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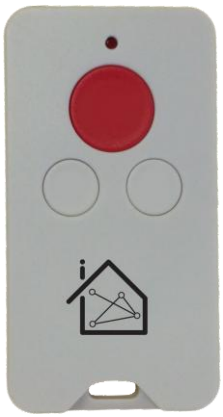
Quick start: **Panic Button EU**

Technical specifications

Normal operating voltage	1x CR2032 3V battery
Frequency range	868.42 MHz
Wireless range	Min. 150 meters in a mesh network



Basic operations

- The *Panic Button* can trigger any rule or lifestyle
- The *Panic Button* can be configured to your needs
- The *Panic Button* is easy to install and configured
- Indoor use only
- Water resistant
- Big red button with time configurable activation time

How it operates

After a successful inclusion the *Panic Button* can be used.
When pressing a button the led will blink to notice the customer of successful alarm message is sent.
With a controller you can make all different kind of rules and lifestyle changes.

It also possible sent the alarm directly to a Z-Wave based alarm device.

Use

1. Before use, the *Panic Button* should be included into a Z-Wave network and associated.
2. You can test your *Panic Button* by pressing the button for 1 second untill the led is turned on (press time is configurable).
3. Don't forget to update and syncronize your rules in the Internet Gateway.

Include or exclude in Z-Wave network [1]

1. Press and hold the SOS push button until the indicator light starts blinking. Then release the button to start the inclusion or exclusion process.
   (Note: Normally button should be pressed for 2 seconds but in case the product is already included, it can take up to 12 seconds before the indicator light will start blinking.)
2. When classic inclusion failed, the product will start Network Wide Inclusion automatically.

Force wakeup notification

1. When included press and hold the SOS push button for approximately 4 seconds.

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[1] Make sure your Z-Wave controller is in the correct operation mode (include or exclude).

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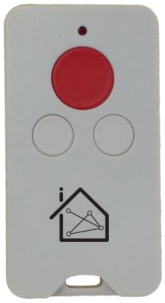
Technical Manual: **Panic Button EU**

Caution:

- **This device is using a radio signal that passes through walls, windows and doors. The range is strongly influenced by local conditions such as large metal objects, house wiring, concrete, furniture, refrigerators, microwaves and similar items. On average, the indoor range is approximately 30 meters.**
- **Do not expose this product to excessive heat or moisture.**
- **Prevent long term exposure to direct sunlight.**
- **Do not attempt to repair this product. If the product is damaged or if you are in doubt about the proper operation, take the product back to the place of purchase.**
- **Do not clean the product with any chemical liquid.**
- **Indoor use only.**

Technical details

Normal operating voltage	1x CR2032 3V battery Do not use rechargeable batteries
Battery lifetime	Approximately 1 year
Frequency range	868.42 MHz
Wireless range	Approximately 100 meters in line of sight Min. 150 meters with a good mesh network (max 4 hops)
Storage temperature	-5°C to +65°C
Storage humidity	10% to 70%
Operating temperature	0°C to 50°C
Operating humidity	30% to 80%



Product dimensions (length x width x height)

Panic Button = 68 x 36 x 10 mm

Indication mode

The indicator light gives various statuses of the device as follows:

