

# Photoelectric Smoke Detector

F11-Y1-xx

## Operation Instruction Manual

Thank you for purchasing this product.

In this manual, we have shown the important notice in order for you to use the device just and the method of handling this system.

In addition to you read this manual well before the utilization, understanding well, and use.

After you read, in the place where it is seen with anytime, please be sure to keep.

ES1103 K0

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## 1. Safety Instructions

- Before the using, read this chapter and use correctly.
- The contents which it occurs when you handle erroneously are divided in two of “warning” and “caution”. This division states clearly the size and impendence of the harm and the damage.



Warning

The Warning symbol is used to indicate situations and conditions that can cause operator serious injury and/or equipment damage.



Caution

The Caution symbol is used to indicate situations and conditions that can cause operator injury and/or equipment damage.

- Please keep below rules for safety.



Warning

- Do not disassemble a detector. It causes trouble.
- Do not remove a detector, Fire can not be detected.
- Do not use detector which have impacted. And also do not paint or cover a detector.
- Do not soak a detector in water, and do not put a detector into water. It causes electric shock.
- Do not use the method that not listed in this manual, It causes trouble.



Caution

- This system only tells the outbreak of a fire. This system is not Fire prevention systems. And Fire extinguishing system.
- Do not use at the place where it exceeds environmental specification. It causes trouble.
- Do not put heat source under the detector.

- A term of a guarantee and a guarantee range

### 【A term of a guarantee】

In regard to the guarantee of this product, the designated payment of the order main thing after the paying 1 years you guarantee first only the breakdown which occurs in the normal busy condition which you follow the instruction manual.

### 【guarantee range】

In regard to the breakdown which it occurs in this product with the criticism of payment person side during the above-mentioned guarantee period, it does returns repair in the responsibility of payment person side. However, when it corresponds next, you exclude from the object of this guarantee.

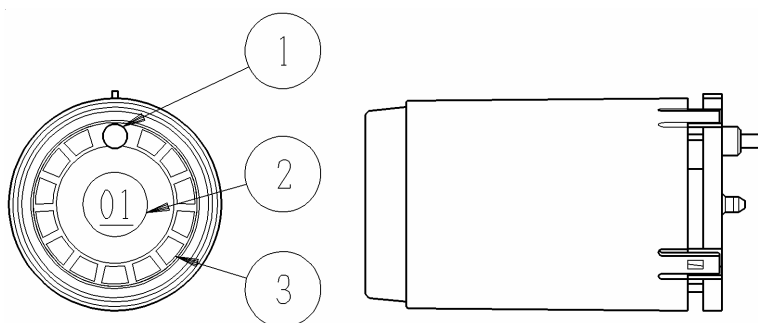
- ① Fire, earthquake and the damage by wind and flood, breakdown and the loss by the thunderbolt and other natural disasters etc.
- ② After the shipping, transporting and moving and falling etc at your corporation, breakdown and the loss with inadequate handling.
- ③ When cause of breakdown due to the reason other than the payment item.

- ④Error in regard to use of the consumer, breakdown and the loss with repairing, remodeling other than our company and error connecting.

Furthermore, the guarantee referred to here being something which means the guarantee of the payment item single unit, pardons the damage which is induced by the breakdown of the payment item.

## 2. Name and Function of each section

### 2-1. Detector (Type : F11-Y1)



#### ① State Indication LED

- Normal supervision ... 10 seconds interval
- Alarm mode ... 2 seconds interval
- Trouble mode ... Off (not blinking)



Caution

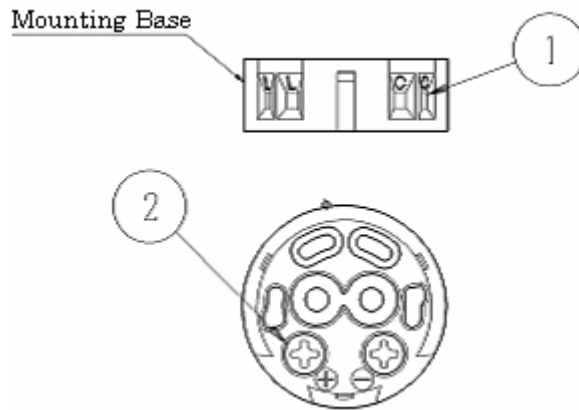
Flashing time is also longer by communication status between Detector and Control unit.

