

## 1. Using ZHC5010 with Homey

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The following information is based on experiences and various setups and shared here as examples, information about possible pitfalls and for inspiration. It is not meant to be an exhaustive description of all settings and possibilities.

As for most in this area, no solution fits all and setups varies a lot; devices can be combined in numerous ways and sometimes it just doesn't work...

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## 2. Contributions

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The original Logic Home Control app v.1.0 for Homey was developed by the manufacturer (Logic Home Control), further development and major revision according to Homey SDK2 guidelines is done by [Ted Tolboom](#) in close cooperation with [Kim T. Nielsen](#) ([Logic Home Control](#)). [Christian Bjerre Høyer](#) has participated in beta-testing the Logic Home Control App SDK2 and ZHC5010 firmware updates. Animated and vivid discussions on features, possibilities, pros and cons, stupid questions and patient answers have been provided by Kim T. Nielsen, Ted Tolboom, Christian Bjerre Høyer, and [Jens Hymøller](#). This guide is drafted by Christian Bjerre Høyer and proof read by Kim T. Nielsen, Ted Tolboom, and Jens Hymøller. Typos and errors are unintended, comments and suggestions are very welcome.

Detailed technical information is available in [the manual](#) (Danish and English versions available) from Logic Home Control. It is highly recommended to read especially pages 5-7 and 11-14 in the manual.

If differences between the manufacturer's manual and the following is found, then the manufacturer is right per definition – except if what is written here works better.

## 3. System requirements

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Homey with firmware v. 1.5.6-rc7 or higher

ZHC5010 with firmware v. 2.0 or higher (current version [2.03](#) is advised)

[Logic Home Control](#) app v. 2.0.0 or higher (SDK2)

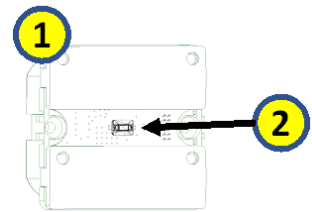
## 4. Installation

Re-pairing (removal and inclusion) based on new app strongly recommended for ZHC5010 as scene flow cards will not work if devices are not included *after* installing the new app. Updating from Logic Home Control app v. 1.0.4 or below to v. 2.0.0 is possible, but all flows using scene flow cards will be broken – and other problems may occur.

It is advised to remove devices *before* updating the v 2.0.0 as this will reset the device and erase inclusion.

Not removing a device prior to installation of v 2.0.0 will result in five orphaned devices that has to be deleted individually afterwards as well as the device will still be linked to Homey, but not known by Homey, and inclusion will not be possible, unless the device has been “removed” (“Homey settings” → “Z-Wave” → “Remove a device”). A factory reset of the ZHC5010 can also be done using the small button “hidden” under the cover between the upper and lower paddles: Press and keep pressed (>10 seconds) until all diodes flash and you hear a “click” from the device (Figure 1).

At present, Homey does not have a feature for updating firmware (for any device), but a Windows stand-alone [firmware updater](#) is available from the manufacturer. A Z-wave controller (like the [UZB from z-wave.me](#)) is needed. As the unit will be reset in the process, the most reasonable process if ZHC5010 firmware is to be updated, is 1) exclude devices from Homey, 2) update ZHC5010 firmware, 3) install the Logic Home Control app v.2.0.0, 4) include ZHC5010. It is not necessary to uninstall older versions of the Logic Home Control app.



*Figure 1: In-/exclusion is initiated by pushing three times (fast) Button 1 ① or on the small "hidden" button ②.*

## 5. Using direct associations

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The use of direct associations between the ZHC5010 makes it possible to bypass Homey. Advantages by doing this are many and include decreased workload on Homey, faster response from associated units, and, in case Homey is disconnected, continued function.

After inclusion in Homey's network, ZHC5010 will be represented by five devices: The physical device and four logical devices (one for each button). Direct associations can be made for each of the four buttons in settings (only accessible at the main device named "ZHC5010 – Relay" as default).

Direct associations are set in the app named and referred to as group 1-21, equal to the list shown in the manual page 13-14 (don't get confused by the headline about NOT Multi Channel Mode).

