

CAN-Gateway software
by <https://shop.myhome-control.de>

**Configuration of OpenHab using MQTT Discovery
(in this example OpenHab 4.0.1 and CAN-Gateway
SW 29.330 used)**

Preconditions

- CAN-Gateway Software (version ≥ 29.330) including Parameters is configured (Demo or full version)
- OpenHab is installed
- MQTT Broker is installed (for example <https://mosquitto.org/>) and configured
- CAN-Gateway is connected to MQTT Broker (please refer to CAN-Gateway operating manual)
 - “Home Assistant MQTT Discovery” is activated in CAN-Gateway MQTT settings (as OpenHab uses the same technique)
- Check that MQTT works for example using <http://mqtt-explorer.com/>

Summary

- 1) Installing of required OpenHab Add-Ons (Steps 1-11)
 - MQTT Binding
 - JINJA Transformation
 - JSONPath Transformation
- 2) Configure MQTT Binding (Steps 12-20)
- 3) Add CAN-Gateway as Thing and Parameters as Items (Steps 21-29)
- 4) Add OpenHab Page (Steps 30-34) – you can skip it if you already have a page to add control elements
- 5) Example: configure a Sensor (Steps 35-42)
- 6) Example: configure a rounded slider as a control element (Steps 43-53)
- 7) Example: configure Label element with control option to choose for example operating modes (Steps 54-70)
- 8) Example: configure Switch element for parameters that can be switched on/off (Steps 71-81)

Additional notes

- In this document only one possibility using MQTT Discovery is considered. For Details please refer to OpenHab documentations:
 - <https://www.openhab.org/addons/bindings/mqtt/>
 - <https://www.openhab.org/addons/bindings/mqtt.homeassistant/>
- Examples show the minimal required configurations. You can adapt OpenHab cards to your needs use another options.
- You also can use, for example, raw MQTT without MQTT Discovery or REST API. Please refer to OpenHab documentation for details.

Installing of required OpenHab Add-Ons

The screenshot shows the openHAB Settings interface. A blue arrow labeled '1' points from the 'Administration' sidebar to the 'Settings' link in the top navigation bar. Another blue arrow labeled '2' points from the 'Add-ons' section in the main content area down to the 'User Interfaces' item.

Navigation Bar: Back, Settings, Search icon

Left Sidebar (Administration):

- No pages
- Administration
 - Settings (highlighted)
 - Things
 - Model
 - Items
 - Pages
 - Rules
 - Scenes
 - Scripts
 - Schedule
- Developer Tools
- Help & About

Main Content Area (Settings):

- Configuration
 - Things
 - Model
 - Items
 - Pages
 - Transformations
- Automation
 - Rules
 - Scenes
 - Scripts
 - Schedule
- Add-ons
 - Bindings
 - Automation
 - User Interfaces
 - Other Add-ons

System Services:

- Regionale Einstellungen
- Netzwerk
- JSON Storage
- Persistence
- Audio
- API-Sicherheit
- Regelbasiert Sprachinterpret
- Add-on Management
- Community-Marktplatz Add-ons
- JSON Drittanbieter Add-ons
- Ephemeris
- Sprache
- Diagramme
- Inbox
- Sitemap
- Sprachserver (LSP)

Installing of required OpenHab Add-Ons

The screenshot shows the openHAB 2.5 user interface. At the top, there is a search bar with the text "MQTT". Below the search bar, the results are displayed with the number "7 results". The results are as follows:

- MQTT Binding** by openHAB (with a blue checkmark icon). An arrow labeled "4" points to the search bar.
- MQTT Online Status** (with a blue checkmark icon)
- MQTT Event Bus Publication** (with an orange bus icon)
- MQTT Actions** (with a purple MQTT icon) - This item has a large blue arrow labeled "5" pointing to its "INSTALL" button.
- Ruuvi Gateway MQTT binding** (with a grey circular icon)
- MQTT Event Bus Subscription** (with an orange bus icon)
- MQTT Event Bus** (with an orange bus icon)

At the bottom of the screen, there is a navigation bar with icons for Bindings, Automation, UI, Other, and a Search bar. A blue arrow labeled "3" points to the Search bar icon.

Installing of required OpenHab Add-Ons

The screenshot shows the openHAB web interface. At the top, there is a search bar with the text "JINJA" and a blue arrow pointing to it with the number "6". Below the search bar, the text "1 result" is displayed. A card for the "Jinja Transformation" add-on by "openHAB" is shown, featuring a large "f(x)" icon. An "INSTALL" button is highlighted with a blue arrow and the number "7". The left sidebar contains navigation links for Administration (Settings, Things, Model, Items, Pages, Rules, Scenes, Scripts, Schedule), Developer Tools, and Help & About. The bottom navigation bar includes links for user1 (http://localhost:8080), Bindings, Automation, UI, Other, and a Search function.

Installing of required OpenHab Add-Ons

The screenshot shows the openHAB web interface. At the top, there is a search bar with the text "JSONPath" and a magnifying glass icon. A blue arrow labeled "8" points to this search bar. Below the search bar, the text "1 result" is displayed. A card for the "JSONPath Transformation" add-on by "openHAB" is shown. The card features a large black circular icon, the add-on name, the developer name, and an "INSTALL" button. A blue arrow labeled "9" points to the "INSTALL" button.

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No pages

Administration

- Settings
- Things
- Model
- Items
- Pages
- Rules
- Scenes
- Scripts
- Schedule

Developer Tools

Help & About

user1
http://localhost:8080

Bindings Automation UI Other

Search

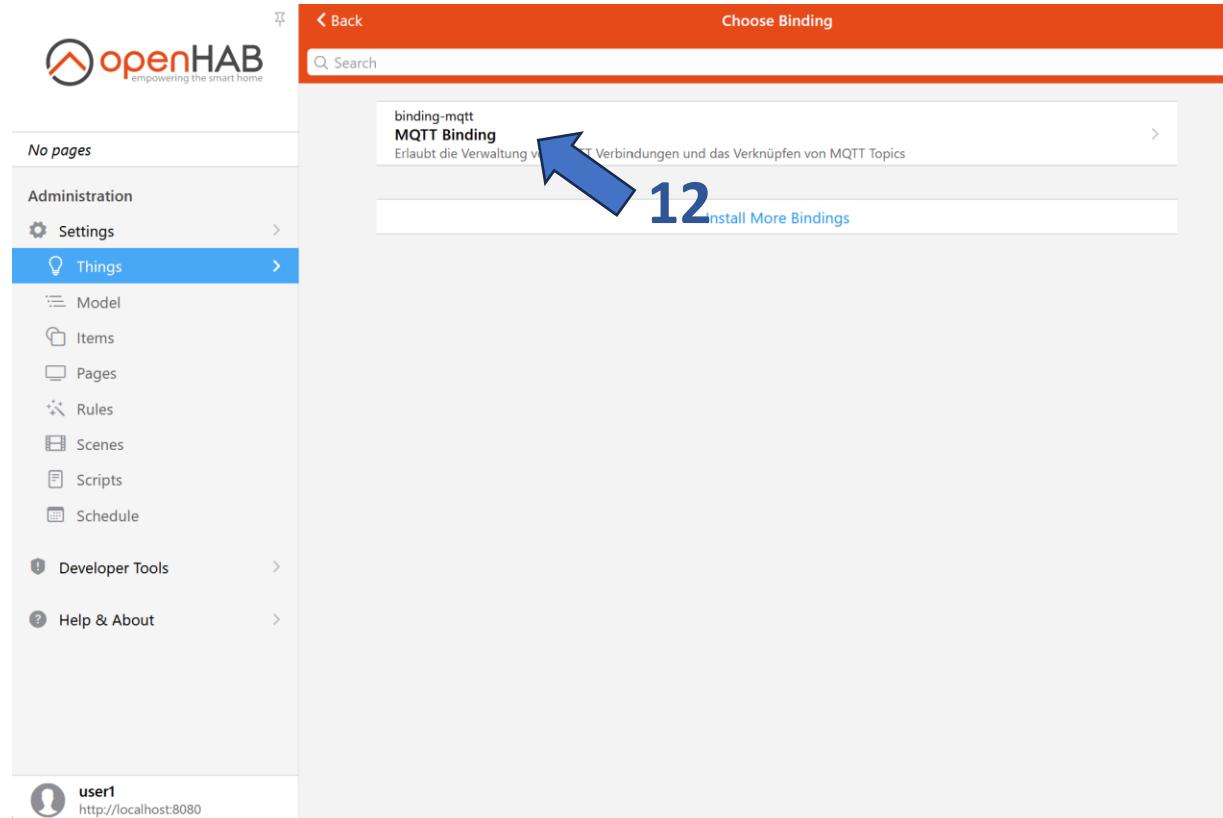
Installing of required OpenHab Add-Ons

The screenshot shows the openHAB web interface. On the left, there is a sidebar with the following navigation items:

- No pages
- Administration
 - Settings
 - Things** (highlighted with a blue arrow and labeled 10)
 - Model
 - Items
 - Pages
 - Rules
 - Scenes
 - Scripts
 - Schedule
- Developer Tools
- Help & About

The main content area is titled "Things" and displays the message "No things yet". It includes a lightbulb icon and text explaining what things are and how to add them. At the bottom right of the main area is a blue circular button with a white plus sign, which is highlighted by a blue arrow and labeled 11.

Configure MQTT Binding



Configure MQTT Binding

The screenshot shows the openHAB web interface with the following details:

- Left Sidebar (Administration):** Shows "No pages".
 - Things** (highlighted with a blue background)
 - Model
 - Items
 - Pages
 - Rules
 - Scenes
 - Scripts
 - Schedule
- Right Main Area (Add a new Thing: mqtt):**
 - Add Manually**
 - mqqt:broker** **MQTT Broker** (highlighted with a blue background)
Eine Verbindung zu einem MQTT-Broker.
Bridge >
 - mqqt:topic** **Generic MQTT Thing** (highlighted with a large blue arrow)
You need a configured Broker first. Dynamically add channels of various types to this Thing. Link different MQTT topics to each channel.
 - mqqt:homeassistant** **HomeAssistant MQTT Component**
You need a configured Broker first. This Thing represents a device, that follows the "HomeAssistant MQTT Component" specification.
 - mqqt:homie300** **Homie MQTT Device**
You need a configured Broker first. This thing represents a device, that follows the "MQTT Homie Convention" (Version 3.x).
 - mqqt:cct** **Milight CCT**
LED globe with both cool and warm white controls
 - mqqt:fut089** **Milight FUT089**
Use this when your remote is the newer 8 group type called FUT089 and your globes are rgb_cct
 - mqqt:fut091** **Milight FUT091**
Use this when your remote is the newer fut091 and your globes are cct
 - mqqt:rgb** **Milight RGB**
RGB Globe with no white
 - mqqt:rgb.cct** **Milight RGBCCT**

Configure MQTT Binding

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No pages

Administration

Settings

Things

Model

Items

Pages

Rules

Scenes

Scripts

Schedule

Developer Tools

Help & About

user1
http://localhost:8080

New MQTT Broker

Unique ID: 32a4556bf8
Identifier: mqtt:broker:32a4556bf8
Label: MQTT Broker
Location: e.g. Kitchen

MQTT Broker

Eine Verbindung zu einem MQTT Broker

Broker Hostname/IP: 127.0.0.1
Required: Die IP-Adresse des MQTT-Brokers

Port des Brokers: 1883
Die Angabe ist optional. Wird keiner angegeben, werden die typischen Ports 1883 und 8883 (SSL) verwendet.

Sichere Verbindung
Required: Verwendet TLS/SSL, um eine sichere Verbindung zum Broker herzustellen.

Hostname bestätigt
Überprüfen Sie den Hostnamen aus dem Zertifikat gegen den Hostnamen des Servers für eine sichere Verbindung.

Protokoll: --

Show advanced

14

15

16

17: scroll down

Configure MQTT Binding

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No pages

Administration

- Settings >
- Things** > **18**
- Model
- Items
- Pages
- Rules
- Scenes
- Scripts
- Schedule

Developer Tools

Help & About

user1
http://localhost:8080

New MQTT Broker

Shutdown Nachricht

Die Nachricht, die an den Broker gesendet werden soll, bevor die Verbindung beendet wird.

Shutdown Topic

Standardmäßig leer und deaktiviert damit die "Shutdown" Nachricht.

Shutdown Nachricht Retain

Wahr, wenn die "Shutdown" Nachricht aufbewahrt werden soll (Standardwert ist wahr)

Benutzername
user1

Der MQTT-Benutzername

Passwort

Das MQTT-Zertifikat fixieren **19**

Wenn dieses und SSL gesetzt sind: Nachdem die nächste Verbindung erfolgreich hergestellt wurde, wird das Zertifikat angepinnt. Die Verbindung wird abgelehnt, wenn ein anderes Zertifikat verwendet wird. **Zertifikat** löschen, um ein neues Zertifikat für den nächsten Verbindungsversuch zu erlauben. Diese Option kann die Sicherheit erhöhen.

Zertifikat-Hash

Wenn **certificatepin** gesetzt ist, wird dieser Hash verwendet, um die Verbindung zu überprüfen. Löschen des Wertes, um ein neues Zertifikat beim nächsten Verbindungsversuch anzupinnen. Wenn leer, wird automatisch durch die nächste erfolgreiche Verbindung der Hash neu eingetragen. Eine Beispieleingabe wäre 'SHA-256:83F9171E06A313118889F7D79302BD1B7A2042EE0CFD029ABF8D06FFA6CD9D3'. **20. scroll down**

Configure MQTT Binding

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No pages

Administration

- Settings
- Things**
- Model
- Items
- Pages
- Rules
- Scenes
- Scripts
- Schedule

Developer Tools

Help & About

user1
http://localhost:8080

New MQTT Broker

Zertifikat fixieren

Wenn dieses und SSL gesetzt sind: Nachdem die nächste Verbindung erfolgreich hergestellt wurde, wird das Zertifikat angepinnt. Die Verbindung wird abgelehnt, wenn ein anderes Zertifikat verwendet wird. **“Zertifikat” löschen**, um ein neues Zertifikat für den nächsten Verbindungsversuch zu erlauben. Diese Option kann die Sicherheit erhöhen.

Zertifikat-Hash

Wenn **“certificatepin”** gesetzt ist, wird dieser Hash verwendet, um die Verbindung zu überprüfen. Löschen des Wertes, um ein neues Zertifikat beim nächsten Verbindungsversuch anzupinnen. Wenn leer, wird automatisch durch die nächste erfolgreiche Verbindung der hash neu eingetragen. Eine Beispieleingabe wäre:
‘SHA-256:83F9171E06A313118889F7D79302BD1B7A2042EE0CFD029ABF8D06FFA6CD9D3’.

Öffentlicher Schlüssel anpinnen

Wenn dieses und SSL gesetzt sind: Nachdem die nächste Verbindung erfolgreich hergestellt wurde, wird das Zertifikat angepinnt. Die Verbindung wird abgelehnt, wenn ein anderes Zertifikat verwendet wird. **“Zertifikat” löschen**, um ein neues Zertifikat für den nächsten Verbindungsversuch zu erlauben. Diese Option kann die Sicherheit erhöhen.

Öffentliche Schlüssel Hash

Wenn **“publickeypin”** gesetzt ist, wird dieser Hash verwendet, um die Verbindung zu überprüfen. Löschen des Wertes, um ein neues Zertifikat beim nächsten Verbindungsversuch anzupinnen. Wenn leer, wird automatisch durch die nächste erfolgreiche Verbindung der hash neu eingetragen. Eine Beispieleingabe wäre:
‘SHA-256:83F9171E06A313118889F7D79302BD1B7A2042EE0CFD029ABF8D06FFA6CD9D3’.

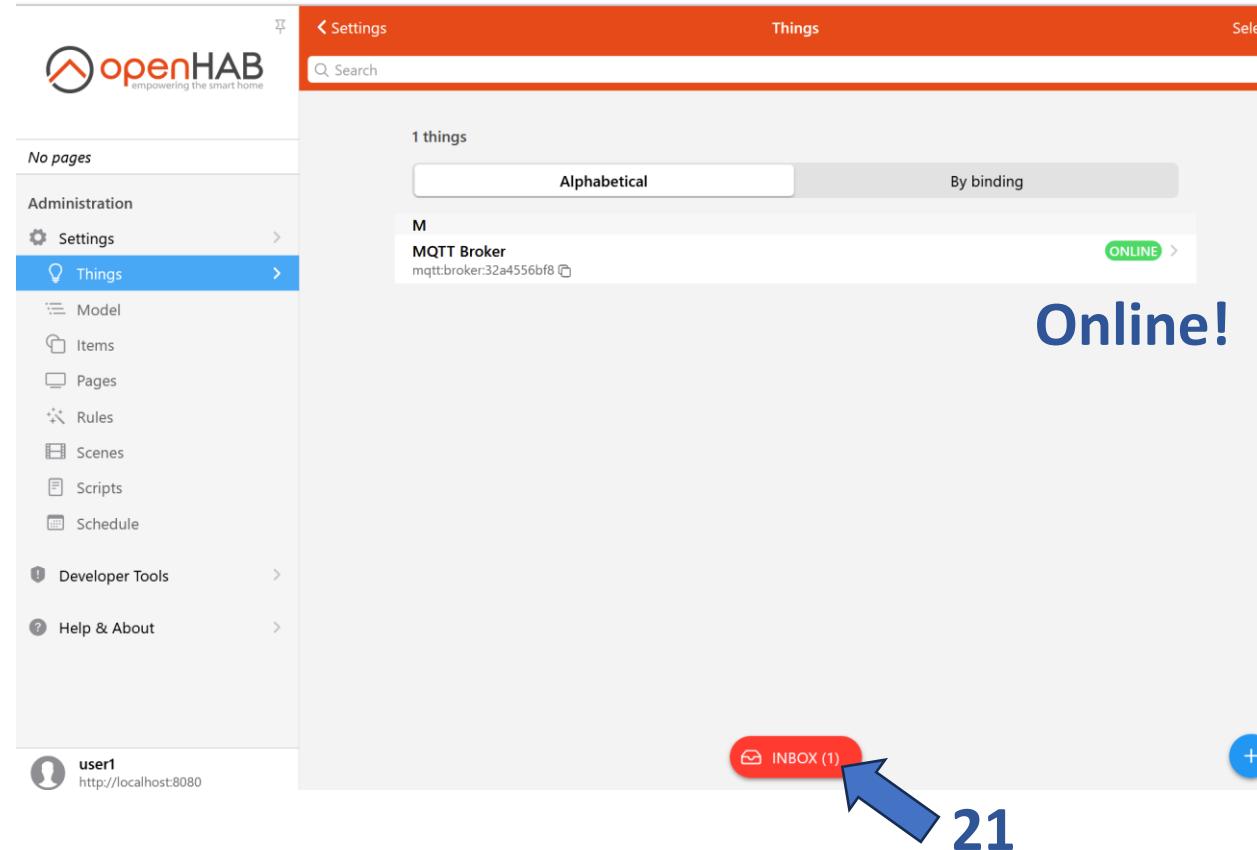
Discovery aktivieren

Wenn auf true gesetzt, aktiviert dieser Broker für alle Entdeckungsdienstleistungen.

