J-Series by Schlage Z-Wave™

Connected Deadbolt (JBE109) and Connected Lever (JFE109)

Version: 0.3

Date: 9/24/2020

1 Table of Contents

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1. Introduction

J-Series by Schlage Z-Wave Deadbolt and Lever Locks are electronic locks with Z-Wave Plus Communication.

JBE109 and JFE109 locks must be used in conjunction with a Security Enabled Z-Wave Controller to fully utilize all implemented functions.

JBE109 and JFE109 lock supports the original Z-Wave Security Standard S0 and the new Security Standard S2 with Smart Start enabled and can be part of any Z-Wave network with other Certified Z- Wave or Z-Wave Plus™ products.

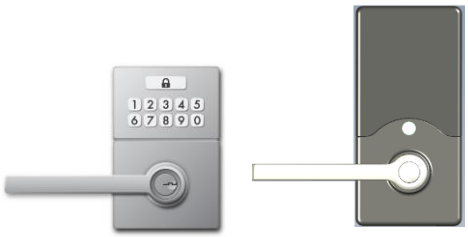
2. Features

The lock comes with two styles – Camelot(Billows) and Century(Gatlin) and two Finishes.

2.1. Styles

Century (Gatlin)

KPD (Keypad Deadbolt)



KPL (Keypad Lever)

Camelot (Billows)

2.2. Finish

Satin Nickel (619)

Aged Bronze (716)

3. Z-Wave Specification

Note:

- 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.
- S0 / S2 security enabled controller is required to operate the product.

3.1 Model JBE109: Keypad Deadbolt

- Z-Wave hardware platform: ZGM130S (Z-Wave 700 Series)
- Z-Wave version: 7.11.1
- Z-Wave library type: 0x03 Routing Slave
- Z-Wave Role Type: Listening Sleeping Slave
- Z-Wave Device Type: Door Lock
- Associated Category: Lock
- Z-Wave Plus: Yes
- Security S2 Classes: S2 Access Control
- SmartStart Compatible: Yes
- Manufacturer ID: 0x003B
- Product Type ID: 0x0004
- Product ID: 0x2109

3.2 Model JFE109: Keypad Lever

- Z-Wave hardware platform: ZGM130S (Z-Wave 700 Series)
- Z-Wave version: 7.11.1
- Z-Wave library type: 0x03 Routing Slave
- Z-Wave Role Type: Listening Sleeping Slave
- Z-Wave Device Type: Door Lock
- Associated Category: Lock
- Z-Wave Plus: Yes
- Security S2 Classes: S2 Access Control
- SmartStart Compatible: Yes
- Manufacturer ID: 0x003B
- Product Type ID: 0x0004
- Product ID: 0x6109

4. Network Management Instructions:

4.1 Add to Network / Remove from Network

One-button Add lock to Z-Wave Network (Inclusion)

1. Place your Z-Wave Controller into the “Add” (Inclusion Mode) or “Remove” (Exclusion Mode). Refer to the respective documentation for your home automation system for details.
2. Remove the battery Cover
3. Press and Hold the Enrolling button under battery cover for 0.5 to 3 seconds as shown. Solid Amber LED will be ON.

KPD (Keypad Deadbolt JBE109)

KPL (Keypad Lever JFE109)

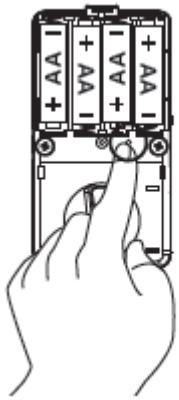
4. Release the Enrolment Button. An LED will flash amber indicating the “Add” or “Remove” process is in progress.
5. Success is indicated by a green LED blink and a beep

