

# ULTRALOG Bolt Z-Wave® Fingerprint Smart Lock User Manual

## Overview

This device is a security enabled Z-Wave Plus® v2 product that is able to use encrypted Z-Wave Plus v2 messages to communicate to other security S2 enabled Z-Wave Plus v2 products. This device must be used in conjunction with a S2 security enabled Z-Wave controller in order to fully utilize all implemented functions. Otherwise it will automatically turn into a lower level of security to maintain backward compatibility. This product can be operated in any Z-Wave network with other Z-Wave certified devices from other manufacturers. All mains operated nodes within the network will act as repeaters regardless of vendor to increase reliability of the network. SmartStart enabled products can be added into a Z-Wave network by scanning the Z-Wave QR Code present on the product with a controller providing SmartStart inclusion. No further action is required and the SmartStart product will be added automatically within 10 minutes of being switched on in the network vicinity.

## Interfaces



| Terminology                 | Description                                                                                                                                                                                                                                                                                    |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Keypad                      | Used to operate various functions of the door lock                                                                                                                                                                                                                                             |
| Advanced Fingerprint Reader | Verifies your fingerprint to unlock the door from the outside.                                                                                                                                                                                                                                 |
| Thumbturn                   | For manual lock / unlock operation                                                                                                                                                                                                                                                             |
| QR Code                     | 2D barcode format that can contain large amounts of information in a small square of encoded blocks resembling a random checkerboard pattern. In Z-Wave, it is used to represent the S2 public part of the DSK on a device, as well as additional information needed for the inclusion process |

## Specifications

### 3.1 Structural Characteristics

| Parameter             | Value                                                                                                        |
|-----------------------|--------------------------------------------------------------------------------------------------------------|
| Product Identifier    | Bolt Z-Wave-FP                                                                                               |
| Color                 | Matte Chrome                                                                                                 |
| Usage                 | Indoor \& Outdoor                                                                                            |
| Operating Temperature | External Assembly: -4 °F \~ 149 °F (-20 °C \~ 65 °C)<br>Internal Assembly: 14 °F \~ 131 °F (-10 °C \~ 55 °C) |
| Relative Humidity     | 30% - 95% Non condensing                                                                                     |
| Product ID            | 0x0008                                                                                                       |
| Product Type ID:      | 0x0004                                                                                                       |

### 3.2 Hardware Characteristics

| Parameter             | Value                  |
|-----------------------|------------------------|
| Z-Wave Model          | EFR32ZG28A             |
| Indicator Light Color | GREEN/BLUE/RED         |
| Battery Info          | AA alkaline battery x4 |

### 3.3 Software Characteristics

| Parameter                                                          | Value                                                                                    |
|--------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Wireless Technology                                                | Z-Wave                                                                                   |
| Certification Type                                                 | Z-WavePlus v2; LR                                                                        |
| Z-Wave SDK Version                                                 | 7.24.1                                                                                   |
| Z-Wave Library Type                                                | Enhanced End Node 232                                                                    |
| Z-Wave Role Type                                                   | Listening Sleeping End Node Role Type                                                    |
| Generic Device Type                                                | GENERIC_TYPE_ENTRY_CONTROL (0x40)                                                        |
| Specific Device Type                                               | SPECIFIC_TYPE_DOOR_LOCK (0x01)                                                           |
| Security Class                                                     | S0, S2                                                                                   |
| SmartStart                                                         | Support. After powering on, SmartStart is auto active if it's out of the Z-Wave network. |
| Over The Air <input type="checkbox"/> OTA <input type="checkbox"/> | Support. Firmware can be updated via RF.                                                 |
| Multichannel Device                                                | No                                                                                       |
| Association                                                        | Support. Refer to Section Association Command Classes.                                   |
| Factory Reset                                                      | Support. Refer to Section How to factory reset.                                          |
| Power-down Memory                                                  | Support. All command settings will stay unchanged even power down.                       |
| User code Report                                                   | Support. When user code changes, send out notification via Group 1.                      |

## Product Quick Start

### 4.1 Z-Wave DSK Location

1. You can find the QR code on the battery cover of your door lock.

Note: Please do not remove or damage them.

