in order not to shield the beam light.
LED indicator blinks with max. sensitivity volume.	Light axis is sliding.(In case of penetration set-up)	Check that transmitting sensor and receiving sensor are mounted facing each other.

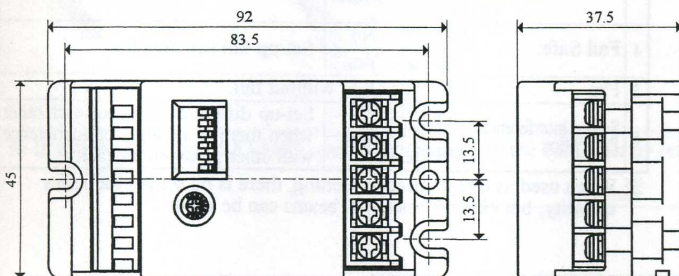
10. Technical Data

Product Name:	Infrared Beam Sensor	Ambient Temperature:	-20 to +55°C
Max. Detection Distance:	When Penetration Set-up: 7m When Direct Reflection Set-up: 1m (When object is white.)	Composition:	Controller: 1 unit. Transmitting & Receiving Sensor: 1 pair or 2 pairs.
Power Supply:	AC/DC12-24V ±10%	Accessories:	Controller fixing screw: 2 pieces Sensor Holder: 2 pieces x beam Q'ty
Power Consumption:	AC12V-1.5VA, DC12V-70mA AC24V-3.0VA, DC24V-70mA	Weight:	80g(Controller)
Output:	Relay Contact 1c DC50V 0.1A (Resistor load)		
Response Time:	0.1 sec.		
OFF Timer:	Penetration Set-up: 0.2 sec., 0.5 sec. Direct Reflection Set-up: 0.2 sec., 0.5 sec., 1.5 sec., 3 sec.		
LED Indicator:	Penetration Set-up: Normal = Light ON Improper sensitivity = Light Blinks Detecting = Light OFF Direct Reflection Set-up: Normal = Light ON Detecting = Light OFF		

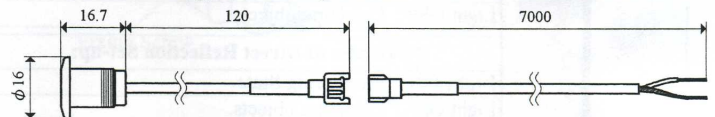
Specifications are subject to change without prior notice.

11. External Dimensions (Unit: mm)

« Controller » 【HTP-20C】 Body Material: ABS resin



« Transmitting, Receiving Sensor » 【P-09F】 Material: PC



HOTRON **HOTRON CO., LTD.**

HOTRON CO., LTD.
1-11-26 Hyakunin-Cho,
Shinjuku-Ku, Tokyo, Japan

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