

F 1H－R YW1K

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 seen with it is seen with anytime, please to be sure to keep.

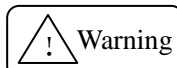
ES1417 K0

Table of contents

| | |
|---|----|
| 1. Safety Instructions | 3 |
| 2. Name and Function of each section..... | 4 |
| 3. Install | 5 |
| 4. Specification..... | 8 |
| 5. Maintenance and Inspection | 10 |
| 6. Disposal | 13 |
| 7. Support..... | 13 |

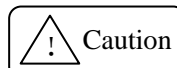
Safety Instructions

- This smoke detector has the ability to transfer information outputs and alarm status indicators to detect smoke.
- 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

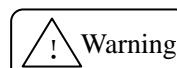
The Warning symbol is used to indicate situations and conditions that can cause operator serious injury and/or equipment damage.



Caution

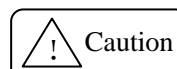
The Caution symbol is used to indicate situations and conditions that can cause operator injury and/or equipment damage.

- 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.

- Guarantee

[A term of a guarantee]

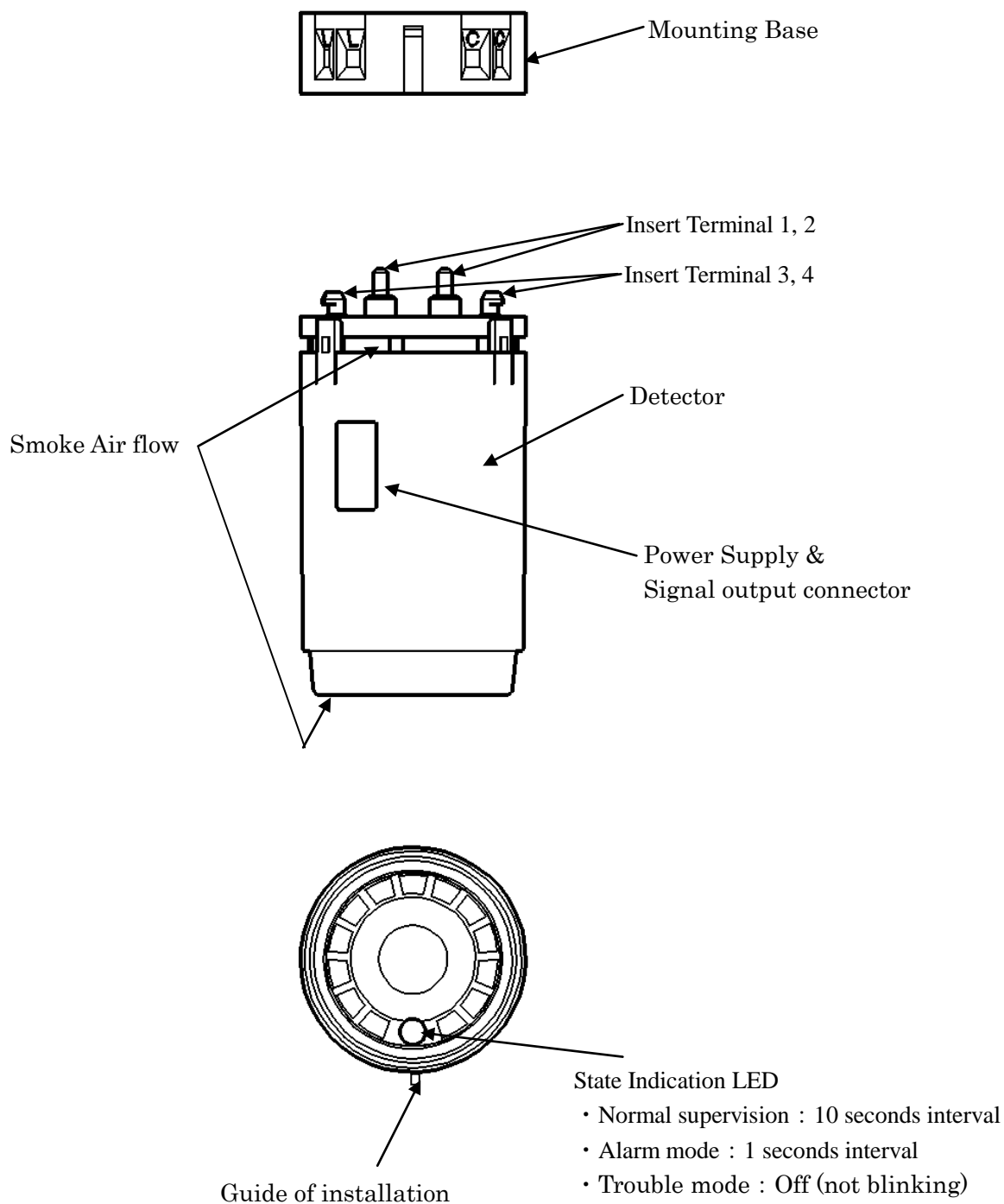
In regard to the guarantee of this product, the designated payment of the order main thing after the paying 1 years you guarantee first only the breakdown which occurs in the normal busy condition which you follow the instruction manual.