If a red LED turns on, try repeating step 1-4

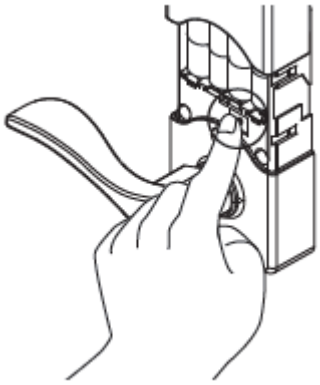
4.2 Factory Reset of the Lock

Steps for Factory Default Reset

1. Press and hold the enrollment button. The led will light solid amber.
2. After about 8 seconds of holding the button, the amber light will turn off.
3. Release the button. Successful FDR is indicated by 3 long green blinks and 3 long beeps.
4. To check that the lock was reset, press the Schlage Button and enter one of the Default User Codes. If the reset was successful, the Default User Codes will unsecure the lock



KPD (Keypad Deadbolt JBE109)



KPL (Keypad Lever JFE109)

Note:

1. Locate default code sticker on lock before attempting factory default reset (FDR) procedure.
2. After the FDR all the stored user codes deleted and cannot be recovered.

4.3 SmartStart

JBE109 and JFE109 locks are SmartStart enabled Z-Wave Plus locks and can be automatically included with a SmartStart enabled Z-Wave Plus Controller on power up.

5. Command Classes supported:

Command Class	Ver.	Support/ Control	Listed in NIF	Secured Added	
				Non- Secured Command Class	Secured Command Class
Application Status	1	S	✓		✓
Association	2	S			✓
Association Group Information	1	S			✓
Basic	2	S			✓
Battery	1	S			✓
Configuration	4	S			✓
Device Reset Locally	1	S			✓
Door Lock	4	S			✓
Firmware Update Meta data	5	S			✓
Multichannel Association	3	S			✓
Indicator	3	S			✓
Manufacturer Specific	1	S			✓
Notification	8	S			✓
Power level	1	S			✓
Schedule Entry Lock	3	S			✓
Security 0	1	S	✓	✓	
Security 2	1	S	✓	✓	
Supervision	1	S & C	✓	✓	✓
Time	1	S & C	✓	✓	✓
Transport Service	2	S	✓	✓	
User Code	1	S			✓
Version	3	S			✓
Z Wave Plus Info	2	S	✓	✓	

5.1 Application Status Command Class V1

Refer Z-Wave Management Command Class Specification

5.2 Application Busy Command

If a Z-Wave command to unlock or lock the deadbolt/lever while the keypad is active, the lock responds with an Application Busy Command to indicate that it cannot currently process that request. Note that other Z-Wave commands are processed normally even when the keypad is active. The status sent is always 0x00 (try again later).

This command is sent when the lock was woken up by manual operation from its sleep state, be it by keypad, Thumb turn, or inside logo button. The Busy status will be sent to Z-Wave Controller till the local operation on the lock is in progress. However, Z-Wave Controller can retry typically after 30 sec. after receiving the Application Busy Status.

5.3 Application Rejected Request Command

The lock would send the Application Reject Request Command in case of Z Wave Controller trying to disable the Power Management (Battery Notifications) by Notification Command Class as these notifications cannot be disabled.

5.4 Association Command Class V2

Refer Z-Wave Management Command Class Specification

Association Set Command:
This command is used to add destinations to a given association group.
This command MAY be ignored if the association group is already full.
Group Identifier: 0x01 (IDs other than 1 will be ignored by lock)
NodeID: List of Node IDs as assigned in the ZWave Network.

Association Remove:
This command is used to remove destinations from a given association group.
Group identifier: 0x01 (IDs other than 1 will be ignored by lock)
NodeID: Node IDs list as assigned in the ZWave Network.

Association Report:
This is sent as a response to Association Get command. Gives the list of nodes associated to the corresponding association group.
Group identifier: 0x01 (It is reported as 0x01 irrespective of what is sent in Get command)
Max Nodes Supported: 0x02
Reports to follow: 0x00
Node ID: List of nodes as previously configured as a result of Set/Remove command.