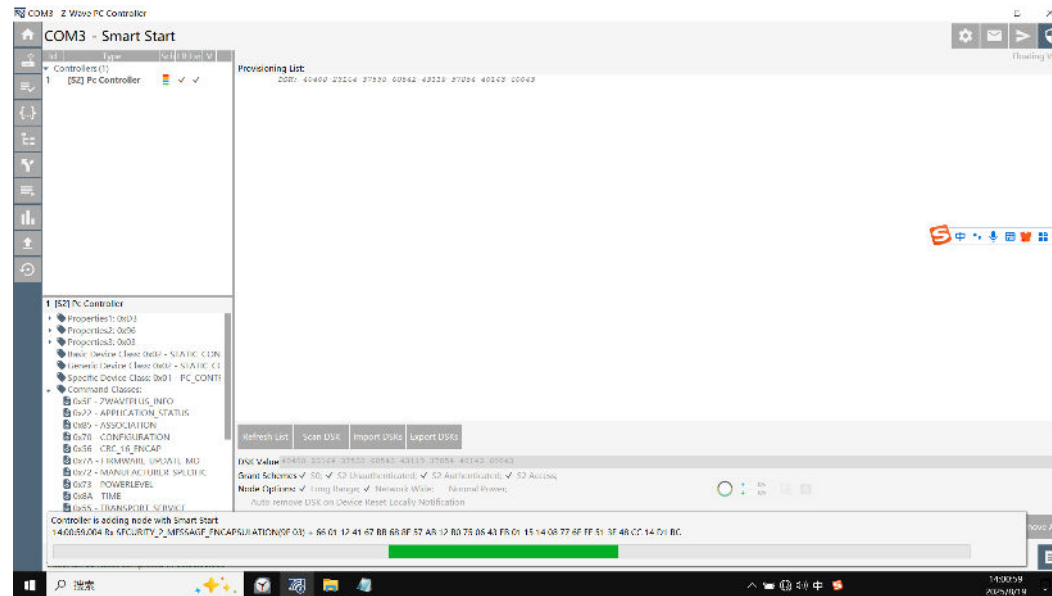
### 4.2 How to add the product into Z-Wave network

1. Follow the user guide of hub to enter inclusion mode.
2. Operate on lock Enter "Include mode": Hold the "ULTRALOQ" button for 3 seconds, hear 2 beeps and flashing blue light, internal LED Flashing Green light. The lock now enters setup mode.
3. Follow the prompts, scan the QR code located on the better cover, or enter the 5-digit PIN code.

Note: Please complete the preparation within 30 seconds. If you miss, please press the ULTRALOQ button again to enter.

### 4.3 How to add the product into Z-Wave Long Range network

Z-Wave Long Range device can only support be included via SmartStart. Extract the DSK from end device and paste it into the DSK Value in PC Controller, make sure the 'Long Range' option is ticked.



In the scanning process when using US\_LR frequency, the end device will switch between 2 PHY setups, the classic US PHY and the LR PHY with both LR channels active. When the inclusion of end device starts, it will settle on using the PHY that was used by the controller for inclusion. In other words, during learn mode, a end node that support LR will send SmartStart Prime on both classic Z-Wave and Z-Wave LR PHY, both request are send up to the host on the controller and it is the host's responsibility to determine which PHY is used for inclusion.

The controller doesn't do channel scanning the same way as in end device. The controller will scan 4 channels, including 3 classic Z-Wave channels 9.6/40/100 kbps and 1 LR channel, using US\_LR frequency will scan at 912 MHz while using US\_LR\_BACKUP will scan at 920 MHz during startup. The active LR channel can be switch at runtime.

### 4.4 How to remove the product from the Z-Wave network

1. Follow the user guide of hub to enter exclusion mode.
2. Operate on lock Enter "Exclusion mode": Hold the "ULTRALOQ" button for 3 seconds, hear 2 beeps and flashing blue light, internal LED Flashing Green light.
3. Remove from the hub.