Create Thing

20

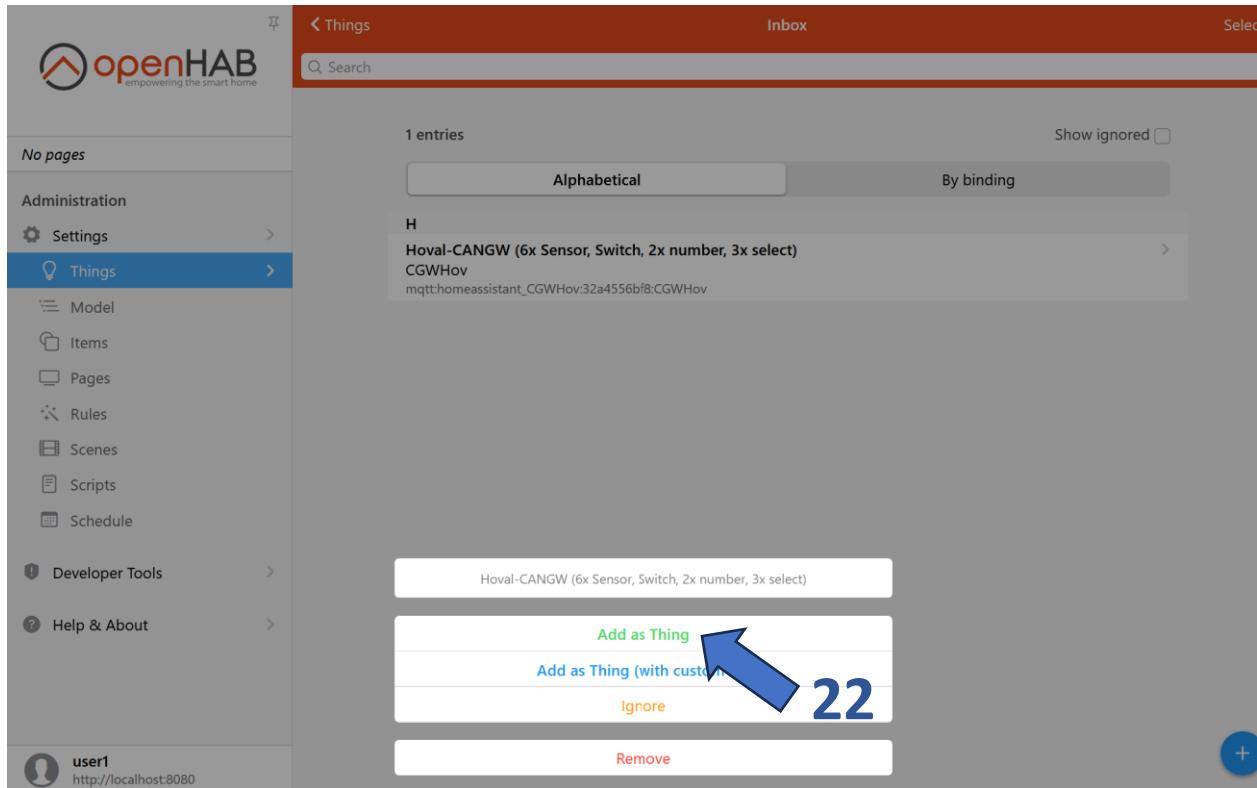
Configure MQTT Binding



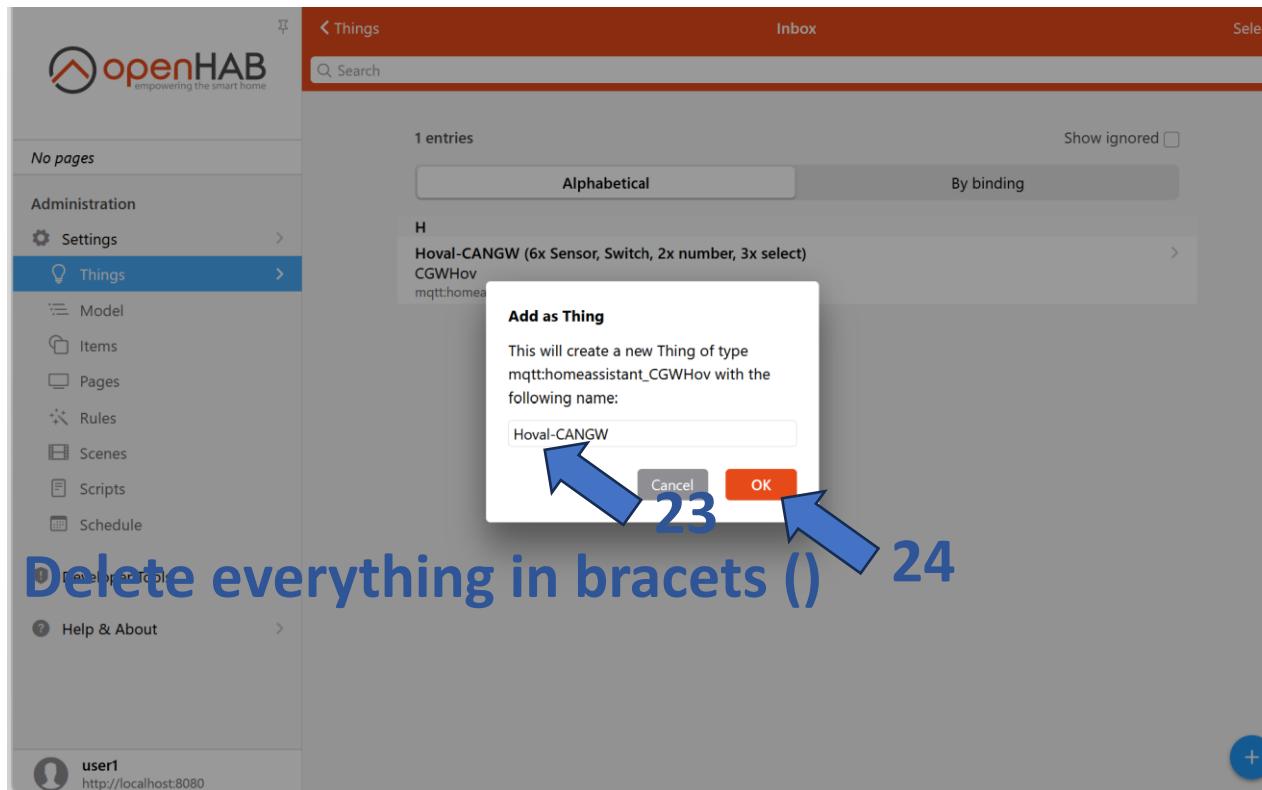
Add CAN-Gateway as Thing and Parameters as Items

The screenshot shows the openHAB administration interface. On the left, a sidebar menu lists various sections: Administration (Settings, Things, Model, Items, Pages, Rules, Scenes, Scripts, Schedule), Developer Tools, and Help & About. The 'Things' item is selected and highlighted with a blue background. The main content area is titled 'Things' and shows a single entry: 'Hoval-CANGW (6x Sensor, Switch, 2x number, 3x select)'. Below the entry is its binding information: 'CGWHov' and 'mqtt:homeassistant_CGWHov:32a4556bf8:CGWHov'. A large blue arrow points from the left towards the 'Hoval-CANGW' entry. To the right of the arrow, the number '22' is displayed in a large blue font, indicating a specific step or identifier.

Add CAN-Gateway as Thing and Parameters as Items



Add CAN-Gateway as Thing and Parameters as Items



Add CAN-Gateway as Thing and Parameters as Items

The screenshot shows the openHAB web interface with the following details:

- Header:** The openHAB logo and the tagline "empowering the smart home".
- Left Sidebar (Administration):**
 - No pages
 - Settings
 - Things** (selected)
 - Model
 - Items
 - Pages
 - Rules
 - Scenes
 - Scripts
 - Schedule
- Top Bar:** Settings, Things, Select, and a search bar.
- Content Area:**
 - Things** section: 2 things listed.
 - H** Hoval-CANGW mqtt:homeassistant_CGWHov:32a4556bf8:CGWHov
 - M** MQTT Broker mqtt:broker:32a4556bf8
 - A large blue "Online!" button with a green "ONLINE" status indicator.
 - A blue "+" button in the bottom right corner.
- Bottom Left:** User information: user1 and the URL http://localhost:8080.

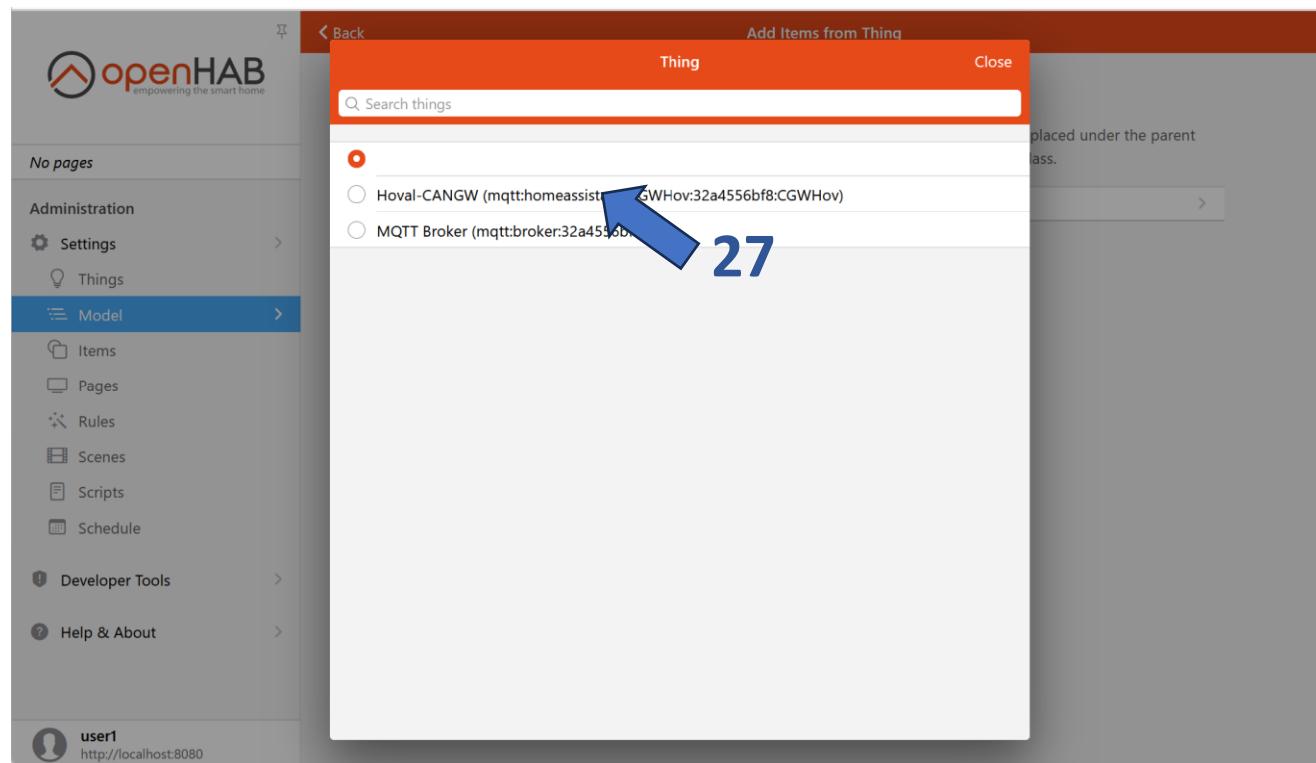
Add CAN-Gateway as Thing and Parameters as Items

The screenshot shows the openHAB Semantic Model interface. On the left, the navigation sidebar lists 'Administration', 'Settings', 'Things', 'Model' (which is selected and highlighted in blue), 'Items', 'Pages', 'Rules', 'Scenes', 'Scripts', 'Schedule', 'Developer Tools', and 'Help & About'. At the bottom left is a user profile icon labeled 'user1' and 'http://localhost:8080'. The main content area has a title 'Semantic Model' and a search bar. Below it, a message says 'Nothing selected' with a small icon. In the center, there's a placeholder text 'Start modelling your home' with a 'Build a model' button. To the right, a 'Add to Model' dialog box is open, listing several options: 'Add Location', 'Create Equipment from Thing' (which is highlighted with a blue arrow and the number '25'), 'Create Points from Thing', 'Add Equipment', and 'Add Point'. At the bottom of the dialog are 'Clear' and 'Show non-semantic' buttons.

Add CAN-Gateway as Thing and Parameters as Items

The screenshot shows the openHAB web interface. The top navigation bar has a back button and the title "Add Items from Thing". The main content area is titled "Equipment" with a sub-instruction: "Select the Thing you wish to create as a new Equipment group in the model. It will be placed under the parent group above, if any. You can alter the new group's details and change its equipment class." Below this is a search bar labeled "Thing" containing the number "26", indicated by a large blue arrow pointing to it. To the right of the search bar is a "">>" button. On the left, there is a sidebar with the "Model" section selected, showing other options like "Items", "Pages", "Rules", etc. At the bottom left is a user profile icon and the text "user1 http://localhost:8080".

Add CAN-Gateway as Thing and Parameters as Items



Add CAN-Gateway as Thing and Parameters as Items

The screenshot shows the openHAB Admin interface with the following details:

- Left Sidebar:** Shows "No pages", "Administration" (Settings, Things, Model selected), "Model" (Items, Pages, Rules, Scenes, Scripts, Schedule), "Developer Tools", and "Help & About".
- User Information:** Shows "user1" and "http://localhost:8080".
- Main Content:** The "Add Items from Thing" dialog is open, listing items from a CAN-Gateway thing:
 - Fan exhaust air set
 - Heat generator operation choice
 - Status vent regulation
 - Humidity set value
 - Heating operation choice
 - Op choice ventilation
 - Extract air temp
 - Humidity extract air
 - Normal ventilation modulation
- Bottom Buttons:** "Select All" (highlighted by a blue arrow labeled 28), "Unselect All", and "Add to Model" (highlighted by a blue arrow labeled 29).

Add OpenHAB Page

The screenshot shows the openHAB web interface with the following elements:

- Left Sidebar:** Labeled "No pages". It includes sections for Administration (Settings, Things, Model, Items, Pages, Rules, Scenes, Scripts, Schedule), Developer Tools, and Help & About.
- Top Bar:** Shows "Settings", "Pages", and a "Select" button.
- Search Bar:** "Search (for advanced search, use the developer sidebar (Shift+Alt+D))".
- Page Overview:** Shows "1 pages" with a list item: "Overview Layout overview".
- Creation Tools (Right Side):**
 - Buttons for creating: "Create chart", "Create floor plan", "Create map view", "Create tabbed page", "Create layout", and "Create sitemap".
 - Blue arrows and numbers indicate specific steps:
 - An arrow points to the "Pages" link in the sidebar with the number **30**.
 - An arrow points to the "Create layout" button with the number **32**.
 - An arrow points to the "Create sitemap" button with the number **31**.
- User Information:** Shows "user1" and the URL "http://localhost:8080".

Add OpenHAB Page

The screenshot shows the openHAB interface for creating a new layout page. The left sidebar has 'Pages' selected. The main area is titled 'Create layout page' with tabs for 'Design' and 'Code'. The 'Design' tab is active. The page configuration includes:

- ID:** page_4f121e729b (Note: cannot be changed after the creation)
- Label:** MyPage1 (highlighted by arrow 32a)
- Sidebar & Visibility:** Visible only to [dropdown]
- Show on sidebar:** [Switch] (highlighted by arrow 33)
- Sidebar order:** Assign order index to rearrange pages on sidebar [dropdown]

Below this, the 'Layout Type' is set to 'Switch to Fixed Layout'. At the bottom of the page area, there are two buttons: 'Add Block' (highlighted by arrow 34) and 'Add Masonry'.

Annotations:

- Arrow 32a points to the 'Label' field.
- Arrow 33 points to the 'Show on sidebar' switch.
- Arrow 34 points to the 'Add Block' button.

User information at the bottom left: user1 http://localhost:8080. Bottom right: Fullscreen, Run mode (Ctrl-R).

Example: configure a Sensor

The screenshot shows the openHAB UI interface for creating a layout page. The left sidebar has a 'Pages' item selected, highlighted with a blue arrow. The main area is titled 'Create layout page' with tabs for 'Design' and 'Code'. In the Design tab, there is a configuration table and a grid editor.

