Homey Pro
Z-Wave Plus® User Manual

Homey Pro as Z-Wave Plus® Controller

Z-Wave® is a wireless communication protocol designed for smart home devices. It allows products like sensors, switches, and locks to work together reliably, even across different brands. Z-Wave uses low-power radio signals, forming a mesh network where devices relay messages to each other for extended range and stable communication.

Homey Pro can be used as a Z-Wave Controller to set up a Z-Wave mesh network. Z-Wave devices can be added to Homey Pro and be controlled just like other Homey devices.

Homey Pro will always be nodeId 1 and will always be the primary SUC/SIS controller in the network. Homey Pro cannot be included in another Z-Wave network.

Terms

DSK	Device Specific Key, printed on the device. The first 5 digits must be entered when Authenticated or Access keys are required
S0	Security 0, older Z-Wave security mechanism. Inefficient and not very secure. Use S2.
S2	Security 2, successor to Security 0 (S0), improved performance and security.
SUC	Static Update Controller. Controller that keeps the network topology and distributes it to other controllers.
SIS	SUC ID Server. Controller that reserves nodeIds that other controllers can use to include nodes in the network.
SmartStart	Simplifies device pairing by scanning QR code or entering the DSK.

Homey Pro End User Interfaces

Homey Mobile App

The mobile app for iOS or Android can be downloaded from https://get.homey.app/

The Homey mobile app can be used to add, remove and control Z-Wave devices.

In the mobile app QR scanning is available for SmartStart or S2 pin entry.

Homey Web App

The web app is available at https://my.homey.app/

The web app can be used to add, remove and control Z-Wave devices.

Homey Developer Tools for Z-Wave

Advanced Z-Wave management features are available at: https://tools.developer.homey.app/tools/zwave

