F1H-Q-RYW1K

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 additional 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.





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- •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.



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



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.



- 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.



- 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 the smoke source under the detector.

Guarantee

[A term of a guarantee]

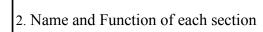
In regard to the guarantee of this product, the designated payment of the order main thing after the paying 1 years you guarantee first only the breakdown which occurs in the normal busy condition which you follow the instruction manual.

[Guarantee range]

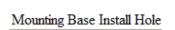
In regard to the breakdown which it occurs in this product with the criticism of payment person side during the above-mentioned guarantee period, it does returns repair in the responsibility of payment person side. However, when it corresponds next, you exclude from the object of this guarantee.

- 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.



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Power Supply and Signal Output Connector Cable

*Ref. Blow Table

Detector Attachment 3, 4

Filter Cap

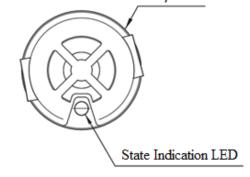
Detector

Mounting Base

Mounting Base

 φ 28

Pin No.	Color of Line	Use
6	Blue	Power +
5	White	Power -
4	0	A1 Ctt
3	Orange	Alarm Contact
2	Brown	Trouble Contact
1	Diown	Trouble Contact



3. Install



- 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.

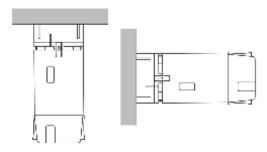
3.1. Install of Smoke Detector

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

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

This detector has suction of smoke by the built-in fan.

There may not be able to suck the smoke sufficiently in ambient wind speed is more than 1m/s. Please be careful.





•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.

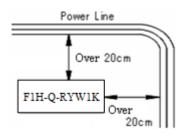
- •Do not use at the place where it exceeds environmental specification. It causes trouble.
- Do not install wrong location. The smoke detector cannot detect a smoke.
- •Be sure to install the detector away from sources of electrical noise such as high voltage and high current switches.

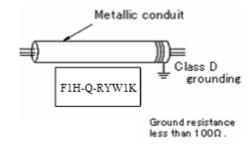


[Isolation from electric noise source such as power line]

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.



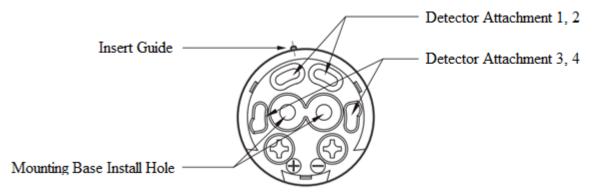


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3.2. Method of installation

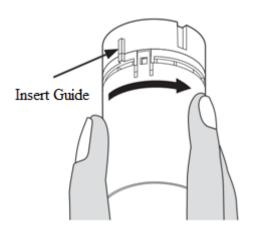
(1) Names of parts mounting base is as follows.



(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 the Detector Attachment into Mounting Base. And Turn a Detector Clockwise until make a sound with "a snick".

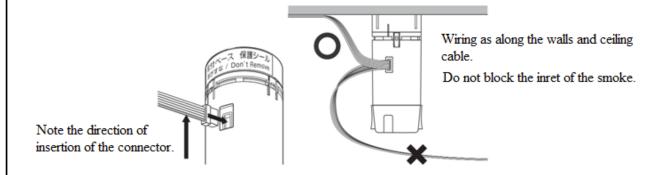




- Put Insert guides, Detector Terminal and Attachment together correctly. It causes trouble.
- Do not turning a detector too much. Also do not make a lack of insertion.
- Do not remove a detector, Fire can not be detected.
- •Do not use detector which have impacted. And also do not paint or cover a detector.

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(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.

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4. Specification

Photoelectric Smoke Detector (1) Name

F1H-Q-RYW1K- xx xx x (2) Type

> ①Sensitivity ②Type of Output 3 Length of cable

Standard setting F1H-Q-RYW1K-R5BB2

Sensitivity 0.5%/m, Alarm Output B, Trouble Output B, Cable length 2m.

①Sensitivity: $0.5\%/m \sim 5\%/m$ (Value = $R5 \sim 05$) Standard Setting is 0.5%/m.(Value=R5)

②Type of Output: Type of Alarm & Trouble Output

Standard Setting is Alarm=B, Trouble=B.