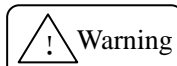
[Guarantee range]

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.
- 4) Error 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.



**Warning**

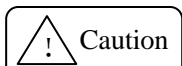
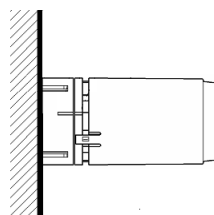
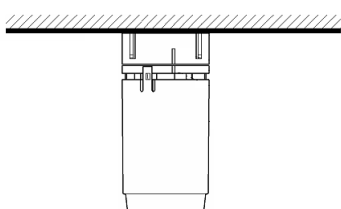
- Do not disassemble a detector. It causes trouble.
- Do not remove a detector, Fire can not be detected.
- Do not use detector which have impacted. And also do not paint or cover a detector.
- Do not wiring while power is on. It causes electric shock and detector troubles.

2.1. Install of Smoke Detector

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

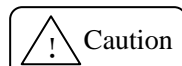
- The flow of smoke into position
- Fans forced to inhale position

When you use smoke detector in a fast wind speed, it is necessary that the smoke is ongoing around detector. Please be careful. State Indication LED Address number should be placed below or sideways

**Caution**

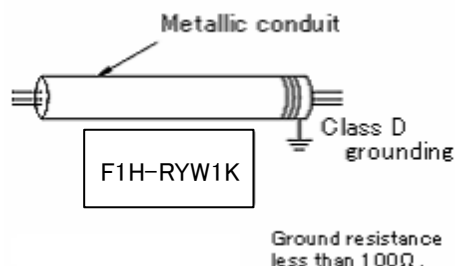
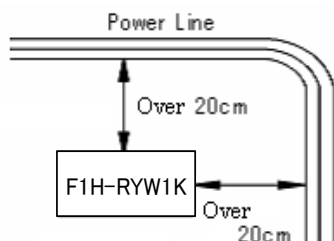
- The smoke detector detects a scattered light by smoke particles optically. And that detects a large amount of dust and steam too. Please install correct location.
- Do not use at the place where it exceeds environmental specification. It causes trouble.
- Do not install wrong location. The smoke detector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

[Isolation from electric noise source such as power line]

**Caution**

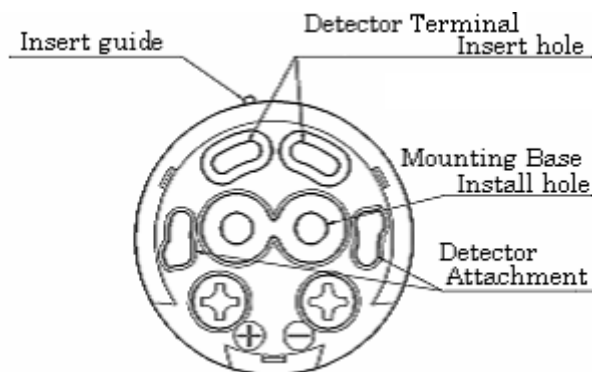
The signal conductor which is connected to the detector, please wires over 20cm separating from the power line.

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

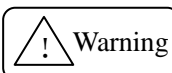


2.2. Method of installation

(1) Names of parts mounting base is as follows.

