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# INSTALLATION GUIDE

## Part 2: Configuration

VelbusLink is regularly updated. The screenshots in this manual may differ from the most recent VelbusLink version.

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# 1 VELBUSLINK

In this guide you will find instructions on how to configure the modules in a Velbus home automation system. For more information on Velbus hardware (installing the modules and wiring), please refer to “Velbus Installation Guide, Part 1: Hardware and Cabling”.

## DOWNLOADING AND INSTALLING

VelbusLink is the free configuration software for Velbus. It can be downloaded from the [www.velbus.eu](http://www.velbus.eu) website. To install VelbusLink on your PC (Windows only), double click the setup file and follow the standard installation procedure.

A message will appear in the upper right corner in VelbusLink when a new version is available. You will need a working internet connection.

## CONNECTING, SCANNING AND SYNCHRONIZING

It is important to understand the following three basic concepts in VelbusLink: connecting, scanning and synchronizing.

### Connecting

In VelbusLink **Connecting**  means: making a connection between the VelbusLink software and the Velbus system (the modules) through an USB or RS232 interface module<sup>1</sup>, through the VMBHIS Home Center server, through the Signum server, the VMBUSBIP IP gateway, or through a TCP/IP server.

When choosing the **Quick connecting**  option, a connection is automatically selected as follows:

- if connection data is saved in the project file, this data will be used
- if not, a USB connection is searched and automatically used if detected
- if no USB connection is detected, a window will pop up with a manual connection selection option

VelbusLink can also be used without being connected to the modules. In that case, changes made can be saved to the VelbusLink project file (which is stored on your PC), and later written to the modules once a connection has been established.

To work on a VelbusLink project without being connected to the installation, the modules need to have been scanned at least once in advance (because VelbusLink identifies the modules by their serial numbers which are unique for every module). Once the installation scanned and the project saved for the first time, the project can be completed offline and later synced to the modules.

### Scanning

When VelbusLink **scans**  your physical installation, it creates on your PC a set of virtual copies of the modules.

You can then configure these virtual modules and create actions between them using VelbusLink’s graphical interface. For instance, to make a certain push button switch a relay channel, you will create a “toggle” action in VelbusLink between the button and the relay channel.

### Synchronizing

By then writing your VelbusLink project (or certain parts of it) to the physical modules (**synchronizing** ) these actions and other settings will then be written into the memory maps of the modules.

**Synchronizing** can be done in two directions: **reading** and **writing** (see below).

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<sup>1</sup> VMBRSUSB or VMB1USB



In VelbusLink **reading** means: copying the physical module's contents to the PC. **Writing** means: copying the VelbusLink project from your PC to the memory maps of the modules.

### Always first connect – scan – synchronize

Whenever you start VelbusLink, it is good practice to always (in this order)

1. open the project file (or start a new project)
2. **connect**  ,
3. **scan**  and
4. **synchronize**  (read if you have not made changes offline, **write** if you have made changes offline and want to copy those to the modules)

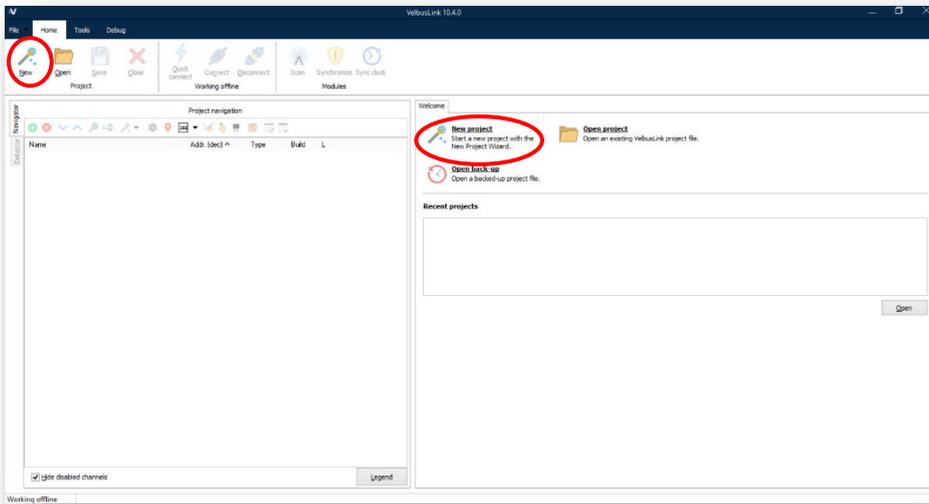
before doing anything else. This way you are sure that what you see on your PC coincides perfectly with what's written into the modules.

## 2 GETTING STARTED WITH A NEW PROJECT

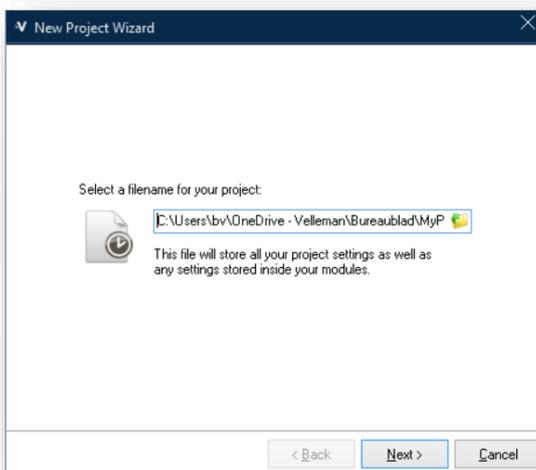
### CREATING A NEW VELBUSLINK PROJECT

We will assume from this step on that VelbusLink is connected to a live Velbus installation with a USB cable. Make sure none of your Velbus modules are in error mode (LEDs blinking several times, pause, then blinking again). In case of errors, please refer to “Troubleshooting” on p.41 and solve the problems before continuing.

After having installed and started VelbusLink, click **New** or **New project** to start a wizard that will guide you through the process of creating a new project.

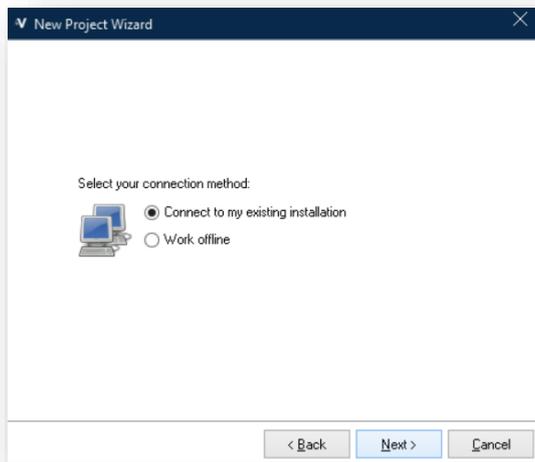


Choose a file name and folder, and click **Next**.

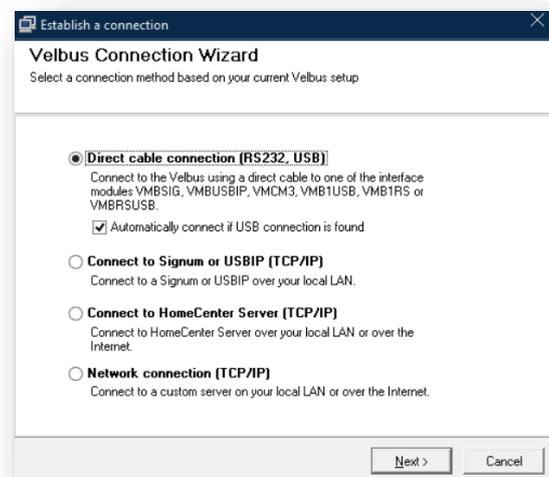


Select **Connect to my existing installation** and press **Next**.

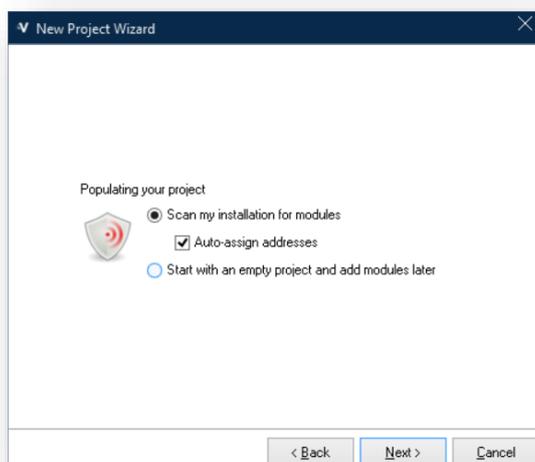
## Part 2: configuration



In the following window, select **Direct cable connection (RS232, USB)** and press **Next**.

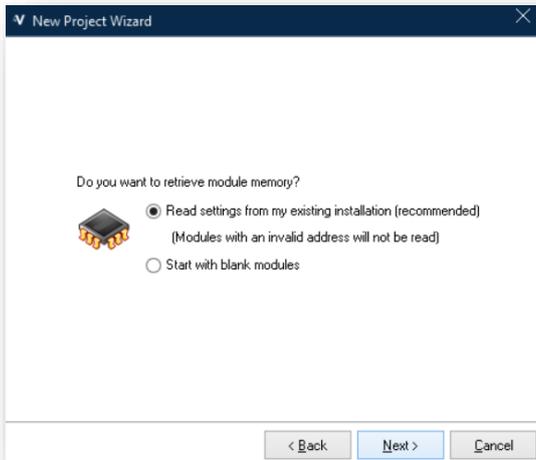


The software will automatically choose the port on which the Velbus USB module is connected. (If the USB connection is not found, try to connect the USB cable in another USB port of your PC.) The PC will now connect to the modules.

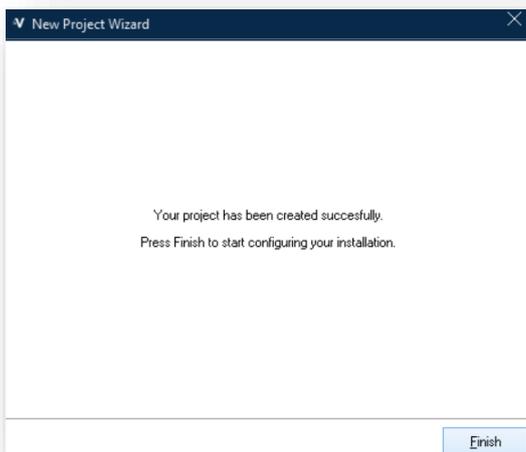


In the next window, click **Next**. This will make VelbusLink scan for modules and the addresses will be automatically attributed to the modules.

Once the scan has completed, VelbusLink will ask if you want to retrieve the module memories, or start with empty modules. We recommend (Read settings from my existing installation), as this is the only way to be sure that your project configuration in VelbusLink matches the actual configuration in the physical modules.



A window may pop up showing the progress of the memory read, after which you will be notified that your new project has been created. Press Finish to start configuring your Velbus installation.



## CHANGING ELECTRONIC ADDRESSES

### About hexadecimal and decimal notation

In VelbusLink addresses can be represented hexadecimally (00-FF) or decimally (0-255). In this manual we will use hexadecimal representation.

The hexadecimal address FF is the same as the decimal address 255, they are only represented in a different way. The same goes for hexadecimal 1A and decimal 11, and so on. VelbusLink can be configured to display addresses decimally or hexadecimally, according to the user's preference (icon .