### 4.5 How to factory reset

Please use this procedure only when the network's primary controller is missing or otherwise inoperable.

Please use a Reset Needle to push the Reset Button (located inside the battery compartment) for around 10 seconds until you hear one long beep and two short beeps.

## 4.6 How to use the Lock

1. Enter 4-8 digit code and press ULTRALOQ Button to unlock .

Note: The default code is 3494. Once the device is added to the Z-Wave network, the user code can only be changed via Z-Wave commands.

2. Use your smart home system to unlock. Refer to your smart home system instructions for more information.

## Supported Command Classes

| Command Class                           | Version | Not added | Nonsecur added | Securely 0 added |           | Securely 2 added |           |
|-----------------------------------------|---------|-----------|----------------|------------------|-----------|------------------|-----------|
|                                         |         |           |                | Nonsecure CC     | Secure CC | Nonsecure CC     | Secure CC |
| Command Class Association               | 2       |           |                |                  | Support   |                  | Support   |
| Command Class Association Group Info    | 3       |           |                |                  | Support   |                  | Support   |
| Command Class Basic                     | 2       |           |                |                  | Support   |                  | Support   |
| Command Class Battery                   | 1       |           |                |                  | Support   |                  | Support   |
| Command Class Device Reset Locally      | 3       |           |                |                  | Support   |                  | Support   |
| Multi Channel Association               | 3       |           |                |                  | Support   |                  | Support   |
| Command Class Door Lock                 | 4       |           |                |                  | Support   |                  | Support   |
| Command Class Firmware Update Meta Data | 5       |           |                |                  | Support   |                  | Support   |
| Command Class Indicator                 | 3       |           |                |                  | Support   |                  | Support   |
| Command Class Manufacturer Specific     | 2       |           |                |                  | Support   |                  | Support   |
| Command Class Powerlevel                | 1       |           |                |                  | Support   |                  | Support   |
| Command Class Security 0                | 1       | Support   | Support        | Support          |           | Support          |           |
| Command Class Security 2                | 1       | Support   | Support        | Support          |           | Support          |           |
| Command Class Supervision               | 1       | Support   | Support        | Support          |           | Support          |           |
| Command Class Transport Service         | 2       | Support   | Support        | Support          |           | Support          |           |
| Command Class User Code                 | 4       |           |                |                  | Support   |                  | Support   |
| Command Class Version                   | 2       |           |                |                  | Support   |                  | Support   |
| Command Class Z-Wave Plus Info          | 2       | Support   | Support        | Support          |           | Support          |           |
| Command Class Schedule Entry Lock       | 3       |           |                |                  | Support   |                  | Support   |
| Command Class Configuration             | 4       |           |                |                  | Support   |                  | Support   |
| Command Class Notification              | 8       |           |                |                  | Support   |                  | Support   |
| Command Class Time                      | 2       | Support   | Support        | Support          |           | Support          |           |
| Command Class Time Parameters           | 1       |           |                |                  | Support   |                  | Support   |

## Association Command Classes

| Group ID | Maximum Nodes | Description | Function                                                                                                                                                                           |
|----------|---------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1        | 5             | Lifeline    | DEVICE_RESET_LOCALLY_NOTIFICATION<br>DOOR_LOCK_OPERATION_REPORT<br>BATTERY_REPORT<br>INDICATOR_REPORT<br>NOTIFICATION_REPORT<br>DOOR_LOCK_CONFIGURATION_REPORT<br>USER_CODE_REPORT |

## Basic Command Classes

| Command Class | Value | Mapped                     | Value          | Function           |
|---------------|-------|----------------------------|----------------|--------------------|
| Basic Set     | 0x00  | Door Lock Operation Set    | Door Unsecured | Open the door      |
|               | 0xFF  |                            | Door Secured   | Close the door     |
| Basic Report  | 0x00  | Door Lock Operation Report | Door Unsecured | The lock is opened |
|               | 0xFF  |                            | Door Secured   | The lock is closed |
| Basic Get     |       | Door Lock Operation Get    |                |                    |