### Example 1: Direct association to dimmer

To make a direct association from Button 1 on a ZHC to a Fibaro Dimmer 2 (in this example node-id 5) using the Multilevel Switch command makes it possible to control the dimmer directly (on/off and control dim-level) and can be done by filling in the node-id 5 in Group 6 (the "Multilevel Switch Start Level Change" or "Multilevel Switch Stop Level Change" commands) (Figure 2). (Read on, the example continues below).



Group	Value
Group 1	1.1
Group 2	
Group 3	
Group 4	
Group 5	
Group 6	5
Group 7	

Figure 2: Direct association from ZHC5010 Button 1 to a dimmer. Group 1 is the "Lifeline"-association ① to Homey and should be "1.1". The association to the dimmer is in Group 6 as it uses the Multilevel Switch-commands ②.

## 6. Multilevel Switch settings

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When using "Multilevel Switch", ZHC5010 will transmit either "Upper switch value" (if the button is OFF) or "Lower switch value" (if the button is ON). In the Homey app, the default value for "Lower switch value" is set to 0 (switches off the associated device) and the "Upper switch value" is set to 99 (switches the associated device on at maximum level). Both values can be changed for each button by choosing "Settings button 1(-4)" and then "Multilevel Switch on single press". Changing the "Upper switch value" to 255 will make the associated dimmer turn on at *the last known level*. See also the section "Multilevel Switch Command Class" (Page 6) in the manual for ZHC5010 for further explanation. See also Example 3: Direct association from ZHC5010 to Fibaro RGBW-controller, page 11.

## 7. Keeping Homey updated - 1

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To ensure Homey is kept updated about the status of the ZHC5010's buttons (when pressed physically), the association should include not only the node-id of the associated device, but also the node-id "1.1". While

this keeps Homey updated, it has the downside, that ZHC5010 needs to transmit two commands, one to Homey and one to the associated device. Transmission of the second set of commands are *not* initiated until transmission of the first set of commands is finished. In case the used route includes relay via other nodes, this may cause delay, as it includes not only sending commands, but also acknowledgements, and although time used for transmission is small, it may sum up to something noticeable when you expect light to turn on instantaneously and it doesn't.

If a delay from pressing a button on ZHC5010 to the associated device responds is present, listing the "1.1" *after* the node-id of the associated device(s) may help minimising such delays if present. Default setting when including a ZHC5010 in Homey's network is "1.1" in groups 1, 2, 6, 7, 11, 12, 16, 17, and 21.

#### Example 1: Direct association to dimmer (continued)

If Group 6 only includes "5" as above, Homey will not be updated when the button is pressed. To ensure this, Group 6 should be "5,1.1". Unfortunately, this will only keep Homey (sort of) updated on dim-level. To keep Homey updated on on/off-status, it is necessary to fill in "1.1" in Group 2 as well (Figure 3).

Group	Value
Group 1	1.1
Group 2	1.1
Group 3	
Group 4	
Group 5	
Group 6	5,1.1

Figure 3: Direct association from Button 1 on a ZHC5010 to a dimmer with node-id 5. The "Multilevel Switch" commands include turning the device on/off and it is therefore not necessary to make any other associations to the dimmer than only in the Multilevel Switch group (in this case, Group 6) ①. To keep Homey updated, however, it is necessary to add "1.1" in both Group 6 ② and Group 2 ③ (sends the Basic Report On/Off command to Homey).

## 8. Keeping Homey updated - 2

As mentioned above, dimming another device by ZHC5010 is done by sending the "Start level change"-command (as mentioned above). This implies, that the ZHC5010 does not know the *actual* dim-level of the associated device. Consequently, the slider seen on the ZHC5010-button in Homey will not be updated to reflect the dim-level of the associated device, even when adding "1.1" in association groups: The slider will go to maximum, when turning on the light.

At present, the workaround for this is to make a feedback flow in Homey setting the brightness for the relevant button in ZHC5010 to the associated device's actual level: WHEN "Dim-level changed" THEN "Set brightness (#level tag from device)" (Figure 4).

