# OPERATING MANUAL

## NanoMote Quad

ZWA003-A/C

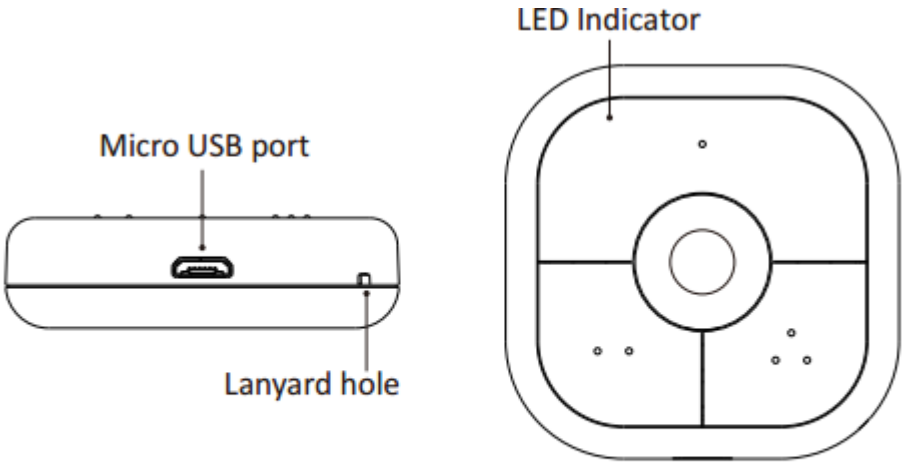
NanoMote Quad is a wireless, portable and rechargeable product. On one hand, it can be used to control separate Z-Wave device, such as a smart Plug, smart Dimmer, Bulb, etc. through Z-Wave Gateway. On the other hand, it can also be used to program a scene by Gateway app which groups many smart nodes such as Plugs, Bulbs, and Siren... The scene may refer to sleep scene, movie scene and entertainment scene, etc. as you created.

Features:

1. Z-Wave Plus certified for good compatibility (500 serials chipset)
2. Z-Wave S2 system
3. Support remote control anywhere and anytime
4. Program up to 4 customized scenes
5. The battery is rechargeable, will run for three months per charge
6. Support low battery alarm with buzzer
7. Support Child Lock function
8. Supporting firmware OTA

