

# zipato®

Zipato

## RFID Keypad

SKU: ZIPERFID



### Quickstart

This is a **Lock** for **Europe**. To run this device please insert fresh **2 \* AA 1,5V** batteries. Please make sure the internal battery is fully charged. To add this device to your network execute the following action:

Press and hold the tamper for 1 seconds and release to start the inclusion process (indication mode: Ready for learn mode).

### Important safety information

Please read this manual carefully. Failure to follow the recommendations in this manual may be dangerous or may violate the law. The manufacturer, importer, distributor and seller shall not be liable for any loss or damage resulting from failure to comply with the instructions in this manual or any other material. Use this equipment only for its intended purpose. Follow the disposal instructions. Do not dispose of electronic equipment or batteries in a fire or near open heat sources.

### What is Z-Wave?

Z-Wave is the international wireless protocol for communication in the Smart Home. This device is suited for use in the region mentioned in the Quickstart section.

Z-Wave ensures a reliable communication by reconfirming every message (**two-way communication**) and every mains powered node can act as a repeater for other nodes (**meshed network**) in case the receiver is not in direct wireless range of the transmitter.

This device and every other certified Z-Wave device can be **used together with any other certified Z-Wave device regardless of brand and origin** as long as both are suited for the same frequency range.

If a device supports **secure communication** it will communicate with other devices secure as long as this device provides the same or a higher level of security. Otherwise it will automatically turn into a lower level of security to maintain backward compatibility.

For more information about Z-Wave technology, devices, white papers etc. please refer to [www.z-wave.info](http://www.z-wave.info).



## Product Description

Zipato Mini RFID Keypad combines RFID and Z-Wave protocol for access control purposes. The user can identify themselves either by using manual code buttons on the numeric keypad, or by using a RFID key fob. The keypad fully supports Zipato automated security systems but also works with other Z-Wave enabled networks. "Home" and "Away" buttons allow the arming and disarming of security system or running any automation scenario. 1 RFID tag included, up to 20 codes supported.

## Prepare for Installation / Reset

Please read the user manual before installing the product.

In order to include (add) a Z-Wave device to a network it **must be in factory default state**. Please make sure to reset the device into factory default. You can do this by performing an Exclusion operation as described below in the manual. Every Z-Wave controller is able to perform this operation however it is recommended to use the primary controller of the previous network to make sure the very device is excluded properly from this network.

## Safety Warning for Batteries

The product contains batteries. Please remove the batteries when the device is not used. Do not mix batteries of different charging level or different brands.

## Installation

- 1 | Use a flat screwdriver at the inlets on the sides to gently unlock the back cover.
- 2 | Use the designated holes on the back cover to screw and mount the Mini Keypad RFiD/Z-Wave.
- 3 | Place two AA 1,5V batteries into the device.
- 4 | Mount the Mini Keypad RFiD/Z-Wave onto the back cover, be sure to close it on all sides, turn the back cover as shown in the picture in overview section. Be sure that the tamper is place on the right spot on the back cover. Mini Keypad RFiD/Z-Wave. (indication mode: Tamper pressed/released).

- 5 | After 1 seconds startup routine begins (indication mode: Ready for learn mode).
- 6 | After 3 more seconds (4 seconds in total) mounting is completed. (indication mode: Mounting successful)
- 7 | The Mini Keypad RFiD/Z-Wave is now ready to use.

## Inclusion/Exclusion

On factory default the device does not belong to any Z-Wave network. The device needs to be **added to an existing wireless network** to communicate with the devices of this network. This process is called **Inclusion**.

Devices can also be removed from a network. This process is called **Exclusion**. Both processes are initiated by the primary controller of the Z-Wave network. This controller is turned into exclusion respective inclusion mode. Inclusion and Exclusion is then performed doing a special manual action right on the device.