### Example 1: Direct association to dimmer (continued)

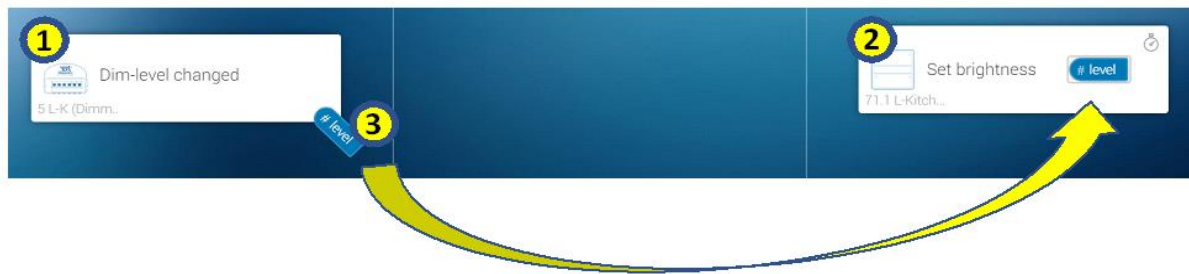


Figure 4: Feedback flow from Fibaro Dimmer 2 ① to ZHC5010 Button 1 ② using the tag `# level` from the dimmer ③. In this example, the internal relay in ZHC5010 is NOT controlled by Button 1.

The feedback flow ensures synchronization between the dimmer and ZHC5010: If the dimmer's dim-level is changed in other ways than via the ZHC5010, the ZHC5010 will be updated with the actual dim-level. As this feedback flow will include updating both status on on/off and status on dim-level, it is possible to omit "1.1" in Groups 2 and 6 (as shown in Figure 2).

## 9. Central Scene Notifications

The ZHC5010 transmits Central Scene Notifications to Homey prior to transmitting commands to other devices. This may result in a small delay between pressing a button at the ZHC5010 and reaction from an associated device. Per default, the ZHC5010 has Central Scene Notifications enabled to ensure functionality. However, if a delay is present – and Central Scene Notifications are not needed, disabling this feature (setting the value to “0”) may help decrease the delay (Figure 5). Be aware, that disabling Central Scene Notifications will affect *all* buttons (the entire ZHC5010). Disabling Central Scene Notifications will render the flow cards named “Scene is activated” and “A button has been pressed” invalid (although still available); see also 0:

### A button has been pressed

This card is only available for the root device and depends on Scene Notifications. Consequently, it will not work if Scene Notifications are disabled (value set to 0 as described above) even though the card is still present.

The flow card can be combined with flow cards in both “and” and “then” columns when building flows using the available two tags: 1) *Scene*, and 2) *Button*

#### *a scene*

At default settings (Scene Notification offset set to 1) pressing Button 1(-4) will return values 1(-4). Changing Scene Notification offset will cause a parallel shift with the new value: Setting Scene Notification offset to 20 will make the ZHC5010 send values 21(-4) when Button 1(-4) is pressed.

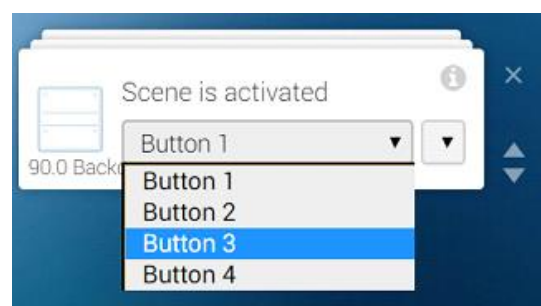
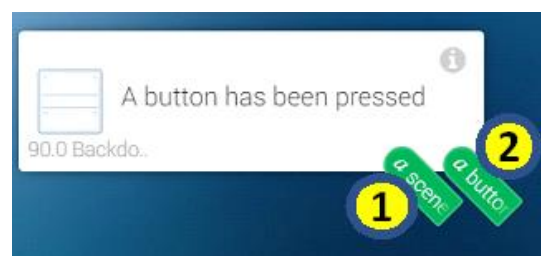
#### *a button*

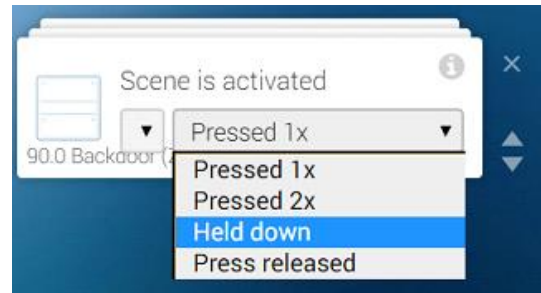
Returns the number of a Button when pressed.