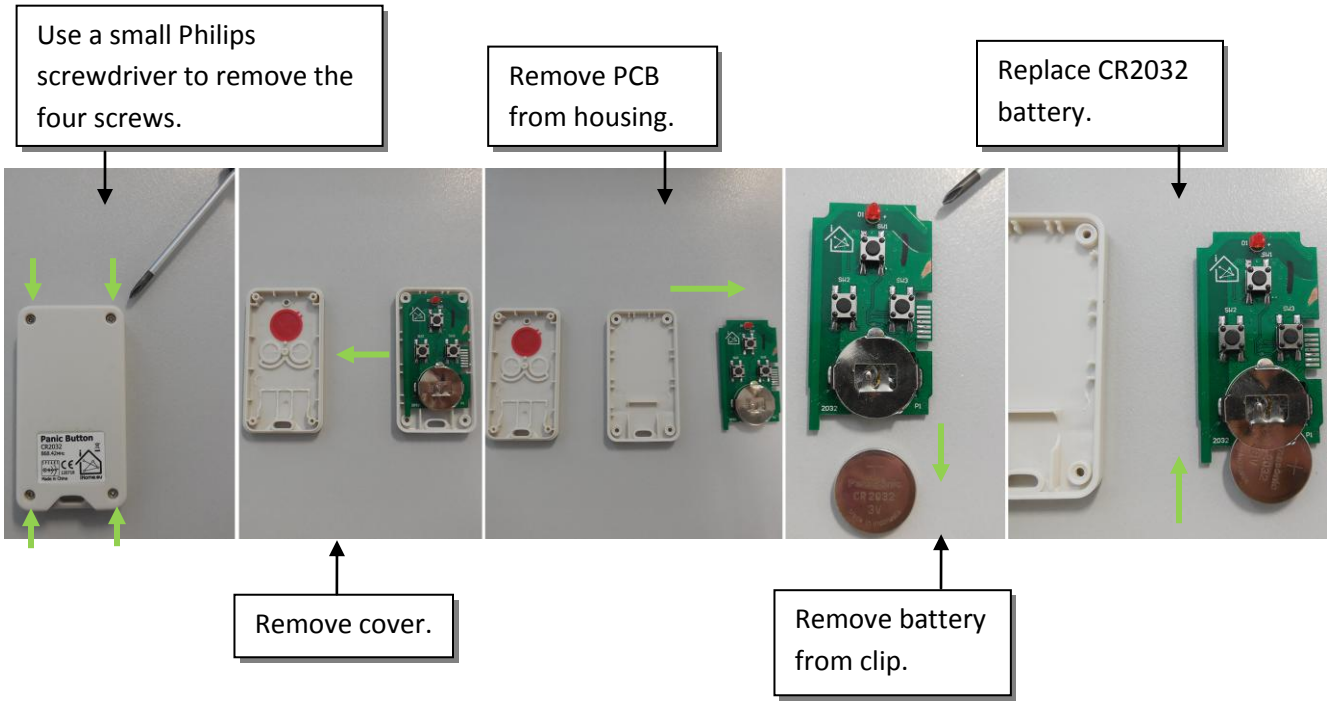
1. Ready for learn mode: indicator light blinks every second
2. Learn in progress (add): indicator light 2 times every second
3. Learn in progress (remove): indicator light 3 times every 1.5 second
4. Learn mode success: indicator light is on for one second
5. RF message send success: indicator light is on for one second
6. RF message send failed: indicator light blinks 6 times rapidly
7. No association is set: indicator light blinks 6 times rapidly

Supporting command classes:

Basic type: BASIC_TYPE_ROUTING_SLAVE
Generic type: GENERIC_TYPE_SENSOR_BINARY
Specific type: SPECIFIC_TYPE_NOT_USED
Listening: False, Z-Wave Lib: 4.54

class: 0x30 COMMAND_CLASS_SENSOR_BINARY
class: 0x85 COMMAND_CLASS_ASSOCIATION
class: 0x84 COMMAND_CLASS_WAKE_UP
class: 0x86 COMMAND_CLASS_VERSION
class: 0x72 COMMAND_CLASS_MANUFACTURER_SPECIFIC
class: 0x70 COMMAND_CLASS_CONFIGURATION
class: 0x80 COMMAND_CLASS_BATTERY
class: 0x71 COMMAND_CLASS_ALARM
class: 0xEF COMMAND_CLASS_MARK
class: 0x20 COMMAND_CLASS_BASIC

Replace battery



Not listening routing slave
This Z-Wave product will be used as routing slave. Slave nodes are nodes in a Z-Wave network that receive commands and perform actions based on the command. This device will always be in sleep mode because it works on batteries. In sleep mode the device is not active listening, the device will wake up according to the wakeup command class.

Include initiator
The include initiator is used when Primary and Inclusion Controllers include nodes into the network. When both the include initiator have been activated simultaneously the new node will be included to the network (if the node was not included previously).

Exclude initiator
The exclude initiator is used by Primary Controllers to exclude nodes from the network. When the exclude initiator and a slave initiator are activated simultaneously, it will result in the slave being excluded from the network (and reset to Node ID zero). Even if the slave was not part of the network it will still be reset by this action.

Z-Wave compatibility
Because this is a Z-Wave device, it means it can co-operate with other Z-Wave devices of other manufacturers. It can co-exist in a Z-Wave network existing with product from other manufacturers.