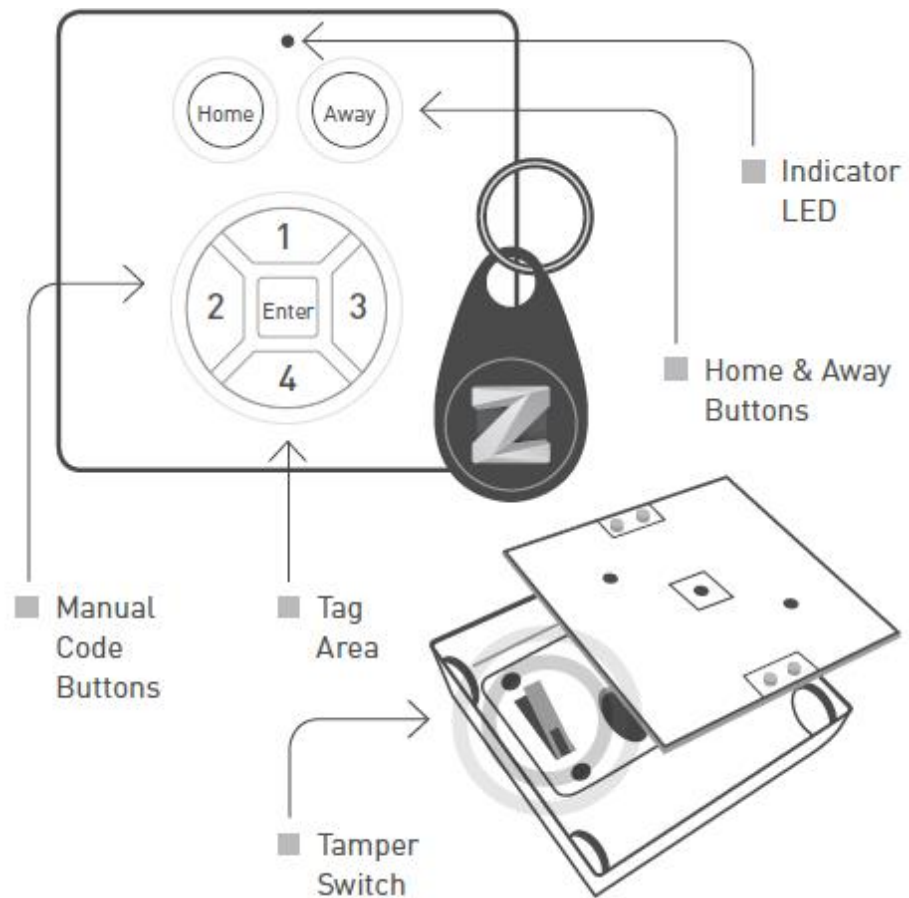
### Inclusion

Press and hold the tamper for 1 seconds and release to start the inclusion process (indication mode: Ready for learn mode).

### Exclusion

Press and hold the tamper for 1 seconds and release to start the exclusion process (indication mode: Ready for learn mode).

## Product Usage



### LED Indicator

The indicator 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 blinks 2 times per second.
- 3 | Learn in progress (remove): Indicator light blinks 3 times per second.
- 4 | Learn mode success: Indicator light is on for 1 second.
- 5 | Learn mode failed: Indicator light blinks 8 times fast.

- 6 | Tamper pressed/released indicator light blinks 3 times rapidly.
- 7 | Mounting successful indicator light is on for 1 second.
- 8 | Busy sending an RF message Indicator light is blinking each second, while most of the time on.
- 9 | RF message send failed indicator light blinks 6 times rapidly

## CONTROL

The Mini Keypad RFiD/Z-Wave operates as an access control device, using the combination of the USER\_CODE command class and the ALARM\_V2 command class. User Codes are to be stored in the Mini Keypad RFiD/Z-Wave, using the USER\_CODE\_SET command. When the User Codes are stored in the Mini Keypad RFiD/Z-Wave, the ALARM\_REPORT\_V2 will have the corresponding USER\_ID with the used USER\_CODE.

*There are two types of Access Control with User Codes:*

- 1 | Manually by using the buttons on the Mini Keypad RFiD/Z-Wave
- 2 | Using the Mini Keypad RFiD/Z-Wave reader and Tags

*The difference in using one of the above mentioned methods is:*

- 1 | When pressing Home/Away, the manual codes (1-4) can be pressed within 1 second. After entering the code the user must press ENTER and the USER\_CODE\_REPORT or ALARM\_REPORT\_V2 will be sent.
- 2 | When the user waits 1 second after pressing Home/Away, the Mini Keypad RFiD/Z-Wave reader is started and a Tag needs to be placed on, brought directly on the Mini Keypad RFiD/Z-Wave.

After successful read, the USER\_CODE\_REPORT or ALARM\_REPORT\_V2 will be sent. Because the RFID code are not readable on the Tags, the Mini Keypad RFiD/Z-Wave has some special procedures. Some examples are given at the Typical operation diagrams chapter in the Technical Manual.