All Velbus modules need to have a unique address between 01 and FE (hexadecimally) or 1 and 254 (decimally). **Addresses 00 and FF (hexadecimally), or 0 and 255 (decimally) are reserved by the system. They are not to be used as addresses for active Velbus modules.**

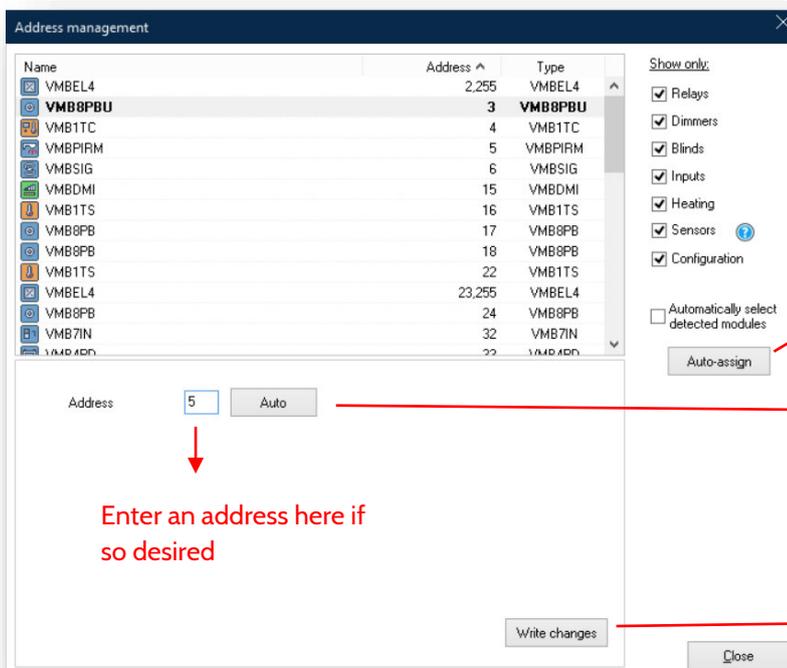
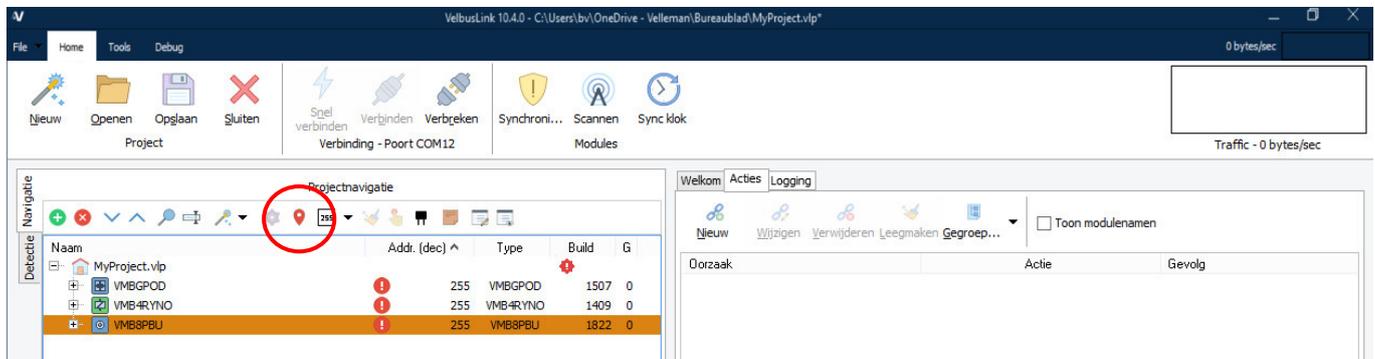
## Part 2: configuration

### Auto-assigning addresses

The wizard “New project” will automatically address the modules. If you checked this option, you will not have to do anything concerning addressing. Continue with “Operating channels from within VelbusLink” on p.9.

### Manually assigning addresses

If you chose to uncheck the option “Auto-assign” in the “New project” wizard, you will have to address the modules now. You can do this by selecting a random module and by pressing the **Address Management** icon .



Click “Auto-assign” to assign a free address to all unaddressed modules in the installation

Enter a free address for the selected module with the “Auto” button

Press “Change” to make the change

In the address management window, the “automatic addressing” can also be applied. This is the easiest option as VelbusLink will attribute a free address to every module. To do so, press **Auto-assign**.

If you want to auto-assign your modules individually, use button **Auto** next to the “address” field. A free address will be entered in the field. Accept by pressing **Change**.

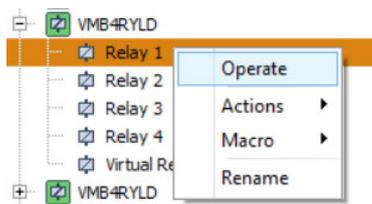
To select the addresses yourself, enter them directly in the “address” field, and press **Change**.

New addresses are immediately written into the module, even without synchronizing. The addresses can be modified afterwards without affecting the system.

This way, attribute valid, unique address (01-FE hexadecimal or 01-254 decimal) to every module in the installation.

## OPERATING CHANNELS FROM WITHIN VELBUSLINK

You can operate a channel from within VelbusLink by right-clicking on the channel (for instance a relay channel) and choosing **operate** from the dropdown list. A window will pop up allowing you to operate the channel, e.g. switch a relay channel on or off.



In the example above we operate a relay channel. Not only relay channels can be operated, but also push buttons, input channels, dimmer channels, blind channels, and so on.

## RENAMING THE MODULES AND CHANNELS

In a new VelbusLink project the module names are identical to the type-code (e.g. VMBGPOD or VMB4RYNO). Modules can be renamed (e.g. “VMBGPOD kitchen”). Names can be 64 characters long and may contain any alphanumeric character.

Most module names are stored only in VelbusLink and not in the modules. Newer modules now store their name too (after synchronizing).

You can rename a module in different ways:

- by double-clicking on the name
- by selecting the module and pressing the F2-key on your keyboard
- by selecting the module and clicking on the rename icon  above
- by right-clicking on it and selecting **Rename**

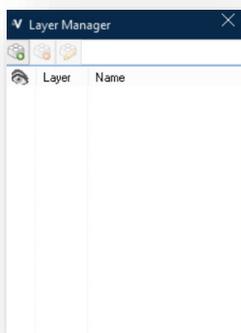
Channels can be renamed in the same way. Channels names can be 16 or 64 characters long (depending of the module type and firmware version) and are always stored in the modules.

We advise to give modules and output channels meaningful names (based on their location and/or function for instance). This will make it easy to find the right modules and channels in VelbusLink when creating actions. It will also facilitate understanding the VelbusLink project if modifications need to be made later.

## OPTIONAL: LAYERS

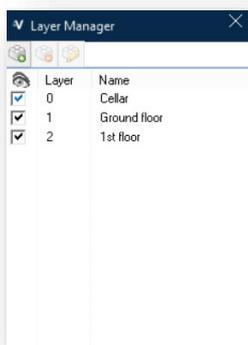
If you have many modules, you may want to organise them in layers, which you can hide or show in VelbusLink. You can for instance put all input modules on the ground floor in one layer, and all input modules on the first floor in another layer. You can then make these layers visible or invisible in the navigator window.

To create, manage and toggle the visibility of layers, click **Layer Manager** icon . This will open the **Layer Manager** window.



## Part 2: configuration

Adding a layer is done by clicking on the building block with the green “+” symbol . To delete a layer, highlight the unwanted layer and click on the building block with the red “-” symbol . Likewise, layers can be renamed by clicking on the building block with the pencil .



Once the layers have been created, go back to the navigator window. Modules can now be assigned (select multiple modules by holding Ctrl or Shift pressed when clicking) to a layer by selecting the module and clicking on the **Assign to a layer** icon .

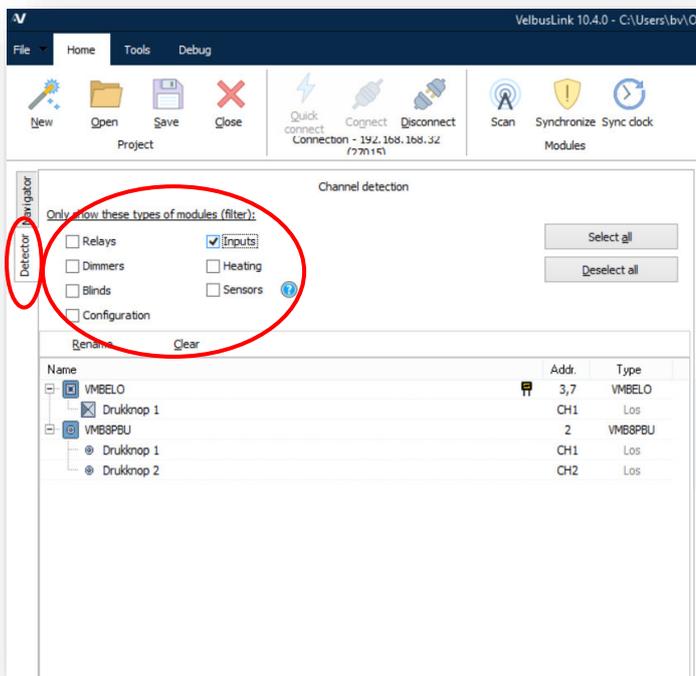
Once the modules have been assigned to layers, their visibility in VelbusLink can be toggled unchecking the checkboxes below the eye  symbol.

Adding, naming or deleting a layer has no effect on the project, apart from making certain modules temporarily visible or invisible in the navigator window.

## USING THE DETECTOR TAB

After scanning the installation, the modules will appear with their typecode in VelbusLink. A useful feature for finding modules and channels is the **Detector**. You can also use it for renaming channels.

Only to be used once all modules have received a valid, unique address.



First, check the modules you want to detect under **Filter on type**. Here you can filter out modules by unchecking the groups they belong to. This can be useful to ignore modules that periodically put data on the bus (like temperature or movement sensors) and that would otherwise appear without being activated by you.

When you press on a button (a button on the input module, or a local button on the relay module), the module will appear in the detector window. Both the module and the channel are detected. In the example above, button 1 on the command module with glass panel Edge Lit (VMBELO) is pressed, and then 2 buttons connected to the VMB8PBU interface.

Changing names of modules and channels here is similar as explained above under “Renaming the modules and channels” on p.9.

The **Detector** tab is a great feature to use if you have an assistant to press buttons in the installation. If you are alone, you can walk around the house yourself and operate modules/channels in a certain order. When you return to VelbusLink, the channels will have appeared in the order you activated them and you can rename them accordingly.

## RECAP

In short, to get started with a new Velbus project, follow the next steps:

1. connect your Velbus installation to your PC (for instance with a USB cable to a VMBRSUSB configuration module)
2. start VelbusLink
3. click on **New project** and follow the wizard
4. give all modules a unique, valid address

Don't forget to save  your VelbusLink project file from time to time.

If you lose your VelbusLink project file, there's nothing to be worried about. All actions, configurations and even channel names will appear in your VelbusLink project, since they were saved in the modules themselves. You can simply start a new project in VelbusLink and to **Synchronize > Read** to recall all data. Only the module names will be lost (for all but the most recent modules).

### 3 ACTIONS

#### HOW THE SYSTEM WORKS

In VelbusLink, all connections between various channels are created following the same basic pattern: initiator – action – subject.



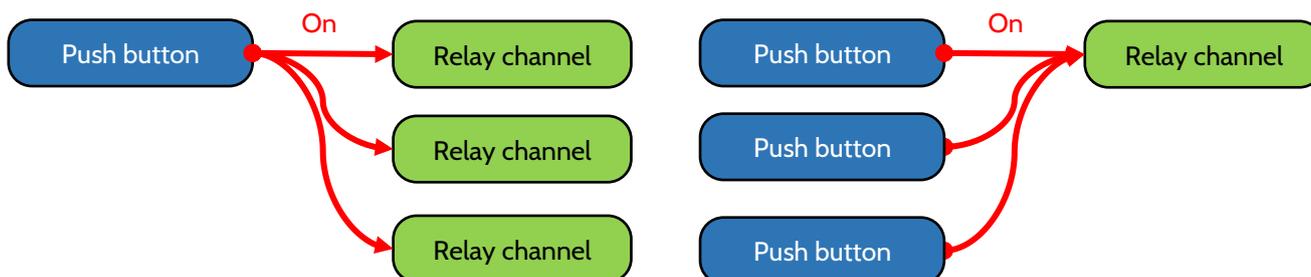
For instance, to make a push button switch a light relay on and off (connected to a relay channel), you would create the following connection:



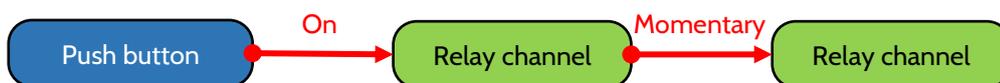
In the above example, the push button is the initiator and the relay channel is the subject. But any kind of channel can be an initiator or a subject. For instance, to make a relay channel lock a push button, we will create the following action between the relay channel (this time acting as initiator) and the push button (this time acting as subject):



One initiator can have more subjects, and one subject can have more initiators.



One channel can simultaneously be the initiator of an action, and subject of another action.



#### CREATING ACTIONS

There are many ways of creating an action. Whichever way you choose to create actions within VelbusLink, the results that will be written to the modules are the same.

As an example, we will demonstrate the connection of an input channel (a push button) to an output channel (a relay) through an action “on/off”.

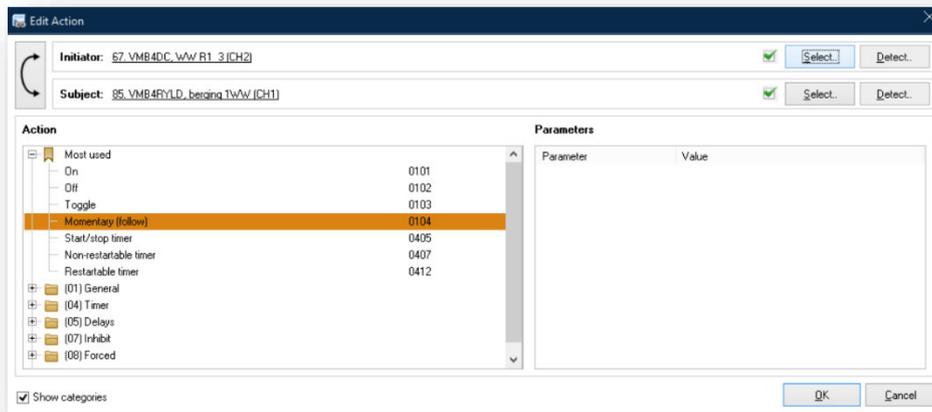
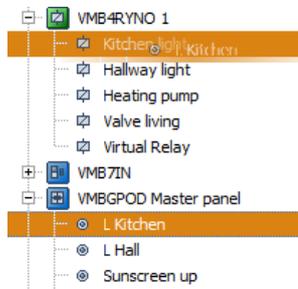
(Note that each relay channel can have a maximum of 36 actions assigned to it.)