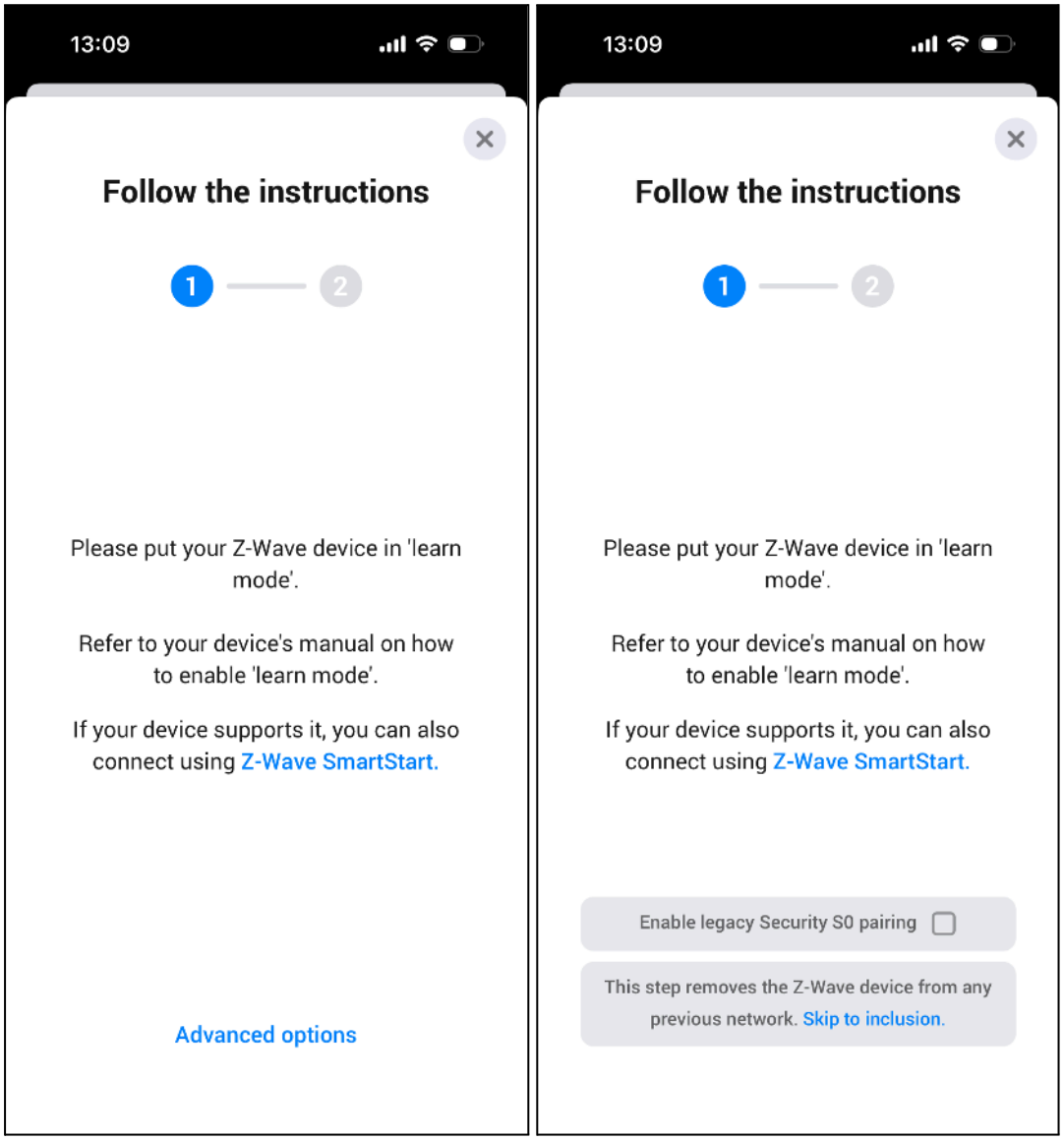
Adding Z-Wave devices to Homey Pro

Adding using Inclusion Mode

Devices are added to Homey Pro by clicking the add button on the Devices screen in the mobile app or web app and selecting “New device” and then selecting “Z-Wave”.

Homey Pro uses Network Wide Exclusion and Inclusion using normal power.

Homey Pro always performs a Remove (step 1) before the actual Add (step 2), so if a device was already added to a Z-Wave network it will be removed first. If the device you are trying to add is already unpaired this step can be skipped by selecting “Skip to inclusion” under “Advanced options”.



From this screen the user can also switch to SmartStart inclusion (see SmartStart in Homey Pro).

When the first step (Remove) is completed the user must put the device in add-mode again and the actual Add-process is started.

When the Add-process is completed a Homey device is created that can be controlled as described in Controlling Devices. Also some additional steps are shown after adding in which the device can be configured (name, zone etc).

Security

Homey Pro always grants **all** requested security classes to a device when using Security 2.

When a legacy Security S0 device is added, Homey Pro will not enable it by default since Security S0 is highly inefficient and insecure.

Note: if a device cannot function without S0, it can be enabled by selecting "Enable legacy Security S0 pairing" under "Advanced options".

If Security 2 (S2) Authenticated or Access Control classes are requested by a device, the user is required to enter the first 5 DSK digits as printed on the device (unless the DSK of the device was added to the Provisioning List before).

In the mobile app the user can enter the first 5 digits manually or scan the device QR code. In the web app the user can enter the first 5 digits manually.

Partly failed inclusion

Sometimes adding a device fails. This can happen if messages could not be delivered to the device for example. If this happens during Security bootstrapping the device was added to the Z-Wave network but Homey Pro aborts any further setup. Therefore no Homey device is created for it.

The device is shown as *'Unknown Node'* in the Developer Tools, where it can also be removed with the 'Remove Any Node' button.

Adding using SmartStart

See chapter SmartStart in Homey Pro

Adding from another controller using Inclusion Controller

See chapter Inclusion Controller support in Homey Pro.

Removing Z-Wave devices from Homey Pro

Remove specific device using Exclusion Mode

Specific devices can be removed from Homey Pro by going to the device settings screen in the mobile app and selecting "Remove device". In the web app a device can be removed by right clicking and selecting "Delete".

This puts Homey Pro in Remove-mode (exclusion). Enable learn mode on the device to remove it from the Z-Wave network.

Remove any node

To remove any node from any Z-Wave network go to the Homey Pro Z-Wave Developer Tools page: https://tools.developer.homey.app/zwave

On this page select “Remove Any Node” and put the node you want to remove in learn mode.

See Homey Pro Z-Wave Developer Tools for more information about Z-Wave Developer Tools.