*There are some situations:*

- 1 | IN CASE AN UNKNOWN MANUAL CODE ENTERED OR UNKNOWN TAG PRESENTED. In this case, the Mini Keypad RFiD/Z-Wave will send an unsolicited USER\_CODE\_REPORT with UserID 0 and UserID Status 0. A controller will receive this report and can initiate a USER\_CODE\_SET to the Mini Keypad RFiD/Z-Wave.
- 2 | IN CASE A KNOWN MANUAL CODE OR TAG IS PRESENTED. This means, this code was previously SET using the USER\_CODE\_SET command. Then the Mini Keypad RFiD/Z-Wave will respond with a ALARM\_REPORT\_V2 with Type 6 and Event 0x05 or 0x06. When the user presses Home, event 0x06 (Keypad Unlock) will be used. When the user presses Away, event 0x05 (Keypad Lock) will be used.

The Mini Keypad RFiD/Z-Wave is capable of playing a notification sound. This feature is typically used to notify a user that an alarm system is being activated. Since the Mini Keypad RFiD/Z-Wave is a non-listening device, the feature can not be controlled at all times. It requires the Mini Keypad RFiD/Z-Wave to wake up and send a Wake Up Notification. After sending a notification that a tag/code is read (either an unknown or already configured code), the Mini Keypad RFiD/Z-Wave will send a Wake Up Notification. The notification sound can be turned on/off upon receiving any Wake Up Notification. See the section about the Wake Up

Command Class for information on when a Wake Up Notification is send.

## NOTIFICATION SOUND AND ACKNOWLEDGEMENT

The Mini Keypad RFiD/Z-Wave supports 3 types of notification sound configurations:

- 1 | Notification sound disabled (configuration parameter 2 set to zero)
- 2 | Notification sound enabled (default, configuration parameter 2 set to auto-stop time).
- 3 | Notification sound and acknowledgement enabled (configuration parameter 3 set to acknowledgement timeout). In the first mode, any Basic or Switch Binary commands that are received are ignored. The second mode, the default, can be used to inform a user that the alarm system is armed or disarmed. To use this, you can send a Basic or Switch Binary set on (0xFF) after receiving an Alarm Report and the Wake Up Notification following it. The last mode can be used in situations where, for example, users can only disarm the alarm system at certain times. In this case, the user can be notified whether or not its code or tag is accepted. By configuring configuration parameter 3, you can set an acknowledge timeout. Whenever a Lock/Unlock Alarm Report containing an UID is send by the Mini Keypad RFiD/Z-Wave, the acknowledgement timeout timer is started.

### *AFTER THIS THERE ARE TWO POSSIBILITIES:*

- 1 | The Mini Keypad RFiD/Z-Wave does not receive anything (or receives a Wake Up No More Information upon its Wake Up Notification). It starts the error sound to notify the user of the unaccepted code.
- 2 | The Mini Keypad RFiD/Z-Wave receives either a Basic (or Switch Binary) on (to start the normal notification sound) or off (to silently acknowledge the code). The acknowledgement timer is stopped. Note that it is actually possible to disable notification sound, but enable acknowledgement. In this case a silent acknowledgement can be both a Basic/Switch Binary on (0xFF) or off (0x00).

## Communication to a Sleeping device (Wakeup)

This device is battery operated and turned into deep sleep state most of the time to save battery life time. Communication with the device is limited. In order to communicate with the device, a static controller **C** is needed in the network. This controller will maintain a mailbox for the battery operated devices and store commands that can not be received during deep sleep state. Without such a controller, communication may become impossible and/or the battery life time is significantly decreased.

This device will wakeup regularly and announce the wakeup state by sending out a so called Wakeup Notification. The controller can then empty the mailbox. Therefore, the device needs to be configured with the desired wakeup interval and the node ID of the controller. If the device was included by a static controller this controller will usually perform all necessary configurations. The wakeup interval is a tradeoff between maximal battery life time and the desired responses of the device. To wakeup the device please perform the following action:

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

NOTE: in always awake mode the batteries will be drain very fast, we do not recommend to use this mode for a longer period. Always awake mode should only be used in order to configure the device.

NOTE: it is not possible to use the buttons of the Mini Keypad RFID/ZWave while it is operating in always awake mode.