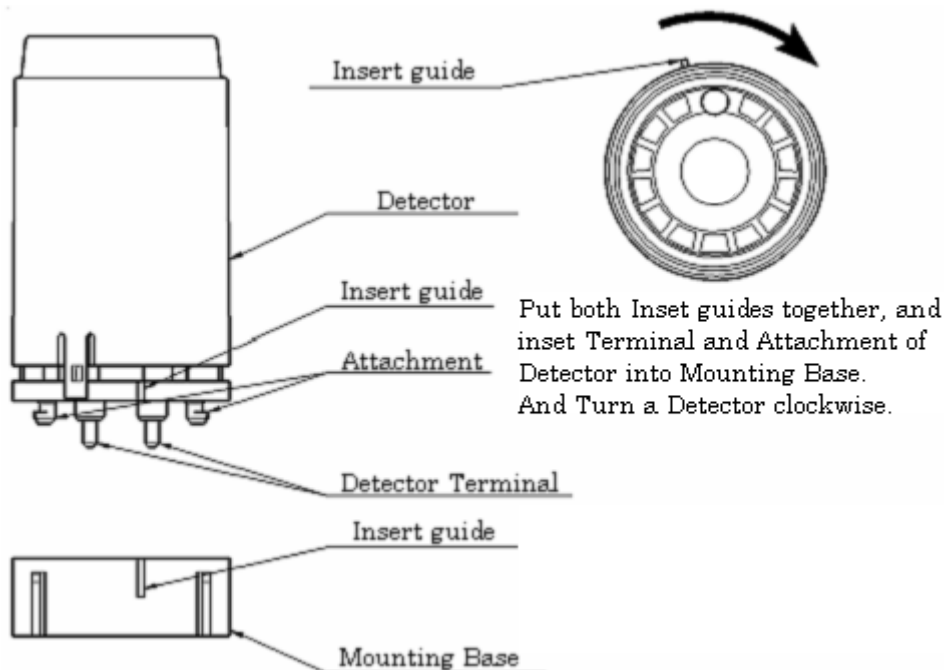


(2) Please install a Mounting Base to "install holes" with two screws M3 which is more than 15mm length.



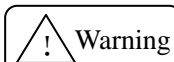
- Incorrect loading of the equipments can cause a malfunction, failure or drop.
- Tighten the screw in the specified torque range. (torque 0.5N·m: Reference value)
- Under tightening can cause a drop, short circuit or malfunction.
- Over tightening can cause a drop, short circuit or malfunction due to damage to the screw or he equipments and malfunction and fire.

(3) 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".

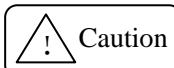


- Put Insert guides, Detector Terminal and Attachment together correctly. It causes trouble.
- Do not turning a detector too much. Also do not make a lack of insertion.
- Do not remove a detector, Fire can not be detected.
- Do not use detector which have impacted. And also do not paint or cover a detector.

(4) Please insert the connector cable into the output connector.



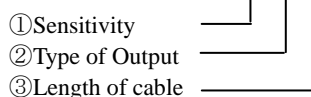
- The connectors are polarized. Please make suitable polar insertion. And please ensure that no loose insert. Loose or Force inserts failure can cause a fire.
- Please do not pull the connector strongly. It causes damage.
- Output relay is PhotoMOS relay. Insulation Test under DC24V between Relay and Relay, Relay and Power supply.
- Do not place obstacle as wiring etc. near the slit of the detector. It will disturb inflow of smoke.
- Please provide a dedicated power supply as much as possible.



- This Detector does not have over voltage protection device. Before using, Please add an external over current circuit breaker.
- Smoke detectors are detecting light scattered by smoke particles in the optical. When used in an environment that generated a large amount of water vapor and particles of dust and smoke can not cause false alarms.

3. Specification

- (1) Name : Photoelectric Smoke Detector
 (2) Type : F1H-RYW1K-xx xx x



Standard setting F1H-RYW1K-R3BB2

Sensitivity 0.3%/m, Alarm Output B, Trouble Output B, Cable length 2m.