## Ⅰ. GENERAL INFORMATION ABOUT NANOMOTE QUAD

**1. Product layout**




• means Button 1 •• means Button 2

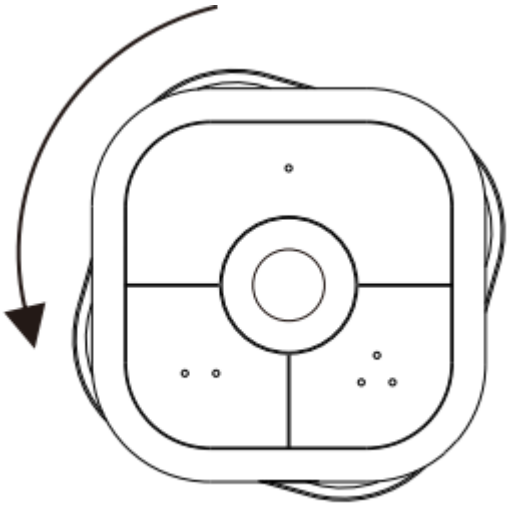
∴means Button 3 ○means Button 4

**2. Specifications**

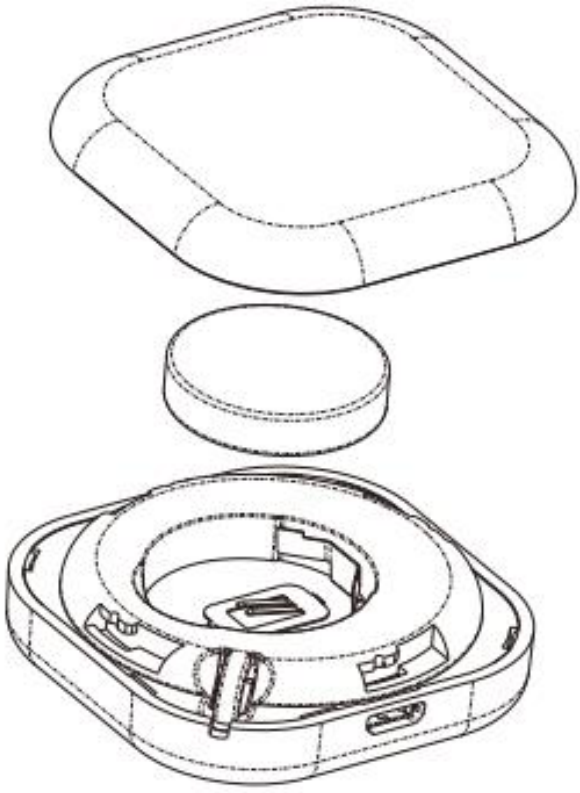
| | |
|---|---|
| Power supply: | 1 x LIR2450 3.6V Battery |
| Storage environment: | -10℃-50℃ 0%-85% |
| Operational temperature: | 0-40℃ |
| Radio protocol: | Z-Wave |
| Radio frequency: | 868.42MHz (EU) 908.42MHz (US)<br>921.42MHz(ANZ) |
| Range: | More than 100m outdoors<br>About 30m indoors (depending<br>on building materials) |
| Dimensions: | 50*50*14.5MM |
| Working current: | 36mA |
| Standby current: | 2.5uA |

## Ⅱ. INSTALLATION

Open the cover



Insert your battery and close the cover



## Ⅲ. Z-WAVE NETWORK INCLUSION

NanoMote Quad can be included and operated in any Z-Wave network with other Z-Wave certified devices from other manufacturers and/or other applications. All non-battery operated nodes within the network will act as repeaters regardless of vendor to increase reliability of the network.

1. Insert the LIR2450 battery.
2. Place the device within the direct range of your Z-Wave controller.
3. Set the main controller's adding mode (see the controller's manual).
4. Double click the button quickly, the LED indicator should blink fast.
5. Wait for the adding process to end.
6. Successful adding will be confirmed by the Z-Wave controller's message.

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**TIP:**

If you want your NanoMote Quad to be a security device that use secure/encrypted message to communicate in a Z-Wave network, then a security enabled Z-Wave controller is needed.

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## Ⅳ. Z-WAVE NETWORK EXCLUSION

To remove the NanoMote Quad from the Z-Wave network:

1. Insert the LIR2450 battery.
2. Place the device within the direct range of your Z-Wave controller.
3. Set the main controller remove mode (see the controller's manual).
4. Double click the button quickly, the LED indicator should blink fast.
5. Wait for the removing process to end.
6. Successful adding will be confirmed by the Z-Wave controller's message.

## V .Security features of NanoMote Quad in Z-Wave network

7. The following is a list of supported command classes:
8. 1.The node info frame supports:

| | |
|---|---|
| COMMAND_CLASS_ZWAVEPLUS_INFO | V2 |
| COMMAND_CLASS_SECURITY | V1 |
| COMMAND_CLASS_SECURITY_2 | V1 |
| COMMAND_CLASS_TRANSPORT_SERVICE | V2 |

2. Security Command Supported Report Frame:

| | |
|---|---|
| COMMAND_CLASS_VERSION | V2 |
| COMMAND_CLASS_MANUFACTURER_SPECIFIC | V2 |
| COMMAND_CLASS_ASSOCIATION_GRP_INFO | V1 |
| COMMAND_CLASS_ASSOCIATION | V2 |
| COMMAND_CLASS_BATTERY | V1 |
| COMMAND_CLASS_WAKE_UP | V2 |
| COMMAND_CLASS_POWERLEVEL | V1 |
| COMMAND_CLASS_CONFIGURATION | V1 |
| COMMAND_CLASS_SUPERVISION | V1 |

| | |
|---|---|
| COMMAND_CLASS_FIRMWARE_UPDATE_MD | V3 |
| COMMAND_CLASS_DEVICE_RESET_LOCALLY | V1 |
| COMMAND_CLASS_CENTRAL_SCENE | V3 |
| COMMAND_CLASS_MARK | V1 |
| COMMAND_CLASS_SWITCH_MULTILEVEL | V2 |