##### 1. Drag and drop

For a smaller installation, a simple way to create an action is to “Drag and Drop”. In the example below, push button 1 is “clicked” (click on the channel Push button 1 and keep the mouse button pressed), dragged on top of the relay channel Hallway light, and dropped.

Doing this will cause the Action properties window to appear, and be pre-populated with the combination selected by this “drag and drop” process.

## Velbus Installation Guide

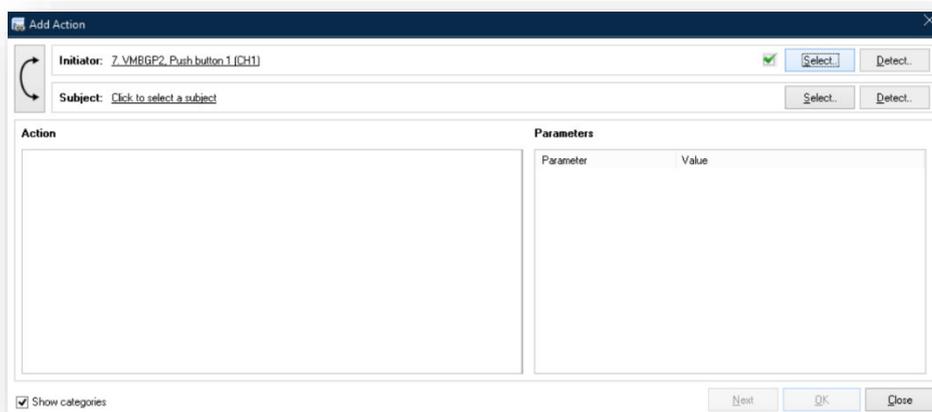


All that remains to do is to define the type of action (e.g. On/off) and to click OK. If necessary, the action parameters (e.g. the timer delay) on the right in the Action properties window can be modified.

## 2. Double-click and select

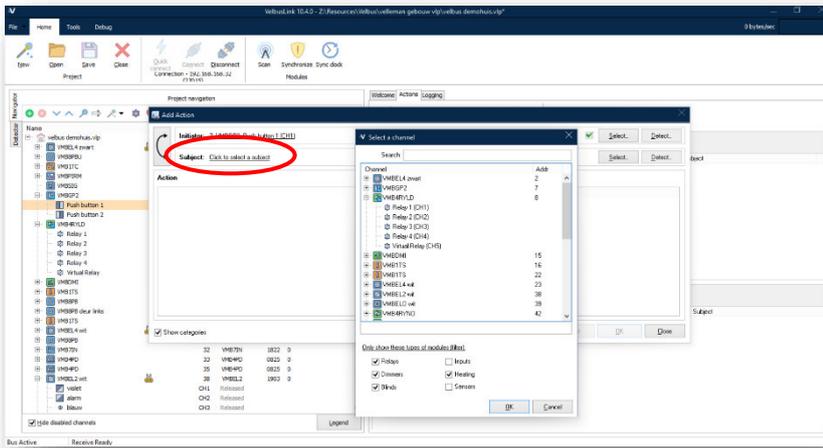
As with most software, there are various ways to achieve the same goal. Here we show you another example of this process.

Start by double clicking on either the input button or the output channel that you want to feature in the next action. The screenshot below appears after double-clicking Push button 1 of the “VMBGPOD living” module.



The Add action window will appear, and the input selection will be pre-populated with the button selected here. (Note the double arrow to the left of Initiator and Subject: clicking on the arrow will switch the selected channels around.)

Clicking on Click to select a subject or the Select button on the right. A new window will appear, from where you can locate the channel which will act as subject. In the example below, we have selected the channel “Hallway light” of the “VMB4RYNO” module to act as subject.



Each module's channels are only shown after the module has been expanded (by clicking on the + sign to the left of it). If you can't find the module you're looking for, make sure its type is checked in the filter at the bottom of the **Select a channel** dialogue.

With the desired output channel highlighted, click on **OK**. The selection window will close and take you back to the **Add action** window, so that you can now choose the type of action you want to happen (see "1. Drag and drop" above).

### 3. Detection

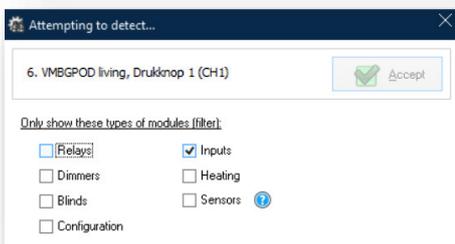
Instead of looking up the channel as described above, a channel can also be selected by detecting it.

Double-click on a channel, e.g. a relay channel. In the **Add action** window, click on **Detect** (instead of **Select**).



An **Attempting to detect...** window will pop up. Press the physical button you want to use, and its corresponding channel will appear in the **Attempting to detect** window. (If the detection does not seem to work, make sure the appropriate filters are checked at the bottom of the **Attempting to detect...**)

Here we have pressed the first push button of the VMBGPOD module.



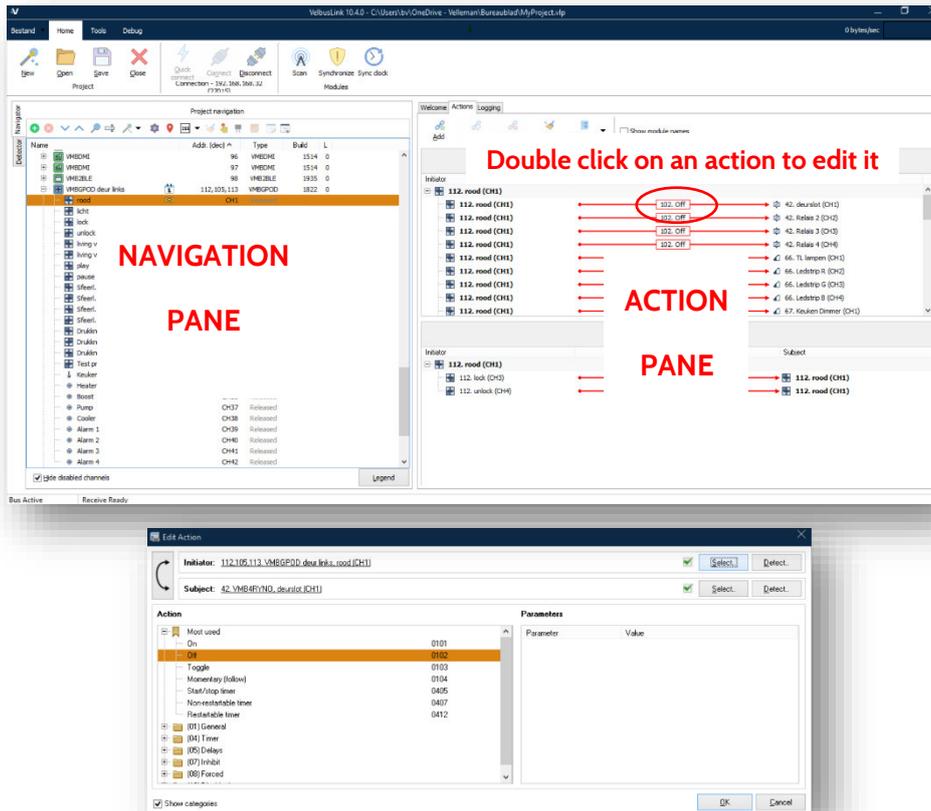
Press **Accept** to fill in this channel as subject in the **Add action** window. You can then select the type of action you want to happen.

## VISUALIZING AND MODIFYING ACTIONS

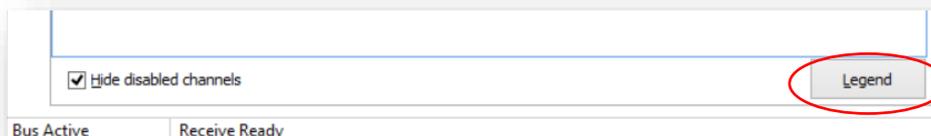
By selecting any element of your installation (one or more modules or channels) in the navigator (left hand pane of VelbusLink), the actions associated with it will be shown in the right hand pane **Actions**. To edit an action, double-click on the

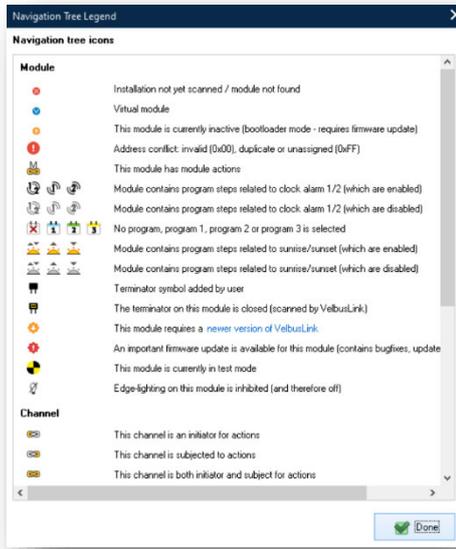
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name of the action and the **Edit action** window will pop up. All properties of the action (initiator, subject, action type and parameters) can be changed. Changes will only be written to the modules after synchronisation of course.



In the navigator window, you can also see that next to every channel associated with an action, a “chain link” icon  appears. According to what has been configured into them, other icons may appear next to modules or channels. The icon key can be shown by pressing the **Legend** button at the bottom of the main window.

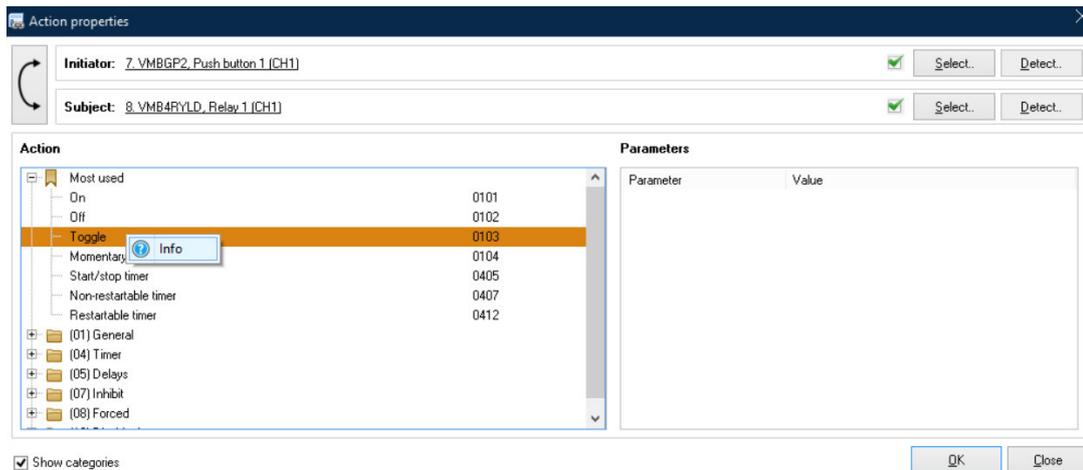




## EXPLANATION OF THE ACTIONS

From within VelbusLink a detailed overview of the actions can be opened, which contains a complete explanation per action: name, description, parameters and where necessary a graphical representation.

To access this overview, right-click an action in the **Action properties** or **Create action** window, and select **Info**.



## COPYING ACTIONS

Actions can be copied from one channel (initiator or subject) to another of the same type. The copied actions are added to the present actions.

This can be done in the following two ways:

1. by dragging the first channel to the second while holding the Ctrl-key pressed. Release the mouse button first, and then the Ctrl-key.
2. by right-clicking on the first channel and selecting **Actions > Copy**. A dialogue will open where the destination channel can be selected.

## THE MACRO WIZARD

Instead of copying the same action several times, the **Macro wizard** can be used. The **Macro wizard** allows you to create the same action between multiple initiators and subjects.

## Preset wizards

VelbusLink has predefined macro wizards installed, like **All on**, **All off**, **All off with status monitoring** (so the feedback led will be lit if a linked subject is on), **All blinds up**, **All blinds down** and **Status monitoring**. To use these, select the initiator channel (e.g. a push-button) and click on the wizard symbol . Select the desired wizard in the drop-down menu. The wizard starts with the initiator already selected, and all the subjects corresponding to the action also preselected. Make the necessary modifications (e.g. deselecting certain subjects) and click **Done**. The action will be added to all the selected subjects.

