HEATIT Z-SMOKE DETECTOR BATTERY

Firmware 4.02

01.10.2020

Ver 2020-A

Installers manual

TABLE OF CONTENTS

1. INTRODUCTION

Heatit Z-Smoke Detector is a multifunctional smoke sensor with a built-in PIR motion sensor, temperature sensor and emergency light. Heatit Z-Smoke Detector is a wireless operated photoelectronic smoke detector designed to interact with most Z-Wave enabled controllers. The detector features smoke-, temperature-, and IR-detection.

2. STATEMENT REGARDING PRODUCTS FROM MULTIPLE MANUFACTURERS

Please read this before installation

This device may be used with all devices certified with the Z-Wave Plus™ certificate and should be compatible with such devices produced by any manufacturer. Every primary controller is different depending on the manufacturer, their target audience and intended use/application. Please review the functionalities implemented by the primary controller you intend to use with our Z-Wave Plus certified device to ensure that it provides the necessary controls to take full advantage of our product's capabilities.

3. BEHAVIOR WITHIN THE Z-WAVE™ NETWORK

This device may be operated within any Z-Wave network with Z-Wave-certified devices from other manufacturers. All non-battery-operated nodes within the network will act as repeaters regardless of manufacturer to increase the reliability of the network. On delivery, the device does not belong to any Z-Wave network.

The device needs to be added to an existing network to communicate with the other devices within it. Devices may also be removed from a network. The add/remove processes are initiated by the primary controller of the Z-Wave network.

4. QUICK START

1. Unscrew the battery cover.
2. Insert three 3V CR123 Lithium batteries into the battery compartment.
3. Orient the batteries according to the polarity.
4. The device will enter auto inclusion mode after being powered on.
5. Set the primary controller in add mode (security/non-security).
6. The Heatit Z-Smoke Detector is now included in your Z-Wave network.

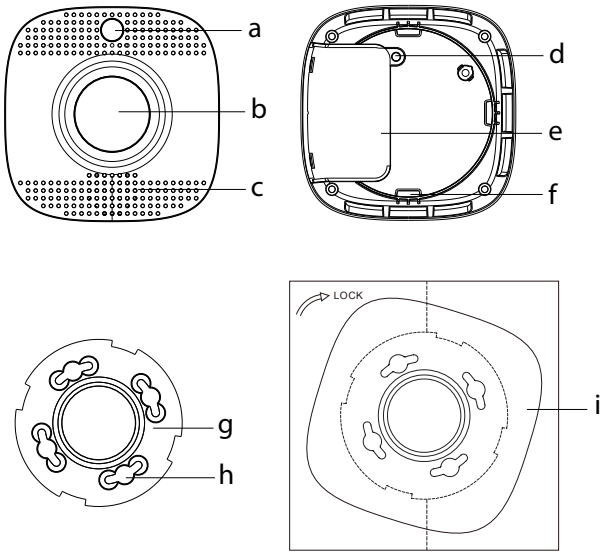
5. INSTALLATION/MOUNTING

1. Place the smoke detector at the desired mounting location and use the Range Test function to make sure the smoke detector can be detected by the control panel where it has been placed.
2. A mounting sheet is included in the package. The illustration size equals the smoke detector's actual size and the perforated design allows for easy removal after installation.
3. Position the sheet tightly against the ceiling and use the four holes as a template to drill holes and insert wall plugs in the wall/ceiling if so required.
4. Place the mounting bracket on top of the mounting sheet and screw it onto the wall/ceiling.

CE

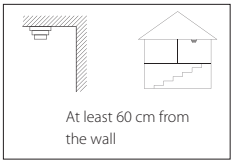
heatit CONTROLS

5. The smoke detector has four notches on its back cover. Gently align the four notches on the smoke detector with the hooks on the mounting bracket. Rotate clockwise to lock the hook.
6. Installation is now complete. You may now tear off the mounting sheet.



a. LED-indicator/function button/emergency light.
b. IR-lens.
c. Buzzer.
d. Battery compartment fixing screw.
e. Battery compartment.
f. Hooks.
g. Mounting bracket.
h. Mounting holes (for the hooks on the mounting bracket).
i. Mount by aligning notches and hooks, then rotate clockwise.