Remove failed node

Failed nodes (nodes which are no longer in the network) can be removed by using the Z-Wave Developer Tools: https://tools.developer.homey.app/zwave

Click on the three dots behind the failed node and select Test. If the node is unreachable, the Remove option will be enabled. Click Remove to remove it from Homey Pro.

Note: removing a temporary unavailable node this way will not actually remove it from the network. When the node becomes available again it might start to send (a lot of) messages to Homey Pro which will no longer answer them.

Remove a Z-Wave device by resetting it

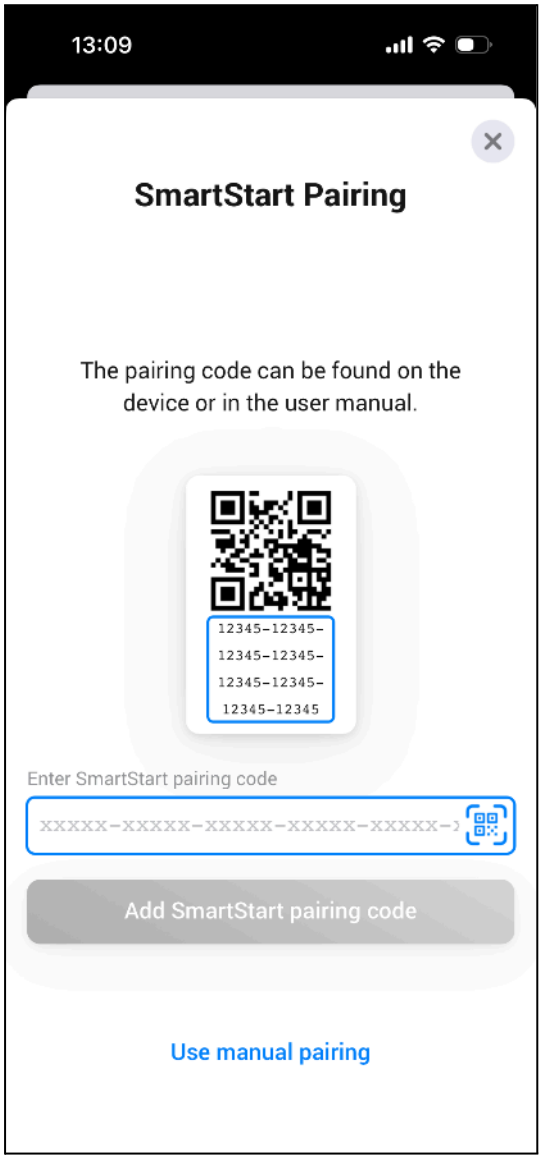
When a reset is performed on a paired device and the device sends a Device Reset Locally notification, Homey Pro will remove the node and mark the corresponding Homey device ‘Unavailable’.

A notification will be shown in the timeline in the Homey Web App and Mobile App that a node was removed.

SmartStart in Homey Pro

Adding device using SmartStart

Devices can be added with SmartStart by selecting “Connect via SmartStart instead” on the Z-Wave add device screen.



On the SmartStart screen the DSK can be entered manually or the SmartStart QR code can be scanned.

After entering the DSK or scanning the QR code a temporary Homey device is created. This Homey device represents the pending SmartStart operation. The device is unavailable until the node is paired successfully.

A successful or unsuccessful inclusion is shown in the timeline in the Homey Web App and Mobile App.

The pending DSK can be found in the device settings. It can also be found in the Provisioning List. The state in the Provisioning List will be ‘Pending’ until SmartStart pairing is completed.

After pairing the temporary device is removed and the real Homey device is created. The DSK is removed from the Provisioning List automatically when pairing is completed.

When pairing SmartStart devices Homey Pro will always grant all requested Security 2 classes.

Removing pending SmartStart device

The pending SmartStart operation can be cancelled by removing the temporary Homey device. The DSK can be found in the device settings. Removing the temporary Homey device also removes the DSK from the Provisioning List.

It can also be cancelled by removing the DSK from the Provisioning List. This also removes the temporary Homey device.

Pending SmartStart devices

To check which devices are waiting for SmartStart inclusion, look for the Z-Wave devices which are unavailable. If the message indicates that it is waiting for SmartStart, the used DSK can be found in the device's Advanced Settings.

Advanced users can manage the pending SmartStart entries in the Provisioning List.