- ①Sensitivity : 0.3%/m~0.9%/m,1%/m,2%/m,3%/m(Value = R3~R9、01,02,03)
 Standard Setting is 0.3%/m.(Value=R3)
 ②Type of Output : Type of Alarm & Trouble Output
 Standard Setting is Alarm=B, Trouble=B.
 (Value = BB)
 ③Length of cable : Cable Length 0=None, 2=2m, 5=5m.
 Standard Setting is 2m. (Value = 2)

3.1. Electrical Specification

- (1) Rated Current : DC 30mA
 (2) Range of Operating Voltage : DC10.0V~DC30.0V
 Acceptable ripple voltage 300mVp-p
 Power supply with connector cable. (See below(6))

- (3) Sensitivity : Depend on Type of Product. 0.3%/m (Nominal)

- (4) State Indication : RED LED
 LED

| State of LED | |
|--------------|---------------------|
| Normal mode | 10 seconds interval |
| Alarm mode | 1 seconds interval |
| Trouble mode | Off (not blinking) |

Alarm will override trouble.

- (5) Output : Alarm, Trouble Relay Output
 Capacity of Relay DC24V,0.5A Resistance loading
 State depends on Type of relay.

| Type | Contact | Normal mode | Alarm mode | Trouble mode | Power OFF |
|---------------|---------|-------------|------------|--------------|-----------|
| AA | Alarm | Open | Close | Open | Open |
| | Trouble | Open | Open | Close | Open |
| AB | Alarm | Open | Close | Open | Open |
| | Trouble | Close | Close | Open | Open |
| BA | Alarm | Close | Open | Close | Open |
| | Trouble | Open | Open | Close | Open |
| BB (Standard) | Alarm | Close | Open | Close | Open |
| | Trouble | Close | Close | Open | Open |

- State of output will be normal about a second after power supply.
- Output relay is PhotoMOS relay.
- On resistance Max.0.7Ω. Off state leakage current 1 μA.
- Insulation Test under DC24V between Relay and Relay, Relay and Power supply.

- (6) Connector Cable : Connector cable included.
 of Power supply & Connector : JST SHR—06V 6pin
 Output Cable : Temperature rating 80°C, Voltage rating 300V, AWG#28, UL1061
 Length : Depend on Type of Product. Standard is 2m..
 Connection Details

| | | Pin No. & Color | | | |
|---------|-------------------|-----------------|--------|---|----------|
| Power | Operating Voltage | 6 | Blue | — | 5 White |
| Alarm | | 3 | Orange | — | 4 Orange |
| Trouble | | 1 | Brown | — | 2 Brown |

- (7) Alarm : Auto Restoration : When smoke disappear Automatically.
 Restoration
 (8) Self Check : Dirty, Deterioration
 (9) Automatic test : Automatically sensitivity correction is carried out once a day to
 function check sensitivity change of optical instruments by
 environmental and annual deterioration. The detector becomes
 trouble condition before exceeding correctable limit.

3.2. Mechanical Specification

- (1) External : $\Phi 28 \times H57$ mm (Installation Base 10mm is contained)
 (2) Mass : Approx 25g (Installation Base is contained)
 (3) Main Material : ABS resins

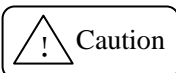
3.3. Environmental Specification

- (1) Operating : $-10^{\circ}\text{C} \sim 60^{\circ}\text{C}$
 Temperature
 Range
 (2) Storage : $-20^{\circ}\text{C} \sim 75^{\circ}\text{C}$
 Temperature
 Range
 (3) Operating : 30~85%RH Non condensing
 Humidity Range
 (4) Storage : 5~95%RH Non condensing
 Humidity Range
 (5) Resistance to : No tolerance to acid and alkaline.
 corrosion



Warning

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



Caution

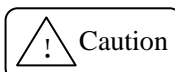
Working temperature and humidity will affect the life span of equipment. Please consider derating and use.