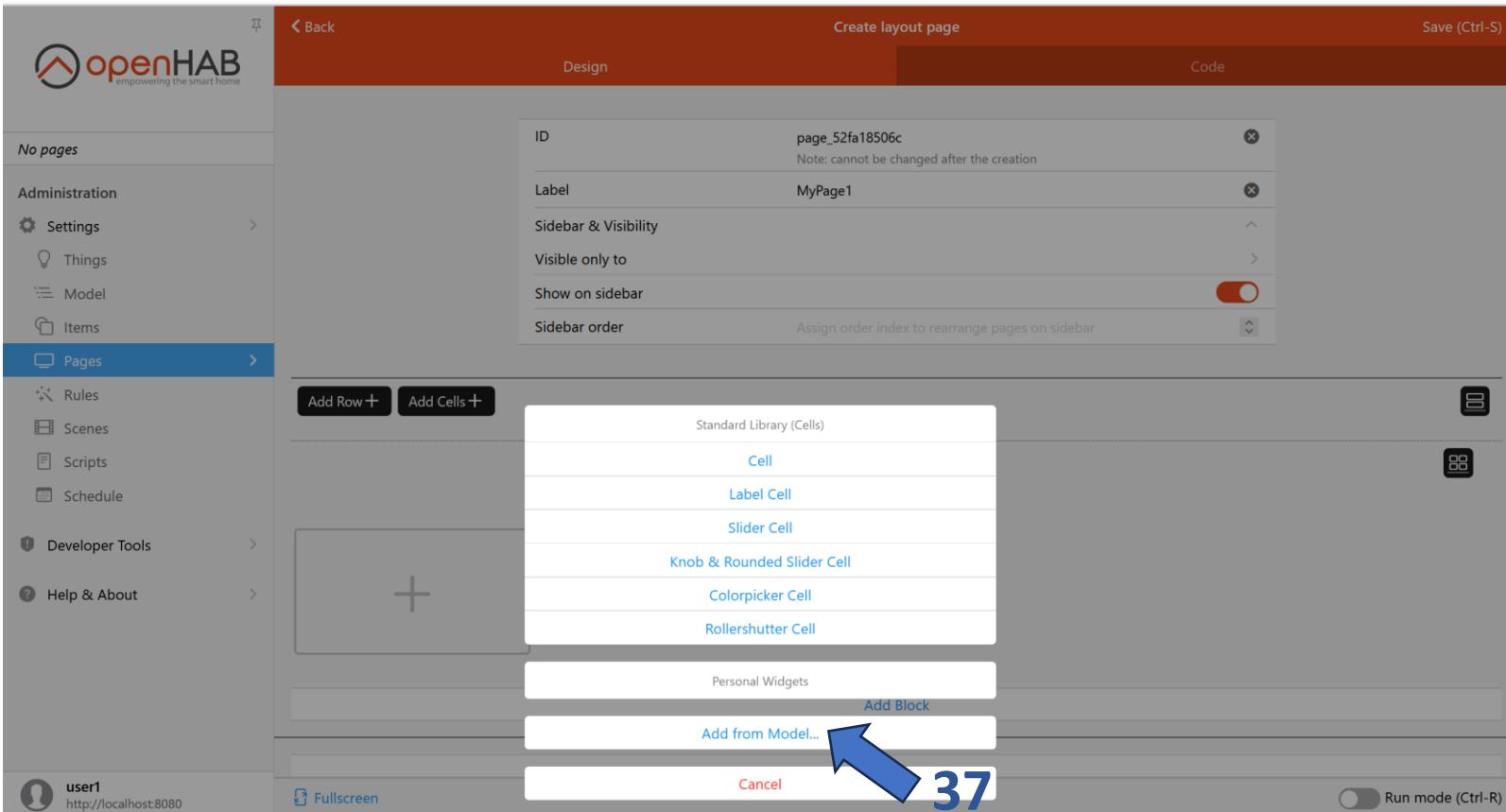
Configuration Table:

ID	page_52fa18506c	Note: cannot be changed after the creation
Label	MyPage1	
Sidebar & Visibility		
Visible only to		
Show on sidebar	<input checked="" type="checkbox"/>	
Sidebar order	Assign order index to rearrange pages on sidebar	

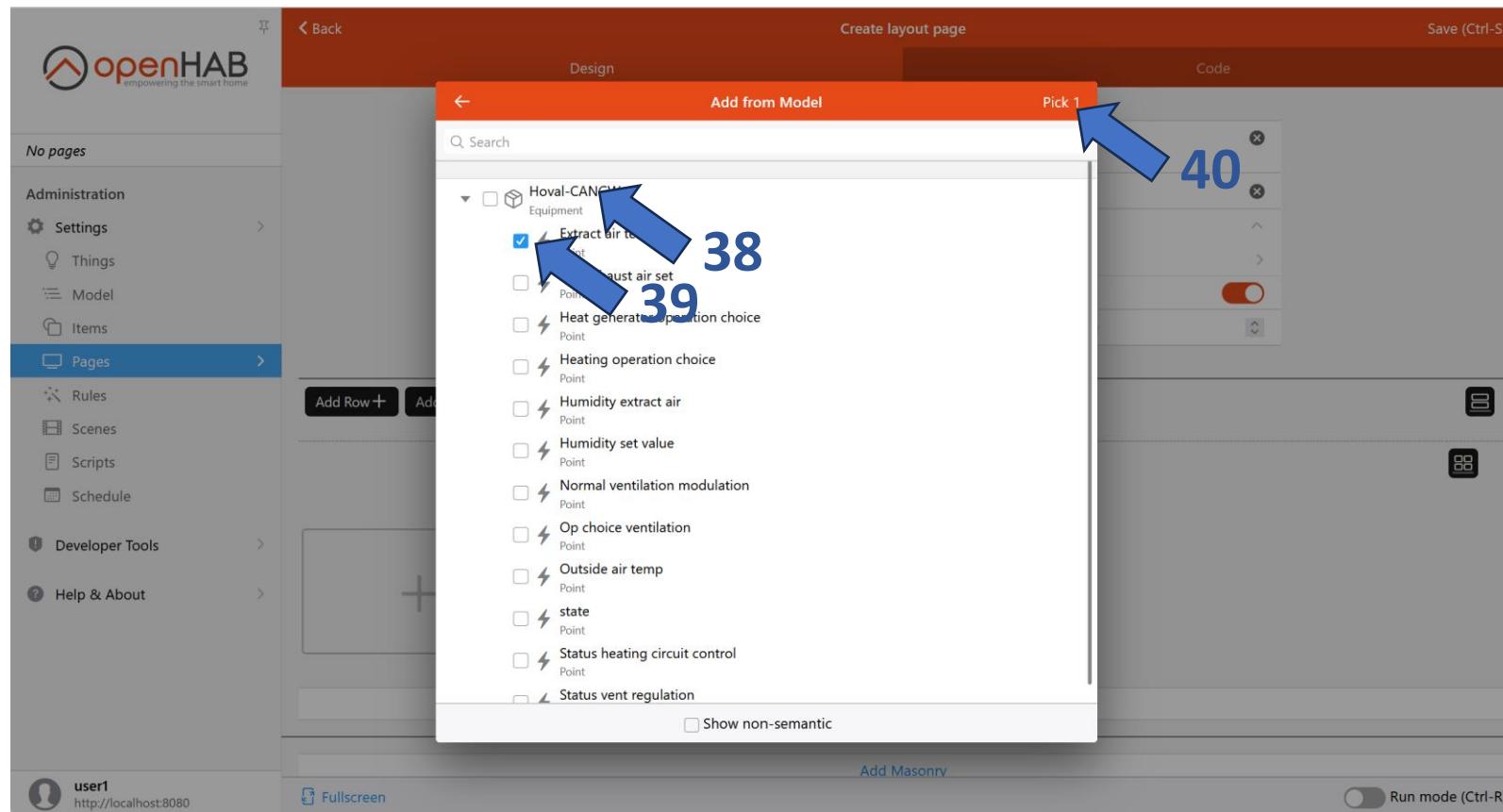
Grid Editor:

The grid editor consists of two rows. The top row contains two buttons: 'Add Row +' and 'Add Cells +' (with a blue arrow pointing to it). The bottom row contains a single cell with a '+' icon inside, also with a blue arrow pointing to it. To the right of the grid are icons for 'Add Block' and 'Add Masonry'. At the bottom of the grid editor are buttons for 'Fullscreen' and 'Run mode (Ctrl-R)'.

Example: configure a Sensor



Example: configure a Sensor



Example: configure a Sensor

The screenshot shows the openHAB interface for configuring a layout page. The left sidebar has a 'Pages' item selected. The main area is titled 'Create layout page' with tabs for 'Design' and 'Code'. In the Design tab, a layout structure is shown with a card labeled 'Extract air temp' containing the value '21.6 °C'. A plus sign icon indicates where new blocks can be added. Below the layout, there are buttons for 'Add Block' and 'Add Masonry'. The top right features a 'Save (Ctrl-S)' button with a blue arrow pointing to it, and the number '41' is displayed to its right.

openHAB
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No pages

Administration

Settings

Things

Model

Items

Pages

Rules

Scenes

Scripts

Schedule

Developer Tools

Help & About

user1
http://localhost:8080

Extract air temp
21.6 °C

Add Row + Add Cells +

Design Create layout page Code

ID page_52fa18506c Note: cannot be changed after the creation

Label MyPage1

Sidebar & Visibility

Visible only to

Show on sidebar

Sidebar order Assign order index to rearrange pages on sidebar

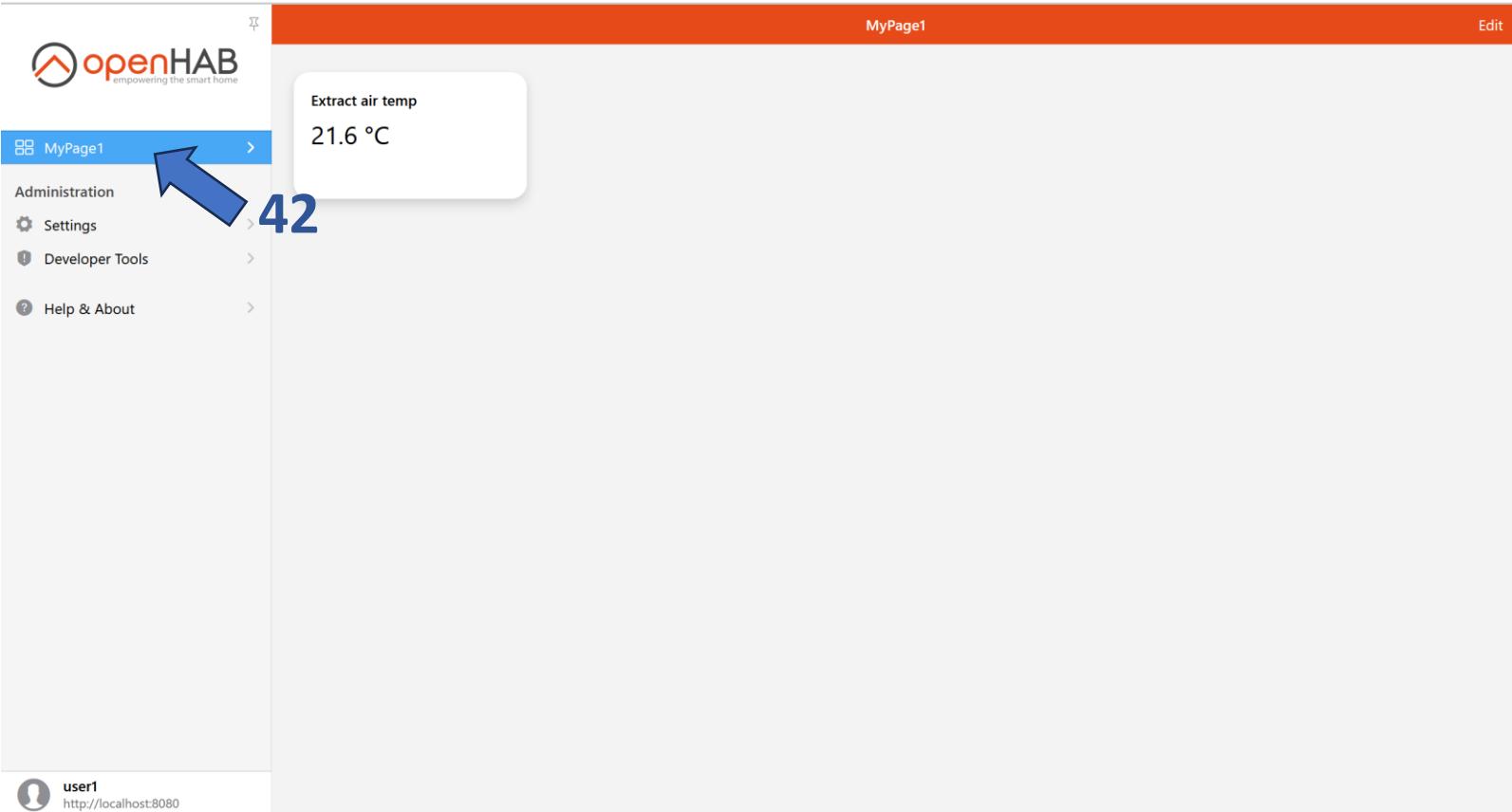
Add Block

Add Masonry

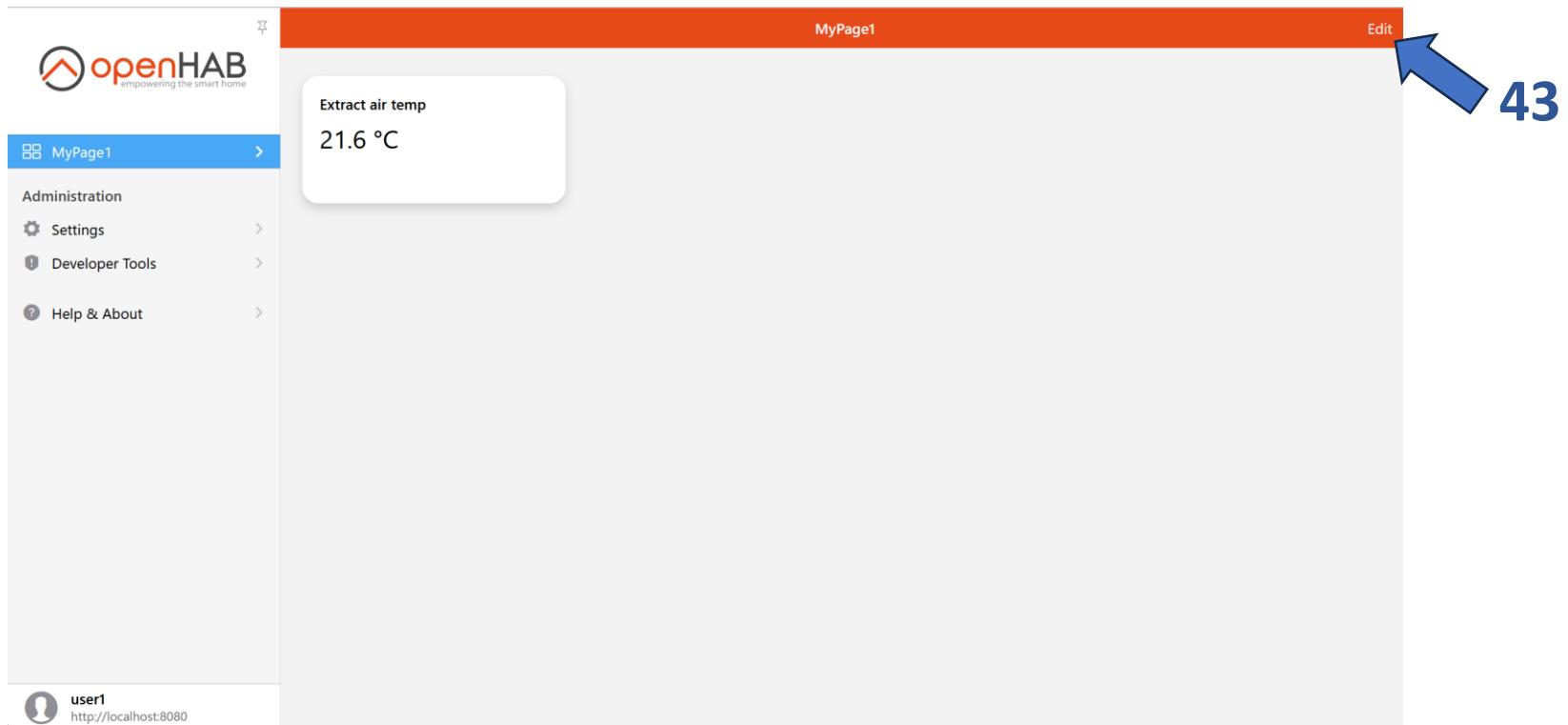
Fullscreen Run mode (Ctrl-R)