## Universal wizard

The macro wizard can not only be used with preconfigured actions (e.g. All on, All off), but also with any other action. Any action can be created between multiple initiators and/or subjects. To make a custom macro wizard, click the wizard symbol  and select **Macro wizard**. Follow the instructions from the wizard.

## 4 CHANGING FEEDBACK CHARACTERISTICS OF INPUT MODULES

By default any feedback provided by an input module (e.g. a push button module or a touch button glass panel) will represent the state of the output connected to it. For instance, if a relay channel is connected to a button, the default behaviour of the button LED will be: feedback LED on when relay is closed, feedback LED off (or dimmed) when relay is off. Feedback LEDs can also blink, for instance when a dimmer is dimming, a timer is running, a blind is going up or down, et cetera.

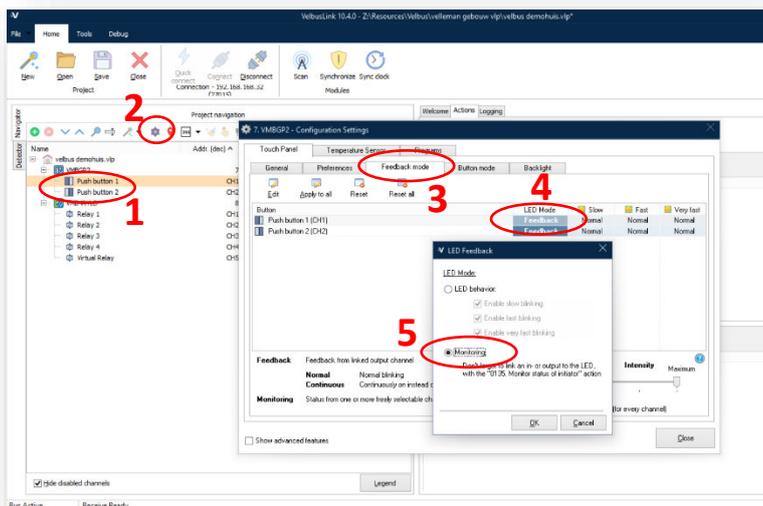
In some situations, you may want to change this default feedback behaviour, for instance to link the feedback LED of a button to a different output than the default one it has been associated with. This can easily be accomplished in VelbusLink.

For example, you may have a button in your living room commanding the ceiling light. Since the button is close to the light, you don't need the feedback LED to show the state of the light. You can use this feedback LED to show the state of the light in the children's room, for instance.

To do so, two steps need to be taken.

Step 1 is to configure the button channel to change its default feedback behaviour to **Monitoring**:

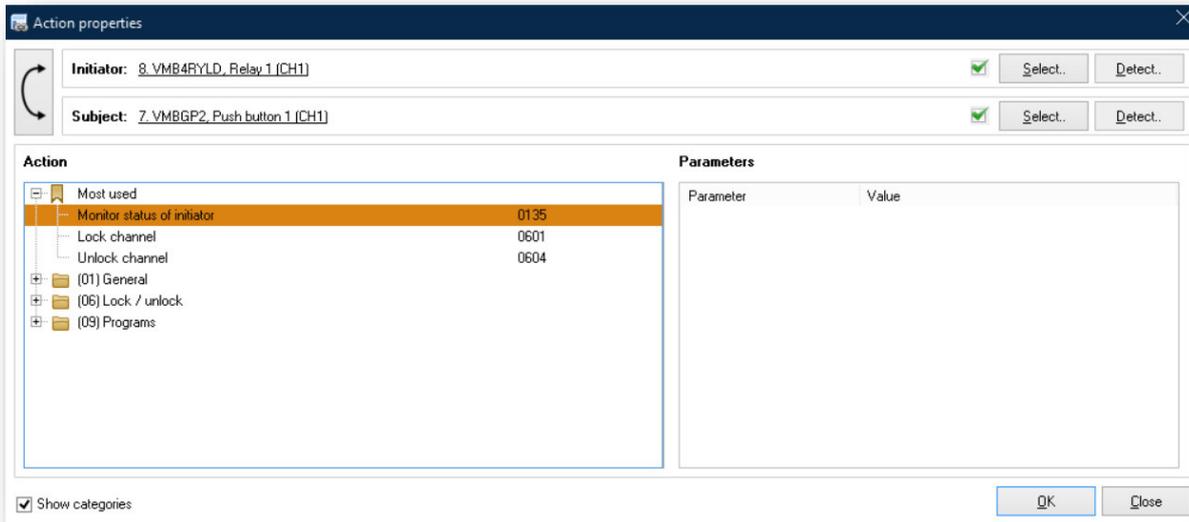
1. select the input module in VelbusLink (e.g. the push button)
2. click on the Configure icon 
3. in the Configuration settings window that appears click on the tab **LED feedback**. (If this tab is not visible, check **Show advanced features** at the bottom of the window.)
4. double-click on **Feedback** next to the channel's name.
5. in the **LED Feedback** window that pops up, select **Monitoring**



Click **OK**, then on **Done**.

Step 2 is defining which output channel has to be monitored. Create the following action (see also “Creating actions” p.12):

- initiator: **output channel** (e.g. relay)
- subject: **input channel** (e.g. push button)
- action: **0135. Monitor status of initiator**



As always, don't forget to **synchronize (write)**.

The feedback LED of the push button in the living room will now reflect the state of the light in the children's room.

Other examples of possible LED feedback configurations are: showing the status of a doorbell, a light in an out building, or even the status of a connected burglar alarm (depending on hardware capability). These are all configured following the same steps as described above.

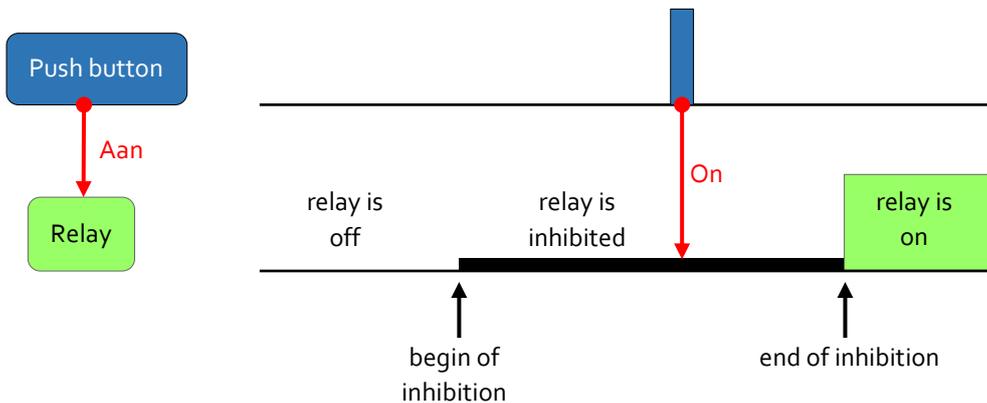
## 5 FORCING AND INHIBITING

For many modules forcing and inhibiting actions are available. These can be used to realise more advanced configurations.

### INHIBITING

While inhibited, a channel will be turned off (released). During inhibition mode, it will no longer respond to signals coming from the bus. It will however still pick up these signals, and when coming out of inhibition mode, it will execute the last command received, even if this was sent during inhibition mode.

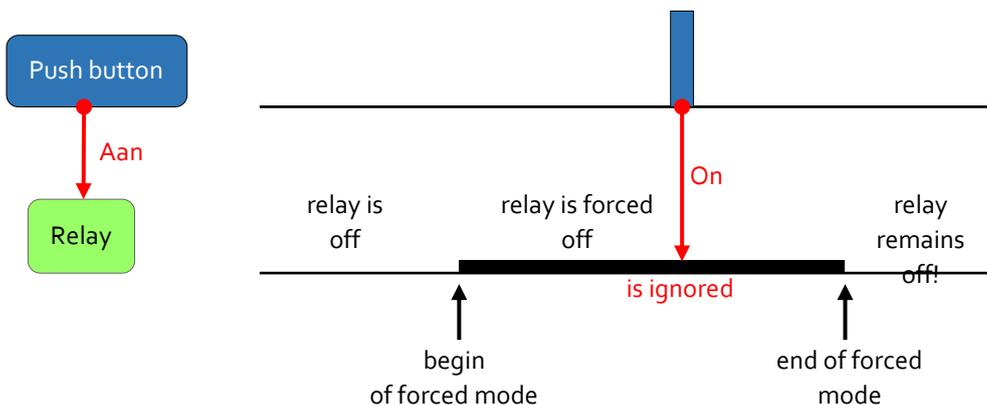
For instance: a push button is connected to a relay channel by means of the action "On". While the relay is inhibited, the push button is pressed. As long as the inhibit mode is active, the relay will stay off (but the button push is registered). As soon as the inhibit mode ends, the "on" will be executed.



### FORCING

A forced channel can be "forced on" or "forced off". While forced, it will no longer respond to signals coming from the bus. Furthermore, it will be completely "deaf" to all commands. When coming out of forced mode, it will **not** execute commands put on the bus during forced mode.

For instance: a push button is connected to a relay channel by means of the action "On". While the relay is "forced off", the push button is pressed. As long as the forced mode is active, the relay will stay off and ignore the button push. After the forced mode ends, the relay will stay off.



### PRIORITIES

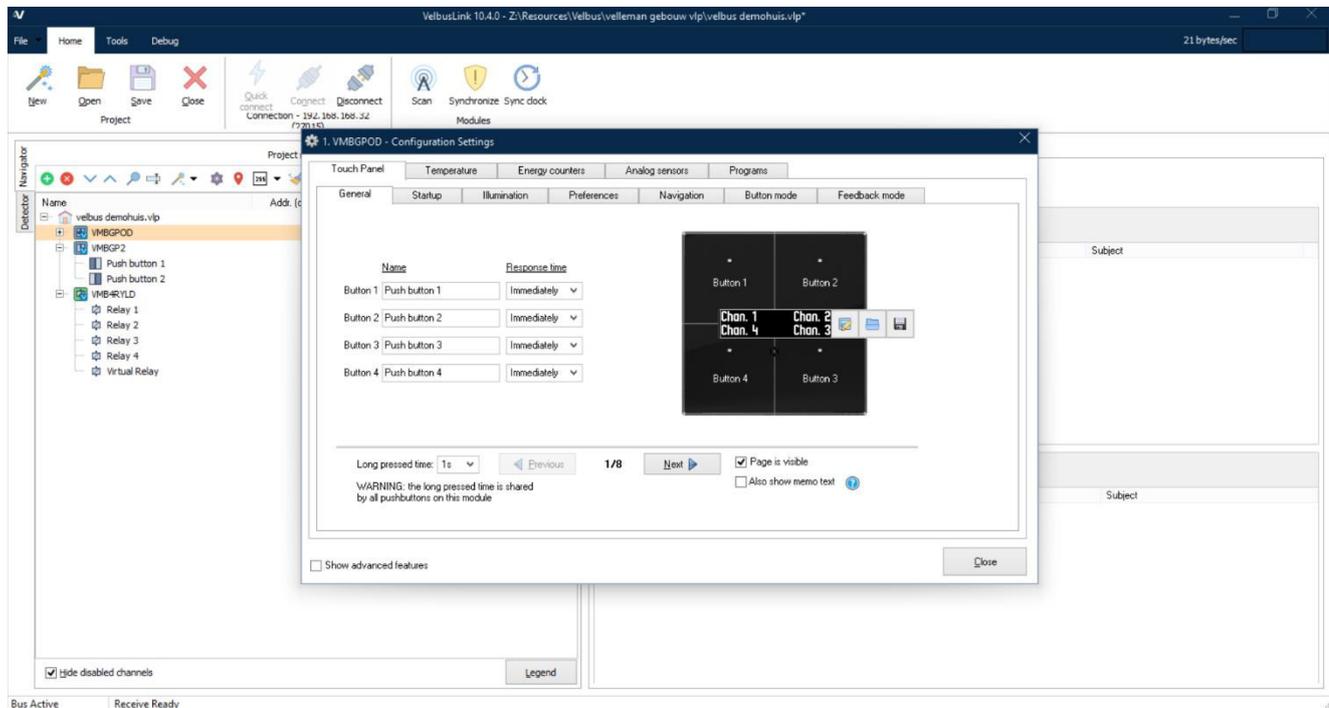
Using a combination of regular, inhibiting and forcing actions one can set different levels of priorities. "Forced off" has priority over "forced on", which has priority over inhibiting actions, which in turn have priority over regular actions.

Example: a sunscreen has to be lowered when the indoor temperature exceeds 25°C. But when the wind sensor closes (too much wind), the screen has to go up regardless of all other commands. This can be achieved by using an inhibiting action for the indoor temperature alarm (e.g. "inhibit but preset down at closed switch"), and a forced action for the wind alarm (e.g. "forced up at closed switch"). The inhibit action will overrule normal button control. The force action will overrule all other actions, including the inhibit actions.