### Scene is activated

This card is only available for the root device and depends on Scene Notifications. Consequently, it will not work if Scene Notifications are disabled (value set to 0 as described above) even though the card is still present.

The card is the “entry” to Central Scene-flows, as it defines how the scene is triggered: Which button (1-4) should be pressed and how (Once, twice, held down, or released).





ZHC5010 flow cards: Trigger cards, page 15.

## 71.0 Kitchen (ZHC) - Settings

▼ Device Specific

Upper paddle buttons

Separate mode (toggle mode) (Default) ▼ ⓘ

Lower paddle buttons

Separate mode (toggle mode) (Default) ▼ ⓘ

Relay mode

Only controlled by commands sent to the root device. ▼ ⓘ

Indicator mode

Indicator Set level values are also used by internal LED activations (value stored). (Default ▼ ⓘ

Scene notification offset

0 **1** ⓘ

Figure 5: Central Scene Notifications can be disabled by setting the value to "0" ①. Disabling Central Scene Notifications affects all buttons.



## 10. Determining the origin of a delay

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Going through the different possible causes of delay systematically will be the fastest way to determine the origin.

- 1) If Central Scene Notifications are not needed at all, disabling these as described above may be the easy step.
- 2) Rank associations with the associated device first (like “5,1.1” instead of “1.1,5”)
- 3) Delete “1.1” in groups 2 and 6 (Button 1), 6 and 7 (Button 2) etc.

To ensure that changed settings are in fact in used when testing the effect, it is advised to triple-press Button 1 and wait 15-30 seconds: The message “Device settings have been saved” implies that changes are saved in Homey and queued for transmission to the device, not a guarantee that changes are already transmitted (although they most probably already are). Check the network activity on

<https://developer.athom.com/tools/zwave> – if triple-pressing Button 1 results in only “[node-id]: Received application update: [something]” and nothing else, odds are that settings are transmitted to the device.

## 11. Secure vs. non-secure commands

ZHC5010 units with firmware 2.0 and higher are included in Homey's network as secure (encrypted communication). However, not all devices can be included as secure (such as Greenwave PowerNode 6 or Fibaro RGBW-controller).

However, direct association from ZHC5010 to non-secure devices is possible as it can be defined for each button if commands are to be sent as secure or non-secure (Figure 6).

The screenshot shows the 'Settings Button 1' configuration page. It includes fields for 'LED mode' (set to 'LED indicates status of corresponding button. (Default)'), 'LED ON brightness level' (15), 'LED OFF brightness level' (0), and 'Button key press threshold' (30). Below these is a section for 'Non-secure commands (FW > 2.0)' which is expanded, showing a list of command groups with checkboxes: 'Group 2 (Basic Report)', 'Group 3 (Basic Set)', 'Group 4 (Binary Switch Set)', 'Group 5 (Binary Toggle Switch Set)', and 'Group 6 (Multilevel Switch)'. All checkboxes are currently unchecked. Information icons are present next to several settings.

Figure 6: To set if commands are sent secure or non-secure: Expand "Settings Button 1(-4)" ① and then "Non-secure commands (FW>2.0)" ②.

### Example 2: Direct association from ZHC5010 to Greenwave PowerNode 6

In this case from ZHC5010 Button 4 to Socket 1 in a PowerNode 6 with node-id 18 as shown in Figure 7 and Figure 8. Sockets in the PowerNode 6 are not dimmable, only on/off, and therefore the group Binary Switch Set should be used.

The screenshot shows a configuration entry for 'Group 19' with the value '3.5,1.1' entered in the adjacent text field. An information icon is located to the right of the text field.

Figure 7: Add node-id "18.1" in Group 19 (Binary Switch Set).