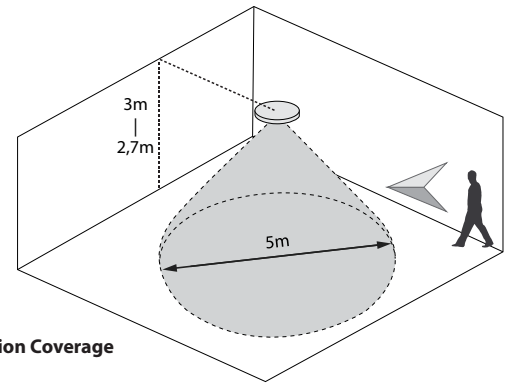
Installation recommendations



- It is recommended to install the device in the center of the ceiling.
- The device should be placed openly, unobstructed by appliances and furniture.
- It is recommended to place a smoke detector at the top of a stairway to detect heat and smoke rising from below.
- For the device to function correctly, it is important to ensure that its readings are done accurately in a stable environment. In order to achieve this:
  - Do not place the detector in the kitchen: Cooking fumes may trigger the alarm.
  - Do not place the detector near a ventilation fan, fluorescent lamp or air-conditioning unit: Air drafts may affect the accuracy of the detector.
  - Do not place the detector near ceiling beams, at the top point of an "A" frame type ceiling or over a cabinet: Stagnant air in these areas may affect the accuracy of the detector.
  - Do not place the detector where it may be exposed to direct sunlight.
  - Avoid installing the smoke detector in areas where other installations may cause rapid changes in temperature within the detection area, e.g. near air conditioners, heaters, boilers or radiators.
  - Avoid large obstacles in the detection area.
  - Moving objects within the PIR detection area (e.g. curtains moving in a draft) may cause an unwanted alarm. Avoid if possible.

The sensor will give false alarms when used in dusty areas like washroom with tumbledryer. To test the PIR motion sensor: Press the function button to enter test mode. Walk around the protected area, and notice when the LED lights up. Check that the detection coverage is adequate.

The smoke detector is designed to be mounted on the ceiling. The ideal mounting height for the smoke detector is 2.7 to 3 meters above ground. Mounting the detector higher than 3 meters above ground may affect detection performance.
The smoke detector can support detection coverage within a diameter of 5 meters. Please refer to the illustrations below for installation details.



IR Detection Coverage

6. ADD/REMOVE

Please read this before installation

The primary controller/gateway has a mode for adding or removing devices. Please refer to your primary controller manual on how to set the primary controller in add/remove mode. The device may only be added or removed from the network if the primary controller/gateway is in add/remove mode.

After power is applied, the smoke detector initiates a 1-minute warm-up period. During this minute, the device will automatically enter add/remove mode, and may now be added to the system via the primary controller.

After the calibration process is finished, you may access the add/remove mode by pressing the function button three times within 1.5 seconds. Removing the device will reset it to factory settings.

If the device already belongs to a network, you must remove it from that network before adding into a new one, or the setup will fail. When the device is removed from the network, it will revert to factory settings.

7. LED-INDICATOR /FUNCTION BUTTON

Red LED

- Turns ON briefly: Transmitting signal.
- Quick flash: Alarm.
- Flashes every second: Smoke detector in sleep mode.
- Flashes every 2 seconds: Smoke detector in warm-up and calibration process.
- Flashes every 4 seconds: Battery exhausted.

Orange LED

- Flashes every second: Device power-on/calibration failed.
- Flashes every 5 seconds: Detecting smoke failed or device malfunctioning.
- Flashes every 4 seconds: Battery exhausted.
- Flashes every 45 seconds: Low battery condition

Function button

- Press the button once to send a test signal and temperature report to gateway.
- Press the button once during an alarm to silence the alarm.
- Press the button 3 times within 1.5 seconds to learn mode.
- Press and hold the button for 10 seconds to enter the calibration process.
- Press and hold the button for 20 seconds to perform a factory reset.

White LED (emergency light)

- The emergency light will begin to flash slowly to alert users that an alarm has been triggered.