#### ② Address Seal

It indicates detector's address.

#### ③ Smoke chamber

The embedded sensor is to detect a smoke concentration.



Conformity wire

18-26AWG

(Incase of Pin terminal, under  $\phi 2\text{mm}$ )

Strip length

4~5mm

## ① Wiring Terminal (4 places)

These holes are Wiring Terminals for communication and power supply.

L and C terminals each have two terminals. Two of each terminal s are internally connected. Please wire to another Base.



Warning

Do not put a line into this terminal except communication line.  
It causes trouble.

## ② Wiring Screw

It's a wiring screw.

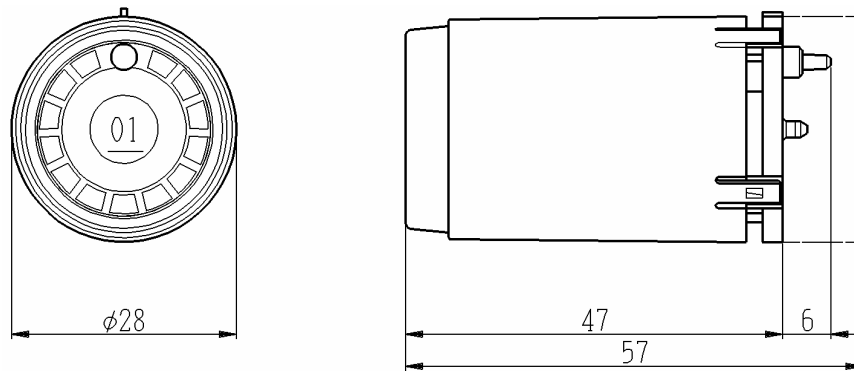


Warning

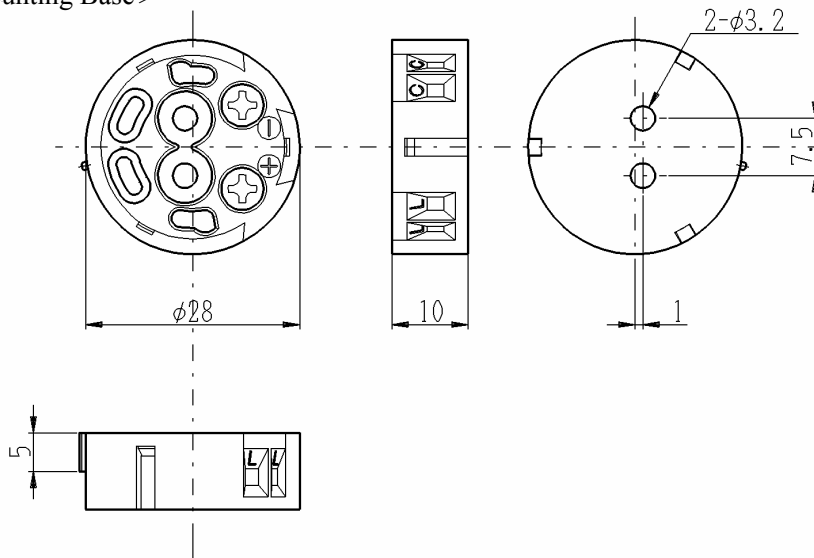
Tighten the wiring screw with the specified torque. If it's loose, it causes fire and malfunction. (torque 0.5N·m: Reference value)

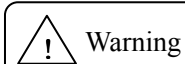
2-3. Outline Dimensions

< Detector >



< Mounting Base >





Warning

- Do not disassemble and repair and remodel a detector. It causes trouble
- Do not remove a detector, Fire can not be detected.
- Do not use a detector which has impacted. And also do not paint or cover a detector.
- Do not wiring while power is on. It causes electric shock and detector troubles.