Save (Ctrl-S) 41

Example: configure a Sensor



Example: configure a rounded slider as a control element



Example: configure a rounded slider as a control element

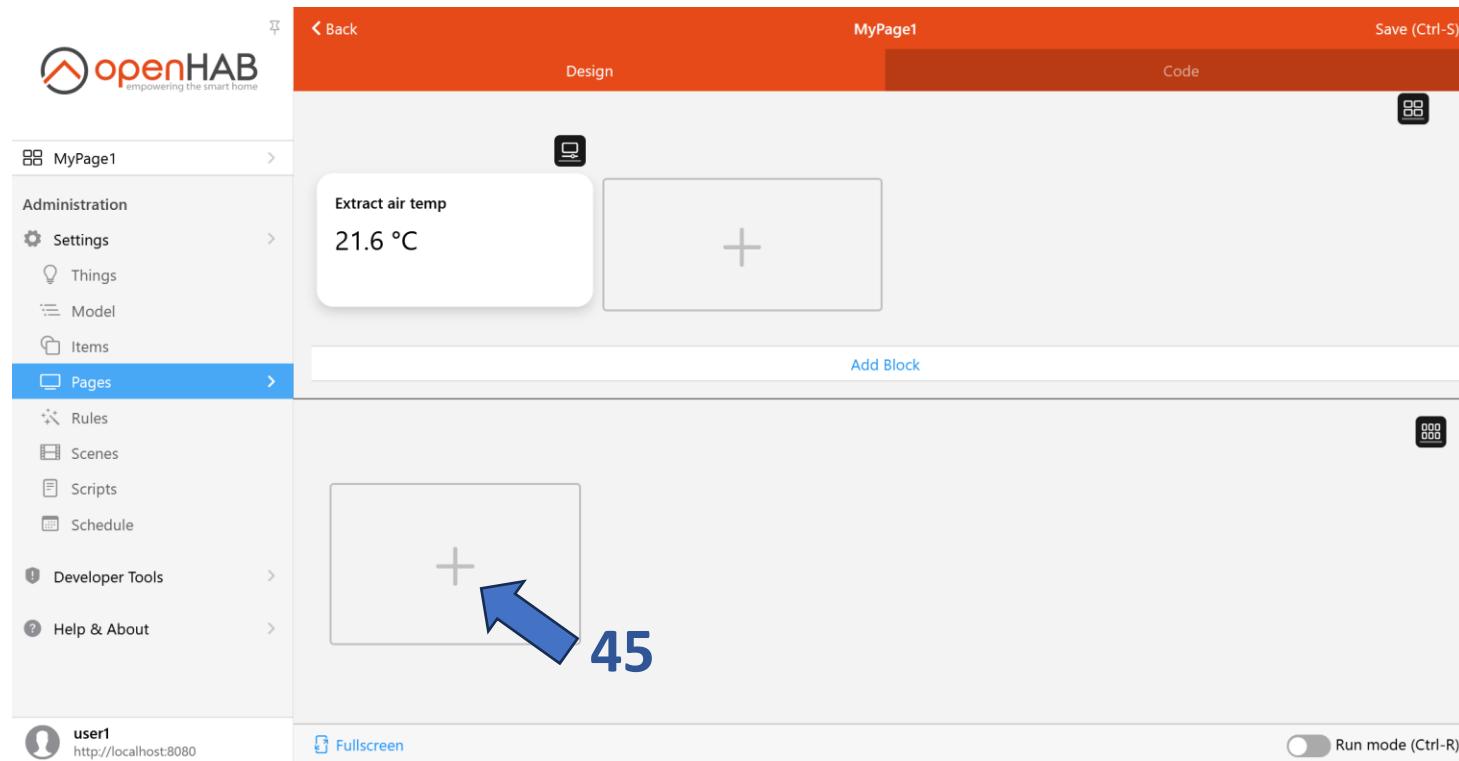
The screenshot shows the openHAB UI Designer interface. On the left, a sidebar menu includes 'Administration' (Settings, Things, Model, Items, Pages), 'Developer Tools', and 'Help & About'. The 'Pages' item is selected and highlighted with a blue background. The main area is titled 'MyPage1' and shows the 'Design' tab. The page configuration includes:

- ID: page_52fa18506c
- Label: MyPage1
- Sidebar & Visibility settings

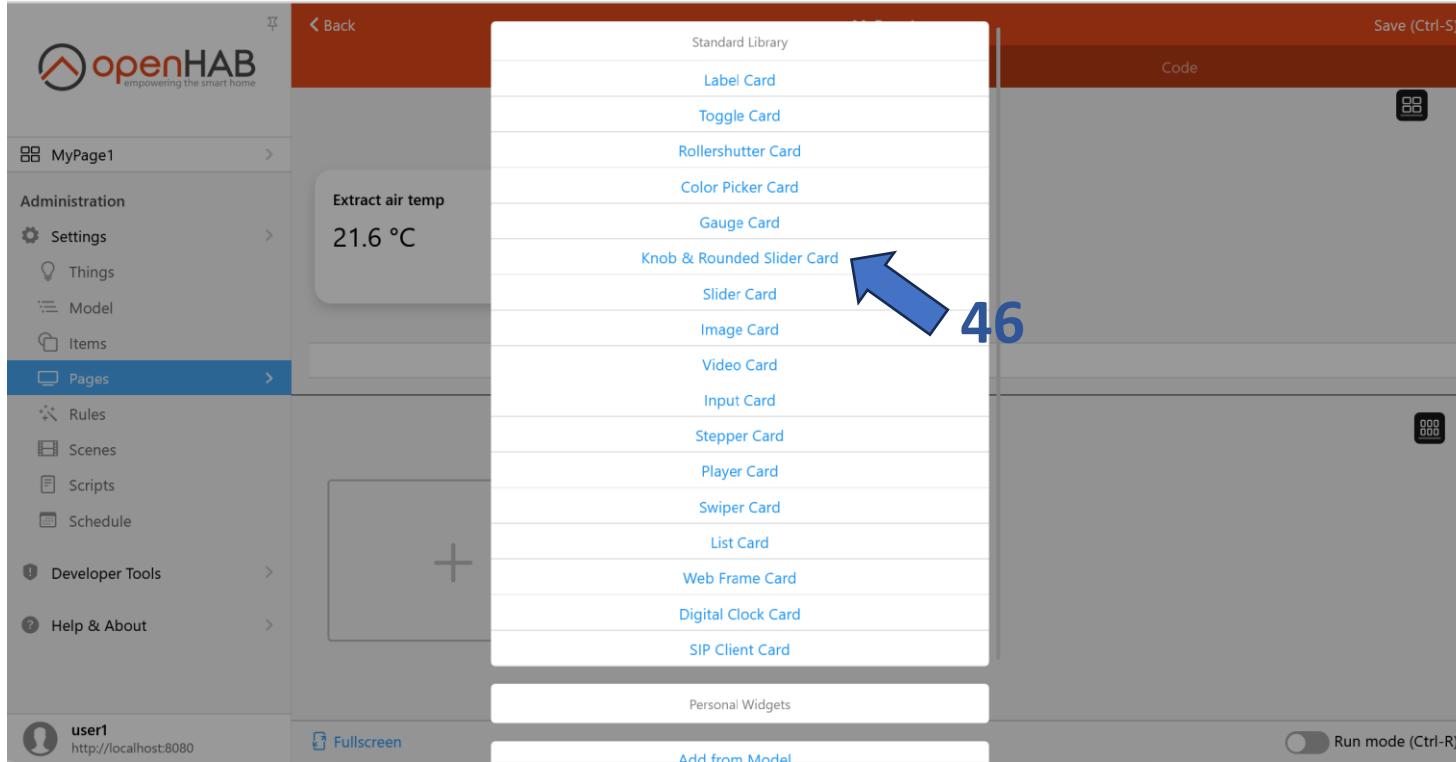
The content area contains a block labeled 'Extract air temp' with the value '21.6 °C'. Below this is a large empty block with a plus sign, indicating it can be expanded or modified. At the bottom of the content area, there are buttons for 'Add Block' and 'Add Masonry'. A blue arrow points from the text '44' to the 'Add Masonry' button.

44

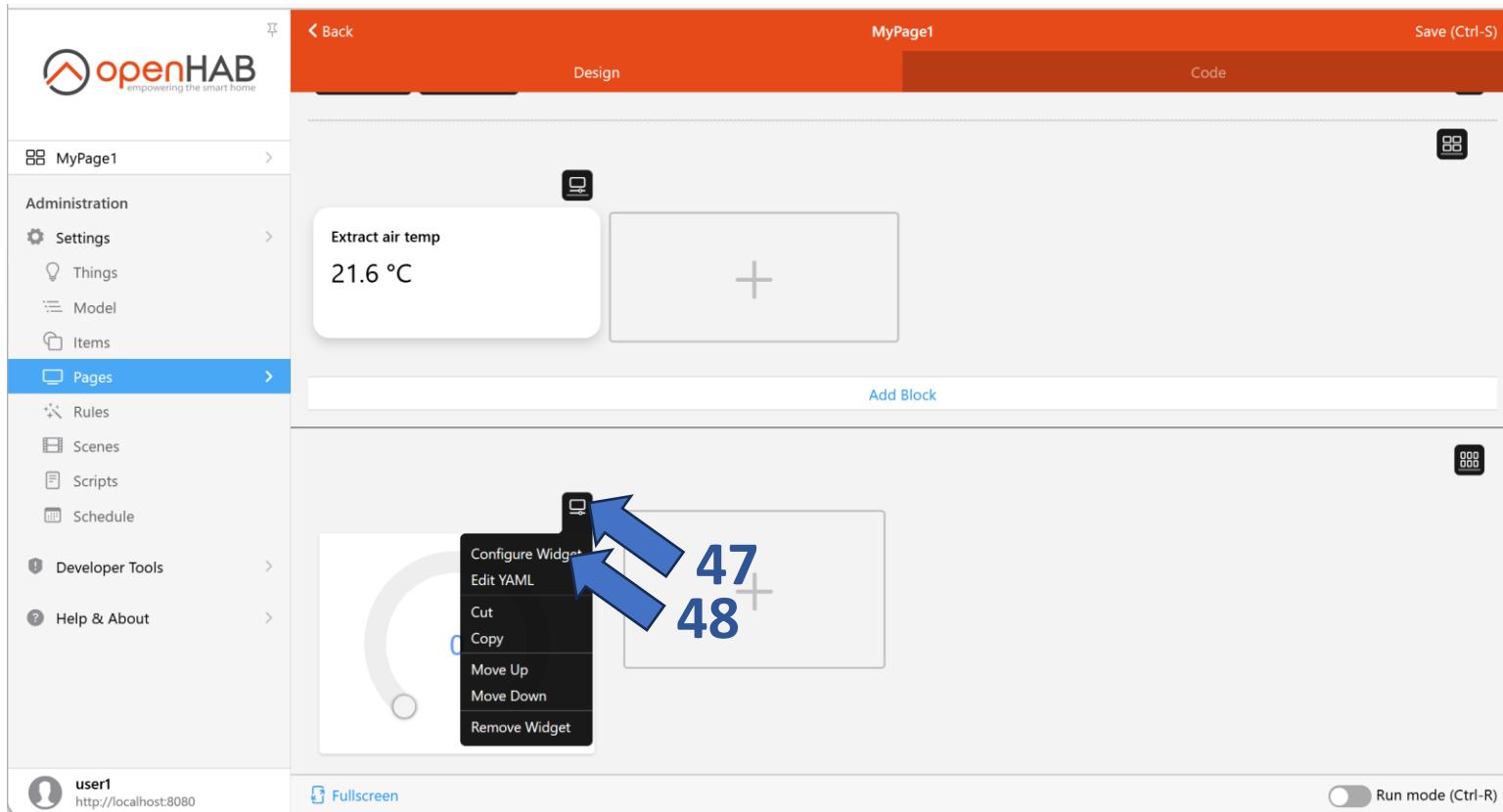
Example: configure a rounded slider as a control element



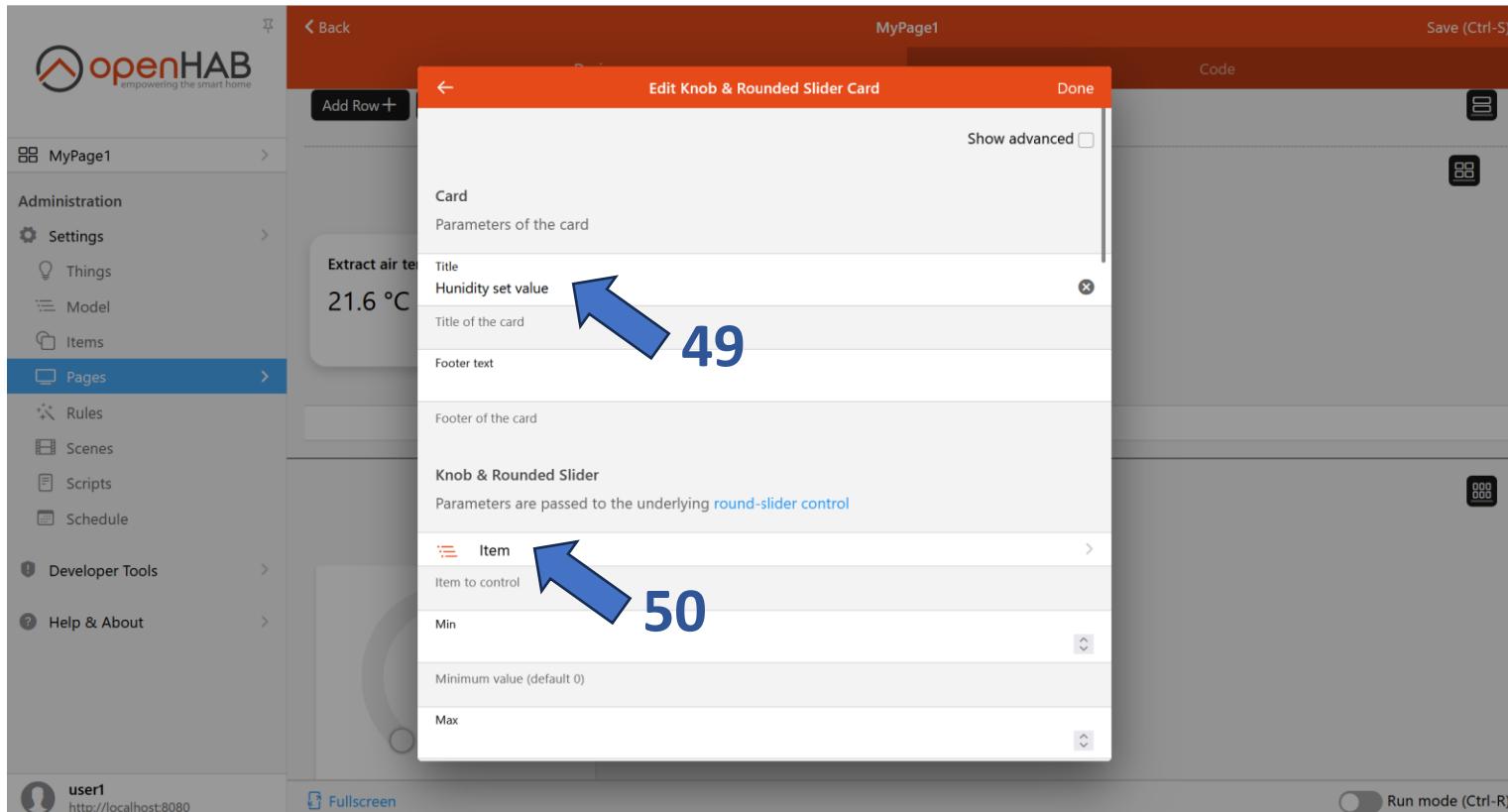
Example: configure a rounded slider as a control element



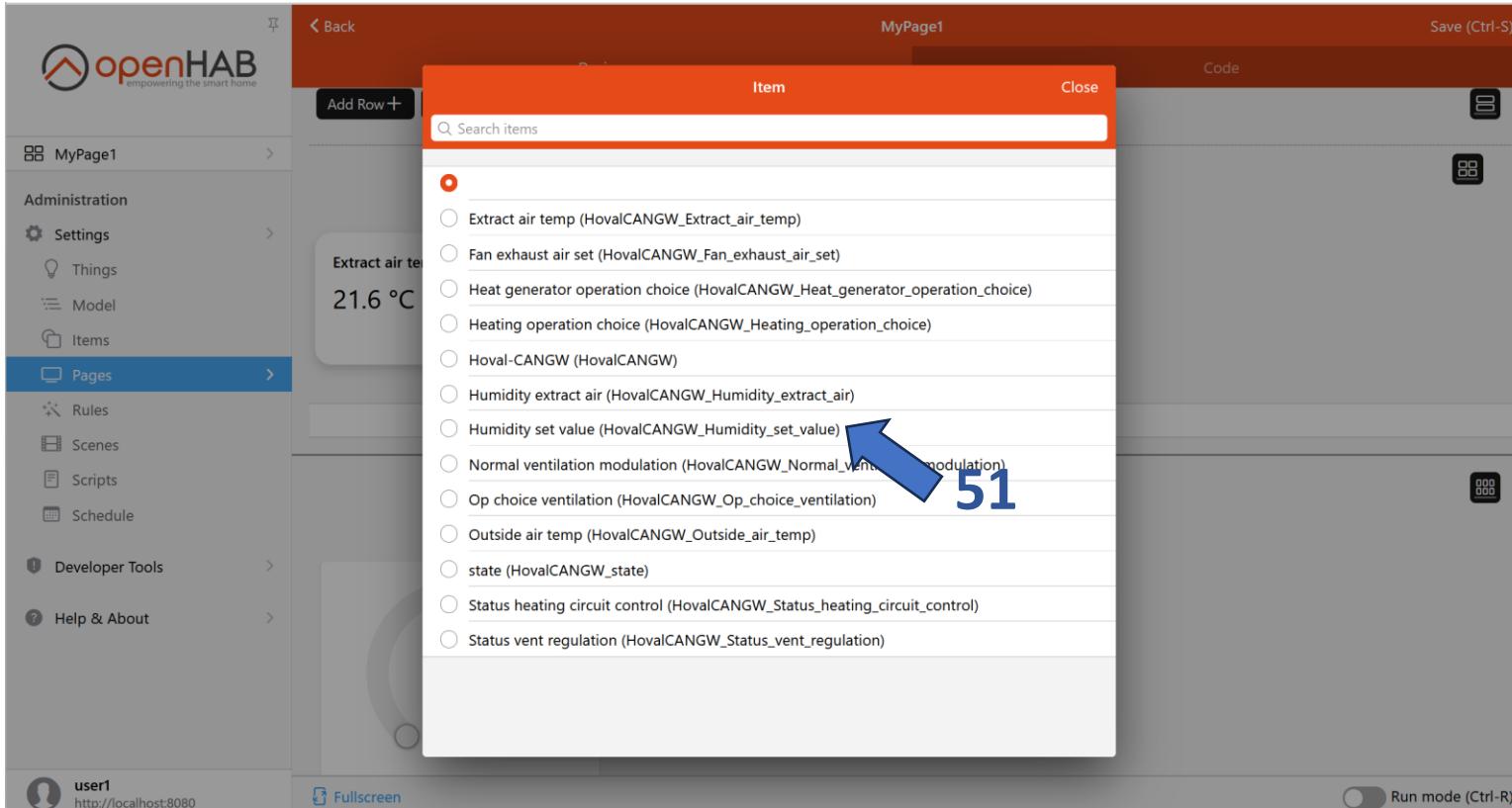
Example: configure a rounded slider as a control element