## VI. LOW BATTERY ALARM FUNCTION

NanoMote Quad will send battery report to the lifeline group when button is triggered during the sleep mode. If the battery level of the NanoMote Quad is less than 20%, the NanoMote Quad will send a low battery alarm to the main controller.

## VII. WAKE UP

Pressing and holding button for 5 seconds and then release so the NanoMote Quad will wake up itself and send wake-up notification out to Z-Wave Controller. After that, it can be operated to update parameters, OTA, and detect battery level etc.

## VIII. CHILD LOCK FUNCTION

Child Lock function. If enable the Child Lock function, the LED indicator will not be on when press down the button. To switch on/off the Child Lock function, please press and hold the button for 10 seconds, the LED indicator will be solid on in red. Then release the button, the LED indicator will be continuously stay in red for 2 seconds. During this 2 seconds, please click the button once, the LED light will be blink fast in red for 2 seconds.

## IX. TESTING Z-WAVE NETWORK RANGE

Press and hold the button for 15 seconds, the LED light will be solid on in purple. Then release the button, the LED light will be stay in purple for 2 seconds, during this 2 seconds, please click the button once, it will start to test the Z-Wave network range and LED light will blink fast in purple. After finish the test, if the LED light is in green, it refers to strong signal; if in blue, it refers to medium signal, and if in red, it refers to weak signal or no signal.

**TIP:**

This function works only when NanoMote Quad has been included into a Z-Wave network.

## Ⅹ. RESET NANOMOTE QUAD

Reset procedure clears the NanoMote Quad's memory, including Z-Wave network information.
To reset NanoMote Quad:
Press and hold the button for 20 seconds, the LED light will be solid on in red. Then release the button, the LED light will be stay in red for 2 seconds, during this 2 seconds, please click the button once, it will start to restore factory default. At the same time, the LED light will be solid on in colorful for 15 seconds. Then Sending Device Reset locally notification to the controller.

**NOTE:**

Use this procedure only in the event that the network primary controller is or otherwise inoperable.

## XI. BATTERY CHARGING

NanoMote Quad has an internal rechargeable battery that will run for three months under the normal use condition. The charger's output should be a micro USB terminal with the specification of output DC 5V.The LED color is red during the charging process, and it will turn to green if the charging is finished.

## ⅫⅡ. BASIC COMMAND

There is no relevant commands are available for mapping.

## ⅩⅢ. BATTERY COMMAND

NanoMote Quad will send battery report to the lifeline group when Button is triggered during the sleep mode. If the battery level of the Scene Controller is less than 20%, the Scene Controller will beep 3 times when the button is pressed.

## ⅩⅣ. ASSOCIATION

Association allows the NanoMote Quad to control another Z-wave device directly, such as Smart Switch, Smart Dimmer, etc. NanoMote Quad supports three association groupings, every group relates to a specific button action. View details in the follow section of “ⅪI. BUTTON FUNCTION”.

Group 1 is the Lifeline group and allows NanoMote Quad sends central scene notification command and battery report command when any button is triggered. Details shown as the below diagram 1.

Group 2 allows NanoMote Quad sends basic set command when the button 1 is triggered.

Group 3 allows NanoMote Quad sends switch multilevel set, multilevel start level change and multilevel stop level change command when the button 1 is triggered.

Group 4 allows NanoMote Quad sends basic set command when the button 2 is triggered.

Group 5 allows NanoMote Quad sends switch multilevel set, multilevel start level change and multilevel stop level change command when the button 2 is triggered.

