

**ATSUMI ELECTRIC CO., LTD.****KAIHEISENSOR 03****USC03A**

Instruction Manual

<Introduction>

This document describes the multi sensor overview and how to use the Z-Wave functionality.

This product is "KAIHEISENSOR 03" that detects door and window open/close, temperature, humidity, and illumination.

It detects the state change of the place where the product is installed and notifies the controller.

This device is a security enabled Z-Wave Plus product that is able to use encrypted Z-Wave Plus messages to communicate to other security enabled Z-Wave Plus products.

This device must be used in conjunction with a Security Enabled Z-Wave Controller in order to fully utilize all implemented functions.

This product can be operated in any Z-Wave network with other Z-Wave certified devices from other manufacturers.

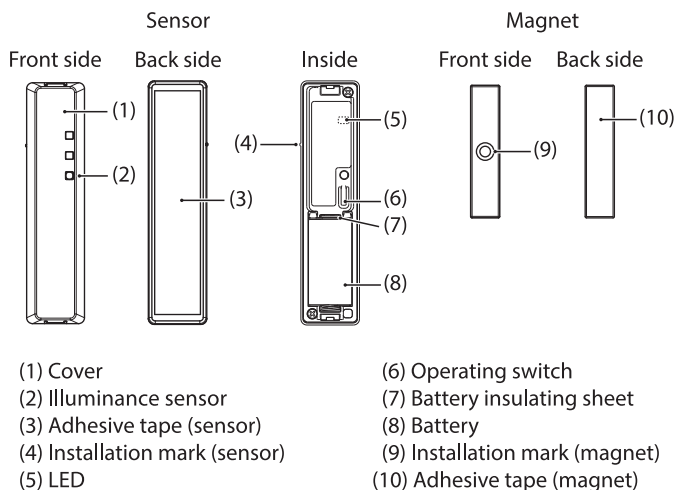
All non-battery operated nodes within the network will act as repeaters regardless of vendor to increase reliability of the network.

Commodity Composition

Before use, make sure that the following included items are all present.

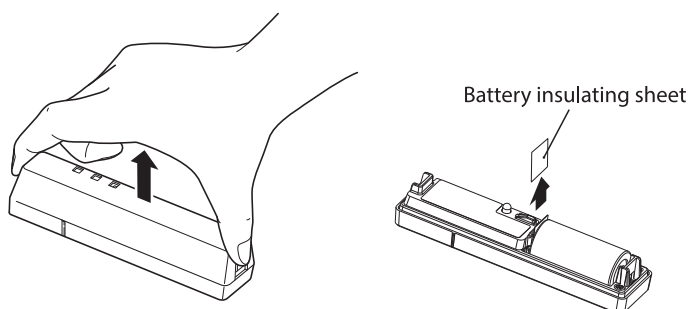
Composition	Quantity	Composition	Quantity
Sensor	1	Magnet	1
Battery (sample)	1 (contained in the sensor)	Instruction manual (this document)	1

Part Names



Installation

1. Remove the cover while pressing the upper and lower parts of the cover. Pull out the battery insulating sheet.
No power switch is provided, so the sensor starts immediately.



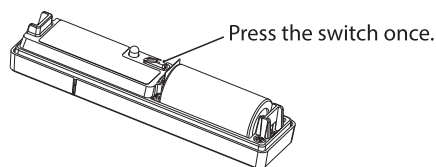
2. Add(Inclusion)

[Note]

Go near the controller and make the registration.

Set the controller in "Add(Inclusion)" mode.

For the operation procedure, see the instruction manual of the controller. Press the operating switch once and release it within about 2 seconds, then registration operation is started and the LED lights for about 30 seconds.



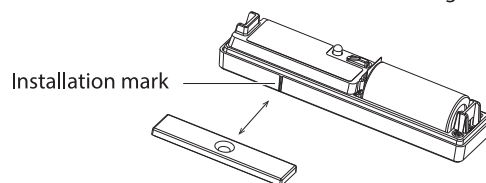
3. Checking operation

In the vicinity where the sensor is to be installed, bring the magnet close to the sensor and distance it from the sensor.

[Note]

Only the left side of the sensor can sense magnetism. Operate the magnet on the side on which the installation mark is present on the sensor.

Confirm that the controller can receive switching information.



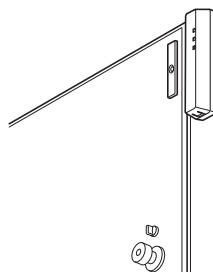
4. Fixing the sensor and magnet with adhesive tape

[NOTE]

Uneven wallpaper and plastered wall can cause the tape to peel, so avoid installation onto them.

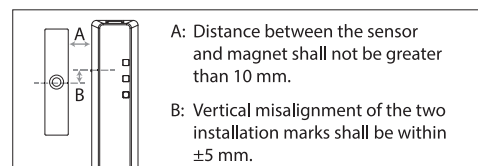
Peel off the release paper from the sensor and the magnet, and fix them onto a window or door. Note that they should be installed with the installation mark on the magnet matching the installation mark on the sensor.

<Installation onto a door (hinged type)>

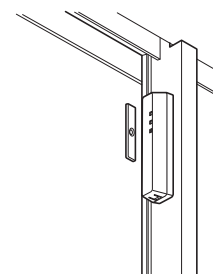


Attach the magnet onto the door, and the sensor onto the door frame.