Association Supported Groupings Report:
This command is used to advertise the maximum number of association groups implemented by this node. This is sent as a response to Association Supported Groupings Get Command.
Supported Groupings: 0x01 (only lifeline group)

Association Specific Group Report:
This command is used to advertise the association group that represents the most recently detected button. Group: 0x00 (Since this feature is not supported)

5.5 Association Group Information Command Class V1

Refer Z-Wave Management Command Class Specification

5.5.1 Association Group Name Report:

Parameter	Value
Grouping Identifier	0x01
Name Length	0x08
Group Name	“Lifeline”
Command Class	0x59 (COMMAND_CLASS_ASSOCIATION_GROUP_INFO)
Command	0x02 (ASSOCIATION_GROUP_NAME_REPORT)

5.5.2 Association Group Info Report:

Parameter	Value
Grouping ID	0x01
Command Class	0x59 (COMMAND_CLASS_ASSOCIATION_GROUP_INFO)
Command	0x04 (ASSOCIATION_GROUP_NAME_REPORT)
Mode	0x00
Profile	0x0001(AGI_PROFILE_GENERAL, AGI_GENERAL_LIFELINE)
Reserved	0x00
Event Code	0x0000
List Mode Bit with Group Count	0x01 / 0x81

5.5.3 Association Group Command List Report:

This must be returned in response to Association Group Command List Get.

Parameter	Value
List Length	12 (6 Commands)
Command Class 1	0x80 (COMMAND_CLASS_BATTERY)
Command Class 1 Command	0x03 (BATTERY_REPORT)
Command Class 2	0x70 (COMMAND_CLASS_CONFIGURATION)
Command Class 2 Command	0x06 (CONFIGURATION_REPORT)
Command Class 3	0x5A (COMMAND_CLASS_DEVICE_RESET_LOCALLY)
Command Class 3 Command	0x01 (DEVICE_RESET_LOCALLY_NOTIFICATION)
Command Class 4	0x71 (COMMAND_CLASS_NOTIFICATION)
Command Class 4 Command	0x05 (NOTIFICATION_REPORT)
Command Class 5	0x63 (COMMAND_CLASS_USER_CODE)
Command Class 5 Command	0x03 (USER_CODE_REPORT)
Command Class 6	0x62 (COMMAND_CLASS_DOOR_LOCK)
Command Class 6 Command	0x03 (DOOR_LOCK_OPERATION_REPORT)

5.6 Basic Command Class V2

Version 2 of this command class is mandatory.

As per the Z-Wave plus V2, Device Class Specification, Basic Set and Report commands must be mapped to Door Lock Operation Set and Report as per the below table. This command is a Secure Command.

Basic Command	Mapped Command
Basic Set (Value)	Door Lock Operation (Door Lock Mode)
Basic Report (Current Value=0x00)	Door Lock Operation Report (Door Lock Mode = 0x00)
Basic Report (Current Value=0xFF)	Door Lock Operation (Door Lock Mode > 0x00)

Basic Set:
Not Supported

Basic Report:
Basic report is sent as a response to the Basic Get command.
Current Value: current lock mode.(0x00 or 0xFF based on lock mode)
Target Value: same as current value.
Duration: 0x00.

Other Requirements:
1. The Basic Command Class MUST NOT be advertised in the Node Information Frame.
2. The Basic Command Class MUST NOT be advertised in the Security Commands Supported Report.

5.7 Battery Command Class V1

Refer Z-Wave Management Command Class Specification.
This command reports the remaining Battery life of the batteries in a percentage form with 100% being full battery life and 0% coincides with dead batteries and the lock does not operate once it reaches this level.
This command is a Secure Command.