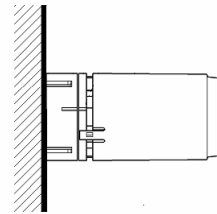
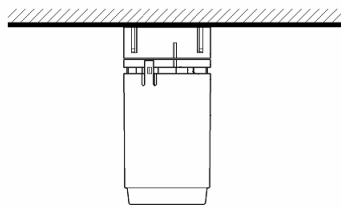
## 3-1. Installation place

Smoke detectors should be installed in order to detect following place.

- The flow of smoke into position
- Fans forced to inhale position

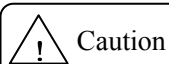
When you use smoke detector in a fast wind speed, it is necessary that the smoke is ongoing around detector. Please be careful.

Address number should be placed below or sideways



Caution

- The smoke detector detects a scattered light by smoke particles optically. And that detects a large amount of dust and steam too. Please install correct location.
- Do not use at the place where it exceeds environmental specification. It causes trouble.
- Do not install wrong location. The smoke detector cannot detect a smoke.
- Be sure to install the detector away from sources of electrical noise such as high voltage and high current switches.

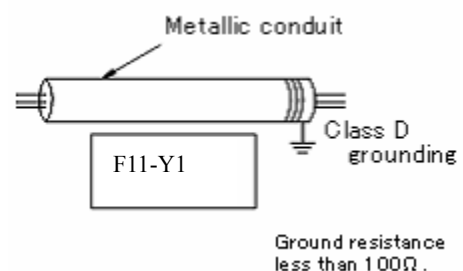
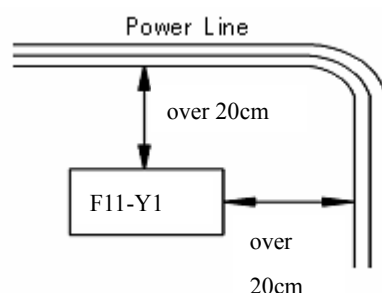


Caution

[Isolation from electric noise source such as power line]

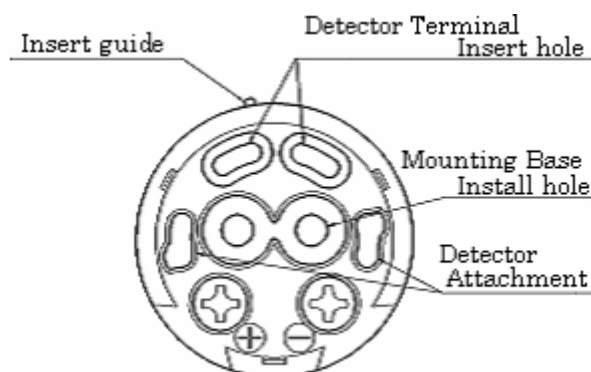
The signal conductor which is connected to the detector, please wires over 20cm separating from the power line.

Case it is not possible, please pass in the metallic conduit which the power line is grounded.



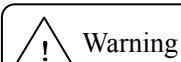
### 3-2. Method of installation

#### (1) Installation of Mounting Base



Conformity wire  
 18-26AWG  
 (Incase of Pin terminal, under  $\phi 2\text{mm}$ )  
 Strip length  
 4~5mm

Please install a Mounting Base to “install holes” with two screws M3 which is more than 15mm length.  
 (See above)



Warning

- Incorrect loading of the equipments can cause a malfunction, failure or drop.
- Tighten the screw in the specified torque range.
- Under tightening can cause a drop, short circuit or malfunction.
- Over tightening can cause a drop, short circuit or malfunction due to damage to the screw or he equipments and malfunction and fire.

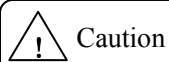
#### (2)Wiring

Please connect wires to holes of Wiring Terminal of Mounting Base (L, C).