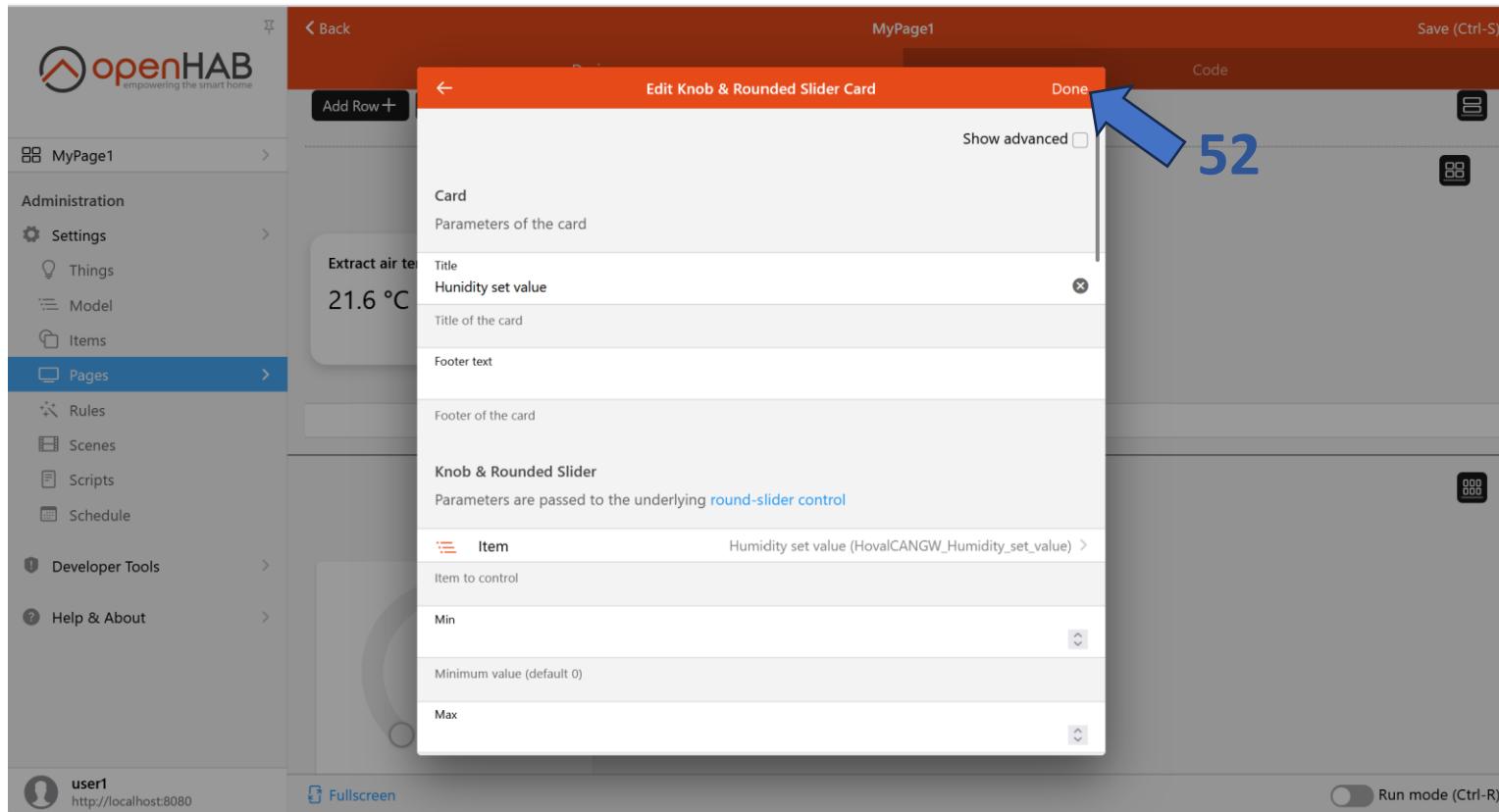
Example: configure a rounded slider as a control element



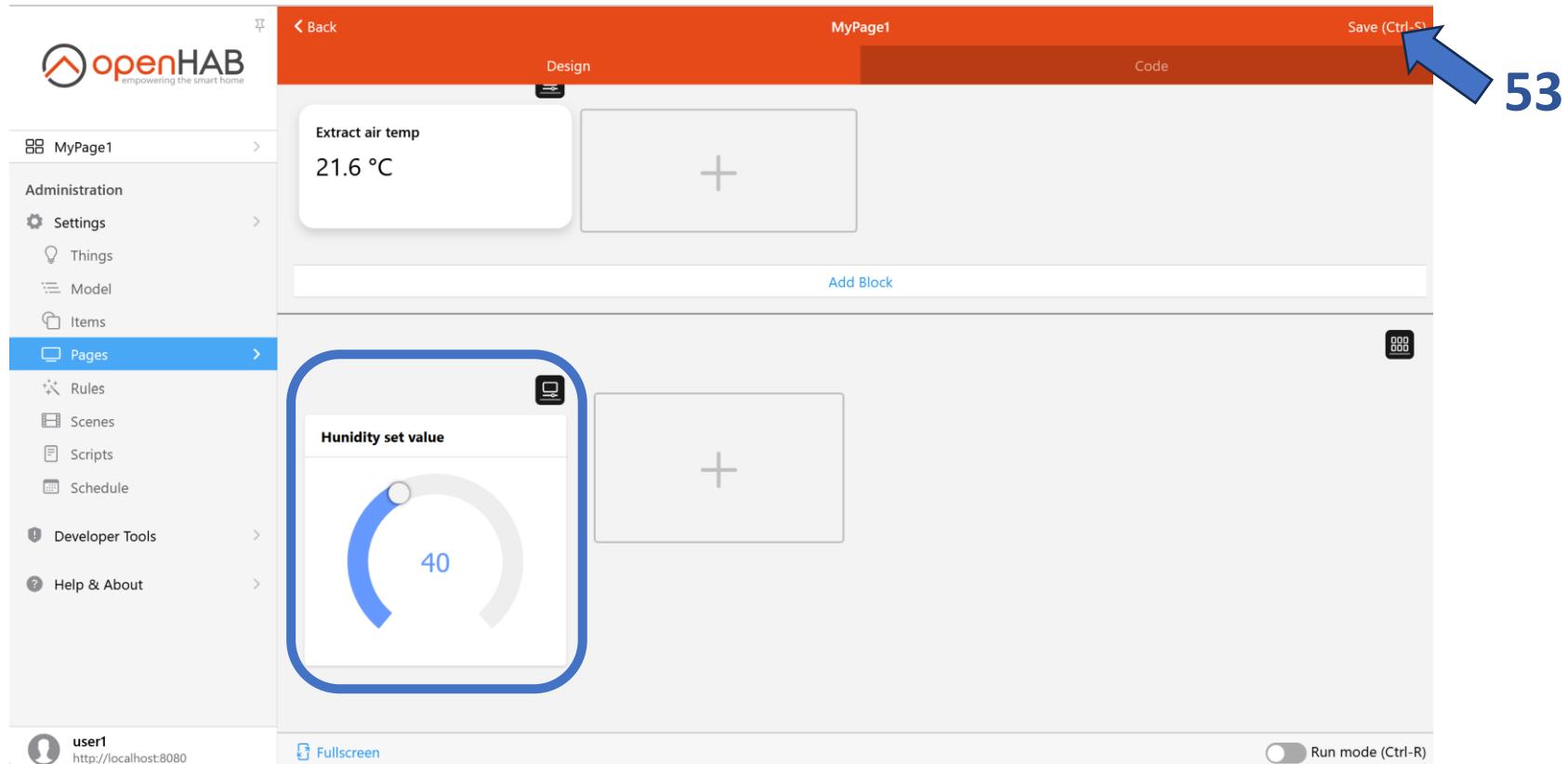
Example: configure a rounded slider as a control element



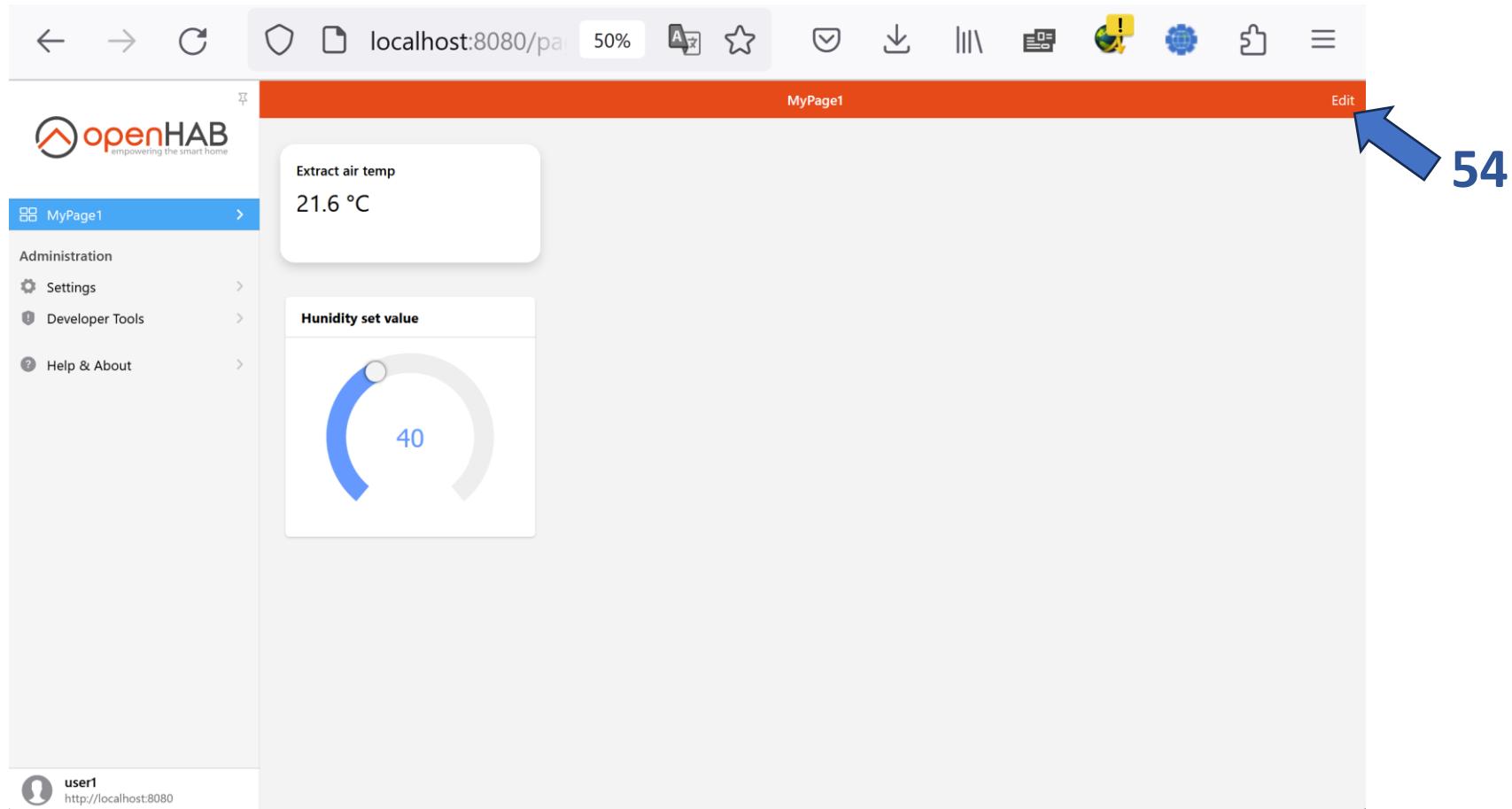
Example: configure a rounded slider as a control element



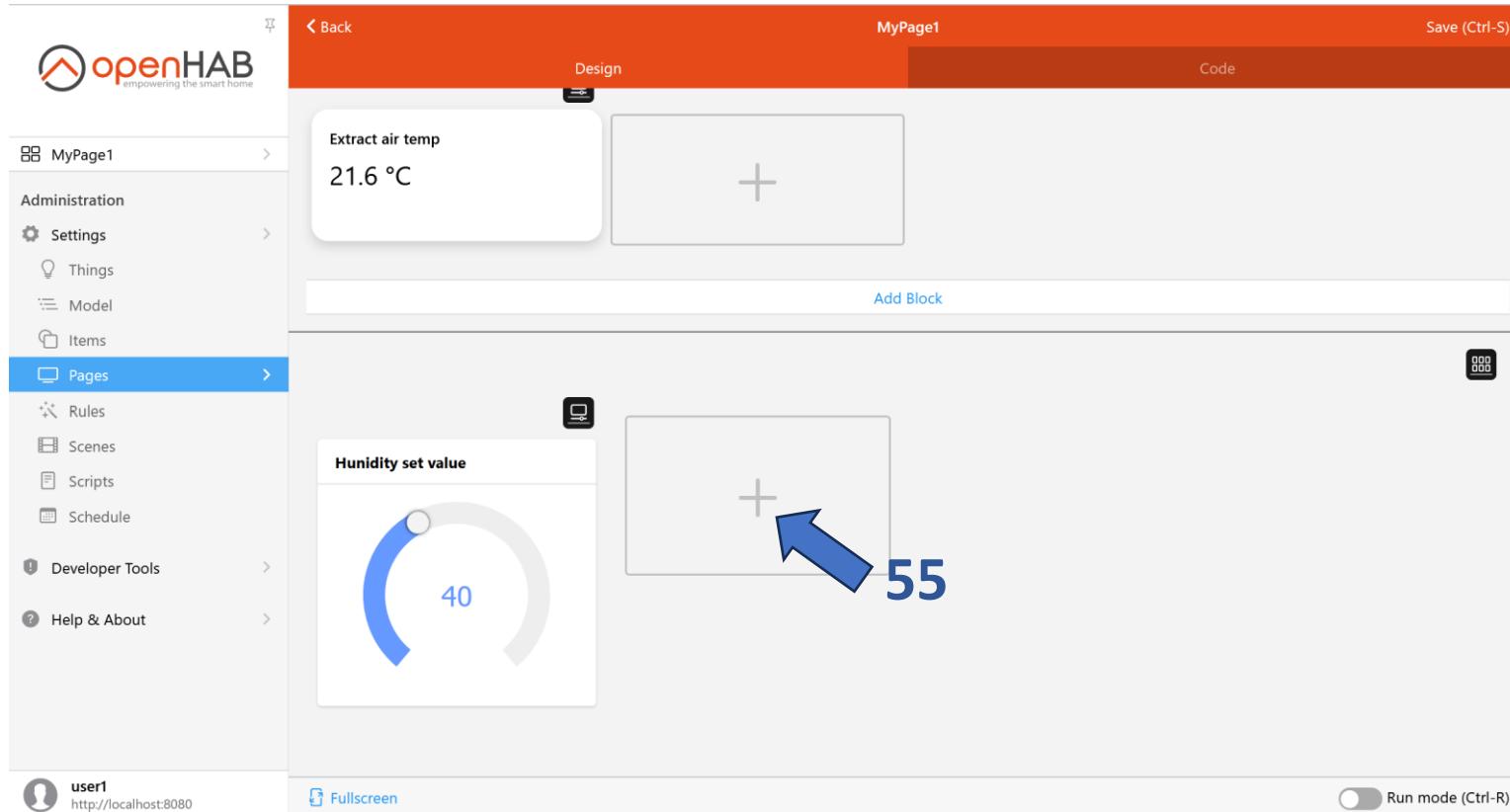
Example: configure a rounded slider as a control element