SmartStart and the Developer Tools

When a SmartStart device is added, its DSK is implicitly added to a list of pending DSKs. You can find the DSK of a pending SmartStart device in the device settings, but the entire list of pending DSKs can be found in the Z-Wave Developer Tools: https://tools.developer.homey.app/zwave.

A pending SmartStart device can be deleted by deleting the Homey device for it, but it can also be removed via the list in the Developer Tools.

Inclusion Controller support in Homey Pro

For backwards compatibility with old Z-Wave controllers, Homey Pro must provide support for Inclusion Controller functionality. This can be used to start device inclusion from another controller that is already in the network. Besides the greater risk of failure, this feature is also no longer relevant since with

Homey Pro you carry the Homey Mobile App everywhere in your house and Network Wide Inclusion is supported. **Therefore we strongly advise not to use it and just add any Z-Wave device directly from the Homey Pro Mobile App!**

If you really want to add devices from another controller using Inclusion Controller support, be aware of the following issue regarding Security 2: if a S2 device is added and it needs Authenticated or Access keys, Homey Pro first checks if the DSK is already available in the Provisioning List. If so, that DSK will be used to start Security 2 pairing.

If the DSK is not available in the Provisioning List, Homey Pro sends a push notification to the Homey Mobile App. The user can reply to this notification with the PIN of the device. The notification is not sent to the Homey Web App!

Note: on iOS long-press the notification to reply directly without opening the Homey Mobile App. On Android click on the arrow to fold out the notification and directly reply to it.

After a node is included in the network by an Inclusion Controller, a notification is shown in the timeline in the Homey Web App and Mobile App.

Z-Wave Device Information

On the device settings screen in the web or mobile app the Z-Wave properties of a device can be inspected.

Here you can find firmware version, security classes, node id etc.

Controlling Devices

On / Off

If a device supports one of the Command Classes below, Homey Pro will show an On/Off button. This button can be used to switch the device's on/off state in this order:

1. Binary Switch: if supported it is set to On [0xFF] or Off [0x00] with default duration [0xFF]
2. Multilevel Switch: if supported it is set to On [0xFF] or Off [0x00]
3. Basic: if supported it is set to On [0xFF] or Off [0x00]

Multilevel Switch

If the device supports the MultiLevel Switch Command Class, Homey Pro will show a slider to control the level. The level is set in the range 0 to 100 [0x63].

Door Lock

For a device with Door Lock Command Class support, Homey Pro shows a picker in the UI with the supported Door Lock modes.

Also a locked / unlocked control is added. With this control the user can switch between ‘Secured’ (closed) and ‘Unsecured’ (open) door lock mode.

In the device settings a section is added to configure the Door Lock settings:

- Constant or Timed operation
- Enable / disable inside door handles
- Enable / disable outside door handles
- Timed operation timeout value

Thermostat Mode

If a device supports Thermostat Mode Command Class, Homey Pro adds a picker to switch between the supported modes. Only modes that are supported will be available to select.

See table below for the mapping between Z-Wave and Homey Pro thermostat modes.

Z-Wave Thermostat Mode	**Homey Pro Thermostat Mode**
Off [0x00]	Off
Heat [0x01]	Heat
Cool [0x02]	Cool
Auto [0x03]	Auto (min/max)
Auxiliary Heat [0x04]	Auxiliary Heat
Resume [0x05]	Resume
Fan Only [0x06]	Fan Only
Furnace [0x07]	Furnace

Dry Air [0x08]	Dry Air
Moist Air [0x09]	Moist Air
Auto Changeover [0x0A]	Auto

Thermostat Setpoint

If a device supports Thermostat Setpoint Command Class, Homey Pro adds a slider for each supported setpoint.

See table below for the mapping between Z-Wave and Homey Pro thermostat setpoints.

Z-Wave Thermostat Setpoint	**Homey Pro Thermostat Setpoint**
Heating [0x01]	Minimum target temperature
Cooling [0x02]	Maximum target temperature
Furnace [0x07]	Furnace
Dry Air [0x08]	Dry Air
Moist Air [0x09]	Moist Air
Auto Changeover [0x0A]	Auto Changeover

Besides the sliders for each setpoint Homey Pro also adds a thermostat ui control. This control sets 1 of the setpoints. Which setpoint it controls depends on the current thermostat mode (if supported) or supported setpoints.