8. FACTORY RESET

Press and hold the function button for 20 seconds. This will reset the smoke detector. It will also perform the calibration process.
NB! Please use this procedure only when the primary controller/ gateway is missing or otherwise inoperable.

9. TESTING THE SMOKE DETECTOR

By pressing the function button on the smoke detector, you can test if the smoke detector is functioning normally.

- If the smoke detector functions normally, the Red LED turns on for 2 seconds, followed by a 2-tone beep.
- If the buzzer sounds 2-tone beeps 3 times, the "Optical Chamber" on the smoke detector is either dirty or out-of-order.
- If the buzzer sounds 2-tone beeps 5 times, the "Heat Sensor" is out of order.

10. ALARM SILENCE

When the smoke detector sounds the alarm, pressing the function button sets the smoke detector to alarm silence mode to silence the alarm for 9 minutes. The buzzer will only stop sounding after the alarm has been activated for at least 1 minute.

If the smoke concentration has dropped below the alarm threshold after the 9-minute alarm silence period has expired, the smoke detector will emit a 2-tone beep and return to normal operation mode without sounding the alarm.

If smoke concentration still exceeds the alarm threshold, the smoke detector will start alarming again.

If smoke concentration continues to rise during the alarm silence period and exceeds the second alarm threshold, the smoke detector will start sounding again. An alarm activated by exceeding the second alarm threshold could not be silenced by pressing the function button.

11. CALIBRATION

As the operating conditions of the smoke detector may vary after having been installed for some time, you may wish to recalibrate the smoke detector to set a new smoke detection threshold value and ensure optimal performance of the smoke detector.
To do this:

- Hold the function button for 10 seconds until the red LED starts to flash. The smoke detector will emit 2 short beeps, then follow the calibration process described in step 4 of the installation procedure to set the new preferred value.
- Every time the battery is removed and re-inserted, the smoke detecter will also set the new threshold value following the calibration process
- After the initial installation, the smoke detector will perform auto-calibration after 4 hours. Afterwards, it will perform an auto-calibration once every month.
- If the calibration fails, the smoke detector will emit continuous beeps, and the red LED will also flash continuously. In this case, you need to remove the batteries, wait for 30 seconds then re-insert the batteries to restart the smoke detector.

12. SERIAL CONNECTION

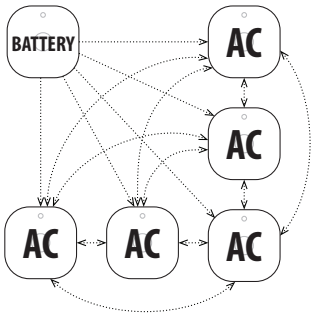
The smoke detector may be used with other Heatit Z-Smoke Detectors 230VAC (maximum 6 in same serial connection). The Heatit Z-Smoke Detector Battery may be associated with the Heatit Z-Smoke Detector 230VAC AC, which is a listening node. To benefit from this functionality, it is necessary to assign associations to the other Heatit Z-Smoke Detectors 230VAC AC. Heatit Z-Smoke Detector Battery may only be associated with Heatit Z-Smoke 230VAC AC (listening nodes).
NB! Serial connection between Heatit Z-Smoke Detector Battery and other Heatit Z-Smoke Detector Battery is not possible.

1. Add all smoke detectors to the same network.
2. Assign the smoke detectors to the correct zone/room in the primary controller.
3. Access associations from the primary gateway (please refer to primary controller manual).
4. Assign assocations from each device using association group 2 (Sensor Basic Set) to all other smoke detectors.

This way it is ensured that no matter where the fire is detected, the devices will alarm with siren and emergency lights.

To stop an ongoing alarm, you can press the function button on a smoke detector. If the smoke detector was triggered by another device, the device will stop all alarms except from where the alarm was triggered.

Heatit Z-Smoke Detector combination



Heatit Z-Smoke Detector Battery and Heatit Z-Smoke 230VAC.
Use Asscociation group 2.

13. SECURITY

The S2 security enhances Z-Wave Plus with an additional layer of AES 128-bit encryption of the wireless Z-Wave communication to prevent hacking and man-in-middle attacks on the home network.