Hops & retries
The Z-Wave range has a range of up to 30 meters in line of sight. This signal is not limited to the 30 meter range due to routing the Z-Wave message to other nodes in the network. This way the range of the Z-Wave network can be expanded to 150 meters indoors (limit of 4 hops).

class: 0x20 COMMAND_CLASS_BASIC
When a button is pressed for one second a basic set frame with value 255 is sent to the associated nodes.

The supporting role of the Basic command class is mapped to the Sensor Binary command class.

class: 0x25 COMMAND_CLASS_SENSOR_BINARY
The Sensor Binary command class can be used to check the status of the *Panic Button* (triggered or idle). Where “255” is triggered, and “0” is idle.

class: 0x86 COMMAND_CLASS_VERSION
This command class is used to obtain information about the *Panic Button*. The Z-Wave library type, the Z-Wave protocol version and the application version will be reported.

class: 0x72 COMMAND_CLASS_MANUFACTURER_SPECIFIC
This will report information about the manufacturer. This product will contain the manufacturer ID of *BeNext*. Manufacturer ID of *BeNext* is 138, the ID of this product is 20.

class: 0x70 COMMAND_CLASS_CONFIGURATION
Configure parameters:

0. **Not used**
1. **Set to default**

Description:	Set all configuration values to default values (factory settings). Read more in chapter Configuration Reset.
Size:	1 byte*
Param1:	If 0xFF then set to default
Param2,3,4:	Not used

2. Time to press the panic button

Description:	The time that the panic pushbutton must be pressed before a (panic) message is sent out to the controller.
Default:	0x64 (*10ms = 1sec)
Size:	1 byte*
Param1:	if 0x00: send directly the panic message when pressed If 0x01 - 0xFF: send a panic message after you keep holding the button pressed for this value x 10ms.

3. Min led feedback time panic

Description:	Minimum time that led feedback is shown after a panic message.
Default:	0x64 (*10ms = 1sec)
Size:	1 byte*
Param1:	If 0x00: led only stays on during the 'send time'. If 0x01 - 0xFF: led stays on during send time + this value*10ms.

4. Buttons mapped

Description:	With this configured parameter you can map the buttons to send different Z-Wave messages.
Default:	0x00 (*10ms = 500ms)
Size:	1 byte*
Param1:	if 0x00: SOS button sends an ALARM_REPORT to nodes group 1 LOCK button sends a BASIC_SET, 0xFF to nodes group 1 UNLOCK button sends a BASIC_SET, 0x00 to nodes group 1 If 0x01 – 0xFF: SOS button sends a BASIC_SET, 0xFF to nodes group 1 LOCK button sends a BASIC_SET, 0xFF to nodes group 2 UNLOCK button sends a BASIC_SET, 0x00 to nodes group 2

5. Time to press the control buttons

Description:	The time that the control pushbutton(s) must be pressed before a (control) message is sent out to the controller.
Default:	0x0A (*10ms = 100ms)
Size:	1 byte*
Param1:	If 0x00: send directly the panic message when pressed If 0x01 - 0xFF: send a control message after you keep holding the button pressed for this value x 10ms.

6. Min led feedback time control

Description:	Minimum time that led feedback is shown after a control message is sent.
Default:	0x32 (*10ms = 500ms)
Size:	1 byte*
Param1:	If 0x00: led only stays on during the 'send time'. If 0x01 - 0xFF: led stays on during send time + this value*10ms.

7. **Do not use**
   Description: Is not used for special BeNext tests.
   Size: 1 byte*

*If a size is other then given size the frame is ignored totally so configuration values are **not** changed.

class: 0x85 COMMAND_CLASS_ASSOCIATION
The Association command class is used to associate other devices with the *Panic Button*. The devices that are associated can be controlled on application level.

The *Panic Button* can be associated into a grouping. If so, the *Panic Button* can control other Z-Wave device (does not have to be a controller).

The Panic Button has two association groups.