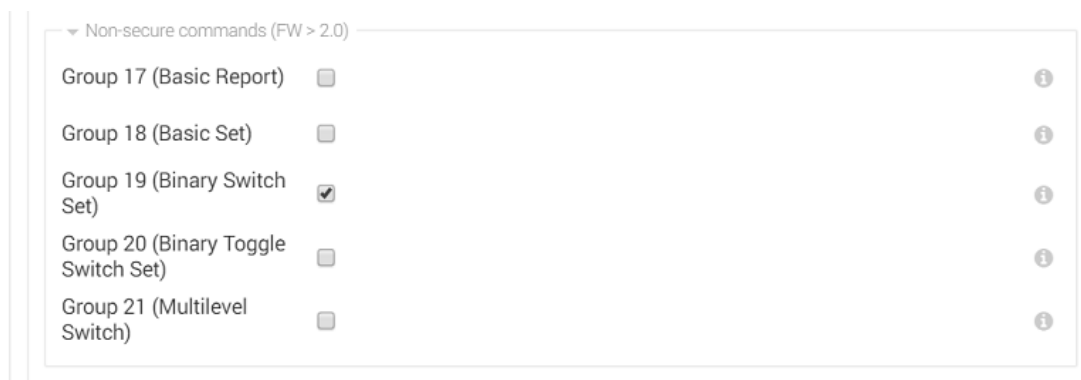


Figure 8: Tick the corresponding box in “Settings Button 4”, “Non-secure commands (FW>2.0)”.

## 12. Keeping Homey updated – 3

Per default Homey does not poll socket status from a PowerNode 6. Consequently, a feedback flow as shown above will not work unless settings for polling status are changed. However, this is not a tempting solution, as the increase in activity network activity could contribute to congestion and delays in the Z-wave network.

A pragmatic solution to this is to forget all about the Greenwave PowerNode 6 when the direct association between ZHC5010 and the Greenwave PowerNode 6 is set up and working: Only use the ZHC5010-button in flows, never the PowerNode 6 socket itself (see 13: Organising devices in Homey, page 13). Odds are, that if the PowerNode 6 socket is not controlled in any way from any flows at all (including general flow cards like “Turn all lights off”, e.g.) the status of the ZHC5010 button will reflect the status of the associated PowerNode 6 socket (although no guarantees are given – if synchronisation is important, the way is to enable frequent polling of status and make a feedback flow and accept increased network load).

### Example 3: Direct association from ZHC5010 to Fibaro RGBW-controller

In this case from ZHC5010 Button 2 to RGBW-controller with node-id 6 as shown in Figure 9 and Figure 10. As the Fibaro RGBW-controller cannot be included as secure, it is also here necessary to allow ZHC5010 to send non-secure commands. As the RGBW-controller has dim-function, it is also relevant to consider the behaviour of ZHC5010 if Multilevel Switch Commands are used (see also 6: Multilevel Switch settings, page 4).



Figure 9: Add node-id “6” in Group 11 (Multilevel Switch).

Settings Button 2

LED mode

LED indicates the status of the corresponding button. (Default)

LED ON brightness level

15

LED OFF brightness level

0

Button key press threshold

30

Multilevel Switch on single press

Enable switch

☒

Upper switch value

255

Lower switch value

0

Switch groups when command received

☒

Non-secure commands (FW > 2.0)

Group 7 (Basic Report)

☐

Group 8 (Basic Set)

☐

Group 9 (Binary Switch Set)

☐

Group 10 (Binary Toggle Switch Set)

☐

Group 11 (Multilevel Switch)

☒

Figure 10: Go to “Settings Button 4”, “Non-secure commands (FW>2.0) and enable sending non-secure commands for Group 11 by ticking the box ①. Further, decide the behaviour of the dimmer when turned on ②: When pushing the button, ZHC5010 sends the value set in “Upper switch value” to the associated device(s).

## 13. Organising devices in Homey

As described above, it may help keeping things simple, working and synchronised if the buttons from ZHC5010 are used in flows to control the devices that ZHC5010 is associated to. One way to do this is to put these devices in a separate zone in Homey.