## 6 CONFIGURING MODULES

All electronically addressable Velbus modules have settings that can be configured. These vary depending on the type of module. For relay modules the channels for instance can be set to “normally closed” or “normally open”. For input modules (e.g. pushbuttons) the array of possible settings is much wider: the response time can be set, single/dual/multi mode can be chosen, LED indication and backlights can be configured, program steps can be added, and so on. In glass panels, additionally the thermometer and thermostat functions can be configured, display settings can be edited, and so on. For dimmers the operation mode may be configurable, multi step presets can be set, and so on.

To access the **Configuration** dialogue of the module, select the module in the navigator and click on the gear icon . In the example below, we opened the configuration dialogue of a VMBGPOD module.



(For detailed explanations per module, please visit the Velbus products pages on [www.velbus.eu](http://www.velbus.eu) > Products.)

## 7 DUAL MODE BUTTONS

Velbus allows for dual mode functioning of push and touch buttons. In dual mode the same button has two different functions: one when short pressed (e.g. all off), and another one when long pressed (e.g. all on). The long press time can be set to 1, 2 or 3 seconds.

In the explanation below we will use a VMBGP2 two touch button glass input module, but other input modules (push button as well as touch button) also allow for dual mode functioning <sup>2</sup>.

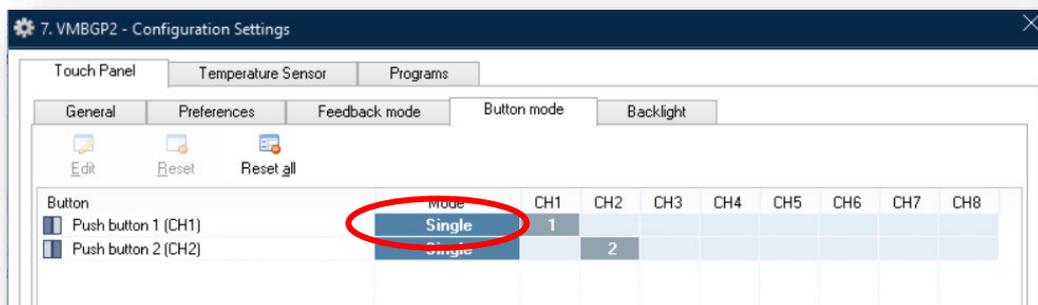
As an example we will configure push button no. 1 to act as “on-off” for the corridor when short pressed and as “all off” when long pressed.

Practically, when long pressing the module will simulate a different channel. *Example:* Long-press button no. 2 to make the module activate press button 8. The most logical way to proceed, is to use a virtual channel for the second channel.

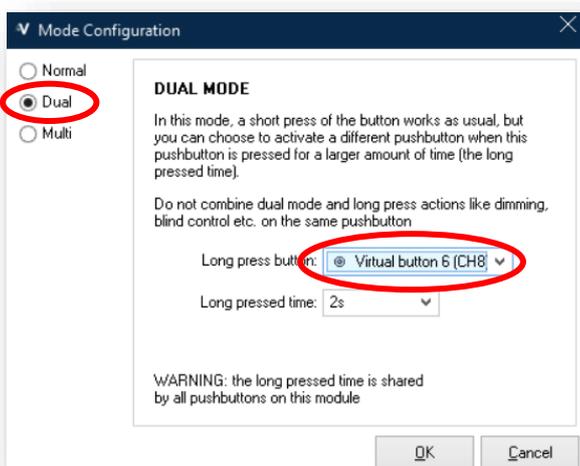
A virtual channel is a channel to which no physical hardware is being connected, e.g. a non-connected push button on a universal 8-channel push button module, or push button channels 3 to 8 on a 2-button glass command module. (Relay channels also have virtual channels, but they are not applicable.)

### STEP 1: SET UP DUAL MODE

Select the push button module in the navigation pane and click on the gear icon . In the configuration window, select the **Button mode** tab.



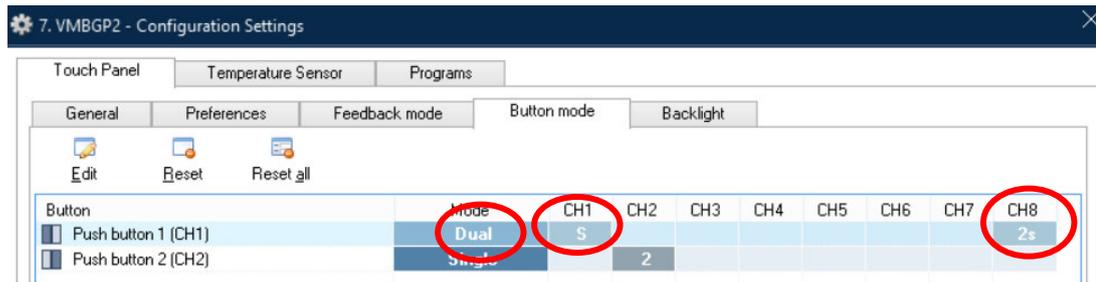
Double click the button that needs to be set to dual mode (in our example Push button 1 (CH1)). The **Mode push button** dialogue pops up. Select **Dual** in the upper left corner. Then select next to **Long press button** which (virtual) button needs to be activated on long press. In our example, we select “Virtual button 6” (channel 8).



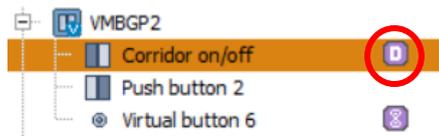
<sup>2</sup> Except the VMBGPOD glass command module with touchscreen and OLED display. Only the first page can accept dual mode.

The long pressed time can be set to 1, 2 or 3 seconds.

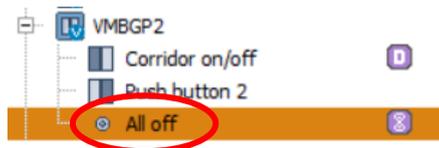
Select **OK**. In the tab **Push button mode** tab of the configuration window we can now see that dual mode has been configured for button 1. We can verify that a short press (S) activates channel 1, and a long press (2s) channel 8.



Close the configuration window. An icon will appear next to the channel with dual mode. Change the name of the button to "Corridor on/off"



The virtual channel we chose for the long press action is also visible now in the navigation pane. Change its name to "All off".



## STEP 2: CREATE THE ACTIONS

Now create the two actions (see "Actions" p.12.).

- For push button "Corridor on/off", create a "Toggle" action for the light relay
- For the virtual button "All off", use the wizard (see "The macro wizard" p.16) for the "all off" action.



## READY!

If we now briefly press the left button on the glass control module, we operate the light in the hallway (on / off). If we press for a long time, all the lights go out.

## 8 MULTI BUTTON MODE

Apart from dual button mode (p. 22), a button can also be configured to work in multi mode. In that case, one input channel will loop through a series of other input channels at each press of the button.

E.g.: to control ventilation speeds multi mode can be used. At the first press low speed is activated, a second press activates medium speed, a third press high speed and a fourth press will turn it off. Pressing again restarts the loop from the beginning.

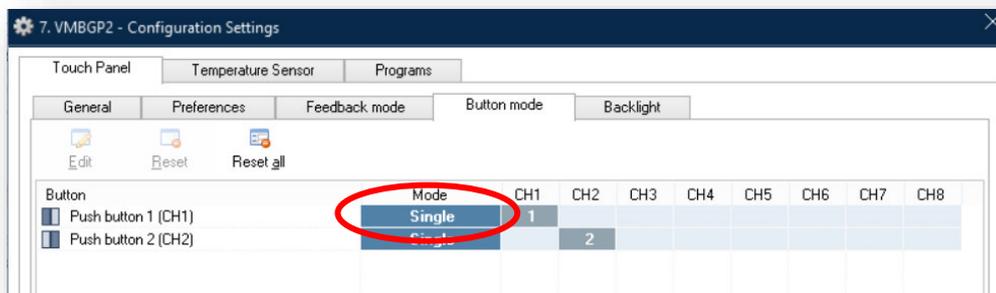
What actually happens is that the input module will consecutively activate different push button channels. These channels can be freely chosen, but must form one continuous series.

E.g.: Push button 1 is configured to function in multi mode for channels 3 to 6. Pushing button 1 will activate channels 3, then 4, then 5, then 6, then 3 again, and so on.

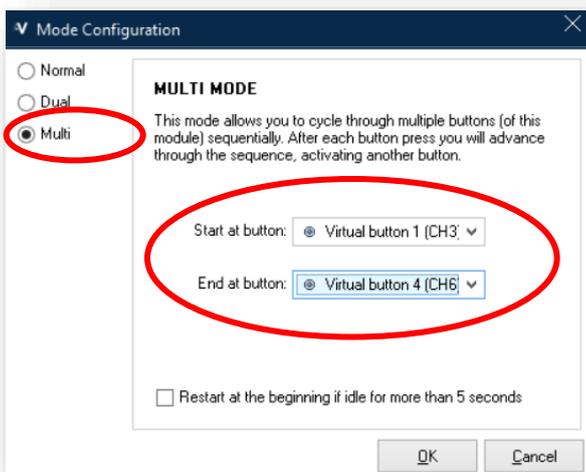
In the example below we use a VMBGP2 glass control module with 2 tactile buttons, but also other input modules (both glass control modules as push buttons) allow for multi mode function<sup>3</sup>.

### STEP 1: CONFIGURING MULTI MODE

Select the module in the navigation pane and click on the gear icon . In the configuration window, select the tab **General** > **Push button mode**.



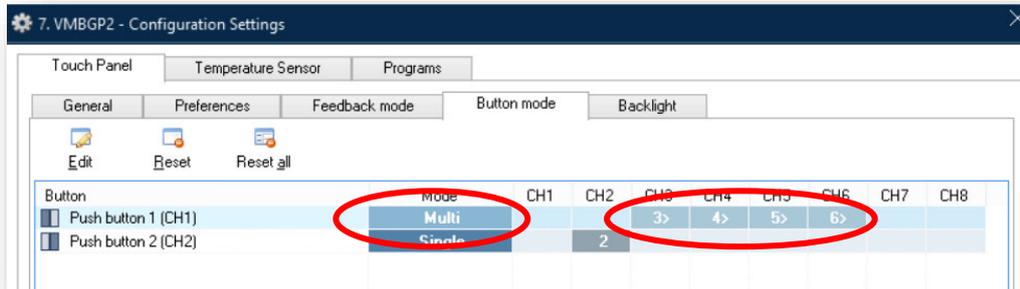
Double-click the button that needs to function in dual mode (in our example **Push button 1 (CH1)**). the dialogue **Mode push button** appears (see screenshot below). Select **Multi mode Dual** on the top left. Then select to the right the first channel of the series (in our example **Virtual 1 (CH3)**) and the last (in our example **Virtual 4 (CH6)**). This way, at each button press, virtual button 1 (CH3), then 2 (CH4), then 3 (CH5) and 4 (CH6) will be activated.



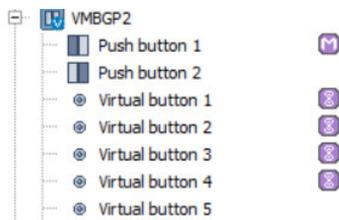
<sup>3</sup> Except the VMBGPOD glass control module with OLED display.

If the option Restart at the beginning if idle for more than 5 seconds is selected, after 5 seconds of inactivity, pressing the button will activate the first button in the series. If not, the module will remember the last channel that has been activated and continue from there.

Press OK. The tab Push button mode of the configuration dialogue now shows that multi mode is enabled for the first button, and that when pressed, channels 3 to 6 will be activated.



Close the configuration window. An “M” icon will appear next to the channel with multi mode.



## STEP 2: CREATING THE ACTIONS

Create on the virtual buttons the actions that will have to be executed.

In our example:

- for virtual button 1 (CH3) the action is made that corresponds to the first button press
- for virtual button 2 (CH4) the action is made that corresponds to the second button press
- and so on until virtual button 4 (CH6)

## READY!

Each time we press button 1, the module will cycle through the actions attributed to the virtual buttons.