(Value = BB)

③Length of cable: Cable Length $0=None, 2=2m, 5=5m_{\circ}$

Standard Setting is 2m. (Value = 2)

4.1. Electrical Specification

(1) Rated Current DC 20mA

(2) of Range $DC21.6V \sim DC26.4V(DC24V \pm 10\%)$ Operating Voltage Acceptable ripple voltage 300mVp-p

Power supply with connector cable. (See bellow(6))

(3) Sensitivity Depend on Type of Product. 0.5%/m (Nominal)

RED LED

(4) State Indication

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

State depends on Type of Telay.						
Туре	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	Alarm	Close	Open	Close	Open	
(Standard)	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.0.7 Ω .Off state leakage current 1 μ A.
- · Insulation Test under DC24V between Relay and Relay, Relay and Power supply.

(6) Connector Cable of Power supply & Output

Connector cable included.

Connector: JST SHR - 06V 6pin

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

function

Self Check (8) Dirty, Deterioration, Fan speed abnormal detection

(9) Automatic Automatically sensitivity correction is carried out once an hour test

> to check sensitivity change of optical instruments by environmental and annual deterioration. The detector becomes

trouble condition before exceeding correctable limit.

4.2. Mechanical Specification

(1) quantity of 1L/min.

suction

(2) Filter Medium efficiency particulate airlifter (Over 70% rate of collection)

(3) External Φ28×H57mm(Installation Base 10mm is contained)

Mass Approx 25g(Installation Base is contained) (4)

(5) Main Material **ABS** resins

4.3. Environmental Specification

Operating (1) -10°C∼60°C

Temperature Range

Storage (2) $-20^{\circ}\text{C} \sim 75^{\circ}\text{C}$

> Temperature Range

Operating

(3) 30~85%RH Non condensing

Humidity Range

(4) Storage 5∼95%RH Non condensing

Humidity Range

No tolerance to acid and alkaline. (5) Resistance to

corrosion

Warning

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.

5.1. Daily Inspection

№	Ite	m	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/outlet 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		Normal supervision	Detector	State Indication LED	Check Visually	Blink 10 seconds interval.	Check the State Indication LED behavior.



- 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.

5.2. 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.

№	Item	Object	Content	Method	Judgment Criteria	Treatment
1	Operating Temperature	Common	Used within the specification?	Measure with a thermometer.	-10°C∼60°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/outlet 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? Adhesion of dirt and foreign matter on the connector?	Check Visually Check Visually	Damages must not be present. Dirt and foreign matter must not be present.	Change the connector cable. 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.



- 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.



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- 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.

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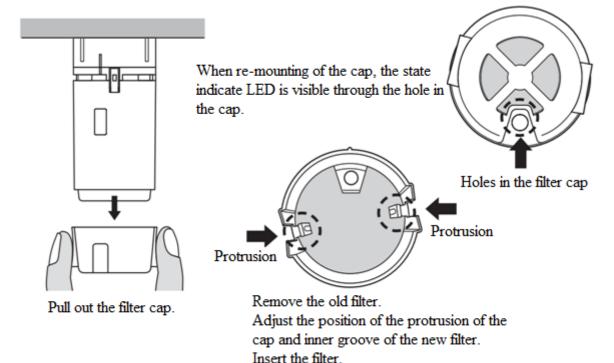
6. Parts of Replacement

Since there is a possibility that clogging occurs in the dirt by suction filter, please be replaced once a year.

When replacing, grab the base of the cap from both sides as shown in the figure.

And crush it lightly and pull it out.

After replacing the filter, attach in the same way as when you pull it out until it "clicks".





• Do not wiring while power is on when you replace the filter.

It causes a false alarm by sucking the dirt and dust when you removed the filter.

7. Term of replacement

Since deterioration over time of the suction fan may vary with temperature, Life of this product depends on the operating temperature of the product.

 -10° C \sim 45 $^{\circ}$ C(Recommended Temperature Range) : 5 years 46°C∼60°C : 3 years

8. Disposal

This product is as general industrial waste disposal.

Disposal methods are specific criteria depending on each municipality.



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9. Support		

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

Fenwal Controls of Japan Co., Ltd.

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