Be sure to ground shielded of shield cable to the FG terminal of the control unit.

Branch Wiring is possible, and no polarity.

But do not bundle high voltage wires and electrical noise emitted wires with, or run them close to.



Caution

Conformity wire is AWG18 - AWG26. Otherwise, use a wire and cause a failure.

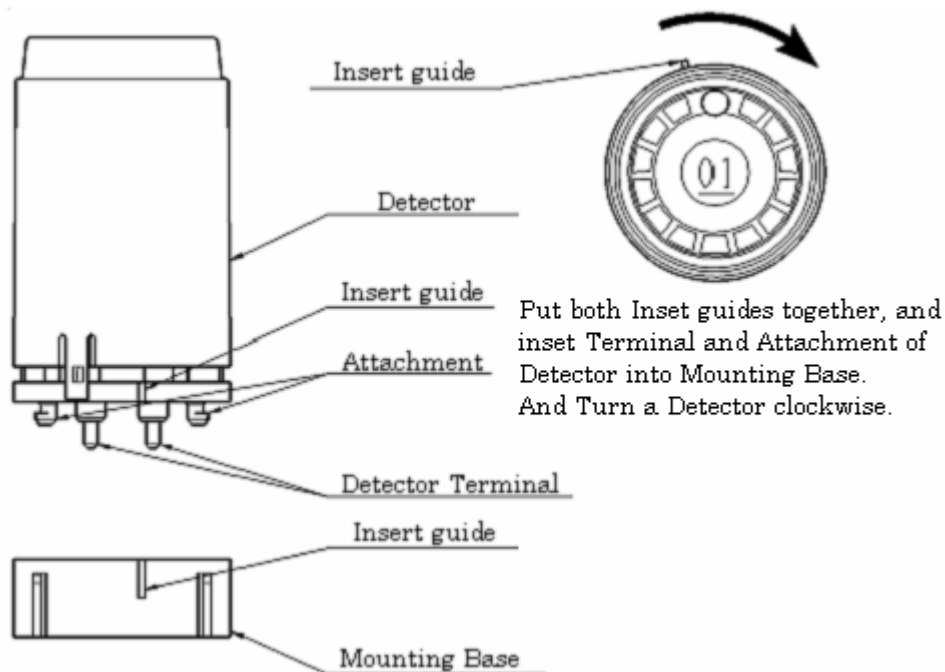


Warning

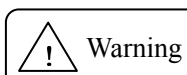
Tighten the wiring screw with the specified torque. If it's loose, it causes fire and malfunction. (torque 0.5N·m: Reference value)



(3) Put a Detector into Mounting Base



Please put both insert guides together, and insert Terminal and Attachment of Detector into Mounting Base. And Turn a Detector Clockwise until make a sound with "a snick". (See above)



- Put Insert guides, Detector Terminal and Attachment together correctly. It causes trouble.
- Do not turning a detector too much. Also do not make a lack of insertion.
- Do not remove a detector, Fire can not be detected.
- Do not use detector which have impacted. And also do not paint or cover a detector.

## 4. Specifications

### 4-1. Part Number

#### 4-1-1. Detector

- (1) Name of item: Photoelectric smoke detector
- (2) Type: F11-Y1-xx (“xx” means Address. It is on Address seal.)

#### 4-1-2. Mounting Base

- (1) Name of item: Mounting Base
- (2) Type: FBR-Y

### 4-2. Electric specifications

- (1) Rating: DC24V 0.5mA (Be supplied by the control unit. No polarity.)
- (2) Range of Working Voltage: DC16.0V~DC30.0V
- (3) Current consumptions  
(at DC24V): 0.35mA or less at Normal supervision  
0.45mA or less at Alarm mode
- (4) Set up for receiving  
the Alarm signals: 5%/m (Nominal)
- (5) State Indication LED: Red LED (blinking)

State of LED	
Normal supervision	10 seconds interval
Alarm mode	2 seconds interval
Trouble mode	Off (not blinking)

Trouble mode gives priority over the Alarm mode.