Battery Report:
This command is sent as a response to battery get command.
Battery Level: 100 - 20% (100-20% till low, 0xFF = below 20% is low battery)

Battery report must also be sent as an unsolicited report during power-up (if lock is included) and after an inclusion process.
1. The lock must report 0% on low voltage and report 0xFF when voltage drops below low voltage.
2. The lock shall send out a battery report approximately every 24 hours to nodes in association group.
3. The lock must not respond to any Z-Wave commands nor listen for any Z-Wave messages when in critical battery.

Additional Function:
All the Battery CC reports sent Unsolicited in Supervision Get command to the controller if it is included in S2 security mode.

5.8 Configuration Command Class V4

Refer Z-Wave Application Command Class Specification.
The Configuration Command Class allows product specific configuration parameters to be changed. One example could be the default dimming rate of a light dimmer. The configuration CC can be controlled via Set and Get subcommands, the Configuration report will be sent based on the available configurations. Refer the table below for the list of parameters supported under the Configuration CC.

The table below defines the values used for some of the parameters under the configuration CC in Lychee. The read/write column indicates whether the parameters are read/write or read only. Any attempt to set a read only parameter is ignored. Any attempt to read a non-implemented parameter is ignored.

Configuration Report Command

Supported Z-Wave Configuration Parameters

Parameter #	Discerption	Read / Write	Size	Config Value	Value	Value Description	Association
0x00 – 0x02	Reserved	N/A	N/A	N/A	N/A	N/A	N/A
0x03	Beeper	R/W	1	1	0x00	Disable Beeper	Yes
					0xFF	Enable Beeper	
0x04	Vacation Mode	R/W	1	1	0x00	Disable Vacation Mode	Yes
					0xFF	Enable Vacation Mode	
0x05	Lock & Leave	R/W	1	1	0x00	Disable Lock & Leave	Yes
					0xFF	Enable Lock & Leave	
0x05 (KPL)	Lock & Leave	R	1	1	0x00	Disable Lock & Leave	No
0x06	User Slot Bit Field (Occupied slots)	R	4	1	0x00 – 0xFF	User Slots 8 – 1 (MSB – LSB) 8,7,6,5,4,3,2,1	No
				2	0x00 – 0xFF	User Slots 16 – 9 (MSB – LSB) 16,15,14,13,12,11,10,9	
				3	0x00 – 0xFF	User Slots 24 – 17 (MSB – LSB) 24,23,22,21,20,19,18,17	

				4	0x00 – 0x3F	User Slots 30 – 25 (MSB – LSB) X,X,30,29,28,27,26,25	
0x0F	Auto Lock	R/W	1	1	0x00	Disable Auto Lock	Yes
					0xFF	Enable Auto Lock	
0x0F (KPL)	Auto Lock	R	1	1	0xFF	Enable Auto Lock	NO
0x10	User Code PIN Length	R/W	1	1	0x04 – 0x08	User Code PIN length, a value between 4 and 8 (default 4)	Yes

5.9 Device Reset Locally Notification Command Class V1

Refer Z-Wave Management Command Class Specification.
On FDR, the lock inform the Z Wave Controller about the resetting node via this command. Then the Z Wave Controller can perform relevant housekeeping operations like removing this node, removing associations to this node in the Controller. All the network settings cleared after factory reset(FDR).
Refer the section **4.2 Factory Reset of the Lock.**

5.10 Door Lock Command Class V4

Refer Z-Wave Application Command Class Specification

Door Lock Capabilities Report Command:
This Command MUST be returned in response to Door Lock Capabilities Get Command.
This command is used to provide the Door Lock capabilities supported by the lock.

Supported Operation type Bit Mask Length: 0x01 (only constant operation supported)
Supported Operation Type Bit Mask 1: 0x02 (constant operation)
Supported Door Lock Mode List Length: 0x02 (2 lock modes supported)
Supported Door Lock Mode 1: 0x00 (unsecured)
Supported Door Lock Mode 3: 0xFF (secured)
Supported [Outside, Inside] Handle Modes Bitmask: 0x00
Supported door components: 0x00/0x02(none or deadbolt)
ARS,HRS,TAS,BTBS : 0x08 (only ARS supported)

Door Lock Configuration Report Command:
This Command MUST be returned in response to Door Lock Configuration Get Command.
This command is used to provide the configuration parameters of the lock.

