Yale Locks

ZWave Developer
User and Reference Guide

Version 1.3.6
10/05/2012

This document covers the ZWave operation of the Yale Real Living family of deadbolt and lever lock products.

The Yale ZWave locks must be used in conjunction with a Security-Enabled ZWave controller in order to fully utilize their full capabilitiy.

The Yale family of ZWave locks are FLIRS (Frequent Listening Routing Slaves) devices and do not need to be activated in any way to "stay awake" and receive ZWAVE commands; when properly included in a suitable ZWave network the locks will listen continuously.

The Yale family of ZWave locks will function in any ZWave network containing certified ZWave products regardless of manufacturer.

Command Class Supported:

The YRDZW Yale series of locks are based on V9 of the ZWave CC (COMMAND_CLASS) specifications. The YRDZW family of locks are security-enabled devices. The CCs that require security are indicated below.

COMMAND_CLASS_MANUFACTURER_SPECIFIC •Not Secure

*Please note:

ASSA ABLOY, the parent company of YALE, was originally assigned a manufacturer ID of 0x0109. This ID was assigned in error and a new ID, 0x0129, was recently issued. All locks currently being manufactured are using this new ID; however there are locks in the field using the former ID.

It is important that all controllers perform the following check to determine whether or not the lock being included is a YALE product:

        IF manufacturer ID = 0x0129
                Lock = YALE Lock

        ELSE IF manufacturer ID = 0x0109 AND Product_Type_ID < 5
                Lock = YALE Lock

        ELSE
                Device is not YALE product

The lock supports the Manufacturer Specific CC with the following parameters:
- Manufacturer ID : 0x0129
- Product Type ID: 0x01 (Touch Lever)

                0x02 (Touch Deadbolt)

                0x03 (Push Button Lever)

                0x04 (Push Button Deadbolt)

- Product ID: xx xx Generation of product (00 01, First Generation)

COMMAND_CLASS_VERSION •Not Secure

The lock supports the Version CC with the following parameters:

- ZWave Library Type: 03
- ZWave Protocol: 03
- ZWave Protocol Sub: 14
- Application Version: 19 (indicates lock firmware version 1.9 for example)
- Application Sub Version: 20 (indicates ZWave firmware version 2.0 for example)

COMMAND_CLASS_SECURITY •Hybrid - certain security commands are sent in the clear in order to establish security.

Refer to ZWave Security CC specifications.

The lock supports ZWave Security CC per ZWave specifications V9.

COMMAND_CLASS_DOOR_LOCK •Required Secure

Refer to ZWave Security CC specifications.

Note: When using 'Operation_Set' command, lock will execute 'Unlock' (00) then perform Timed Operation **IF** Auto Re-lock config parameter is enabled. Otherwise, '00' or '01' is a permanent 'Unlock' value.

COMMAND_CLASS_DOOR_LOCK_LOGGING •Required Secure

Refer to ZWave Security CC specifications.

COMMAND_CLASS_SCHEDULE_ENTRY_LOCK •Required Secure

The lock supports Schedule_Entry_Lock V3.

COMMAND_CLASS_USER_CODE •Required Secure

The lock supports ZWave User Code*CC per ZWave specifications V9.

*Lock will accept pin codes that are 4-8 digits in length.

**Valid values for User ID Status are 0x01 (Active), 0x00 (Inactive)

COMMAND_CLASS_TIME_PARAMETERS •Required Secure

The lock supports ZWave Time Parameters CC per ZWave specifications V9.
The lock's Real Time Clock (RTC) is powered by the same batteries that power the lock electronics.
It is required that the Time Parameters are resent to the lock (resetting the RTC) whenever the batteries are replaced.
The lock will send Alarm 0x82 whenever power is removed and restored to lock.

COMMAND_CLASS_ASSOCIATION •Required Secure

The lock supports 1 association group with 5 devices. Alarm Reports are sent out unsolicited to devices included in the association group.
See alarm chart below for definitions.

COMMAND_CLASS_ALARM

The lock supports Alarm CC per ZWave specifications V9. The alarms listed below are sent unsolicited to devices included in the Association Group (see CC Association).

Alarm Chart

Alarm Reports	Alarm Type	Alarm Level	Description
Master Code Changed or User Added	0x70	0x(00 - F9)	Master code was changed at keypad. Alarm level indicates user slot # where slot #0 is Master Code location. Additional users occupy slots 1-249.
Tamper Alarm	0xA1	0x01 0x02	Keypad attempts exceed code entry limit Front escutcheon removed from main
Manual Unlock	0x16	0x01	By key cylinder or inside thumb turn
RF Operate Unlock	0x19	0x01	by RF module
Manual Lock	0x15	0x01 0x02	By key cylinder or inside thumb turn By touch function (lock and leave)
RF Operate Lock	0x18	0x01	By RF module
Keypad Lock	0x12	0x(00 - F9)	Where Alarm level represents user slot number
Keypad Unlock	0x13	0x(00 - F9)	Where Alarm level represents user slot number
Deadbolt Jammed	0x09	0x00	Deadbolt motor jammed
Low Battery Alarms	0xA9 0xA8 0xA7	0x01	Too low to operate Critical Battery Level Low Battery
Auto Lock Operate Locked	0x1B	0x01	Auto re-lock cycle complete, locked
Duplicate Pin-code error	0x71	0x(00 - F9)	Where Alarm level represents user slot number Alarm is generated if code specified in User_Code_Set command already exists in the lock's list of codes.
RF Module Power Cycled	0x82	0x01	Power to RFM was restored, sent by RF module
User Deleted	0x21	0x(01 - F9)	Alarm Level refers to user number
Lock Handing Completed	0x81	0x01	Lock has completed Handing Cycle