14. NODE INFORMATION FRAME

The node information frame is the business card of a Z-Wave device. It contains information about the device type and its technical features. The add and remove procedure of the device is confirmed by sending out a node information frame. Besides this, it may be necessary for certain network operations to send out a node information.

15. COMMAND CLASSES

15.1 Command Class Notification V8

Notification Command Class is used for various purposes in the smoke detector. The table below shows how the smoke detector will behave during different events.

USE	SUPPORTED EVENTS	EVENT 1	EVENT 2	EVENT 3
Smoke (0x01)	0x03	State idle (0x00)	Smoke Detected (0x02)	Alarm silenced (0x06)
Heat (0x04)	0x03	State idle (0x00)	Overheat detected (0x02)	Alarm silenced (0x09)
Home Security (0x07)	0x03	State idle (0x00)	Tampering, product cover removed (0x03)	Motion detection (0x08)

When reciving Basic Set ON (0xFF) the siren will sound.
When reciving Basic Set OFF (0x00) the siren will be turned OFF.

15.2 Command Basic

Basic is mapped towards;

USE	SUPPORTED EVENTS	EVENT 1	EVENT 2
Smoke (0x01)	0x02	State idle (0x00)	Alarm silenced (0x06)

15.3 Command Class Sensor Multilevel V11

Used to advertise the measured air temperature.

SIZE (BYTES)	SCALE	PRECISION
2 byte (0x02)	Celsius (0x00)	1 Decimal (0x01)

15.4 Command Class Battery V1

Used to advertise the measured air temperature.
The following table lists all Command Classes supported by the Z-Wave device. The device supports both S0 and S2 Unauthenticated security.

	INSECURE INCLUSION	SECURE INCLUSION
COMMAND_CLASS_ASSOCIATION_V2	Yes	Yes
COMMAND_CLASS_ASSOCIATION_GRP_INFO_V3	Yes	Yes
COMMAND_CLASS_ASSOCIATION_GRP_INFO_V3	Yes	Yes
COMMAND_CLASS_VERSION_V3	Yes	Yes
COMMAND_CLASS_MANUFACTURER_SPECIFIC_V2	Yes	Yes
COMMAND_CLASS_ZWAVEPLUS_INFO_V2	Yes	
COMMAND_CLASS_DEVICE_RESET_LOCALLY_V1	Yes	Yes
COMMAND_CLASS_POWERLEVEL_V1	Yes	Yes
COMMAND_CLASS_FIRMWARE_UPDATE_MD_V5	Yes	Yes
COMMAND_CLASS_SUPERVISION_V1	Yes	Yes
COMMAND_CLASS_SECURITY_2_V1	Yes	
COMMAND_CLASS_TRANSPORT_SERVICE_V2	Yes	
COMMAND_CLASS_BATTERY_V1	Yes	Yes
COMMAND_CLASS_NOTIFICATION_V8	Yes	Yes
COMMAND_CLASS_SENSOR_MULTILEVEL_V11	Yes	Yes
COMMAND_CLASS_SWITCH_BINARY_V1	Yes	Yes

Command Basic
Used to advertise the measured air temperature.

The following table lists all Command Classes supported by the Z-Wave device. The device supports both S0 and S2 Unauthenticated security.

	INSECURE INCLUSION	SECURE INCLUSION
COMMAND_CLASS_ASSOCIATION_V2	Yes	Yes
COMMAND_CLASS_ASSOCIATION_GRP_INFO_V3	Yes	Yes
COMMAND_CLASS_ASSOCIATION_GRP_INFO_V3	Yes	Yes
COMMAND_CLASS_VERSION_V3	Yes	Yes
COMMAND_CLASS_MANUFACTURER_SPECIFIC_V2	Yes	Yes
COMMAND_CLASS_ZWAVEPLUS_INFO_V2	Yes	
COMMAND_CLASS_DEVICE_RESET_LOCALLY_V1	Yes	Yes
COMMAND_CLASS_POWERLEVEL_V1	Yes	Yes
COMMAND_CLASS_FIRMWARE_UPDATE_MD_V5	Yes	Yes
COMMAND_CLASS_SUPERVISION_V1	Yes	Yes
COMMAND_CLASS_SECURITY_2_V1	Yes	
COMMAND_CLASS_TRANSPORT_SERVICE_V2	Yes	
COMMAND_CLASS_BATTERY_V1	Yes	Yes
COMMAND_CLASS_NOTIFICATION_V8	Yes	Yes
COMMAND_CLASS_SENSOR_MULTILEVEL_V11	Yes	Yes
COMMAND_CLASS_SWITCH_BINARY_V1	Yes	Yes