Operation Type : 0x01 (constant operation)
[Outside,Inside] Door Handles Mode: 0x00
Lock Timeout Minutes: 0xFE (since constant operation)
Lock Timeout Seconds: 0xFE (since constant operation)
Auto-relock time 1 (MSB): 0x1E (0/30 secs for KPD and 5 secs always for KPL)
Auto-relock time 2 (LSB): 0x00
Hold and release time 1 (MSB): 0x00
Hold and release time 2 (LSB): 0x00
BTB,TA: 0x00 (not supported)

Door Lock Operation Report Command:
This command MUST be returned in response to this Door Lock Operation Get Command.
This command is used to advertise the status of a door lock device.
The report is also sent out via supervision, if lock is included via S2 access.

Current Door Lock Mode: current lock mode
[Outside, Inside] Door Handles Mode: 0x00
Door Condition: (none/Bolt state)
Lock Timeout Minutes: 0xFE (since constant operation)
Lock Timeout Seconds: 0xFE (since constant operation)
Target Door Lock Mode: intended target lock mode
Duration: Always 0

5.11 Firmware Update Meta Data Command Class V5

Refer Z-Wave Management Command Class Specification.

The Firmware Update Meta Data Command Class used to transfer a firmware image to or from a Z-Wave node.

Compatibility considerations:

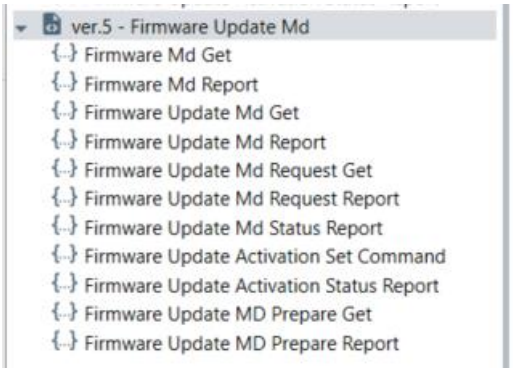
A device implementing Firmware Update Meta Data Command Class, version 5 MUST also implement Firmware Update Meta Data Command Class, version 4.

Firmware Update Meta Data Command Class, version 5 is backwards compatible with Firmware Update Meta Data Command Class, version 4.

New commands, fields and values:

The Firmware Update Meta Data Command Class, version 5 introduces the support of a hardware identifier to uniquely identify firmware images that can be loaded on devices. This allows devices running identical software version on different hardware revisions to receive the correct firmware image.

The Following list of commands are supported in the Firmware Update V5 CC



The Firmware Image will Auto Complete the Firmware Update process once the Download of the Image is being activated from the Pc controller. The status report sent under the **"FIRMWARE_UPDATE_MD_REQUEST_REPORT** " will be "0xFF" indicating that New image was successfully stored in temporary non-volatile memory. The device will now start storing the new image in primary non-volatile memory dedicated to executable code. Then the device will restart itself.

The "**Firmware Update Activation Set Command** " will not be used since the" FIRMWARE_UPDATE_MD_REQUEST_REPORT " will be "0xFF" and not "0xFD" and so Firmware update would auto-complete once Update has been initiated from the Pc controller,

1. Firmware Update Meta Data Get Command:

The Firmware Update Meta Data Get Command is used to request one or more Firmware Update Meta Data Report Commands.

No. of Reports : 1

Res: 0

Report Number: The Report number field indicates the sequence number of the requested firmware fragment. The first firmware fragment MUST be identified by the Report Number value 1.

2. Firmware Meta Data Report Command:

This command is used to advertise the status of the current firmware in the device.