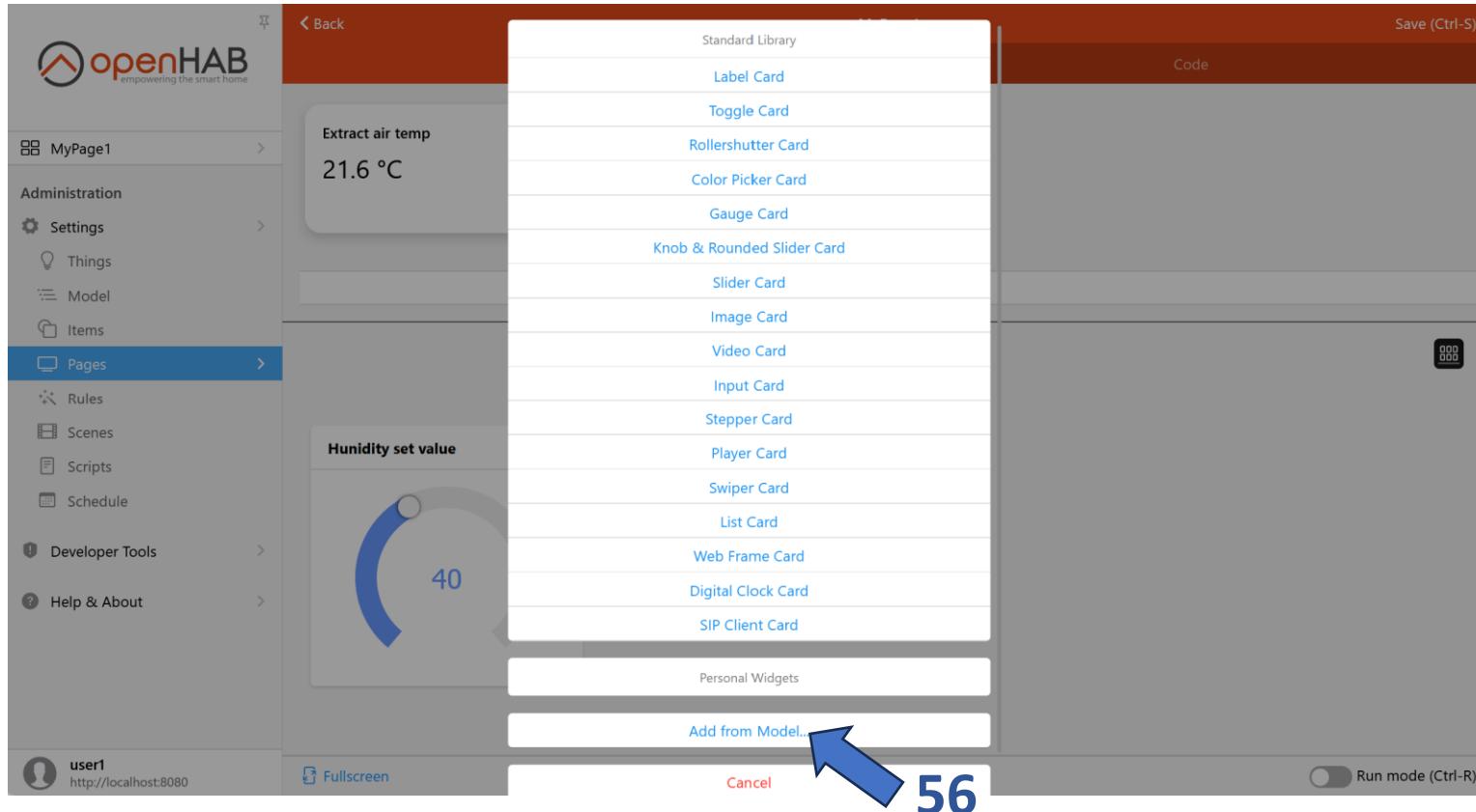
Example: configure Label element with control option



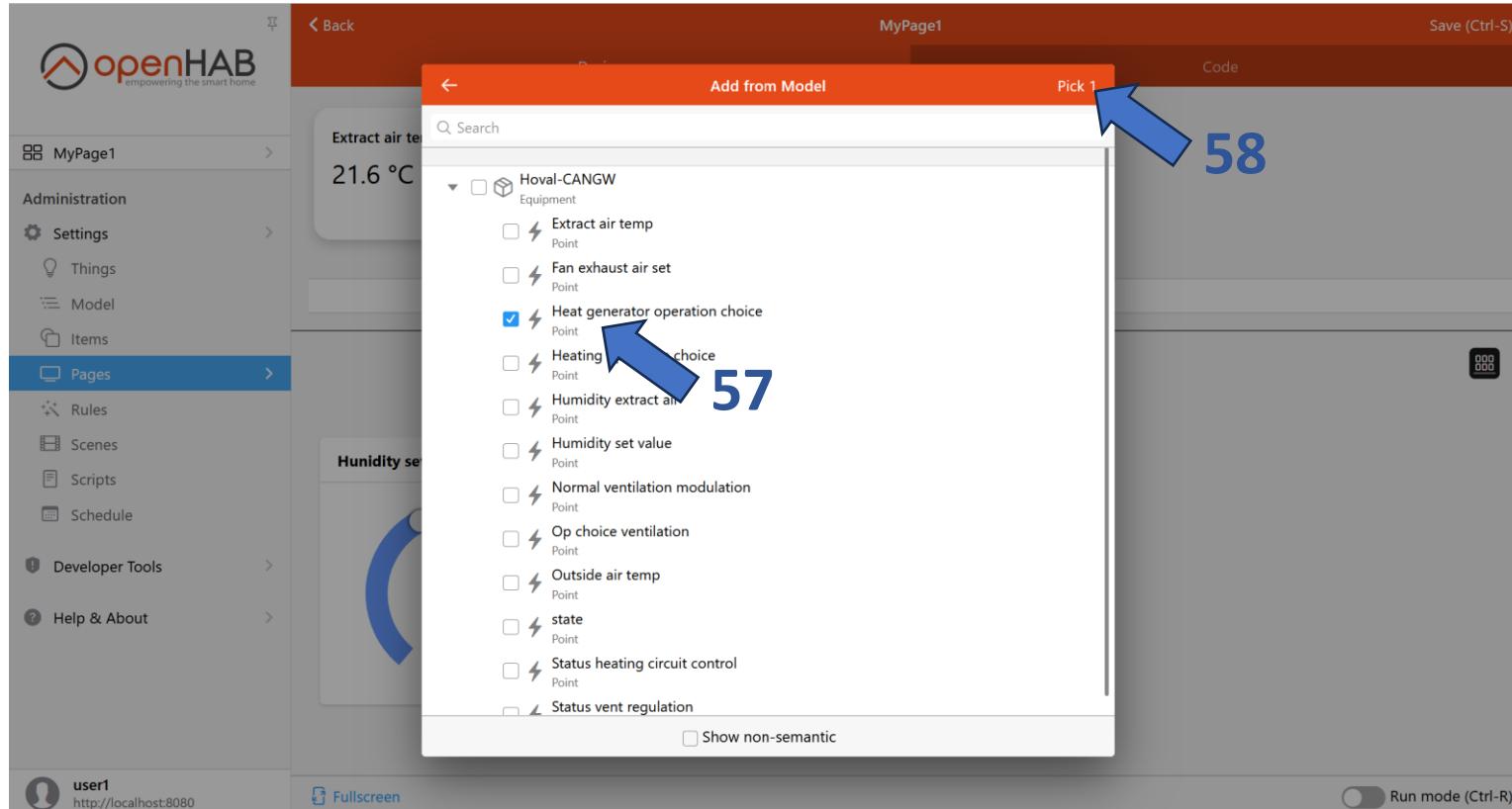
Example: configure Label element with control option



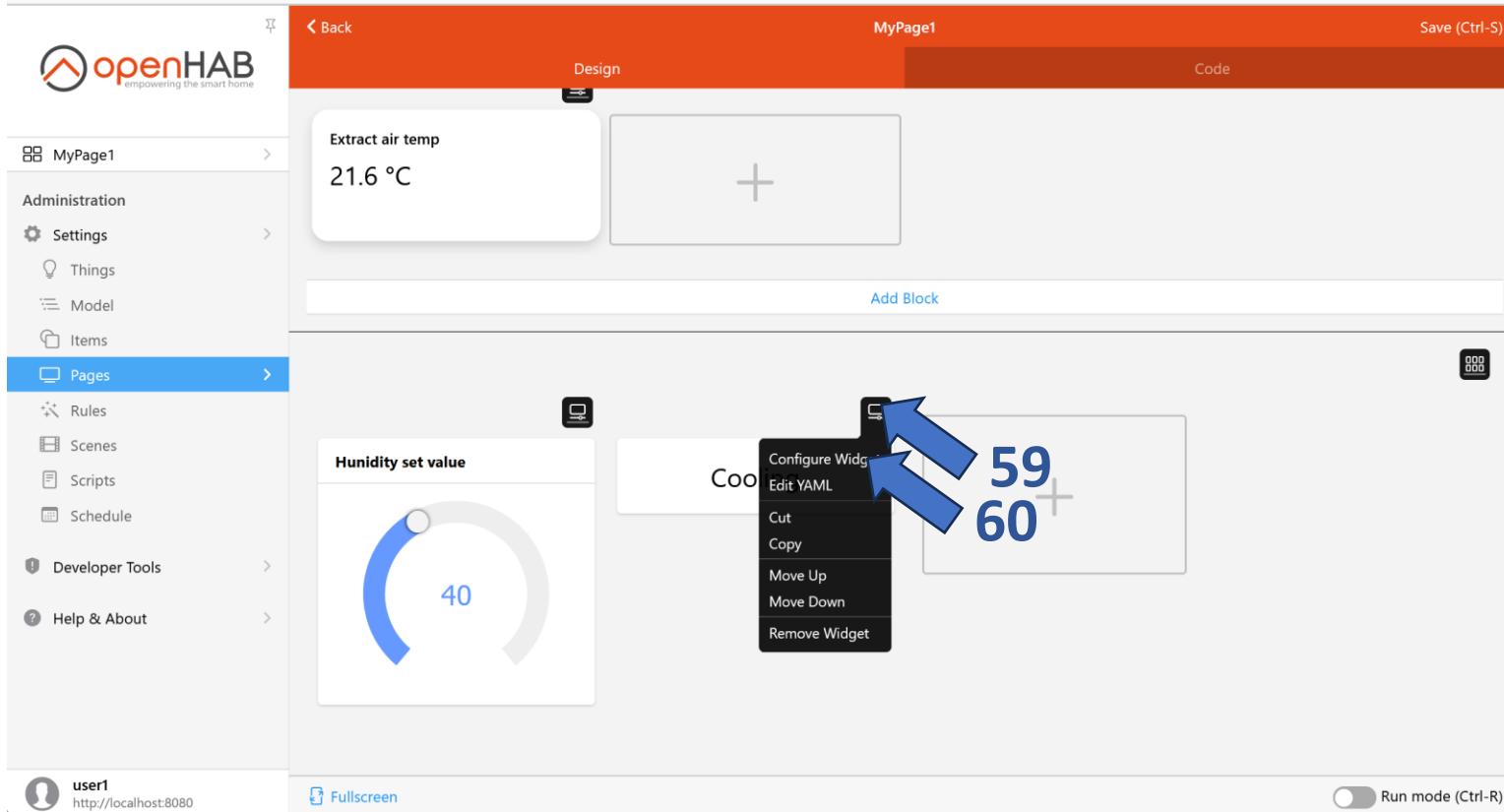
Example: configure Label element with control option



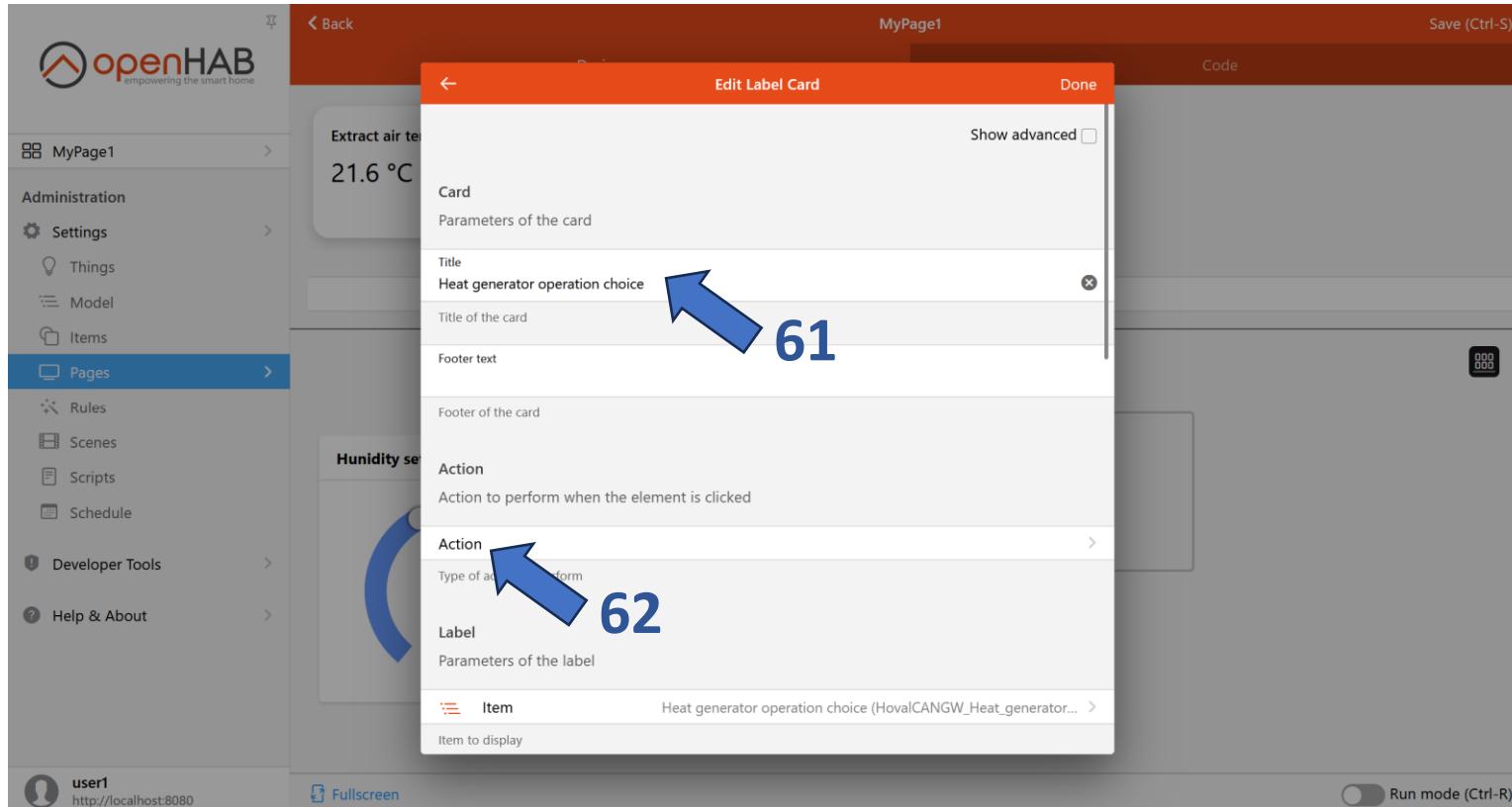
Example: configure Label element with control option



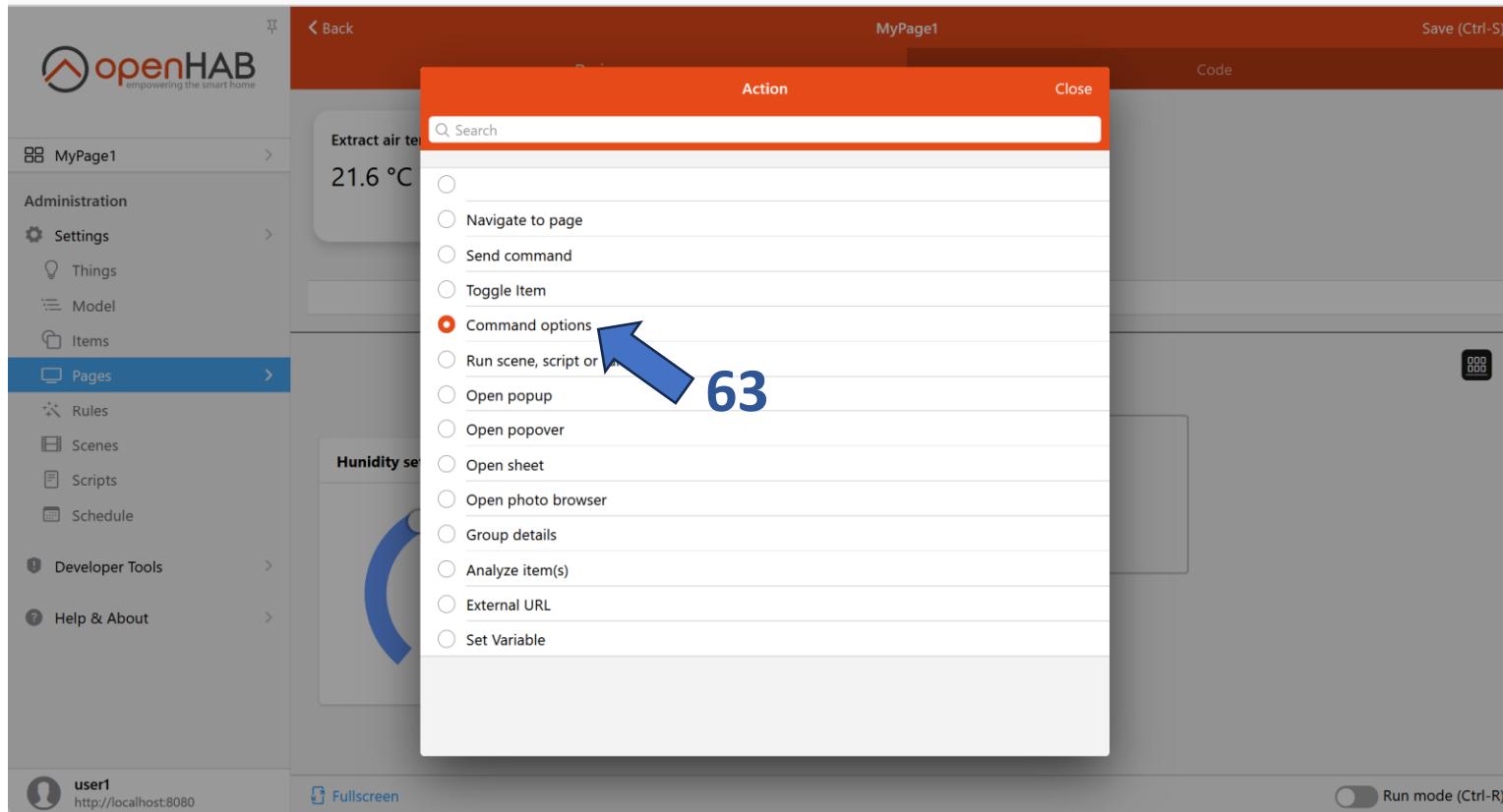
Example: configure Label element with control option