### Example 4: Organising devices

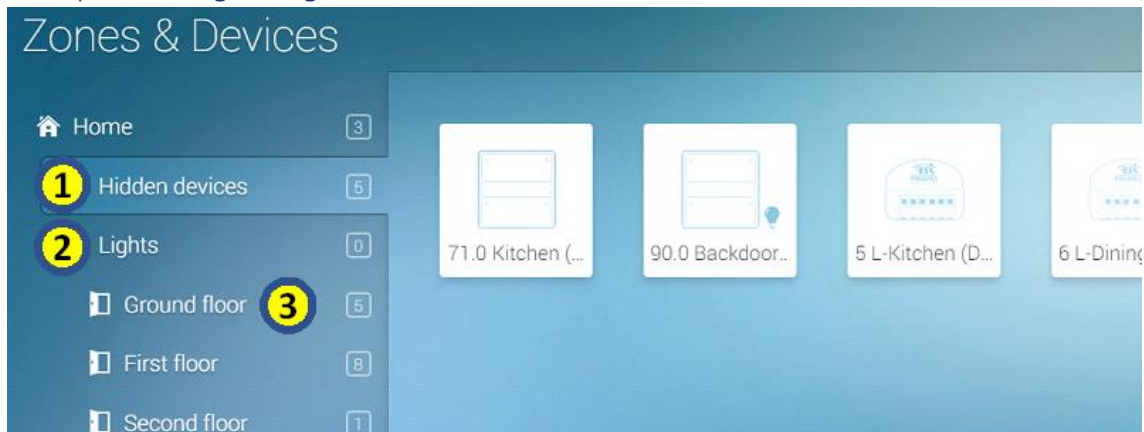


Figure 11: This example includes a main zone named “Hidden devices” ① including two Fibaro Dimmer 2 (5 L-Kitchen and 6 L-Dining table) and two ZHC5010 units (71.0 Kitchen and 90.0 Backdoor). Another main zone named “Lights” ② includes sub-zones “Ground floor” ③, “First floor”, and “Second floor”.



Figure 12: The “Ground floor” zone include device icons for all light on ground floor level: In this example three switches related to two dimmers, that is, three logical subunits from ZHC5010: 71.1 L-Kitchen ①, 71.2 L-Dining table ②, and 90.3 L-Dining table ③, (the latter two controlling the same dimmer).

## 14. Direct associations between several ZHC5010s and other devices

Being able to control the same light by several switches is a frequent need (in stairs, hallways, large rooms, etc.). One way to do this is making a lot of flows in Homey. However, direct associations can be used to minimise the number of flows needed as well as decrease workload on Homey and minimise delays. Controlling one dimmer by several switches is not the difficult part: Keeping the switches synchronised is, as this involves one switch transmitting on/off signals to another, which in turn may react on this by transmitting a new signal, which could cause the first to react leading the two switches into an uncontrollable feedback loop switching lights on/off in a continuous cycle (like when a microphone and a speaker playing the sound picked up by the microphone are too close to each other and a rather unpleasant screaming sound is heard). How to gain control again, if such a feedback loop is induced depends on how the loop is created. If the loop cannot be interrupted via disabling on or more flows or gaining access to the relevant associations in device settings, the last resort may be resetting ZHC5010(s) involved in the loop by pressing the “hidden” button (as described in the beginning of this document).

**Example 5:** Keeping one dimmer and two ZHC5010s synchronised with direct association

Devices in this example are a Fibaro Dimmer 2 (Node-id 8) and two ZHC5010s (Node-id 71 and 90, respectively), all included in secure mode. Both buttons are set to class “Light” upon inclusion.

The dimmer will be controlled with Button 3 from the ZHC5010 with node-id 71 and Button 1 from the unit with node-id 90. Each button should be configured as described above, all that is needed is to add the other ZHC5010 node-id in the Multilevel Switch-group and vice versa:

Associations for ZHC5010 with node-id 71:

*Group 12 (Basic Report On/Off from Button 1): 1.1*

*Group 13 (Basic Set on/Off from Button 3): 1.1*

*Group 16 (Multilevel Switch-commands from Button 3): 8,90.1,1.1*

Associations for ZHC5010 with node-id 90:

*Group 2 (Basic Report On/Off from Button 1): 1.1*

*Group 3 (Binary Switch-command from Button 1): 1.1*

*Group 6 (Multilevel Switch-commands from Button 1): 8,71.3,1.1*

Unfortunately, the problem with keeping track of the exact dim-level described above for a “one button-one dimmer”-setup is still present. Luckily, the solution is (almost) the same.

**Example 6:** Keeping one dimmer and two ZHC5010s synchronised with a flow

Adding a flow like the flow shown in Figure 4, this time with both ZHC5010s, will do the trick.



Figure 13: Feedback from dimmer to two different ZHC5010s.

## 15. ZHC5010 flow cards: Trigger cards

### A button has been pressed

This card is only available for the root device and depends on Scene Notifications. Consequently, it will not work if Scene Notifications are disabled (value set to 0 as described above) even though the card is still present.