Group 6 allows NanoMote Quad sends basic set command when the button 3 is triggered.

Group 7 allows NanoMote Quad sends switch multilevel set, multilevel start level change and multilevel stop level change command when the button 3 is triggered.

Group 8 allows NanoMote Quad sends basic set command when the button 4 is triggered.

Group 9 allows NanoMote Quad sends switch multilevel set, multilevel start level change and multilevel stop level change command when the button 4 is triggered.
Details shown as the below diagram 2

Diagram 1:

| Button ID | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Scene Number | 1 | 2 | 3 | 4 |

Diagram 2:

| Button ID | Group ID | Action & notification |
|---|---|---|
| Any button | 1 | Press: Central scene notification ( Key Attributes=0)<br>Hold: Central scene notification ( Key Attributes=2)<br>Release: Central scene notification ( Key Attributes=1) |
| Button 1 | 2 | Press: Basic Set<br>Hold: Reserve<br>Release: Reserve |
| | 3 | Press: Switch multilevel set<br>Hold: Multilevel start level change<br>Release: Multilevel stop level change |
| Button 2 | 4 | Press: Basic Set<br>Hold: Reserve<br>Release: Reserve |
| | 5 | Press: Switch multilevel set<br>Hold: Multilevel start level change<br>Release: Multilevel stop level change |
| Button 3 | 6 | Press: Basic Set<br>Hold: Reserve<br>Release: Reserve |
| | 7 | Press: Switch multilevel set<br>Hold: Multilevel start level change<br>Release: Multilevel stop level change |
| Button 4 | 8 | Press: Basic Set<br>Hold: Reserve<br>Release: Reserve |
| | 9 | Press: Switch multilevel set<br>Hold: Multilevel start level change<br>Release: Multilevel stop level change |

**TIP:**

1. The max number of associated nodes of all each group is 5.
2. Association allows for direct transmission of control command between devices and takes place without the participation of the main controller.

## XV. BUTTON FUNCTION

NanoMote Quad offers three button action types, including short press, press and hold, release.

Short press allows NanoMote Quad sends:
Central scene notification commands to the associated nodes.
Basic set command to the associated nodes.
Switch multilevel set command to the associated nodes.

Press and Hold (more than 2 seconds) allows NanoMote Quad sends:
Central scene notification command to the associated nodes.
Multilevel start level change command to the associated nodes.

Release allows NanoMote Quad sends:
Central scene notification command to the associated nodes.
Multilevel stop level change command to the associated nodes.

## XVI. ADVANCED CONFIGURATION

NanoMote Quad offers a wide variety of advanced configuration settings. Below parameters can be accessed from main controllers configuration interface.

**Parameter No.32 Level of low battery.**
Available settings: **10-50 (10% - 50%)**
Default setting: **20 (20%)**
Parameter size: **1[byte]**

**Parameter No.41 Enable send central scene notification.**
**0** - Disable.
**1** – Enable.
Default setting: **1**
Parameter size: **1[byte]**

**Parameter No.42 Setting the duration value of the command switch multilevel.**
Available settings: **-128 to 127**
Default setting: **-1**
Parameter size: **1[byte]**

**Parameter No.43 Enable/disable the buzzer alarm when battery is running low.**

**0** - Disable.

**1** –Enable.

Default setting: **0**

Parameter size: **1[byte]**

## XVII. NOTES FOR OTA

With reference to Wake-up operation (VI.WAKE UP) and Z-Wave controller's guidances to do OTA.

## XVIII. FCC NOTICE (for USA)

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and
(2) This device must accept any interference received, including interference that may cause undesired operation.
The manufacturer is not responsible for any radio or tv interference caused by unauthorized modifications or change to this equipment. Such modifications or change could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-- Reorient or relocate the receiving antenna.

-- Increase the separation between the equipment and receiver.

-- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-- Consult the dealer or an experienced radio/TV technician for help.