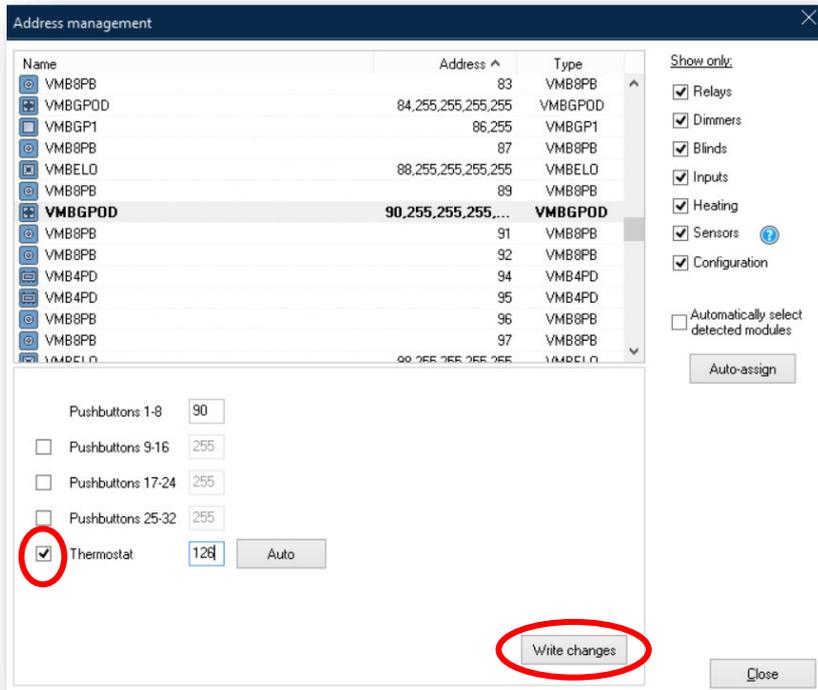
## 9 HEATING/COOLING CONTROL

Velbus can easily be configured to command a heating and/or cooling system (see “Installation Guide, Part 1: Hardware and Cabling” for a quick overview of relevant modules).

We will explain here the principle of heating control using a VMBGPOD glass panel with OLED display as master panel in the living room, and a VMBGP2 two-button glass panel in the bathroom.

### 1. ACTIVATE THE TEMPERATURE SENSORS

First of all, the thermostat functions of both panels have to be activated by assigning them an address (different from FF). Access the **Address management** dialogue by clicking the icon . Below, as an example, we have selected the VMBGPOD.



Check the **Thermostat** checkbox. A free address is automatically attributed to the thermostat. Click on **Change**. Do the same for other modules as necessary. Then press **Close**.

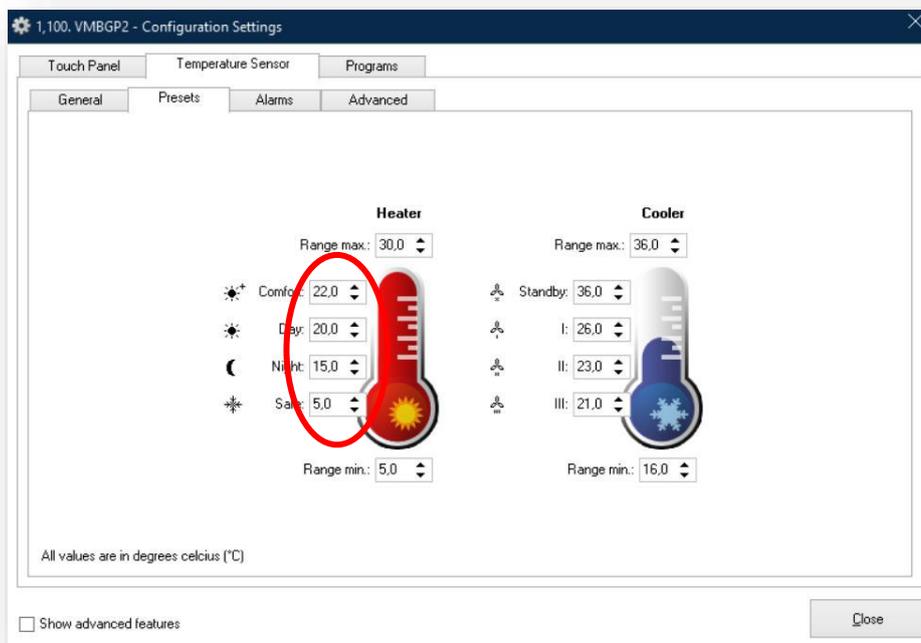
### 2. CONFIGURE THE THERMOSTATS

Now, in the navigator window, select the VMBGP2 panel and access its configuration dialogue by clicking on .

Edit the settings in the tab **Temperature sensor** > **General**. Change the sensor name (we chose “Bathroom”). The sensor name chosen here will also appear on the VMBGPOD display when we configure this later on.



Set in the tab **Temperature sensor** > **Presets** the desired temperatures for every heating mode.



Click on **Close**.

Next, configure the VMBGPOD master panel in the living room.

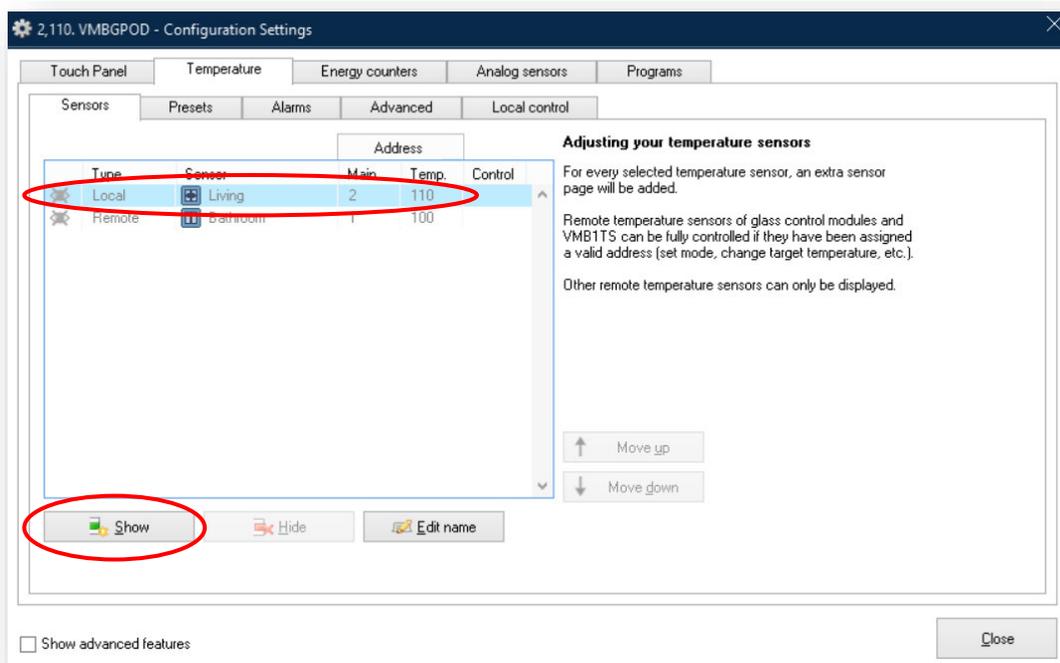
### 3. SHOWING THE SENSORS ON THE OLED DISPLAY

We will show both thermostats on the OLED display of the VMBGPOD module, so we can access both from the command module.

In the VMBGPOD configuration settings, go to the tab **Temperature > Sensors**.

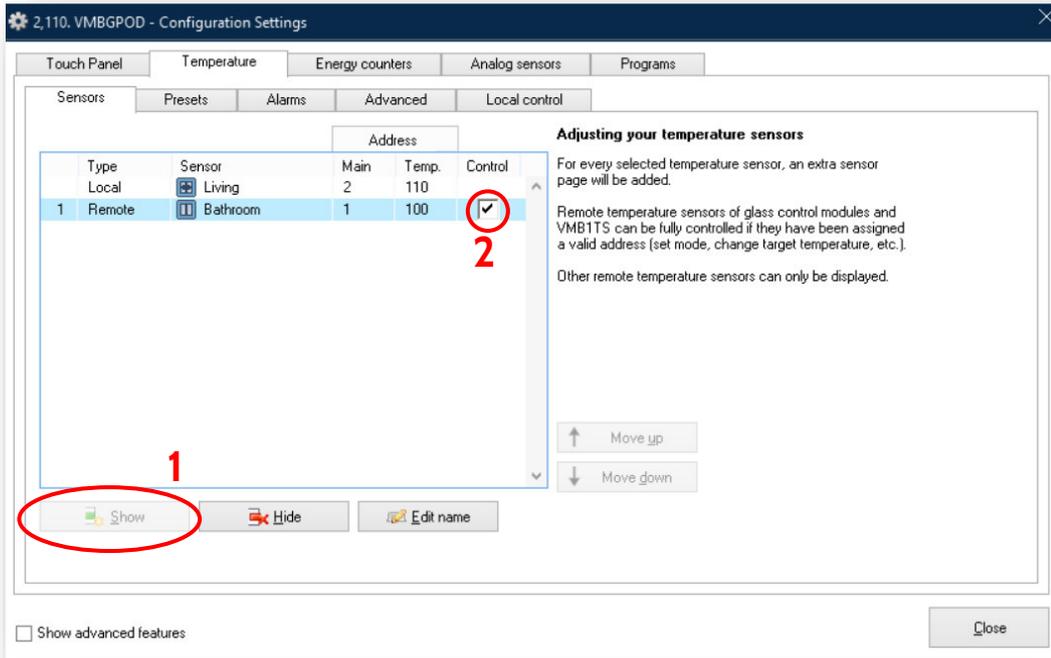
Select the “Local” sensor, click on the **Edit name** button, and change its name to “Living”.

Then click on **Show**. This makes this thermostat visible on the screen of the VMBGPOD.



## Part 2: configuration

Next, select the “Bathroom” sensor and click on **Show**. Check the box “Access” to access the bathroom thermostat from the living.



Press **Done** to exit the dialogue.

After synchronisation (write) you will now be able to access from the VMBGPOD glass panel’s display both the “Living” and the “Bathroom” thermostat functions. These include setting the mode (anti-freeze, night, day, or comfort) and changing the current target temperature. This change can be timed (e.g. 2° warmer for one hour) or it can remain active until the next program step or the next manual intervention. (Please refer to the VMBGPOD product pages and the FAQ on [www.velbus.eu](http://www.velbus.eu) for more details).

## 4. CREATE CONNECTIONS

Finally, we need to create the right connections (actions) between the thermostat channels on the glass panels and the relay channels controlling the heating system.

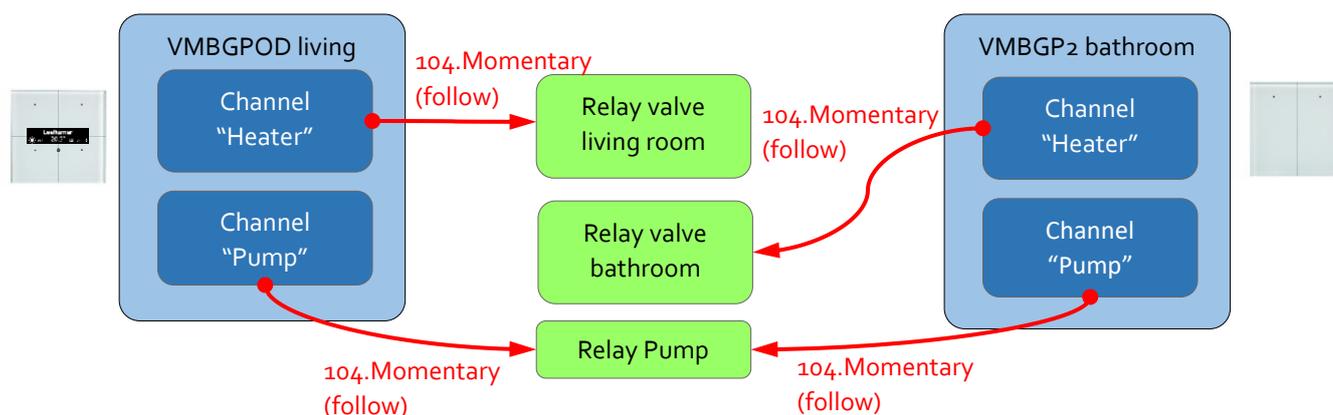
How the Velbus relays need to be physically connected to the heating system depends on the specific system. A standard setup could be, for instance, one relay commanding the central pump of the heating system, and for each heating circuit a separate relay channel that controls the flow valve.

The glass panels have 8 special channels for heating and cooling (see screenshot below). In our example the “Pump” and “Heater” channels interest us most. Whenever the measured temperature drops below the target temperature, these channels will be closed (“Pressed”). Once the temperature is again equal to or higher than the target temperature, the channels open again (“Released”).

In the example below, the measured temperature is 22.5°C. The target temperature has not been reached, thus the “heater” and “pump” channels are closed (“Pressed”).

VMBGPOD Master panel		09,40	VMBGPOD
⊙ L Kitchen		CH1	Released
⊙ L Hall		CH2	Released
⊙ Sunscreen up		CH3	Released
⊙ Sunscreen down		CH4	Released
⊙ Push button 5		CH5	Released
⊙ Push button 6		CH6	Released
⊙ Push button 7		CH7	Released
⊙ Push button 8		CH8	Released
⊙ Living		CH34	22.5°C
⊙ Heater		CH35	Pressed
⊙ Boost		CH36	Released
⊙ Pump		CH37	Pressed
⊙ Cooler		CH38	Released
⊙ Alarm 1		CH39	Released
⊙ Alarm 2		CH40	Released
⊙ Alarm 3		CH41	Released
⊙ Alarm 4		CH42	Released

Schematically represented, the actions to be created are the following:



Note: The “momentary” action means that the subject will follow the state of the initiator. As long as the initiator is pressed (closed), the subject will be pressed (closed) also. As long as the initiator is released (open), the subject will be released (open) also. The “Momentary” action, when used with multiple initiators on the same subject, will function as a logical “OR”: as long as at least one of the initiators remains closed (“Pressed”), the subject will remain closed (“Pressed”) also. Only when all initiators are open (“Released”) will the subject be open (“Released”).