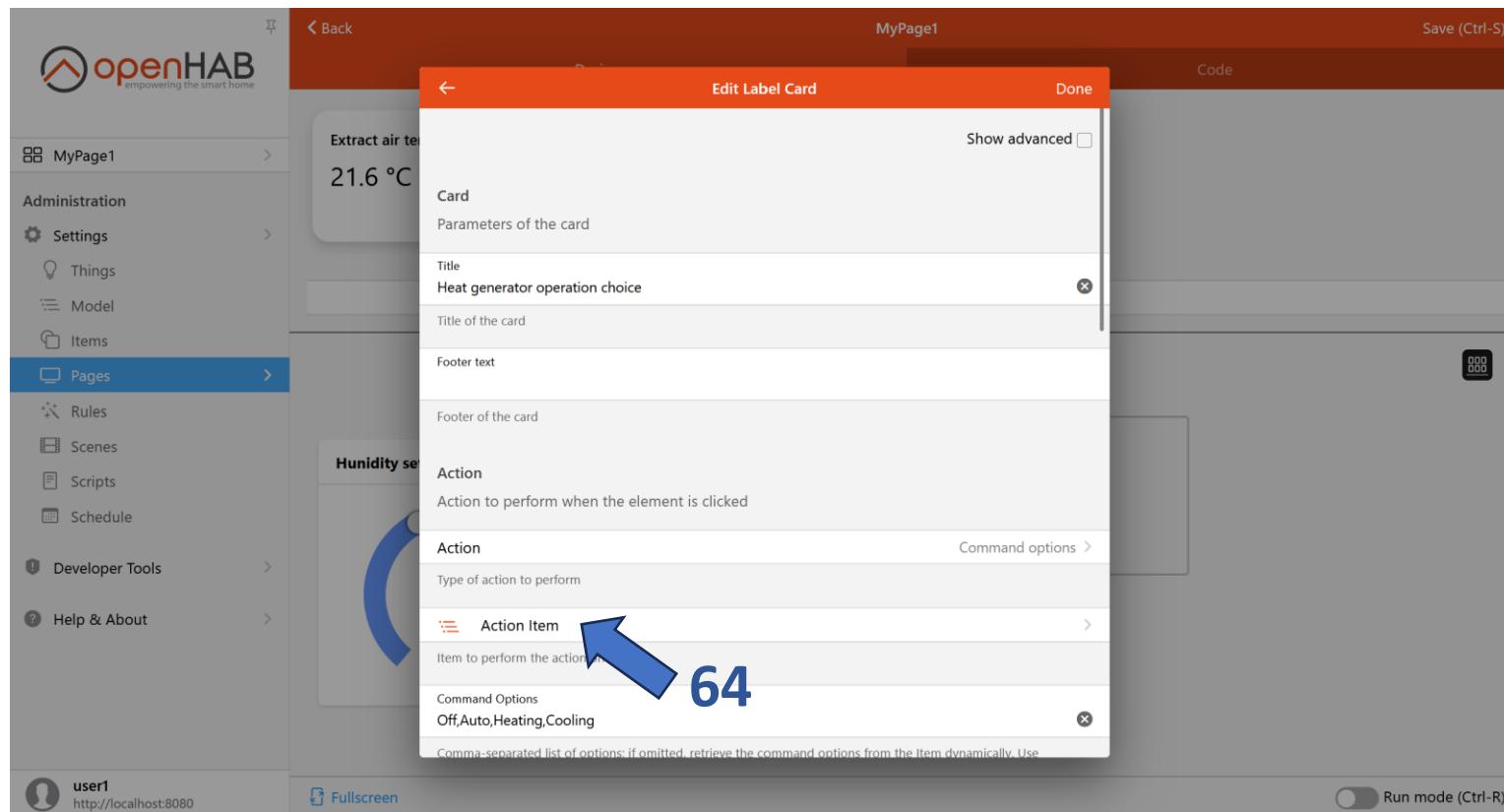
Example: configure Label element with control option



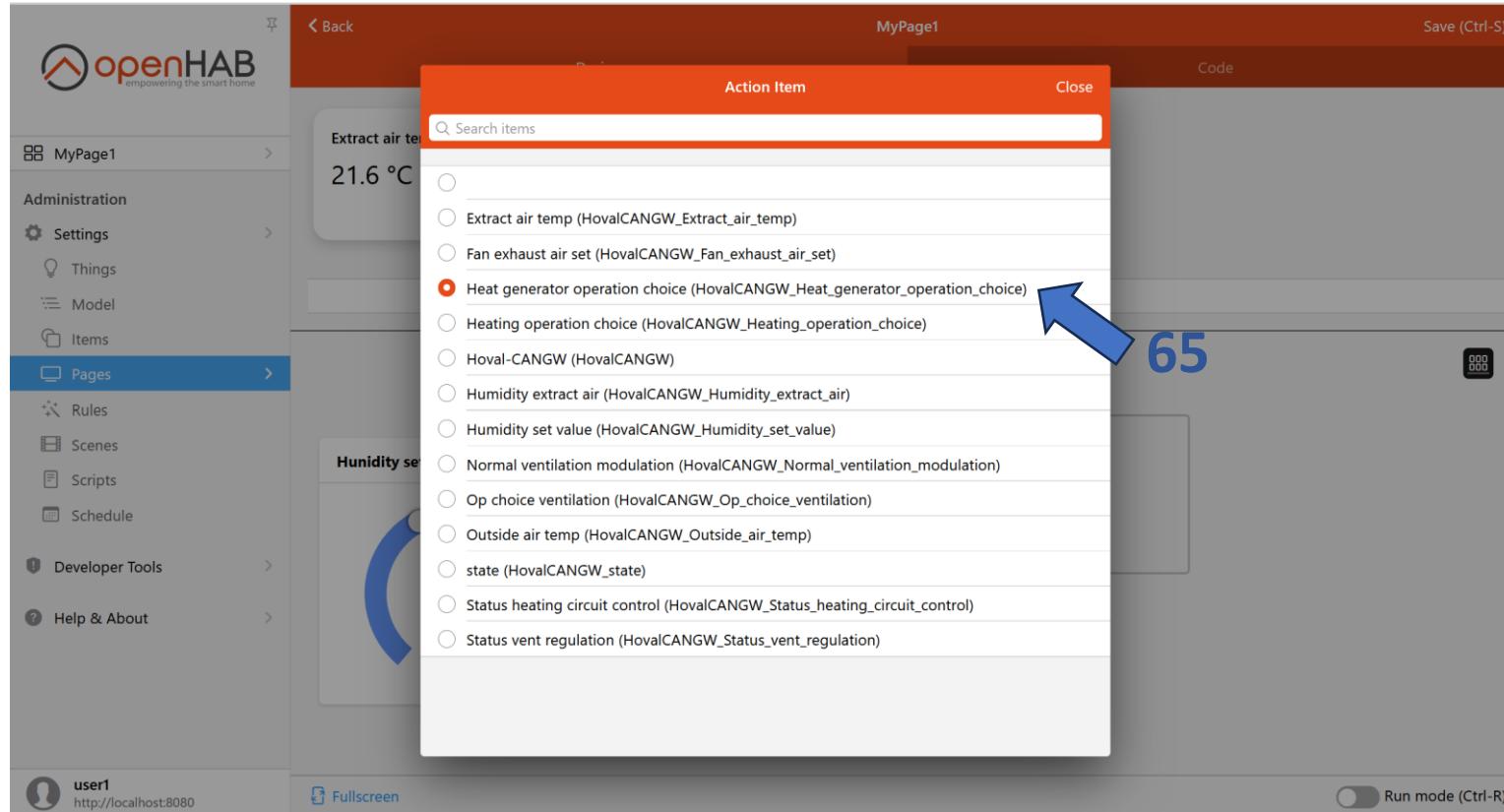
Example: configure Label element with control option



Example: configure Label element with control option



Example: configure Label element with control option



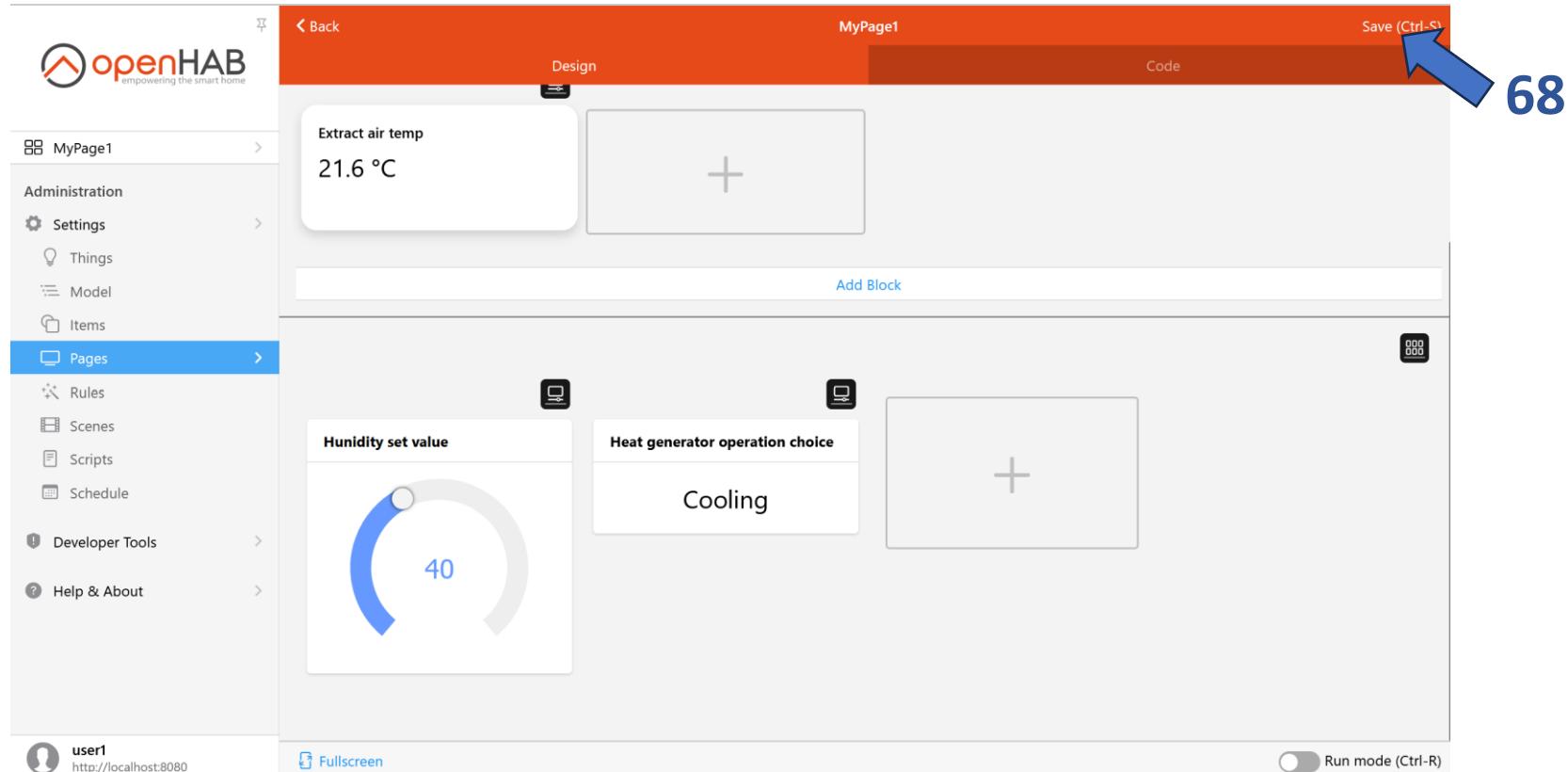
Example: configure Label element with control option

The screenshot shows the openHAB interface with the following components and annotations:

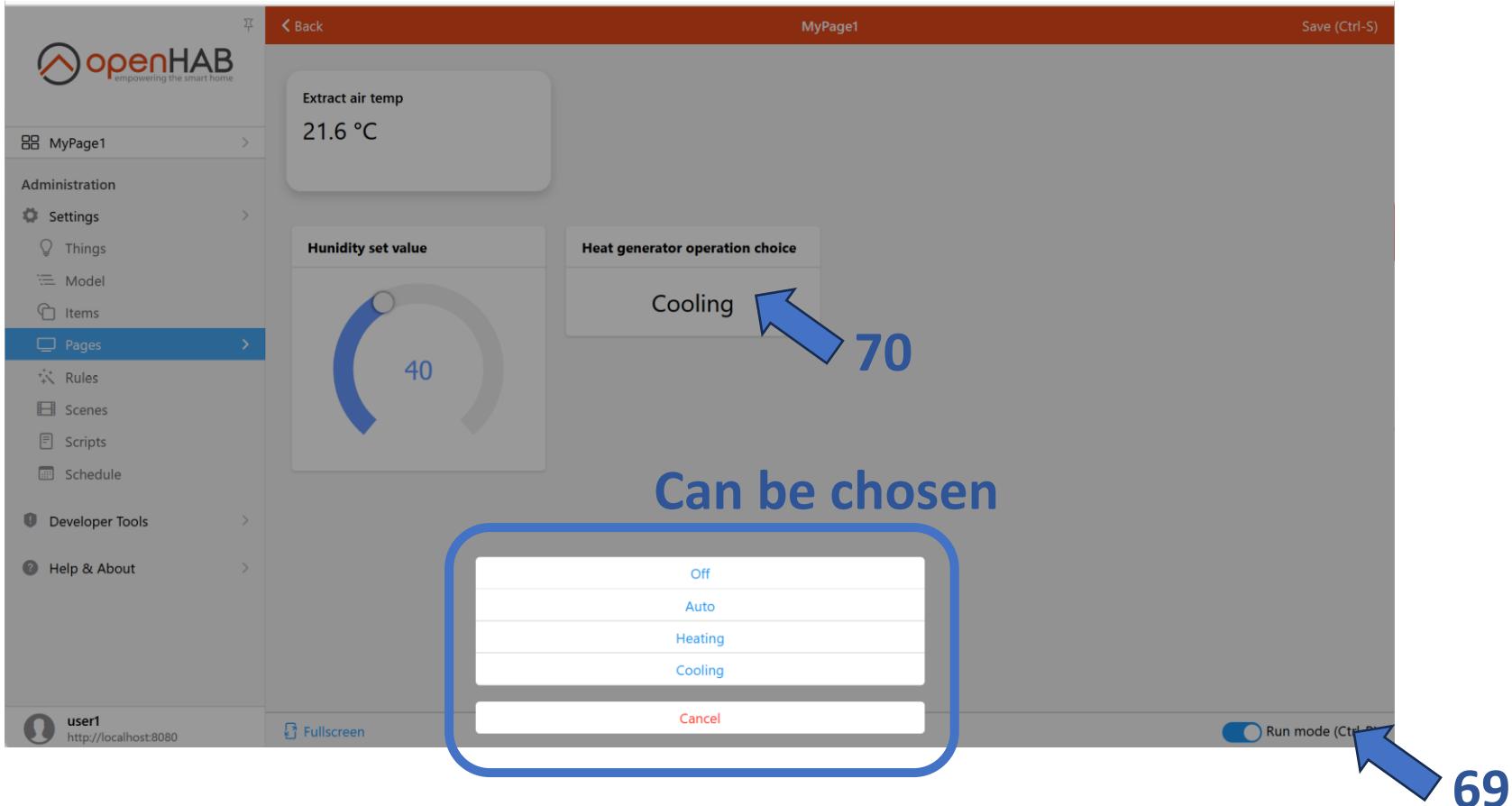
- Left Sidebar:** Administration, Items, Pages (selected), Rules, Scenes, Scripts, Schedule, Developer Tools, Help & About.
- Top Bar:** openHAB logo, MyPage1, Save (Ctrl-S).
- Central Card:** Edit Label Card titled "Heat generator operation choice".
 - Card:** Parameters of the card.
 - Title:** Heat generator operation choice.
 - Footer text:** Footer of the card.
 - Action:** Action to perform when the element is clicked.
 - Action Item:** Heat generator operation choice (HovalCANGW_Heat_generator...).
 - Command Options:** Off,Auto,Heating,Cooling.
- Bottom Callout (66):** Copy exactly names, comma separated.
- Bottom Callout (67):** Click on „i“.
- Right Panel:** CAN Gateway: Parameter list table.