## Notification Command Classes

| Notification Type | Event | Alarm Reports            | Description                                   |
|-------------------|-------|--------------------------|-----------------------------------------------|
| 0x06              | 0x01  | Manual Lock              | Manual lock operation                         |
| 0x06              | 0x02  | Manual Unlock            | Manual unlock operation                       |
| 0x06              | 0x03  | RF Operate Lock          | RF lock operation                             |
| 0x06              | 0x04  | RF Operate Unlock        | RF unlock operation                           |
| 0x06              | 0x05  | Keypad Lock              | Keypad lock operation                         |
| 0x06              | 0x06  | Keypad Unlock            | Keypad unlock operation                       |
| 0x06              | 0x09  | Auto Lock Operate Locked | Auto lock locked operation                    |
| 0x06              | 0x0B  | Lock jammed              | Lock jammed                                   |
| 0x06              | 0x0C  | All User Deleted         | All user codes deleted                        |
| 0x06              | 0x0D  | User Deleted             | Single user code deleted                      |
| 0x06              | 0x0E  | User Added               | New user code added                           |
| 0x06              | 0x0F  | Duplicate Pin-code error | New user code not added due to duplicate code |
| 0x06              | 0x10  | Tamper Alarm             | Keypad temporary disabled                     |

## How to Trigger Notifications

| Event | Alarm Reports            | Trigger Method                                                                                                                                                                                                                               |
|-------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0x01  | Manual Lock              | Rotate thumbturn to Locked                                                                                                                                                                                                                   |
| 0x02  | Manual Unlock            | Rotate thumbturn to Unlock                                                                                                                                                                                                                   |
| 0x03  | RF Operate Lock          | RF lock operation                                                                                                                                                                                                                            |
| 0x04  | RF Operate Unlock        | RF unlock operation                                                                                                                                                                                                                          |
| 0x05  | Keypad Lock              | Locked via "ULTRALOQ" button                                                                                                                                                                                                                 |
| 0x06  | Keypad Unlock            | Unlock by entering user code via keyboard.                                                                                                                                                                                                   |
| 0x09  | Auto Lock Operate Locked | To enable Auto Lock, press and hold the "1" button until you hear two beeps. Once enabled, unlock the door. The lock will automatically lock after 30 seconds.                                                                               |
| 0x0B  | Lock jammed              | In the unlocked state, press the Ultraloq relock button and manually hold the thumb turn to prevent it from rotating (simulating a jam). Once you hear two beeps, the jam has been triggered. At this point, a notification can be received. |
| 0x0C  | All User Deleted         | Delete all user codes                                                                                                                                                                                                                        |
| 0x0D  | User Deleted             | Delete single user code                                                                                                                                                                                                                      |
| 0x0E  | User Added               | New user code added                                                                                                                                                                                                                          |
| 0x0F  | Duplicate Pin-code error | New user code not added due to duplicate code                                                                                                                                                                                                |
| 0x10  | Tamper Alarm             | The password is entered incorrectly 5 consecutive times                                                                                                                                                                                      |

## Identity Function

| Indicator ID  |      | Property ID                     |      |
|---------------|------|---------------------------------|------|
| Node Identify | 0x50 | On Off Period                   | 0x03 |
|               |      | On Off Cycles                   | 0x04 |
|               |      | On time within an On/Off period | 0x05 |