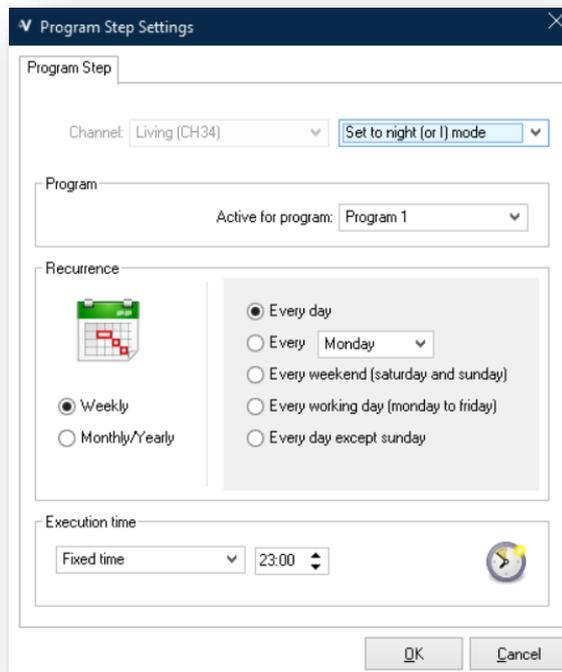
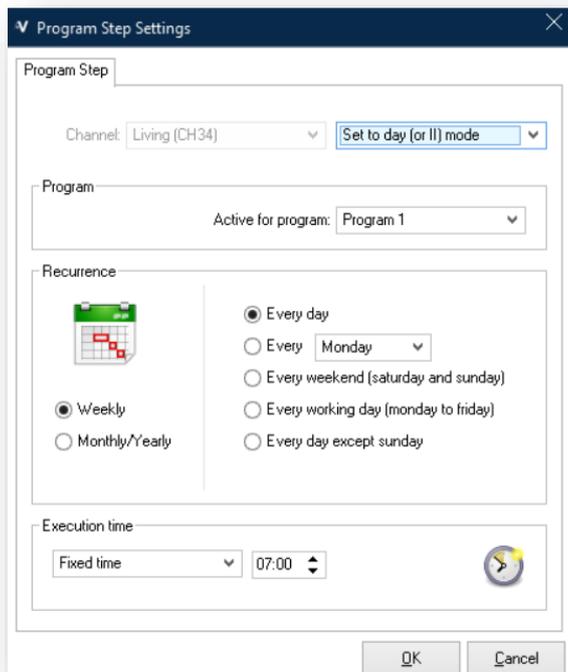
Thanks to the “momentary” actions, whenever the “pump” and “heater” channels are being pressed, the connected relays also close and thus activate the heating system. Once the “pump” and “heater” channels open again, the relevant parts of the heating system will be deactivated too. Note that as long as at least one connected “pump” channel is closed, the pump relay will also remain closed. Thus the pump will continue working as long as at least one glass panel demands heating.

More configuration options, e.g. hysteresis, sensor calibration, delays etc. are accessible under the **Temperature** tab. For details, please refer to [www.velbus.eu](http://www.velbus.eu) (product pages and FAQ).

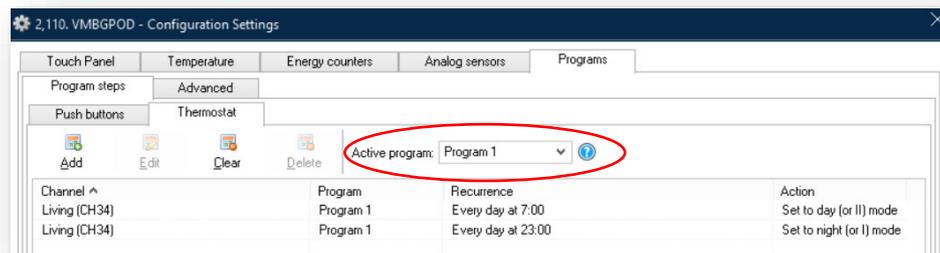
## 5. AUTOMATIC HEATING AND COOLING

To automatically set the heating to day mode in the morning, night mode in the evening etc., program steps are used for the temperature sensor. These can be created in the module’s configuration dialog, tab **Programs > Program steps > Thermostat**. (Further explanations concerning program steps can be found under “Creating and modifying program steps” on p. 32).

In the example below two program steps are created, one to set the heating to day mode and a second one to set it to night mode.



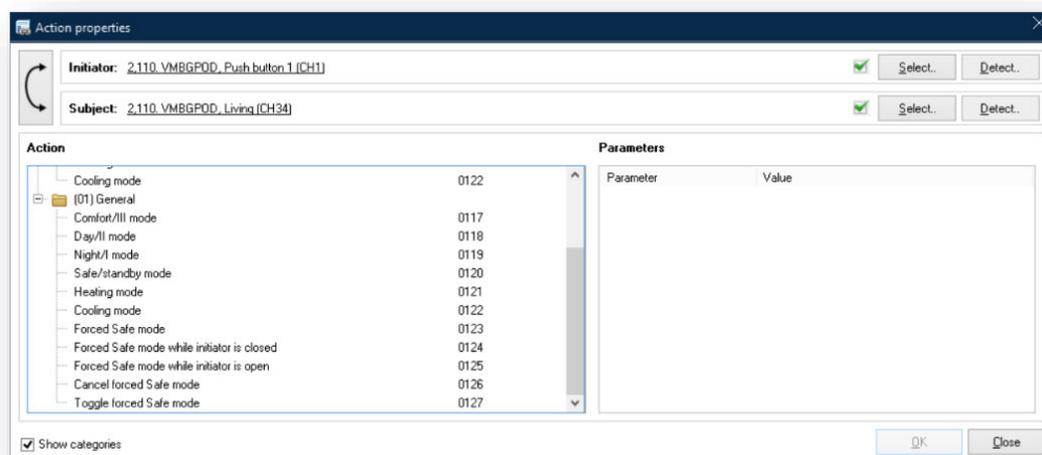
Don't forget to check that the right program is active. This can only be done when VelbusLink is connected to the installation.



## 6. USING INPUT CHANNELS TO SET THE HEATING/COOLING MODE (OPTIONAL)

Input channels (e.g. push buttons) can be configured to change the active heating/cooling mode. To do so, create an action with the input channel as initiator and a temperature sensor channel as subject.

In the example below, we selected as subject the temperature sensor channel of a VMBGPOD glass panel.



Available actions are switching to day/night/safe/comfort mode, to heating or cooling mode, and so on.

## 10 CREATING AND MODIFYING PROGRAM STEPS

All Velbus input modules (push buttons, sensors...) can be configured to activate, deactivate, lock, unlock, press, long press or release their own channels at certain times. Time settings can be fixed times, sunrise/sunset with or without offset, and more. Every input module has a built-in astronomical clock with sunset and sunrise hours predefined.

A program step can be considered as a input module commanding, locking and unlocking its own channel on a given time. A push button can automatically activate at 22:00, and so activate the action related to this push button (e.g. activating a relay). A twilight sensor (or a push button) can lock itself at sunset, and unlock at sunset.

### A PRACTICAL EXAMPLE

You want the light on the wall to switch on automatically at 22:00, and switch off at 03:00.

For this purpose, we need two push buttons (the first one with the action "on" to the light relay, and the second one with the action "off" to that same relay). We leave the push button with the "on"-action to short-press at 22:00. The action is executed, as of the push button is physically pressed, and the light switch on. We leave the push button "off" to short-press at 03:00 to execute the coupled action "off" so the light switches off.

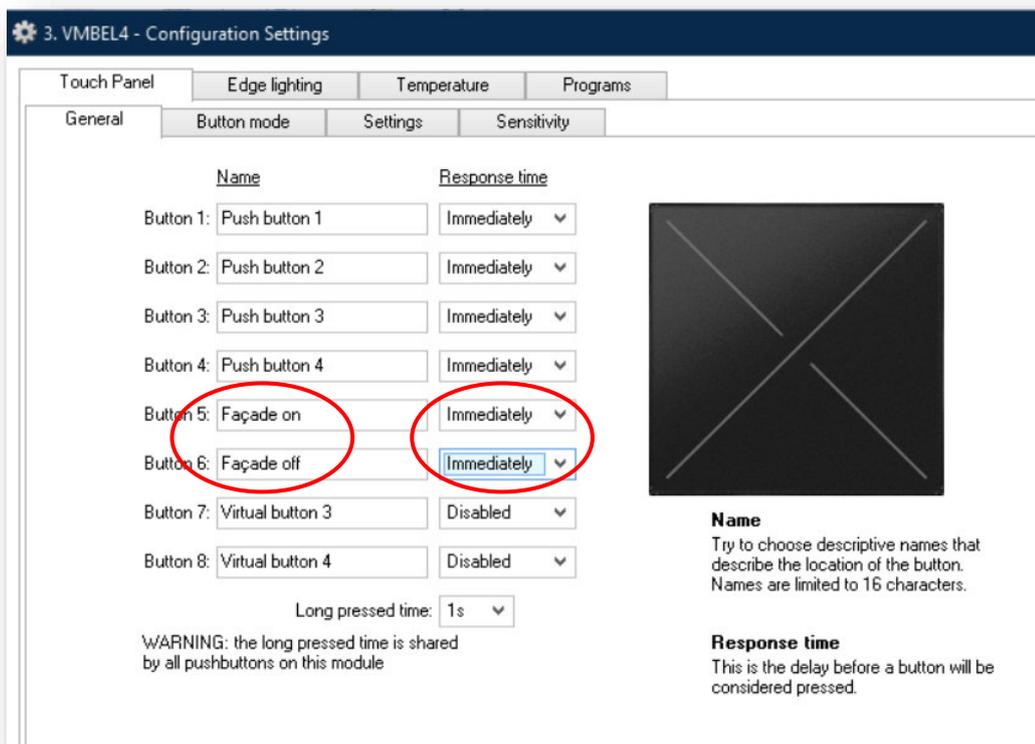
We note two important remarks:

1. Do not use "on/off" actions for program steps, but do so for individual "on" and "off" actions. For instance, if someone has switched on the light at 21:00, and the program step "on/off" is set at 22:00, the light will switch off instead of switch on. To make sure the light switches off, regardless of what happened before, we need to use the "on" action. (And the same for "off").
2. For program steps on push buttons we will generally use virtual channels instead of regular channels. That way, we will be able to use the regular channels for manually controlled functions (e.g. "on/off" actions), without having to sacrifice them for program step actions.

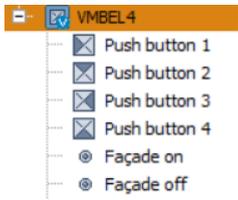
For automatic façade lighting, please follow the steps below:

### Step 1: Activating virtual channels on an input module

Open the configuration settings of the desired push button module (below is a VMBEL4 4-button Edge Lit module). Change the reaction delay of the two virtual channels to "Direct" and change the names to "Façade on" and "Façade off".