#### (6) Self Check Function

(Sensitivity revise): The Detector revise own sensitivity changes automatically once a day. Use of Environment and Dirty and Degradation of Optics parts cause of sensitivity changes.

Limit the amount of sensitivity revision come and failure.

- (7) Address: Addresses are stored in EEPROM. If EEPROM has problem, Detector will be trouble state.
- (8) Power off Time: Turn off the power on again until 60 seconds margin over time.
- (9) Mounting Base: FBR-Y
- (10) Compatible Control Panels: FC1 (For details, refer to the user's manual for the control unit.)

### 4-3. Mechanical specifications

#### 4-3-1. Detector

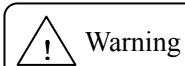
- (1) External form:  $\phi 28 \times H47$ mm
- (2) Main material: ABS, PBT (UL-94V-0)
- (3) Color: Beige
- (4) Mass: Approximately 20g

#### 4-3-2. Mounting Base

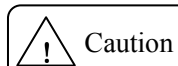
- (1) External form:  $\phi 28 \times H10$ mm
- (2) Main material: ABS (UL-94V-0)
- (3) Color: Beige
- (4) Mass: Approximately 10g

## 4-4. Environmental specifications

- (1) Working temperature range: 0°C ~ 50°C
- (2) Storage temperature range: -20°C ~ 70°C
- (3) Working humidity range: 30 ~ 85%R.H, Non condensing
- (4) Resistance to corrosion: No tolerance to acid and alkaline.



Use the detector in an environment that meets the general specifications contained in this manual. Otherwise it causes trouble and erroneous operation.



Working temperature and humidity will affect the life span of equipment. Please consider derating and use.

## 5. Self check Function

The Detector revise own sensitivity changes automatically once a day.

Use of Environment and Dirty and Degradation of Optics parts cause of sensitivity changes. Limit the amount of sensitivity revision come and failure. And State Indication LED lights in trouble. Also the detector notifies the control unit of own trouble status.

## 6. Maintenance and Inspection

### 6-1. Daily Inspection

- Please check State Indication LED is blinking 10 seconds interval. Also check indication of the control unit is normal. (For detail of the control unit, refer to the user's manual for the control unit.)
- If there are Adhesion of dirt and foreign matter on surface of the detector, Please remove it with cloth which wring the water out tightly. And then prevent water from infiltration carefully.



Warning

Do not soak a detector in water, and do not put a detector into water. It causes electric shock and trouble.

### 6-2. Periodic Inspection

- Please check State Indication LED is blinking 10 seconds interval. Also check indication of the control unit is normal. (For detail of the control unit, refer to the user's manual for the control unit.)
- Do not needs to check smoke detect function with real smoke such as Tobacco, incense, etc. Because this smoke detector has self check functions. (Refer to 「5.Self check function」 )
- Please do visual inspection periodically. There are possibilities that an entrance of the smoke chamber cover with dust and foreign matter, and continue to use and malfunction.
- If there are Adhesion of dirt and foreign matter on surface of the detector, Please remove it with cloth which wring the water out tightly. And then prevent water from infiltration carefully.

Please refer to the user's manual for the control unit about functional connection the control unit and the smoke detector.



Warning

- Do not soak a detector in water, and do not put a detector into water. It causes electric shock and trouble.
- After Cleaning, do not leave a foreign substance such as sawdust or wiring debris on a detector. Such debris could cause erroneous operation.
- Do not clean with a solvent such as a ph-balanced detergent, Bleach, Benzene, Thinner, Alcohol. It causes the detector surface is damaged.

## 7. Disposal

This product is as general industrial waste disposal. Disposal methods are specific criteria depending on each municipality.

## 8. Support

Please inquire about this product to Fenwal Controls of Japan Co., Ltd. Tokyo headquarters.

Fenwal Controls of Japan Co., Ltd.  
1-5-10 Iidabashi Chiyoda Tokyo, 102-0072 Japan

Tokyo headquarters: +81-3-3237-3565