## Quick trouble shooting

Here are a few hints for network installation if things dont work as expected.

1. Make sure a device is in factory reset state before including. In doubt exclude before include.
2. If inclusion still fails, check if both devices use the same frequency.
3. Remove all dead devices from associations. Otherwise you will see severe delays.
4. Never use sleeping battery devices without a central controller.
5. Dont poll FLIRS devices.
6. Make sure to have enough mains powered device to benefit from the meshing

## Association - one device controls an other device

Z-Wave devices control other Z-Wave devices. The relationship between one device controlling another device is called association. In order to control a different device, the controlling device needs to maintain a list of devices that will receive controlling commands. These lists are called association groups and they are always related to certain events (e.g. button pressed, sensor triggers, ...). In case the event happens all devices stored in the respective association group will receive the same wireless command wireless command, typically a 'Basic Set' Command.

### Association Groups:

Group Number	Maximum Nodes	Description
1	5	Lifeline

## Configuration Parameters

Z-Wave products are supposed to work out of the box after inclusion, however certain configuration can adapt the function better to user needs or unlock further enhanced features.

**IMPORTANT:** Controllers may only allow configuring signed values. In order to set values in the range 128 ... 255 the value sent in the application shall be the desired value minus 256. For example: To set a parameter to 200 it may be needed to set a value of 200 minus 256 = minus 56. In case of a two byte value the same logic applies: Values greater than 32768 may needed to be given as negative values too.

### Parameter 1: Factory settingf

Size: 1 Byte, Default Value: 0

Setting	Description
<b>85</b>	Configuration settings of the device are altered. The device will report this even if the configuration parameters are changed back to the default value.
<b>170</b>	Configuration of the device is untouched. Note that this value will not change to 0x55 upon modifying the wake up interval and that re-setting the value to 0xAA will always reset the wake up interval.
<b>255</b>	set default

### Parameter 2: Feedback time

*To configure the time the beep is automatically turned off in seconds.*

Size: 1 Byte, Default Value: 16

Setting	Description
<b>0 - 255</b>	seconds

### Parameter 3: Feedback timeout

*To configure the timeout to wait for a WAKEUP\_NO\_MORE\_INFORMATION before the error beep is automatically sound. The error beeps are fixed 8 beeps shortly after each other.*

Size: 1 Byte, Default Value: 0

Setting	Description
<b>0 - 255</b>	seconds

### Parameter 4: Feedback beeps per second

*To configure the number of beeps per second. Every beep is fixed about 10ms.*

Size: 1 Byte, Default Value: 2

Setting	Description
<b>1 - 7</b>	nr of beeps per second



## Parameter 5: The mode

*To configure the operating mode.*

Size: 1 Byte, Default Value: 1

Setting	Description
1	Normal operating mode.
3	Z-Wave chip is always on to request e.g. version or manufacturer id. If any mode other then 3, that value will be reported after a get but will be handled in SW as mode 1.

## Technical Data

Dimensions	62x62x17 mm
Weight	45 gr
Hardware Platform	ZM3102
EAN	3858890730579
IP Class	IP 20
Battery Type	2 * AA 1,5V
Device Type	Lock
Firmware Version	00.1c
Z-Wave Version	03.43
Z-Wave Product Id	0x0097.0x6131.0x4501
Frequency	Europe - 868,4 Mhz
Maximum transmission power	5 mW

## Supported Command Classes

- Basic
- Switch Binary
- User Code
- Configuration
- Alarm
- Manufacturer Specific
- Battery
- Wake Up
- Association
- Version

## Explanation of Z-Wave specific terms

- **Controller** — is a Z-Wave device with capabilities to manage the network. Controllers are typically Gateways, Remote Controls or battery operated wall controllers.
- **Slave** — is a Z-Wave device without capabilities to manage the network. Slaves can be sensors, actuators and even remote controls.
- **Primary Controller** — is the central organizer of the network. It must be a controller. There can be only one primary controller in a Z-Wave network.
- **Inclusion** — is the process of adding new Z-Wave devices into a network.
- **Exclusion** — is the process of removing Z-Wave devices from the network.
- **Association** — is a control relationship between a controlling device and a controlled device.
- **Wakeup Notification** — is a special wireless message issued by a Z-Wave device to announces that is able to communicate.
- **Node Information Frame** — is a special wireless message issued by a Z-Wave device to announce its capabilities and functions.

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