If the device supports Thermostat Mode, the thermostat ui controls the following setpoints:

Homey Pro Thermostat Mode	**Controls Homey Pro setpoint**
Heat	Minimum target temperature
Cool	Maximum target temperature
Auto	Auto Changeover
Auxiliary Heat	Minimum target temperature
Furnace	Furnace

Dry Air	Dry Air
Moist Air	Moist Air
Auto (min/max)	Minimum target temperature

If the device does not support Thermostat Mode or the current mode is not one from the list above, the thermostat ui controls the first supported setpoint in this order:

1. Target Temperature Min
2. Target Temperature Max
3. Auto Changeover
4. Furnace
5. Dry Air
6. Moist Air

Indicator

If a node supports the Indicator Command Class, the node can be identified from the Z-Wave Developer Tools: https://tools.developer.homey.app/zwave

Click on the three dots besides the node and select ‘Identify Node’.

This sends the default identify command to the node. The nodes indicator should be switched on for 600ms and switched off for 200ms three times.

Wake Up

Nodes supporting the Wake Up Command Class can be configured from the Homey device settings screen.

The wake-up interval can be set and wake-up can be enabled/disabled.

If a node is sleeping when a message is sent to it, Homey Pro will show a notification that the node must be woken up before the message can be delivered. A notification is added to the Homey Pro timeline after successful or failed delivery to the node.

Z-Wave associations

Add, edit and remove associations

Associations between nodes can be edited on the device settings screen.

For each association group the number of allowed destinations is shown in the tooltip.

Homey Pro (node id 1) is always added to the Lifeline association group of every paired Z-Wave device. If a device sends a Device Reset Locally Notification the device will be removed from Homey Pro.

Each group contains a list of destination nodes and/or endpoints. The endpoints are specified as nodeId.endpointId, so 2.1 for example. The nodes are separated by a comma. You can find the destination node Id in the device settings of the corresponding Homey device.

The associations are set using the Multi Channel Association Command Class if supported, otherwise the Association Command Class is used.

Homey Pro Z-Wave Developer Tools

Developer Tools

Developer tools for Z-Wave are available at:
https://tools.developer.homey.app/tools/zwave

Nodes

In this section a list of all nodes is shown. For each node the following properties are shown:

- Device: name of the Homey device or unknown device if the node is no longer bound to a Homey device.
- Route: the type of route that is used to reach the node and the list of node ids of the route to the node.
- Tx Queued: the number of messages that are waiting to be transmitted to the node when it wakes up.
- Tx Sent: the number of messages that were (attempted) to be sent to the node.
- Tx Error: the number of failed messages to the node (absolute and %).

- Rx: the number of messages received from the node by Homey Pro.
- Flags:
    - Coordinator: Homey Pro.
    - Secure: the security classes are shown between brackets.
    - Online / Offline: whether a sleeping node is awake or not.
    - NoAck: the node did not acknowledge the last message that was sent to it.
    - Battery: the node is a sleeping (battery) device.
    - Unreachable: the node can not be reached and is considered a failed node.

On the right of the node the three dots context menu button is shown with the following items:

- Send Basic On: shown if Basic Command Class is supported. Sends a BASIC_SET with value 0xFF.
- Send Basic Off: shown if Basic Command Class is supported. Sends a BASIC_SET with value 0x00.
- Identify Node: shown if Indicator Command Class is supported. Sends a 600ms on, 200ms off cycle 3 times.
- Update Route: sends a Request Neighbor Update to the node to ask it to find and return its neighboring nodes. The routes from the node to Homey and to any association destinations are updated.
- Test: send a NOP message to the node. If the node does not respond it is marked as ‘failed’ and the Remove menu item is enabled.
- Remove: removes a failed node from Homey Pro Z-Wave controller.
- Interview Node: shown for a default Z-Wave device. Re-interviews the node to discover its capabilities.