16. ASSOCIATIONS

Z-Wave devices control other Z-Wave devices. The relationship between one device controlling another device is called an association. In order to control a subordinate device, the controlling device needs to maintain a list of devices that will receive controlling commands. These lists are called "Association Groups". They are always related to the specific event triggered (e.g., sensor reports). In case the event is triggered, all devices stored in the respective association group will receive a joint wireless command.

17. ASSOCIATION GROUPS

MULTILEVEL SWTICH DEVICE	DESCRIPTION
Group 1 Lifeline	Lifeline. (Normally used by the Z-Wave Controller) Sends: - Battery Report - Notification Report - Sensor Multilevel Report - Device Reset Locally Notification Max. nodes in group: 5
Group 2 Sensor Basic set	- Basic set When the smoke detector is active, it will send basic set (0xFF). When the smoke detector is deactived, it will send basic set (0x00). Max. nodes in group: 5

SETTING AND REMOVING ASSOCIATIONS

Associations may be assigned and removed via Z-Wave commands. Please refer to your primary controller/Z-Wave gateway for more information.

PRODUCT INFO

Heatit Z-Smoke Battery

FEATURES

- Multifunctional smoke detector
- Battery
- Smoke detector
- Temperature sensor
- Motion sensor
- Serial connection capability via gateway (max 6 pcs)
- Built-in emergency lighting
- Low battery alert
- Button to silence unwanted alarms
- Tamper switch
- Firmware update (OTA)
- Supports encryption mode S0, S2 Unauthenticated Class

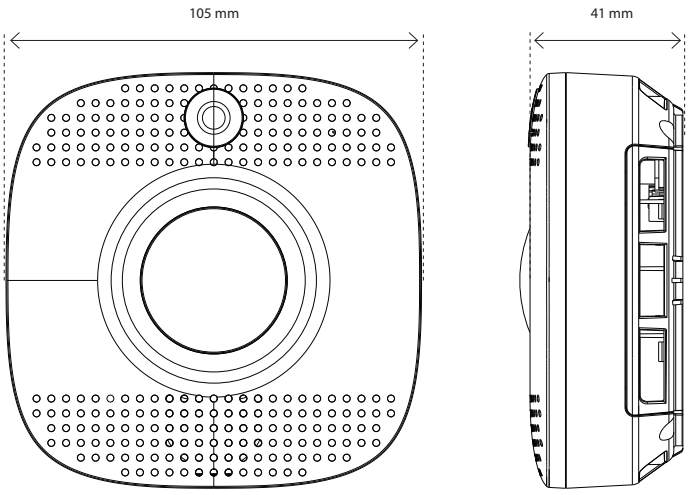
This product is a security-enabled Z-Wave Plus product with encryption. The product must be used with a security-enabled Z-Wave Controller in order to fully utilize the product.

TECHNICAL DATA

Protocol	Z-Wave, 868.4MHz
Chip	Z-Wave 500 chip
Battery	3 x CR123A 3V batteries
Battery life	~2,8 years
Temperature sensitivity	±1°C
Alarm	85dB at 3 meters distance
Smoke sensor	Photoelectric
Ambient temperature	5°C to 40°C
Humidity	Max. 85% RH
Range, PIR	Up to 5m at 3m mounting height
IP Code	IP 20
Size (LxWxH)	105mm x 105mm x 41mm
Approvals	Z-Wave Plus, CE, RoHS, EN 14604:2005

MAINTENANCE

The product should be tested regularly. Vacuum or blow the dust off the smoke detector regularly. The smoke detector must be replaced every 10 years.



ART. NO.	PRODUCT	FREQUENCY
45 126 88	Heatit Z-Smoke Detector Battery	EU 868.4MHz

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