Parameter	Value
Manufacturer ID	0x003B
Firmware 0 ID	0x4890
Firmware Upgradable	0xFF
Number of Firmware Targets	0x01
Max Fragment Size	0x1C
Firmware 1 ID	0x4891

Parameter	Value
Wait Time	0x1E (30 Seconds)

5.12 Manufacturer Specific Command Class V1

Refer Z-Wave Management Command Class Specification

Parameter		Value
Manufacturer ID		0x003B
Product Type ID (J Series)		0x0004
Product ID	JBE109 JFE109	0x2109 0x6109

5.13 Notification Command Class V8

Refer Z-Wave Application Command Class Specification
Refer Z-Wave Notification Command Class, list of assigned Notifications

The Notification Command Class is used to advertise events or states, such as movement detection, door open/close or system failure. The Notification Command Class supersedes the Alarm Command Class.

The lock will support the below listed Notification Events.

Z-Wave Notification Type		Z-Wave Alarm Event		Description	Default Status	V1 Alarm	V1 Level
Access Control	0x06	Manual Lock Operation	0x01	Device transitioned to the locked state due to manual interaction	Active	0x15	0x01
		Manual Unlock Operation	0x02	Device transitioned to the unlocked state due to manual interaction		0x16	0x01
		RF Lock Operation	0x03	Device transitioned to the locked state due to Z-Wave Door Lock Command interaction		0x18	0x01
		RF Unlock Operation	0x04	Device transitioned to the unlocked state due to Z-Wave Door Lock Command interaction		0x19	0x01
		Keypad Lock Operation	0x05	Device transitioned to the locked state due to keypad interaction		0x12	User #

Z-Wave Notification Type		Z-Wave Alarm Event		Description	Default Status	V1 Alarm	V1 Level
		Keypad Unlock Operation	0x06	Device transitioned to the unlocked state due to keypad interaction	Active	0x13	User #
		Auto Lock Locked Operation	0x09	Device automatically returned to the locked state by the auto lock function		0x1B	0x01
		Lock Jammed	0x0B	Lock could not reach the desired position after two attempts. This is also sent if the lock is moved to an unknown region with the thumb turn. This is the general bolt movement error message.		0x09	0x00
		Keypad temporarily disabled	0x10	Four invalid user codes were entered. The lock disables the keypad for 30 seconds.		0xA1	0x01
		New program code entered	0x12	Indicates that the programming code was manually reprogrammed at the lock		0x00	0x00
Power Management	0x08	Replace battery soon	0x0A	Sent once when lock transitions to low battery	Active	0x0A7	0x01
		Replace battery now	0x0B	Sent once when lock transitions to critical battery (lock will no longer operate)	Active	0x0A9	0x01

- For Keypad Lock/Unlock Operation Notifications, the event parameter sent is the user code that was accepted at the lock. In the case of a lock and leave operation, then no event parameter is sent. All notifications are version 8.

- The lock busy notification is not sent; the application status command class is used instead.

- The notification set command allows the different notification types to be enabled or disabled. Setting the status to 0x00 disables and 0xFF enables that alarm type.

- The Power Management Notifications cannot be disabled for the product. If attempted to disable, Application Reject Request Command will be sent from the Lock. Notification Get Command

- If the lock was unable to move to the desired position, the lock responds with a “lock jammed” notification.

- **Keypad Temporarily Disabled** - The only other persistent notification event is Keypad Temporarily Disabled (4 invalid user codes were entered). This event will expire after 30 seconds. There is no way to remotely clear this event.

- **Replace Battery Soon and Replace Battery Now** notifications - The persistent notification event is replacing battery soon or replaces battery now. When battery level is below 20%, the notification event Replace Battery Soon or Replace Battery Now will be sent unsolicited. These are persistent notifications and will continue to send battery report daily until the batteries have been replaced. This event cannot be cleared remotely.