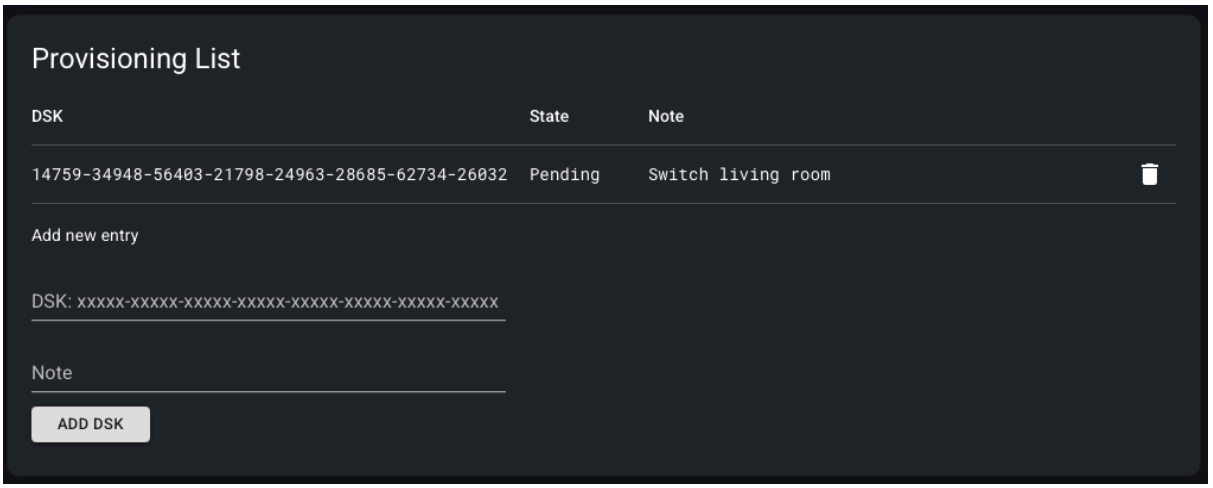
System Information

This section shows various Z-Wave information of the current network:

- Security keys for the different security classes
- Home Group ID
- Hardware Region
- Software Region
- The operation that is currently being performed

Provisioning List

In this section all pending SmartStart provisioning DSKs and manually added DSKs are shown.



SmartStart entries

This list contains the DSKs of SmartStart devices that were added using SmartStart.

The state of these entries will be ‘Pending’ until SmartStart pairing is completed.

After pairing the entry will automatically be removed. This is done to prevent the device from automatically re-appearing in Homey Pro after the user removed the device.

Each entry that was added with SmartStart also corresponds to a Homey device that is ‘Unavailable’ until pairing is completed.

The user can cancel this SmartStart pairing by removing the corresponding Homey device or removing the entry from the Provisioning List by clicking the trash button.

Manual entries

You can also add a DSK here for a device that you may be pairing more often. For these devices, Homey Pro will no longer prompt for the PIN code during Security 2 bootstrapping.

This list can also be used when you want to pair a Security 2 device from another controller by using the Inclusion Controller feature. See Inclusion Controller support in Homey Pro.

The state of these entries will be ‘Pending’ until a node is paired with that DSK.

After a node was paired using an entry from the list, the state will change to ‘Node ID x’ to show which node was paired with the DSK.

An entry can be deleted by clicking the trash button.

Note: If a node was paired with the DSK it will stay in the network until it is manually removed!

Remove any node

Use this option to remove any node from any network.

Remove unknown nodes

This will send NOP operations to all nodes for which no corresponding Homey device is found. If the node does not respond it is marked ‘Failed’ and will be removed from the Homey Pro Z-Wave controller.

Send Node Information Frame

Homey Pro will send its Node Information Frame on the Z-Wave network.

Update Z-Wave Routes

A full network update process is started. Note that this may take a very long time and during this time the network is unavailable.

Homey will work “inside-out” to ask its neighbors to update their list of neighbors. For each found node new routes are assigned to Homey, so the node knows how to send unsolicited messages to Homey. Battery nodes are not processed, they must be updated manually when the update is finished. Use the “Update Route” feature in the node menu.

When all neighbors and their neighbors are updated, routes between nodes that are needed for associations are updated.

Send Raw Data

This sends raw data to a node. No encapsulation is used. This is for testing/debugging purposes.

Reset Z-Wave network

This resets the Z-Wave network. A “Device Reset Locally Notification” is sent to all destinations in the Homey Pro Lifeline association group. Note: if a device does not receive this notification it will be orphaned and it must be excluded or reset first before it can be included again. Homey Pro will always perform an exclusion first when adding devices.