The flow card can be combined with flow cards in both “and” and “then” columns when building flows using the available two tags: 1) *Scene*, and 2) *Button*

#### *a scene*

At default settings (Scene Notification offset set to 1) pressing Button 1(-4) will return values 1(-4). Changing Scene Notification offset will cause a parallel shift with the new value: Setting Scene Notification offset to 20 will make the ZHC5010 send values 21(-4) when Button 1(-4) is pressed.

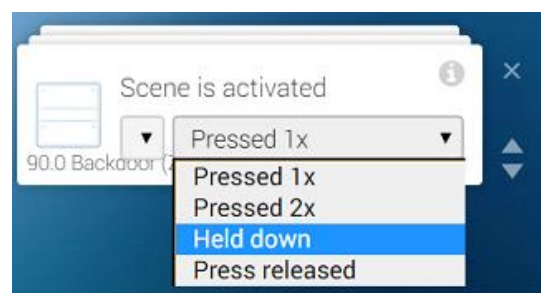
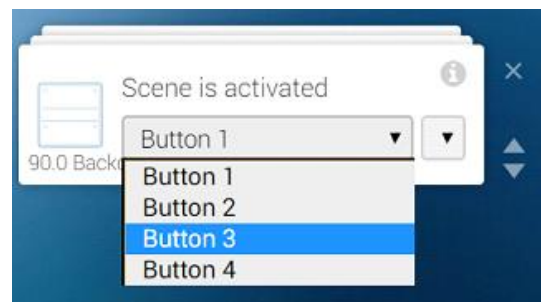
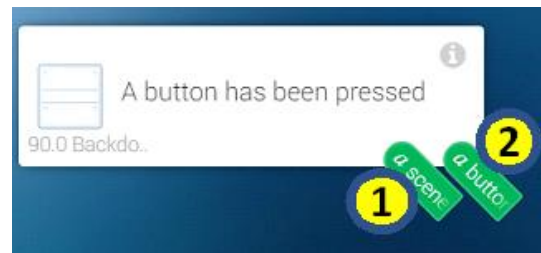
#### *a button*

Returns the number of a Button when pressed.

### Scene is activated

This card is only available for the root device and depends on Scene Notifications. Consequently, it will not work if Scene Notifications are disabled (value set to 0 as described above) even though the card is still present.

The card is the “entry” to Central Scene-flows, as it defines how the scene is triggered: Which button (1-4) should be pressed and how (Once, twice, held down, or released).



## 16. ZHC5010 flow cards: Controlling LEDs

ZHC5010 is available in two different versions: One with LEDs in the buttons, and one without. Unfortunately, the same hardware ID is used for both models of the ZHC5010 making it impossible to make an app that can distinguish between the two. Consequently, the cards used to control the LEDs are available also if the actual device is a ZHC5010 without LEDs. Using this card with a ZHC5010 without diodes will neither cause problems, nor be useful.

Flow cards for controlling the LEDs are only available when *the root device* is used in flows.

### Set LED level

After selecting the relevant button, the decided level can be set, either by the vertical slider (when active, arrow keys up/down can be used to trim the value) or by dragging a value tag.

Setting the LED level by this flow card can lead to two different results, depending on the setting "Indicator mode".

#### *Temporary change in LED brightness*

When ZHC5010 receives an Indicator Set message, the received value can be used temporarily, that is, the current light level for the actual LED will be set, but not stored (the next time the LED is activated the light level will be as set in "LED ON brightness level" (parameters 7-10).

#### *Sustained change in LED brightness*

The "LED ON brightness level" for the actual LED (parameters 7-10) will be updated to the received value thereby changing the light level for the actual LED for subsequent internal LED activations.