## Configuration Command Classes

| Param # | Name                               | Value  | Description                                                                                                                                                            |
|---------|------------------------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1       | Beeper                             | 1      | Mute                                                                                                                                                                   |
|         |                                    | 0      | Unmute ( <b>default</b> )                                                                                                                                              |
| 2       | Auto Relock (Door Sensor Required) | 1      | Enable                                                                                                                                                                 |
|         |                                    | 0      | Disabled ( <b>default</b> )                                                                                                                                            |
| 3       | Auto Lock Timing                   | 0      | Disabled                                                                                                                                                               |
|         |                                    | 5-1800 | Auto lock time range: 5-1800 seconds;<br><b>Default Value: 30</b>                                                                                                      |
| 4       | Door Sensor                        | 0x01   | Enable; (Note: Parameters #5, #6 and #7 must be set again each time you enable the door sensor feature)                                                                |
|         |                                    | 0x00   | Disabled ( <b>default</b> )                                                                                                                                            |
| 5       | Door Left Open Status Set          | 0-100  | Leave the door left ajar, set a value different from the current one to read and save the "door-ajar" status (e.g., if default is 0, set any value between 1-100).     |
| 6       | Door Closed Status Set             | 0-100  | With the door fully closed, set a value different from the current one to read and save the "door-closed" status (e.g., if default is 0, set any value between 1-100). |
| 7       | Door Opened Status Set             | 0-100  | With the door fully open, set a value different from the current one to read and save the "door-open" status (e.g., if default is 0, set any value between 1-100).     |
| 8       | Anti-Peep Keypad                   | 0x01   | Enable, up to 16 digit                                                                                                                                                 |
|         |                                    | 0x00   | Disabled ( <b>default</b> ). Mandatory for Alarm.com.                                                                                                                  |
| 9       | Door Left Open Alarm Delay         | 0      | Disable                                                                                                                                                                |
|         |                                    | 5-255  | Enable, time range: 5-255 seconds;<br>Default Value: 5                                                                                                                 |

## Configuration Command Classes

| Param # | Setting                            | Values                                                                      | Technical Description                                                              | Easy-to-Understand Explanation                                                                                                                                         |
|---------|------------------------------------|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1       | Beeper                             | 1 = Mute<br>0 = Unmute ( <b>default</b> )                                   | Turns lock beeps on or off.                                                        | <b>On (default):</b> Lock makes sounds.<br><b>Off:</b> Lock is silent.                                                                                                 |
| 2       | Auto Relock (Door Sensor Required) | 1 = Enable<br>0 = Disabled ( <b>default</b> )                               | Auto relocks when door closes (requires door sensor).                              | <b>On:</b> Lock relocks automatically when door closes.<br><b>Off (default):</b> Stays unlocked until you lock it manually.                                            |
| 3       | Auto Lock Timing                   | 0 = Disabled<br>5-1800 ( <b>default 30</b> )                                | Sets countdown before auto-locking.                                                | Choose <b>5–1800 seconds</b> (e.g., 60 = 1 minute).<br>Default = <b>30 seconds</b> .                                                                                   |
| 4       | Door Sensor                        | 0x01 = Enable<br>0x00 = Disabled ( <b>default</b> )                         | Enable; (Note: Parameters #5, #6 and #7 must be reset again each time you enable.) | <b>On:</b> Sensor knows if door is open/closed.<br><b>Off (default):</b> Sensor not used.                                                                              |
| 5       | Door Left Open Status Set          | 0-100 ( <b>default 0</b> )                                                  | Record "door ajar" position.                                                       | Leave the door left ajar, set a value different from the current one to read and save the "door-ajar" status (e.g., if default is 0, set any value between 1-100).     |
| 6       | Door Closed Status Set             | 0-100 ( <b>default 0</b> )                                                  | Record "door closed" position.                                                     | With the door fully closed, set a value different from the current one to read and save the "door-closed" status (e.g., if default is 0, set any value between 1-100). |
| 7       | Door Opened Status Set             | 0-100 ( <b>default 0</b> )                                                  | Record "door open" position.                                                       | With the door fully open, set a value different from the current one to read and save the "door-open" status (e.g., if default is 0, set any value between 1-100).     |
| 8       | Anti-Peep Keypad                   | 0x01 = Enable<br>0x00 = Disabled ( <b>default, required for Alarm.com</b> ) | Allows entry of up to 16 digits including random numbers.                          | <b>On:</b> Lets you add random numbers before/after your real PIN (extra security).<br><b>Off (default):</b> Normal PIN entry.                                         |
| 9       | Door Left Open Alarm Delay         | 0 = Disabled<br>5-255 (default 5)                                           | Alarm sounds if door left open beyond set time.                                    | <b>On:</b> Choose delay (5–255 seconds). Default = <b>5 seconds</b> .<br><b>Off:</b> No alarm if door is left open.                                                    |