Number	MQTT topic	Modbus address	Value	Raw value (hex)	Age, s
1	Outside_air_temp_gradC	0	12.4	00	6
2	Humidity_extract_air_percent	10	56	00	6
3	Extract_air_temp_gradC	20	21.6	00	6
4	Fan_exhaust_air_set_percent	30	48	00	6
5	Status_vent_regulation	40	3	00	6
6	Op_choice_ventilation	50	4	00	6
7	Normal_ventilation_modulation_percent	60	45	00	6
8	Humidity_set_value_percent	70	40	00	6
9	Status_heating_circuit_control	80	2	00	6
10	Heating_operation_choice	90	4	00	6
11	CoolVent_activate	100	0	00	6
12	Heat_generator_operation_choice	110	4	00	6

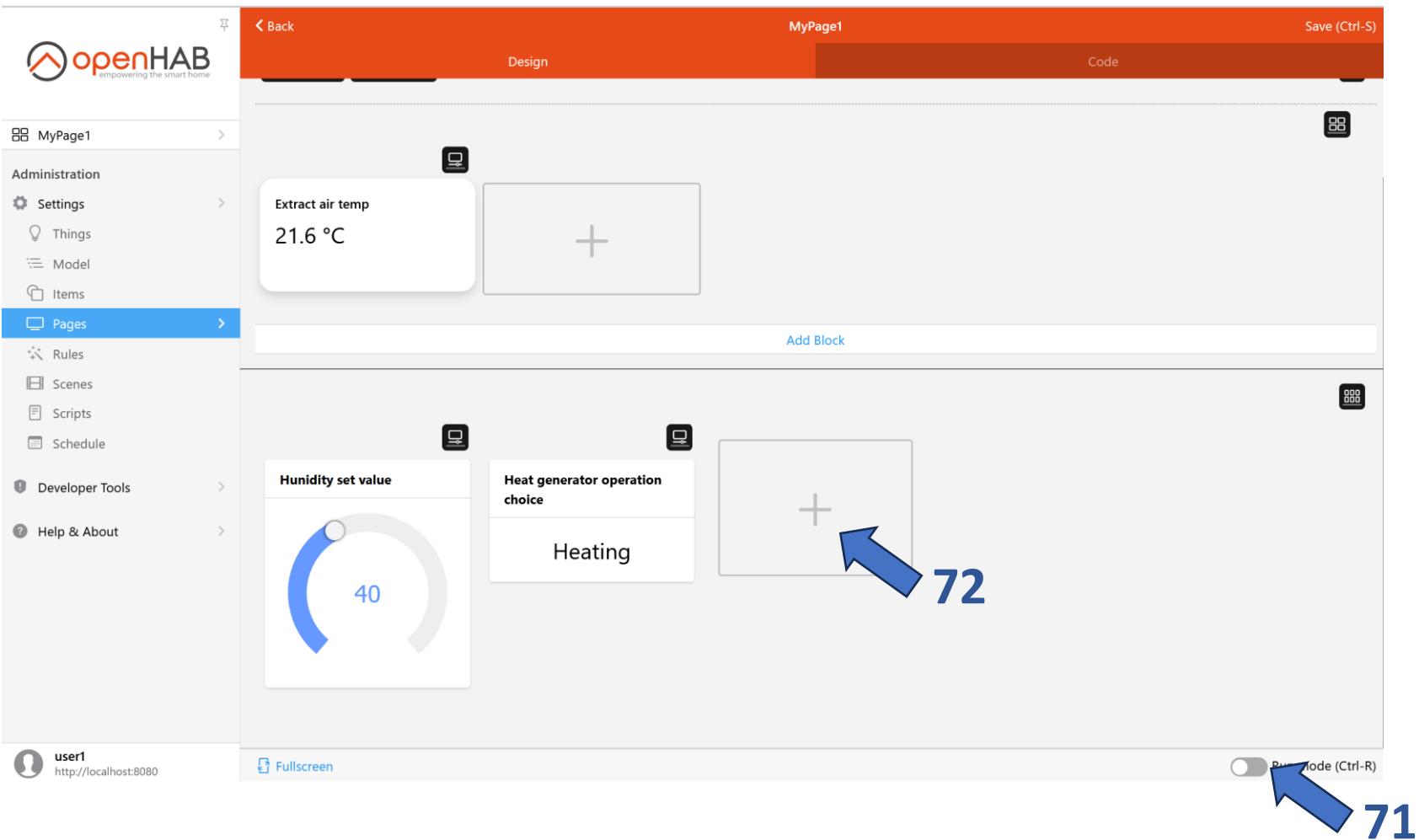
Installing of required OpenHab Add-Ons



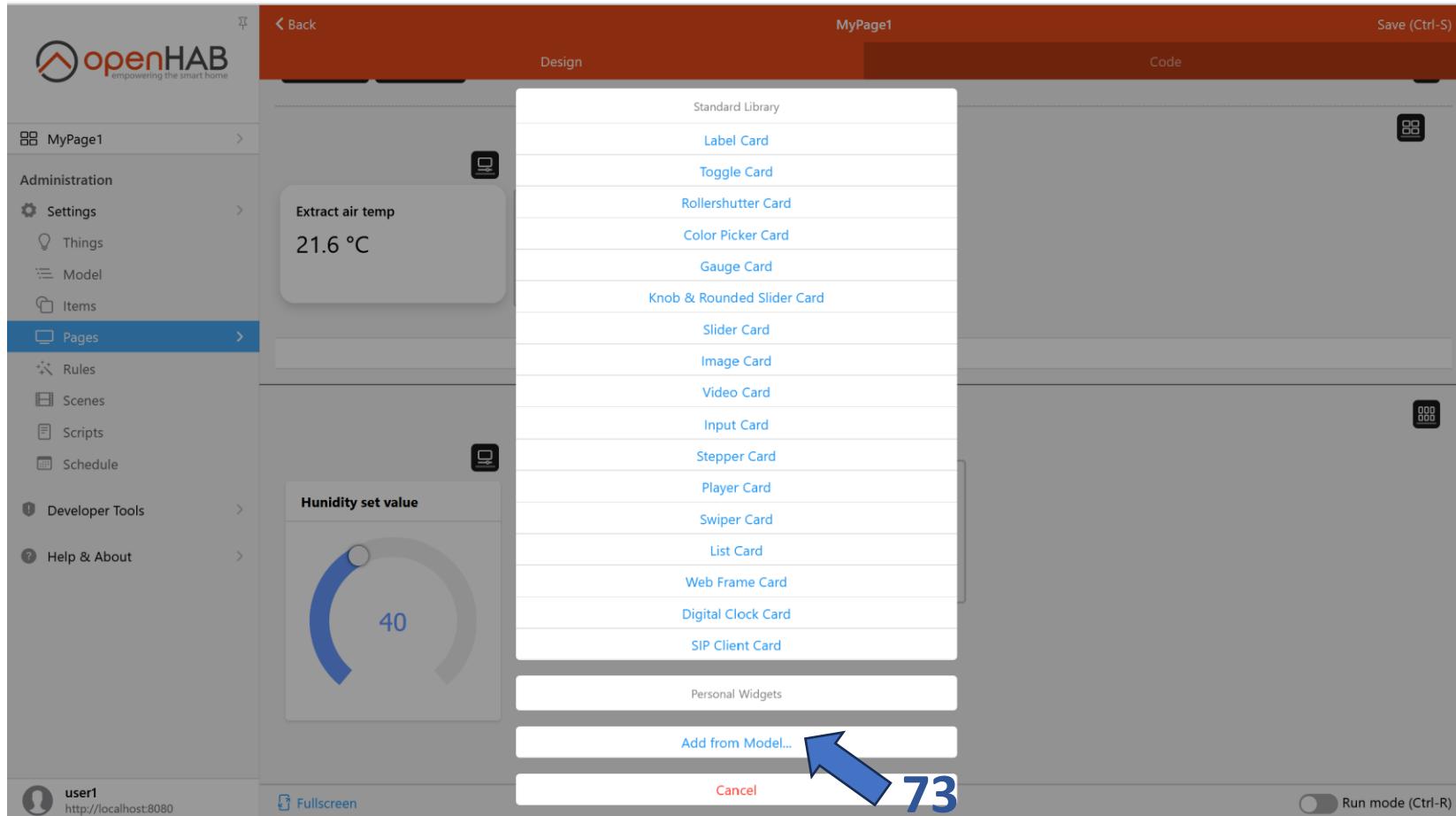
Example: configure Label element with control option



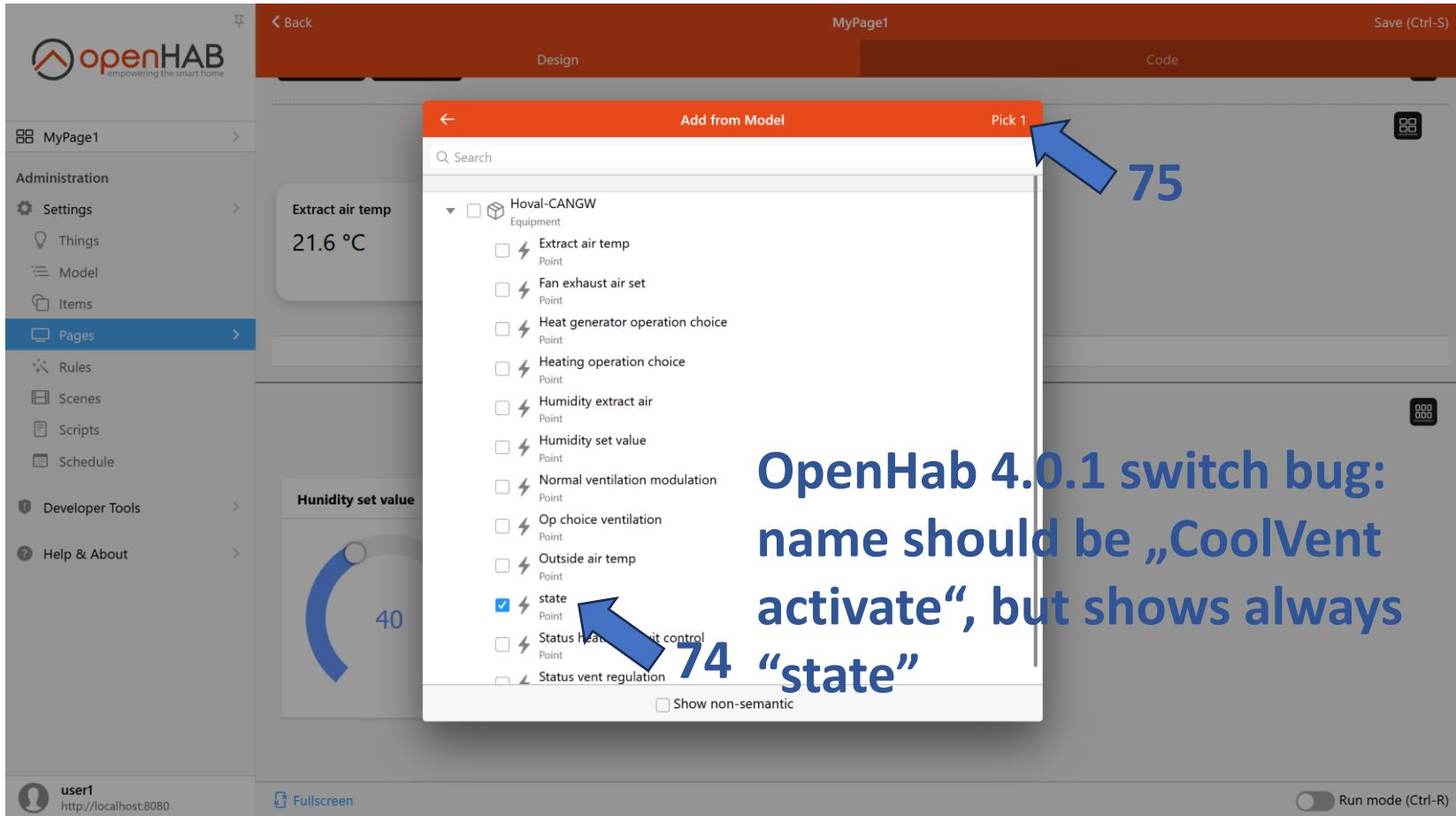
Example: configure Switch element



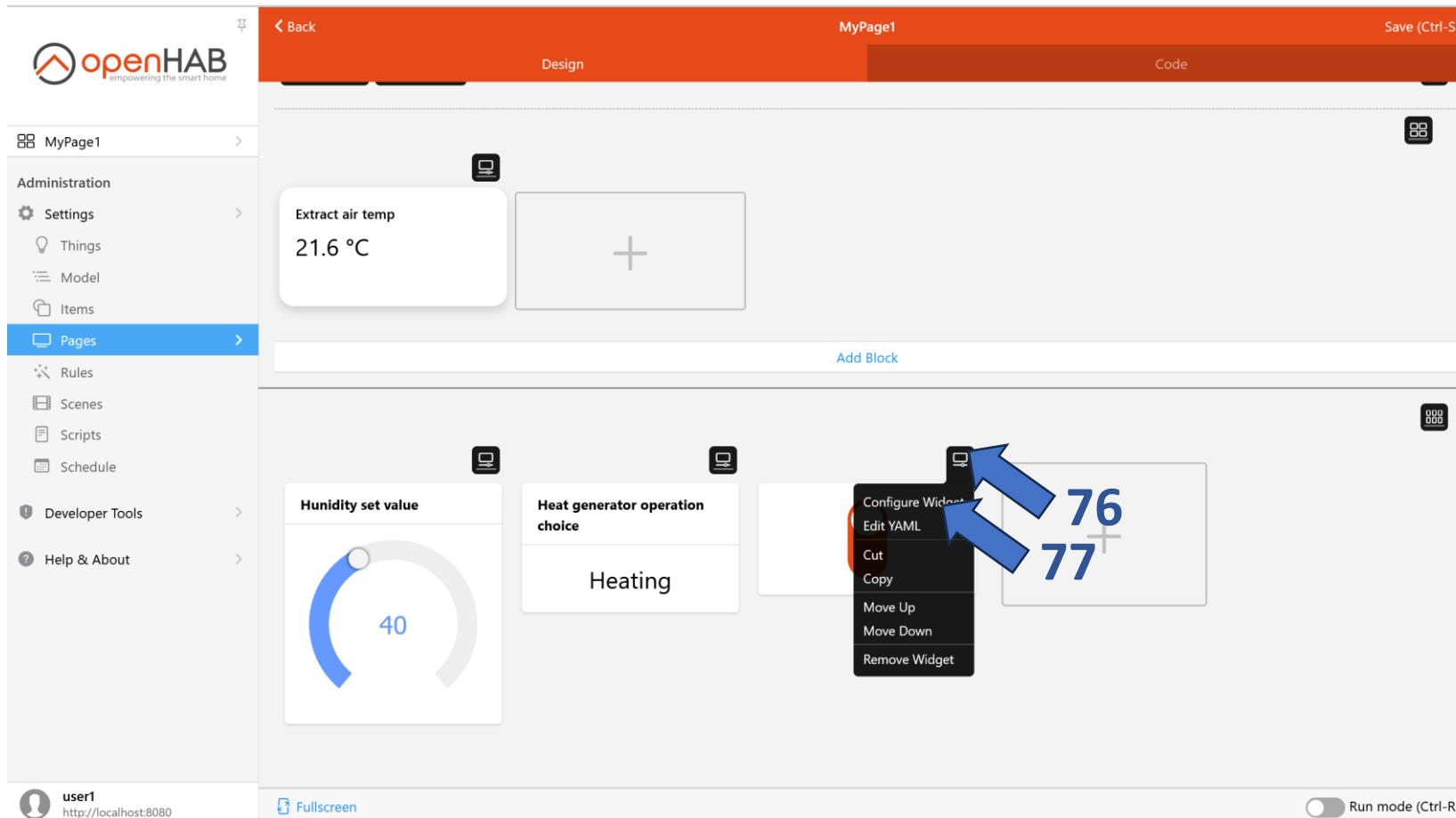
Example: configure Switch element



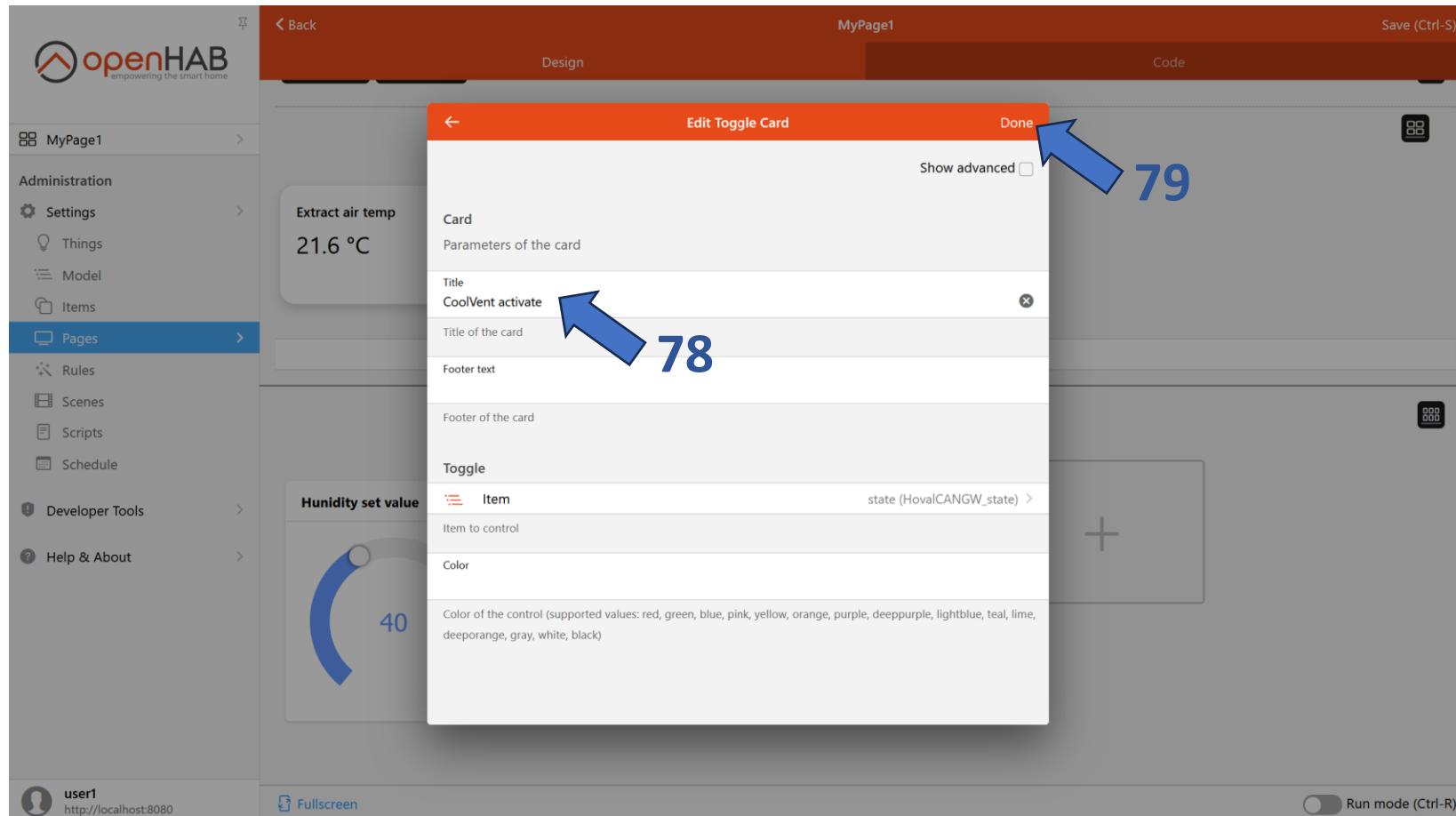
Example: configure Switch element



Example: configure Switch element



Example: configure Switch element



Example: configure Switch element