5.14 Power level Command Class V1

Refer Z-Wave Network Command Class Specification
Power Level CC is used to control RF power of the node and test specific links within the network.

It supports,

1. Powerlevel Set Command
2. Powerlevel Get Command
3. Powerlevel Report Command
4. Powerlevel Test Node Set Command
5. Powerlevel Test Node Get Command
6. Powerlevel Test Node Report Command

Note: Refer SDS13784-Z-Wave-Network-Protocol-Command-Class-Specification document from Silicon Labs.

5.15 Schedule Entry Lock Command Class V3

Refer Z-Wave Application Command Class Specification

- The Lock supports Scheduling mechanism for the User Codes configurable from the Z Wave Controller. The Scheduling Command Class can get or set the Scheduled User Codes only if the Lock time is synchronized with the Z Wave Network.

- Locks supports up to 30 user codes. Each User Code can have up to 2 Slots of Schedules, either 2- Daily repeating schedule type or 1-year day scheduling type.

- Weekdays Schedules are not supported; however, such application can be achieved with Daily Repeating Scheduling with one-day bitmask for one of the Daily repeating Schedule.

- Once a Regular User Code of All-time Access (Default) is assigned with a Schedule, it cannot be made again as All-time Access User Code by clearing the Schedule assigned to it. The Scheduled User Code should be either deleted and freshly added back to lock or assigned with an All-time Access Schedule explicitly by using Daily Repeating Schedule with All days selected and start 00:00 Hrs. to end 23:59 Hrs.

5.16 Security 0 Command Class V1

Refer Z-Wave Transport-Encapsulation Command Class Specification

The Security 0 Command Class provides commands to establish a secure connection between controller and the node.

5.17 Security 2 Command Class V1

Refer Z-Wave Transport-Encapsulation Command Class Specification

J-Series by Schlage Z-Wave locks support S2 security with Access Control security level.

5.18 Supervision Command Class V1

Refer Z-Wave Transport-Encapsulation Command Class Specification

The Supervision Command Class allows a sending node to request application-level delivery confirmation from a receiving node.

It must support,

1. Supervision Get Command
2. Supervision Report Command

Supervision Command Class supports all command classes listed in sec **5. Command Classes.**

This is also used by lock for the reliable communication of the Unsolicited Reports and Notifications communicated to the Z-Wave Controllers with S2 security for the communication Controlling Command Class from the Lock are:

- Battery
- Configuration
- Notification
- User Code
- Door Lock
- Time

There will be 3 retries with 2 seconds intervals between each retry for the Unsolicited Report to be sent with the Supervision Command Class

5.19 Time Command Class V1

Refer Z-Wave Application Command Class Specification

- This Command Class has Support and Control provision on the lock.
- The Time Command Class is required to provide the Network Time for the lock to support the User Code Access Scheduling.

Note: At Power Up the Lock is assigned with Default Time and Date (00:00:00 , 1st Jan 1970) and once the Lock is included in the secured Z Wave Network, it will use the Time Command services to get the Network Controller Time. Lock will keep synchronizing every 24 Hrs. with the Z-Wave Controller.

Refer Transport Service Command Class V2

Refer Z-Wave Transport- Service Command Class Specification

5.20 User Code Command Class V1

Refer Z-Wave Application Command Class Specification

- The lock supports user codes between 4 and 8 digits in length. All the user codes in the lock must be the same length and it may contain other length of user codes(4 to 8) when added via Z-Wave plus controller application. This length is configurable with the configuration command class.
- If a user code is received that contains an improper number of digits (E.g.: if 3 digits user code entered when the lock supports 4 to 8 digits) the lock returns a user ID status of 0xFE and does not modify the contents of that user code.

Note : The default User codes, and Programming codes are present in the lock

This Command Class is used to manage user codes in access control systems(Locks)

User code Set Command:
This command is used to set user code to the lock.
User Identifier: 1 to 30 (since our lock can store 30 user codes)
User ID Status: It follows the below table.