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COMMAND_CLASS_CONFIGURATION (see configurable parameters chart below**; defaults in bold)**

The lock supports Configuration CC per ZWave specifications V9. The network controller can use this CC to set and retrieve the lock's configurable parameters as outlined in the Configurable Parameter table (below).

When a parameter is changed at the lock, the lock will send an unsolicited configuration report to devices included in the Association Group to report the new parameter value.

Name	Parameter Number	Size	Value	Description
Audio Mode	1	1 byte	1, **2** or 3	3-level control; 1=Silent **2=Low** 3=High (for Product IDs 0x01, 0x02 only) For Product IDs 0x03,0x04: • **0x03 = ON** • 0x01 = OFF
Auto Re-lock	2	1 byte	**0x00** 0xFF	**0x00 = OFF** 0xFF = ON
Re-lock Time	3	1 byte	5-180 Unsigned Integer	seconds; after successful code entry and unit unlocks, it will automatically re-lock after specified time (**30** = default value)
Wrong Code Entry Limit	4	1 byte	1-7	The number of invalid code entries lock will accept before sending TAMPER Alarm. When number of wrong code entries is exceeded, lock will disable keypad for the time specified by Shutdown Time parameter. (**5** = default)
Language	5	1 byte	**1**,2,or 3	**1=English** 2=Spanish 3=French (for Product IDs 0x01, 0x02 only)
Shutdown Time	7	1 byte	1-255 Unsigned Integer	number of seconds unit will be inoperable after number of wrong code entries is exceeded (**60** = default)
Operating Mode	8	1 byte	**00** 01 02	**Normal Mode** Vacation Mode - all user codes disabled - except for Master Code. Privacy Mode - all user codes disabled and RF Lock/Unlock disabled.
One Touch Locking*	11	1 byte	0x00 **0xFF**	0x00 = OFF **0xFF = ON**
Privacy Button*	12	1 byte	**0x00** 0xFF	**0x00 = OFF** 0xFF = ON
Lock Status LED*	13	1 byte	**0x00** 0xFF	**0x00 = OFF** 0xFF = ON

*Valid only with version 1.9 or higher lock firmware

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COMMAND_CLASS_PROTECTION V2 •Required Secure

The lock supports Protection CC per ZWave specifications V9. Setting the Protection state disables all user codes except for the master code.

COMMAND_CLASS_BATTERY •Required Secure

The lock supports Battery CC per ZWave specifications V9. It is recommended that the network controller use this CC to retrieve the lock's battery level at least once daily. The lock will send low battery alarms if low battery condition exists immediately after user access.

COMMAND_CLASS_TIME •Required Secure

The lock supports Time CC per ZWave specifications V9.

COMMAND_CLASS_BASIC •Required Secure

The lock supports Basic CC per ZWave specifications V9. The lock will not respond to any BASIC_SET commands. The lock will respond to a BASIC_GET by sending current lock state (00=unsecured, FF=secured).

Glossary

Unsecured - (door) unlocked.

Secured - (door) locked.

Inclusion - join the network.

Exclusion - exit or leave the network.

Register - inclusion (network-wide is allowed).

Delete - exclusion (network-wide is not allowed).

HCP module - RF circuit board containing ZWave functionality.

ZWave Network Inclusion/Exclusion

To change lock's Network status

Enter Master Code #

Enter 7 #

If lock is **on** the network,

Keypad model will flash RED; press '3#' to leave the network ; lock will beep three times to indicate lock has left the network successfully.

Touch model voice response will say" Network Mode"; lock screen will display '3'; select '3#' to leave the network . Voice response will say "Exit the wireless network" and then "Completed" when lock has successfully left the network.

If lock is **not on** the network,

Keypad model will flash BLUE; press '1#' to join the network ; lock will beep three times to indicate lock has joined the network successfully.

Touch model voice response will say" Network Mode"; lock screen will display '1'; select '1#' to join the network . Voice response will say "Joining the wireless network" and then "Completed" when lock has successfully joined the network.

Installing the Network Module

IMPORTANT: The batteries must be removed prior to removing or inserting the network module:

- Remove batteries
- Insert network module
- Reinstall batteries