* The front sides of both the sensor and the magnet face in the same direction.

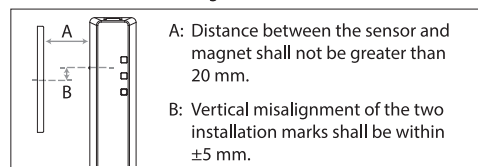


<Installation onto a window (sliding type)>



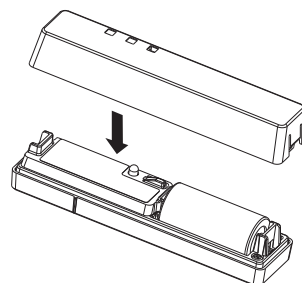
Attach the magnet onto the window glass, and the sensor onto the window sash.

* The front side of the magnet faces toward the sensor.



5. Mounting the cover

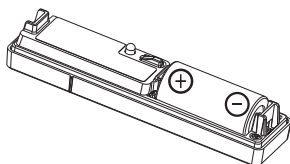
Make sure of the direction of the cover, and mount it.



Other operations

Battery replacement

1. Remove the cover.
2. Take out the battery.
3. Insert the new battery.
Make sure of the correct direction before inserting the battery.
4. Mount the cover.



Remove(Exclusion)

1. Set the controller in "Remove(Exclusion)" mode.
2. Remove the cover.
3. Press the operating switch once. The LED comes on and then goes out.
4. Confirm that "Remove(Exclusion)" is complete in the controller.

Factory Default Reset

[NOTE]

Use this procedure only in the event that the primary controller is lost. All the set values and the controller information are cleared to return to the factory default.

1. Remove the cover.
2. Hold down the operating switch for about 10 seconds. The LED comes on when initialization starts.
3. Release the operating switch when the LED comes on.
The initialization is complete when the LED goes out.
4. Mount the cover.

Wake up

1. Remove the cover.
2. Press the operating switch twice consecutively. The sensor wakes from the sleep state, and sends "WAKE UP NOTIFICATION".
It will automatically enter the sleep state upon completion of sending/receiving with the controller.
3. Mount the cover.

Configuration

Wake up interval

Default setting : 60 minutes
Available setting : 10 minutes ~ 10,080 minutes(7days)
Interval : 3 minutes and 20 seconds

Battery capacity

The device sends the battery capacity in %.
It Sends "0xFF" when the voltage goes below the threshold.

Association

The number of supported groups is 1. "Lifeline"
The number of supportable nodes is 1 unit.
"Lifeline" reports the device status and allows for assigning single device only (main controller by default).

CONFIGURATION (data size: all 1 byte)

No.	Name	Bit	Setting	Default	Value
1	LED	0	Whether to Enable/Disable lighting at sending	0 (Enable)	0 or 1
		1~7	Not used	0	
2	Temperature	0~2	Threshold value (1 to 9 °C in increments of 1°C)	0 (1°C)	0 to 8
		3~7	Not used	0	

Notification Type and Events

If the open / close state of the sensor is changed, it sends the open / close information to the controller.

Notification Type : Access Control (0x06)
Event : Close (0x17), Open (0x16)

This product measures temperature, humidity, and illuminance once every minute, and sends the information if any of the following changes takes place.

Temperature: $\pm 1^{\circ}\text{C}$ or more, or humidity/illuminance: $\pm 10\%$ or more

Temperature, humidity, and illuminance values are sent all at the same time.

Sensor Type : Temperature (0x01) LEVEL(0x42)
Humidity (0x05) LEVEL(0x42)
Illuminance (0x03) LEVEL(0x42)

Z-Wave Command Classes

COMMAND_CLASS_ASSOCIATION_V2 (secure S2)
COMMAND_CLASS_ASSOCIATION_GRP_INFO_V3 (secure S2)
COMMAND_CLASS_BATTERY (secure S2)
COMMAND_CLASS_DEVICE_RESET_LOCALLY (secure S2)
COMMAND_CLASS_MANUFACTURER_SPECIFIC (secure S2)
COMMAND_CLASS_NOTIFICATION_V8 (secure S2)
COMMAND_CLASS_POWERLEVEL (secure S2)
COMMAND_CLASS_SECURITY
COMMAND_CLASS_SECURITY 2
COMMAND_CLASS_SUPERVISION
COMMAND_CLASS_TRANSPORT_SERVICE_V2
COMMAND_CLASS_VERSION_V3 (secure S2)
COMMAND_CLASS_WAKE_UP_V2 (secure S2)
COMMAND_CLASS_ZWAVEPLUS_INFO_V2
COMMAND_CLASS_SENSOR_MULTILEVEL_V11 (secure S2)
COMMAND_CLASS_CONFIGURATION (secure S2)

Specifications

Product name	KAIHEISENSOR 03
Part number	USC03A
Power supply	CR123A 3.0V
Indicating light	Red LED x 1
Operating temperature	-10 to +50 °C
Operating humidity	RH 95% or less (no condensation)
Installation location	Indoor use only
Communication mode	Z-Wave®
Available frequency	922.5 / 923.9 / 926.3 MHz
Communication distance	About 30 m (prospect)
Outside dimensions	About 96 x 23 x 21 mm (sensor)
	About 50 x 11 x 3 mm (magnet)
Mass	About 45 g (including battery)