User Code 1: 0x30-0x39 (A digit encoded in ASCII)
User Code 2: 0x30-0x39 (A digit encoded in ASCII)
User Code N: 0x30-0x39 (A digit encoded in ASCII). (N is user code length)

Description	Value
0x00	Available (not set)
0x01	Occupied
0x02	Reserved by Administrated
0xFE	Status not available

User code Report Command:
This command is a response to User code Get command.
The command format is same as a Set command.

Deleting an individual user code
To delete an individual UC, we need to send "USER_CODE_SET" command with a valid User Id and the "User ID Status" set to 0 and the rest of the fields to be Don't care.

Users Number Report Command:
This command is a response to Users Number Get Command.
Supported Users: 0x1E (since lock supports 30 user codes)

Deleting all user code
To delete an individual user code, upon "USER_CODE_SET" command both User Id value set to '0' and the "User ID Status" set to 0 and the rest of the fields to be Don't care.
Additionally, lock responds with "User Code Report " containing User Id value set to '0' and the "User ID Status" set to 0 and the rest of the fields to be Don't care upon performing Delete all user codes operation through manual programming.

Response on successful User code Addition
If adding User code was a success, then the lock responds with "**User code Report Command**" containing below values
User Code : Code added by user
User Id : Id assigned with "User Code Set Command" when added through Z-Wave controller / Automatically assigned by lock when added through manual programming.
User ID status : Enabled / Grant Access=0x01

Response on Unsuccessful User code addition .
If adding User code was a failure ,then the lock responds with "**User code Report Command**" containing below values
User Code : Code added by user
User Id : Id assigned with "User Code Set Command"
User ID status : Status not available=0xFE
NOTE: Lock doesn't send "User code report " when adding user code through manual programming fails.

5.21 Version Command Class V3

Refer Z-Wave Management Command Class Specification

Parameter	Value
Z-Wave Library Type	0x03 (Routing Slave)
Z-Wave Protocol Library Version	0x07
Z-Wave Protocol Library Sub Version	0x0B
Firmware 0 Version	0x01
Firmware 0 Sub Version	0x08
Hardware Version	0x03
Number of firmware targets	0x01
Firmware 1 Version	0x01
Firmware 1 Sub Version	0x0B

- The lock reports the version as per the table in Supported Command Classes in section 5. All versions that are not indicated otherwise are version 1. If the command class is not contained in the table, the lock returns 0x00 for the version.

5.22 Z Wave Plus Info V2

Refer Z-Wave Management Command Class Specification

Parameter	Value
Z Wave Plus Version	0x02
Role Type	0x07 (ROLE_TYPE_SLAVE_SLEEPING_LISTENING)
Node Type	0x00 (NODE_TYPE_ZWAVEPLUS_NODE)
Installer Icon Type	0x0300 (ICON_TYPE_GENERIC_DOOR_LOCK_KEYPAD)
User Icon Type	0x0300 (ICON_TYPE_GENERIC_DOOR_LOCK_KEYPAD)

5.23 Indicator Command Class V3

Refer Z-Wave Application Command Class
The product will support Indicator CC V1 to V3,

Indicator command class V1 supports the below subcommands.

1. Indicator Get
2. Indicator Set
3. Indicator Report

Indicator command class V2 supports the below subcommands.

1. Indicator Get
2. Indicator Set
3. Indicator Supported Get
4. Indicator Supported Report

On the lock, the inside LED will be used for the indication(Amber). It will Implement the Indicator Set command with 0xFF for turning on the UI and 0x00 for turning off the UI in V1 CC.

In V3 CC the Node Identify feature of the Indicator CC is supported. It will support Indicator ID "0x50- Node Identify" and Property ID's "0x03-On/Off Period", "0x04 - On/Off Cycles" and "0x05 - On time On/Off period" for set and get command.