Group 1
Maximum supported nodes: 8

If configuration parameter 4 configured with value 0 then this group is used.
- SOS button: send ALARM_REPORT
- LOCK button: send a BASIC_SET, 0xFF
- UNLOCK button: send a BASIC_SET, 0x00

If configuration parameter 4 configured with value other then 0 (1-255) then this group is used.
- SOS button: send BASIC_SET, 0xFF
- LOCK button: no use
- UNLOCK button: no use

Group 2
Maximum supported nodes: 8

If configuration parameter 4 configured with value 0 then this group is used.
- SOS button: no use
- LOCK button: no use
- UNLOCK button: no use

If configuration parameter 4 configured with value other then 0 (1-255) then this group is used.
- SOS button: no use
- LOCK button: send a BASIC_SET, 0xFF
- UNLOCK button: send a BASIC_SET, 0x00

Class: 0x80 COMMAND_CLASS_BATTERY
This class is used to request and report battery levels for a given device.
When the battery level is lower than 20%, the Panic Button will send a battery warning (value 255) after every wake up notification. A battery get will report the actual value even if it is below 20%.

When the batteries are placed an unsolicited battery report is sent (when included).

class: 0x84 COMMAND_CLASS_WAKE_UP

The Wake Up command class is used at battery-operated devices. This class allows the *Panic Button* to wake up occasionally to notify others devices, that the *Panic Button* is ready to receive commands. After receiving the commands the *Panic Button* will go into sleep mode again. The wake up interval can be set using the WAKE_UP_INTERVAL_SET command.

The default value is 0x15180 = 86400 sec = 24 hour
The default node is 0xFF = 255 (broadcast)

It is possible to send a **wake up notification** on user interaction. To do this press and hold the Panic Button for 14 seconds. Ignore the blinking of the led and keep the button pressed for at least 14 seconds.

Operating modes

The Panic Button supports two different modes.

Mode 1: Alarm mode

This mode is mainly used to notify a controller of an alarm or trigger an alarm on a Z-Wave supported alarm device.

Product can act on two types of handles:

When single pressed (and hold): press and hold the button, the duration to hold depends on the configured values (parameter 2 or 5).

When double pressed: quickly (within 500 msec.) double press the button.

This mode can be configured with the following frame:

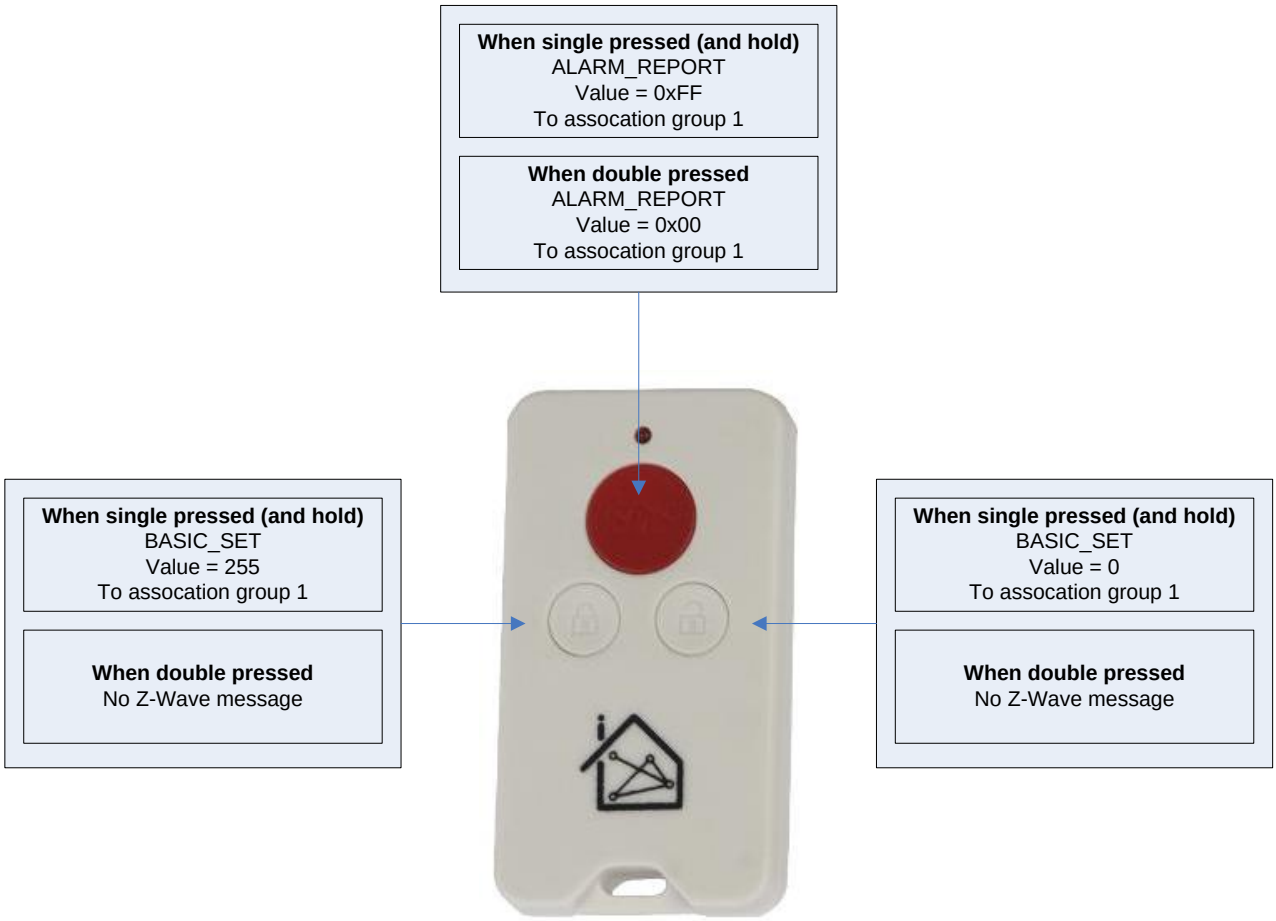
CONFIGURATION_SET

Parameter: 0x04

Size: 0x01 (can't be different from 1)

Value: 0x00

Below figure shows an overview of the Z-Wave frames, values and association groups.



Mode 2: Control mode

This mode is mainly used to control a Z-Wave other device by directly sending a BASIC_ON or BASIC_OFF.

Product can act on 2 types of handles:

When single pressed (and hold): press and hold the button, the duration to hold depends on the configured values (parameter 2 or 5).

When double pressed: quickly (within 500 msec.) double press the button.

This mode can be configured with the following frame:

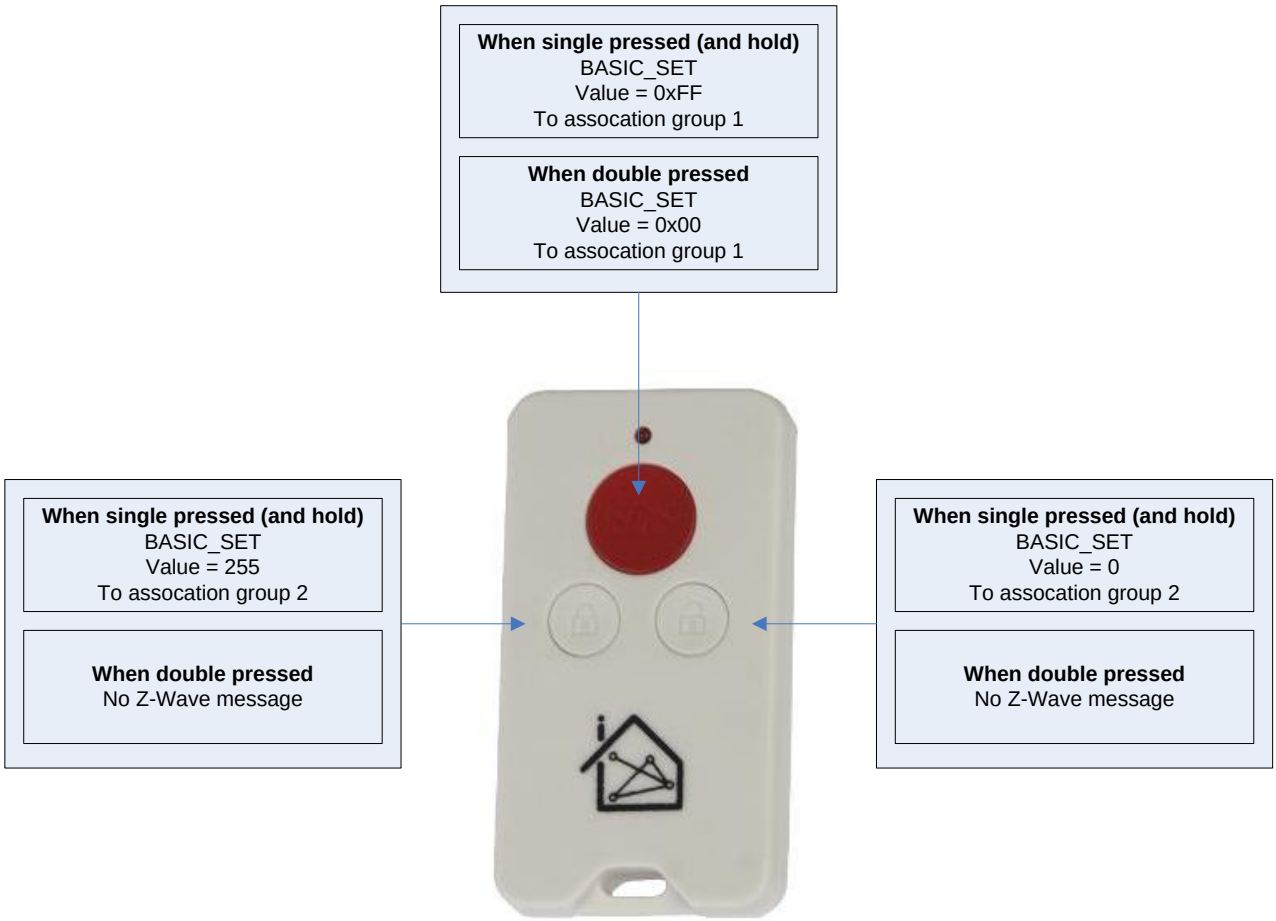
CONFIGURATION_SET

Parameter: 0x04

Size: 0x01 (can't be different from 1)

Value: 0x01 – 0xFF

Below figure shows an overview of the Z-Wave frames, values and association groups.



Configuration reset

The Panic Button supports a configuration resets function. Configuration reset means:

- All configuration values are defaulted

This function can be activated by sending a configuration set frame:

CONFIGURATION_SET
Parameter: 0x01
Size: 0x01 (can't be different from 1)
Value: 0xFF (can be any value except for 0x55 or 0xAA)

When the value of configuration value is requested, two possible values can be returned.

CONFIGURATION_REPORT
Parameter: 0x01
Value 0x55: Device doesn't have all his configuration settings anymore.
Even when a configuration parameter is changed back to the default value
Value 0xAA: Devices still has all his factory settings.
This are only configuration parameters, wake up interval can be changed.

~~Always awake mode~~

~~The always awake mode is used to request different values from the device e.g. version and manufacturer specific.~~

~~The always awake mode can be activated by:~~

~~CONFIGURATION_SET~~
~~Parameter: 0x05~~
~~Size: 0x01 (can't be different from 1)~~
~~Value: 0x03 (mode 3)~~

~~The always awake mode can be deactivated by:~~

~~CONFIGURATION_SET~~
~~Parameter: 0x05~~
~~Size: 0x01 (can't be different from 1)~~
~~Value: Any value except 3~~

~~A second option to deactivate mode 3 is:~~

1. ~~Remove batteries~~
2. ~~Wait ca 10 seconds~~
3. ~~Replace batteries~~

~~**Note:** in always awake mode the batteries will be drain very fast, we do not recommend to use this mode.~~

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Troubleshooting

Frequently Asked Questions

Q: I can't have my *Panic Button* included into my Z-Wave network, what am I doing wrong?
A: **1**. Is the controller ready to include any device into the Z-Wave network? If the controller is not in include or exclude mode, the *Panic Button* will not be included or excluded.
2. The *Panic Button* is already included in a Z-Wave network (check your led feedback!). Exclude the *Panic Button* and try again.

Q: I have configured a value but when I request it, it is not changed?
A: It is mandatory that the correct size is used while configure a parameter; go to the documentation about the configuration command class to check if the right size is used during configuration. If the wrong size is used the frame is ignored totally.

Q: I have configured a new value and when I request it the correct value is returned but the behavior is still the same?
A: Some configuration parameters have limits of what they can do, go to the documentation about configuration to check if the value of the configured parameter is out off limit.

Q: How to force a wakeup notification?
A: Keep the pushbutton pressed for more than 18 seconds.