4.1. Daily Inspection

| № | Item | | Object | Content | Method | Judgment Criteria | Treatment |
|---|--------------|--------------------|----------|---|-----------------------------|--|--|
| 1 | Installation | | Common | Securely locked? | Move the detector to check. | The detector must be installed securely. | Retighten the screws on the base with proper torque. |
| | | | | Obstacle near the inlet of detector? | Check Visually | Obstacle must not be present. | Removed. |
| 2 | Appearance | | Common | Adhesion of dirt and foreign matter? | Check Visually | Dirt and foreign matter must not be present. | Removed and Clean. |
| | | | | Damages? | Check Visually | Damages must not be present. | Change the detector. |
| 3 | Wiring | | Common | Damages or Breakages? | Check Visually | Damages must not be present. | Change the connector cable. |
| | | | | Adhesion of dirt and foreign matter on the connector? | Check Visually | Dirt and foreign matter must not be present. | Removed and Clean. |
| | | | | Looseness of connectors | Move the wire to check. | Connectors must not be loose | Change the connector cable. |
| 4 | Behavior | Normal supervision | Detector | State Indication LED | Check Visually | Blink 10 seconds interval. | Check the State Indication LED behavior. |

**Warning**

- Please do not touch the terminal while the unit is energized. It may get an electric shock.
- Please do the cleaning and the increase tightening of the screw after the power supply off. If not the power supply off, it may get an electric shock.
- Do not soak a detector in water, and do not put a detector into water.

**Caution**

- Under tightening can cause a drop, malfunction.
- Over tightening can cause a drop, malfunction due to damage to the screw or equipments and malfunction.
- Please use the dry cloth or wring the water out tightly cloth for the cleaning.
- 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.

4.2. Periodic Inspection

The items that must be inspected one or two times every 6 months to 1 year are listed below.

When the equipment is moved or modified, or layout of the wiring is changed, also perform this inspection.

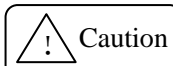
Do not needs to check smoke detect function with real smoke such as Tobacco, incense, etc. Because this smoke detector has self check functions.

| No | Item | | Object | Content | Method | Judgment Criteria | Treatment |
|----|-----------------------|--------------------|----------|---|---------------------------------|--|--|
| 1 | Operating Temperature | | Common | Used within the specification? | Measure with a thermometer. | 0°C ~ 50°C | Meets the specification. |
| 2 | Operating Humidity | | Common | Used within the specification? | Measure with a hygrometer. | 30 ~ 85%RH Non condensing | Meets the specification. |
| 3 | Atmosphere | | Common | IS there volatile or corrosive gas? | Measure corrosive gas. | No tolerance to acid and alkaline. | Meets the specification. |
| 4 | Power Supply Voltage | | Common | Used within the Power Supply Voltage specification? | Measure a Power Supply voltage. | DC10.0V ~ DC30.0V | Meets the specification. |
| 5 | Ripple Voltage | | Common | Used within the Ripple Voltage specification? | Measure a ripple voltage. | 300mVp-p | Meets the specification. |
| 6 | Installation | | Common | Securely locked? | Move the detector to check. | The detector must be installed securely. | Retighten the screws on the base with proper torque. |
| | | | | Obstacle near the inlet of detector? | Check Visually | Obstacle must not be present. | Removed. |
| 7 | Appearance | | Common | Adhesion of dirt and foreign matter? | Check Visually | Dirt and foreign matter must not be present. | Removed and Clean. |
| | | | | Damages? | Check Visually | Damages must not be present. | Change the detector. |
| 8 | Wiring | | Common | Damages or Breakages? | Check Visually | Damages must not be present. | Change the connector cable. |
| | | | | Adhesion of dirt and foreign matter on the connector? | Check Visually | Dirt and foreign matter must not be present. | Removed and Clean. |
| | | | | Looseness of connectors | Move the wire to check. | Connectors must not be loose | Change the connector cable. |
| 9 | Behavior | Normal supervision | Detector | State Indication LED | Check Visually | Blink 10 seconds interval. | Check the State Indication LED behavior. |



Warning

- Please do not touch the terminal while the unit is energized. It may get an electric shock.
- Please do the cleaning and the increase tightening of the screw after the power supply off. If not the power supply off, it may get an electric shock.
- Do not soak a detector in water, and do not put a detector into water.



- Under tightening can cause a drop, malfunction.
- Over tightening can cause a drop, malfunction due to damage to the screw or equipments and malfunction.
- Please use the dry cloth or wring the water out tightly cloth for the cleaning.
- 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.

5. Disposal

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

6. 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