After notifying all destinations a new Z-Wave network is created with new security keys and a new Home Group ID.

All remaining Homey Pro Z-Wave devices are marked as unavailable so the user can remove them.

Log

This section can be used for debugging purposes. Low level Z-Wave logging is shown here.

State

The current state of the Homey Pro Z-Wave module is shown here for debugging purposes.

Z-Wave specification

Supported Command Classes

Command Class	Version	Secure
COMMAND_CLASS_ASSOCIATION [0x85]	2	Yes
COMMAND_CLASS_ASSOCIATION_GRP_INFO [0x59]	3	Yes
COMMAND_CLASS_CRC_16_ENCAP [0x56]	1	No
COMMAND_CLASS_DEVICE_RESET_LOCALLY [0x5A]	1	Yes
COMMAND_CLASS_FIRMWARE_UPDATE_MD [0x7A]	5	Yes
COMMAND_CLASS_INDICATOR [0x87]	3	Yes
COMMAND_CLASS_MANUFACTURER_SPECIFIC [0x72]	1	Yes
COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION [0x8E]	3	Yes
COMMAND_CLASS_MULTI_CMD [0x8F]	1	No
COMMAND_CLASS_POWERLEVEL [0x73]	1	Yes
COMMAND_CLASS_SECURITY [0x98]	1	No
COMMAND_CLASS_SECURITY_2 [0x9F]	1	No
COMMAND_CLASS_SUPERVISION [0x6C]	1	No
COMMAND_CLASS_TRANSPORT_SERVICE [0x55]	2	No
COMMAND_CLASS_VERSION [0x86]	2	Yes
COMMAND_CLASS_ZWAVEPLUS_INFO [0x5E]	2	No

Controlled Command Classes

Command Class	Version
COMMAND_CLASS_ASSOCIATION [0x85]	2
COMMAND_CLASS_ASSOCIATION_GRP_INFO [0x59]	3
COMMAND_CLASS_BASIC [0x20]	1

COMMAND_CLASS_CRC_16_ENCAP [0x56]	1
COMMAND_CLASS_DOOR_LOCK [0x62]	1
COMMAND_CLASS_INDICATOR [0x87]	3
COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION [0x8E]	3
COMMAND_CLASS_MULTI_CHANNEL	4
COMMAND_CLASS_NO_OPERATION	1
COMMAND_CLASS_SECURITY [0x98]	1
COMMAND_CLASS_SECURITY_2 [0x9F]	1
COMMAND_CLASS_SUPERVISION [0x6C]	1
COMMAND_CLASS_SWITCH_BINARY [0x25]	2
COMMAND_CLASS_SWITCH_MULTILEVEL [0x26]	1
COMMAND_CLASS_THERMOSTAT_MODE [0x40]	1
COMMAND_CLASS_THERMOSTAT_SETPOINT [0x43]	1
COMMAND_CLASS_VERSION [0x86]	2
COMMAND_CLASS_WAKE_UP [0x84]	2
COMMAND_CLASS_ZWAVEPLUS_INFO [0x5E]	2

Basic Command Class

Homey Pro does not support Basic Command Class.

Security Command Class

Homey Pro supports Security S0 and Security S2.

All security classes are supported and always granted to a requesting node.

S0 is not granted by default. See Security.

Association Command Class

Homey Pro supports one association group: the Lifeline group with id 1.

A “Device Reset Locally Notification” is sent to all devices in this group when the Z-Wave network is reset.

The group supports 231 destinations.

Indicator Command Class

Supported Indicator IDs

- Node Identify [0x50]

Supported Property IDs:

- On/Off Periods [0x03]: 0x00 - 0xFF (0 - 25.5s)
- On/Off Cycles [0x04]: 0x00 - 0xFE (0 - 254)
- On time within an On/Off period [0x05] (0 is symmetric, 1 - 25.5s)

Homey Pro will flash its led ring accordingly.

Factory reset Homey Pro

Homey Pro can be factory reset by inserting a pin in the reset-hole on the bottom. Keep pressing for 30s until the ring is completely red.

Note: in this case no “Device Reset Locally Notification” is sent to the Z-Wave devices and they will be orphaned. They must be excluded first before they can be included again. Homey Pro will always perform an exclusion first when adding devices.