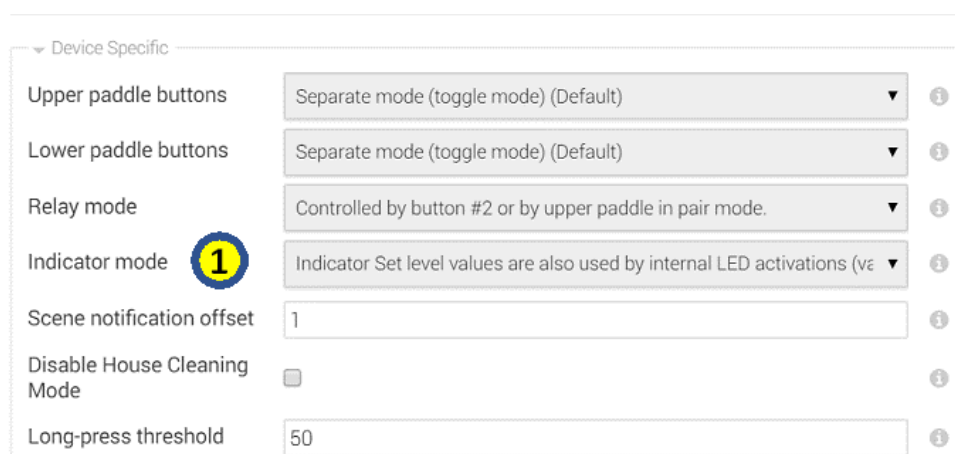
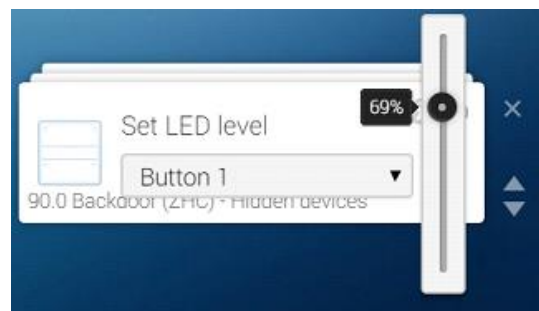
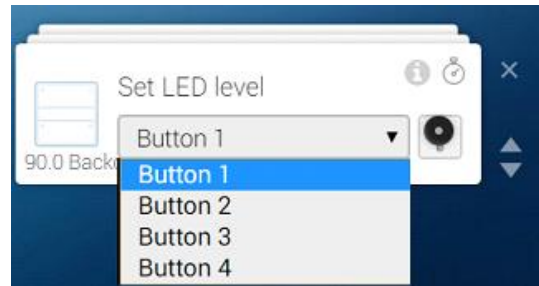


Figure 14: Indicator mode can be changed under device specific settings ①.

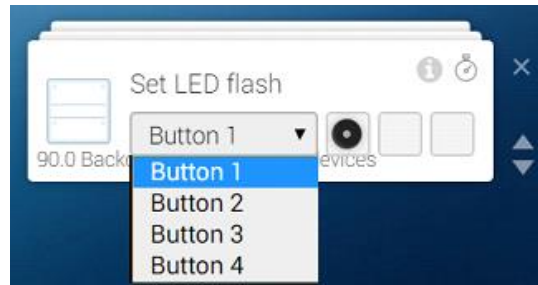


### Set LED flash

The flow card used to control if and how the LEDs should flash include four parameters:

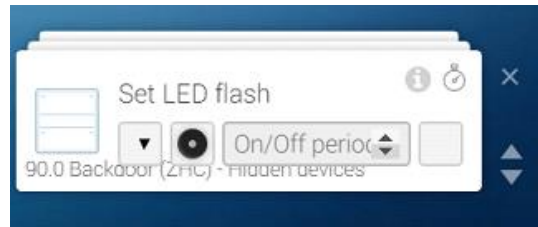
- 1) Button
- 2) Brightness
- 3) On/Off periode
- 4) On/Off cycles

For the relevant button, set the brightness of the LED.



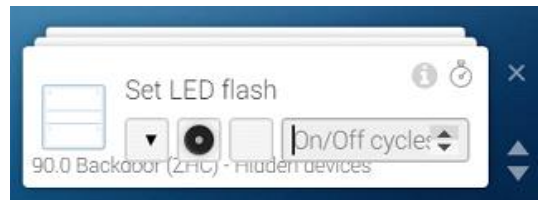
The parameter On/Off period denominate how long time the LED is turned on *and* turned off, that is, the complete cycle.

Possible settings are 0-25,5 seconds.



The parameter On/Off cycles denominate the number of times the LED should flash before turning off.

Numbers between 0-254 will set the LED to flash 0-254 times; setting the number to 255 will make the LED flash until turned off explicitly.



### Turn off LED / Stop flashing

This flow card is used for turning off the LED for the chosen button, both if the LED is constantly lit or if it is flashing (no matter the number of On/Off cycles it was set to do).

If the LED for some reason does not turn off using this flow card, a workaround is to use the "Set LED flash" flow card and set the LED to flash once.