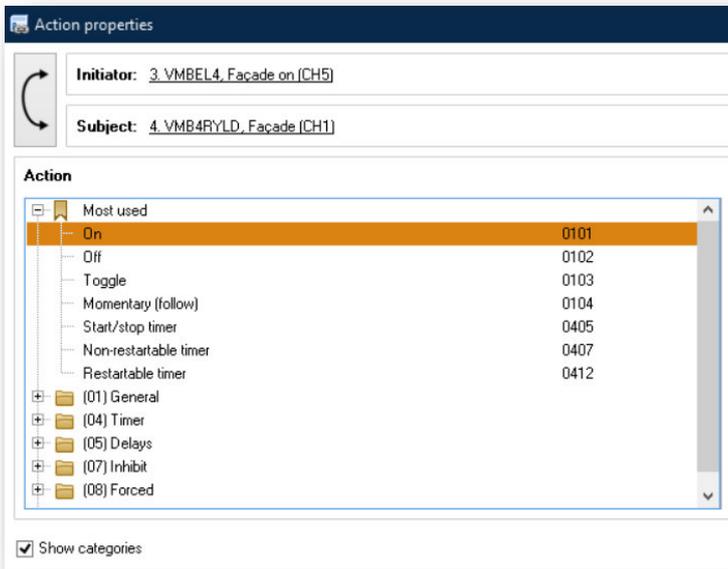


These channels will appear in the navigation pane:



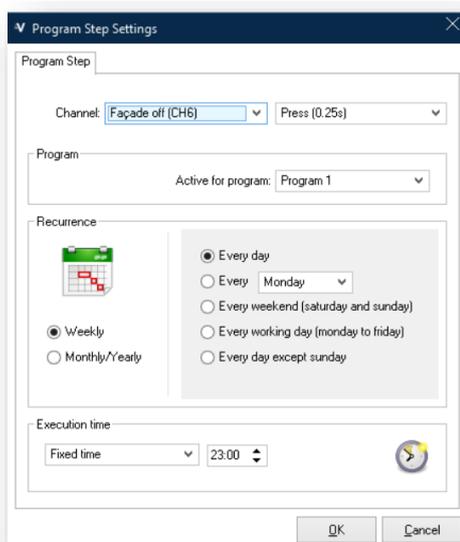
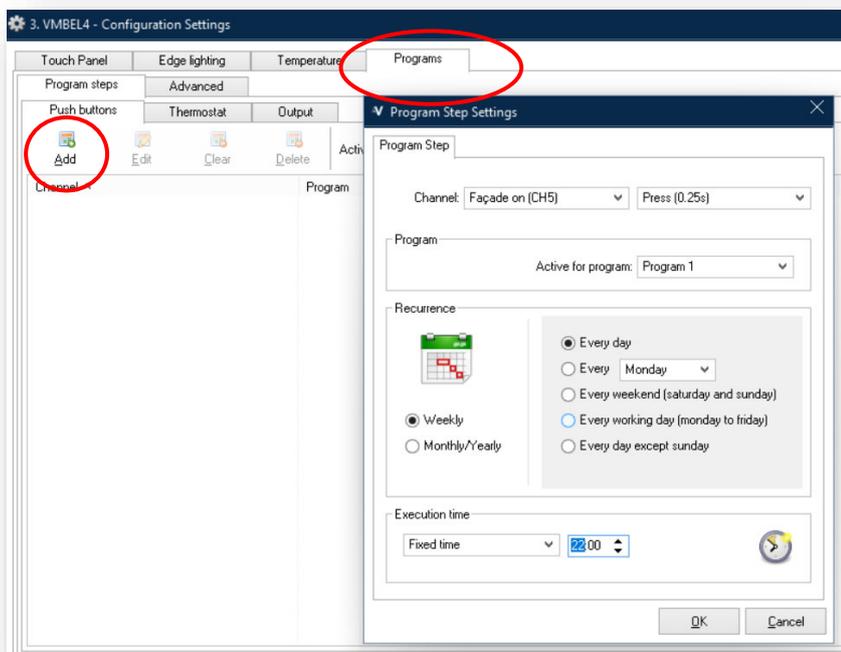
### Step 2: Creating actions on virtual channels

Create an action “101. On” with the virtual push button “Façade on” as initiator and the light relay as subject. Create a second action “102. Off” with the virtual push button “Façade off” as initiator.



### Step 3: Creating program steps for the virtual push buttons

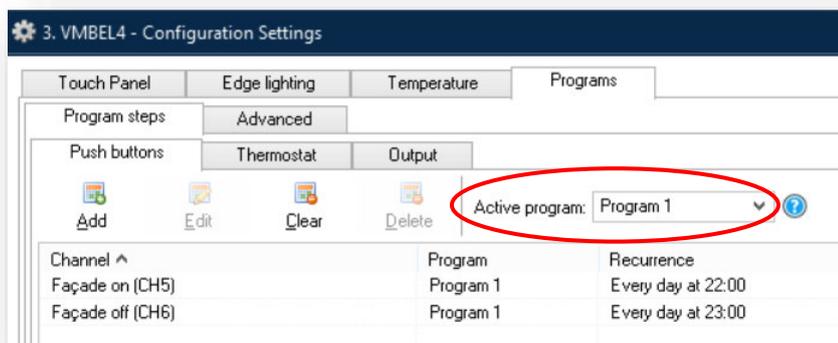
Open the configuration settings of the input module and go to the tab “Programs”. Create the two following program steps:



#### Step 4: Checking if the program is active

To make a module execute a program step, we need the corresponding program to be active (see screenshot below). This configuration is only available when VelbusLink is connected, since the active program is set directly on the module, even without synchronisation.

Generally, program 1 is always active, but it is recommended to check to make sure.



### HEATING/COOLING PROGRAM STEPS

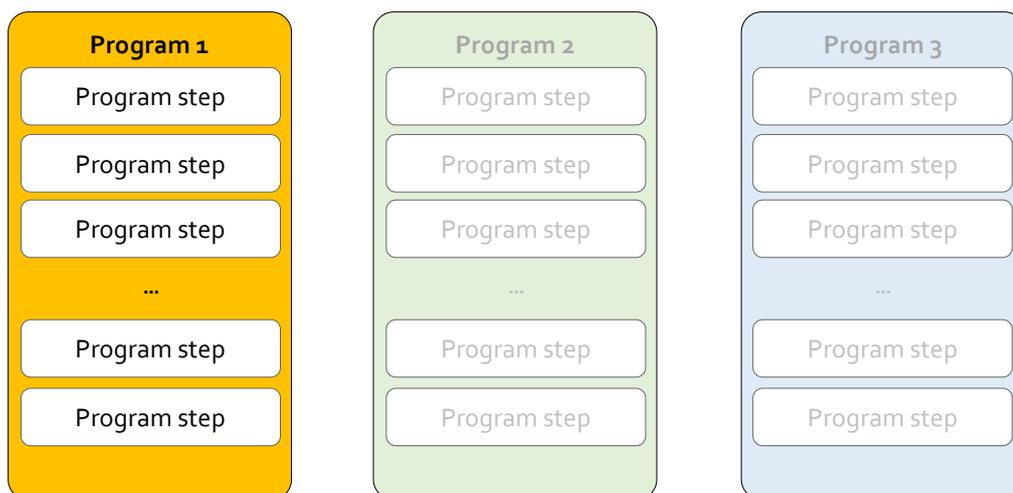
Those modules that have thermostat functions (e.g. the glass control module series) also have a configuration tab for program steps related to heating and cooling. For more information, see “5. Automatic heating and cooling” on p. 29). These are configured in the same way as other program steps (see above).

### PROGRAMS VERSUS PROGRAM STEPS

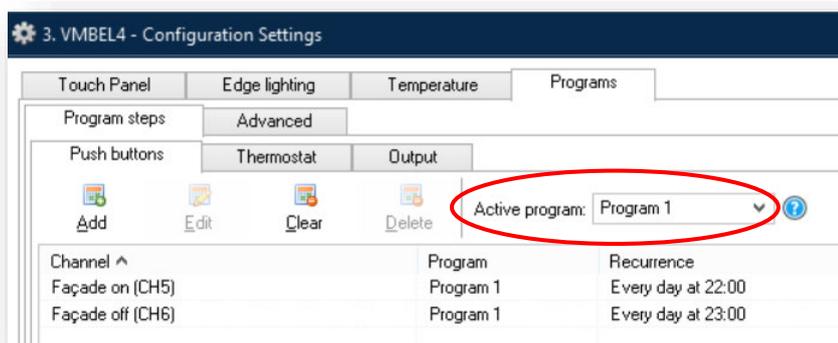
Every input module has three possible programs: Program 1, 2 and 3. **Programs** are not the same as **program steps**.

A **program step** can be for instance: “activate input channel 3 during 1 minute every day at 07:00”. A **program** is a set or group of such program steps. Only one **program** at a time can be active for a given module, containing multiple **program steps**.

In most cases only one program will be used, containing all the needed program steps.



For the program steps to be executed on a module, the program they belong to needs to be active (see screenshot below). This setting is only accessible when VelbusLink is connected, as the active program is immediately set on the module, even without syncing.

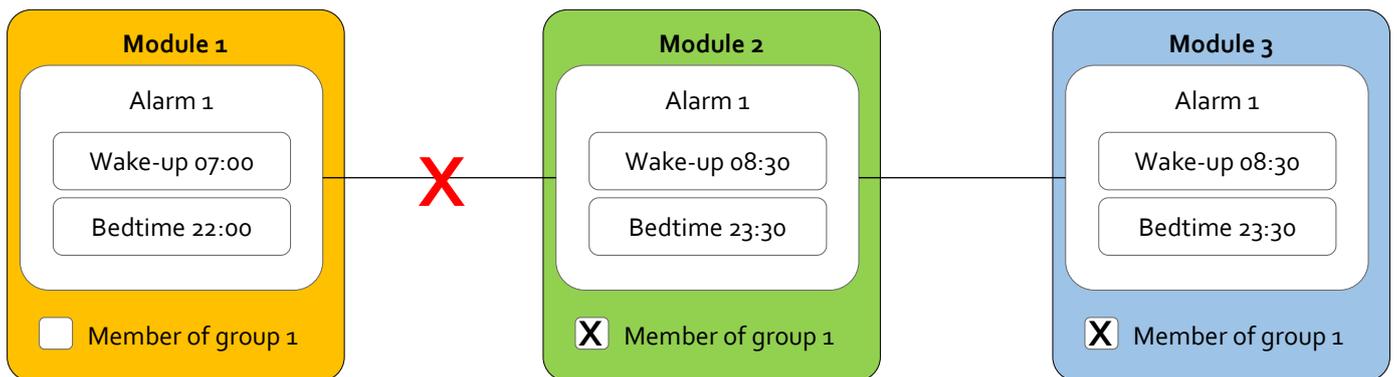
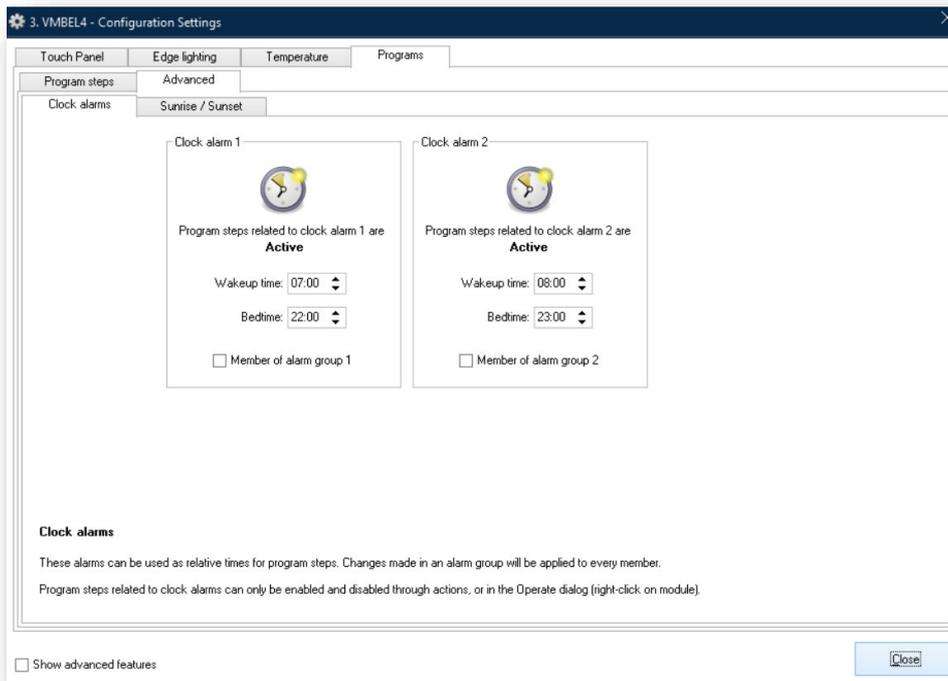


## WAKE-UP AND BEDTIMES (OPTIONAL)

Program steps are normally used with fixed times, or with sunset/sunrise times. If so desired, optionally one can use wakeup- and bedtimes. This is an advanced option that can be useful in some cases, but it is not at all required.

Wakeup- and bedtimes can be seen as variables, whose value can be set in the tab “Clock alarms” of VelbusLink, or on the OLED screen of a VMBGPOD glass control module. The scope of this variable is initially limited to the module. But wakeup- and bedtimes can be made member of alarm groups. In that case, when the value is changed for one member of the group, all other members of the group will copy this value.

In the example below module 1 is not a member of any alarm group. Changes to wakeup- and bedtimes will only have a local effect (in the module itself). Modules 2 and 3 are members of the same alarm group. Changes to wakeup- or bedtime in module 2 will be automatically copied by module 3 and vice versa.



Changes to wake-up and bedtime only affect module 1 (not a member of any alarm group)

Changes to wake-up and bedtime affect both modules 2 and 3 (because both are members of the same alarm group)

Program step: “Set to day mode at wake-up time” is activated at 07:00

Program step: “Set to day mode at wake-up time” is activated at 08:30

Program step: “Set to day mode at wake-up time” is activated at 08:30

E.g.: the temperature sensor of multiple modules needs to be set to day mode in the morning. In each of the modules a program step “set to day mode at wakeup time” is created. All modules are made members of the same alarm group. If the wakeup time needs to be adjusted later on, it suffices to change it in one module. The other modules will automatically copy it.

Note: activating and deactivating these alarm scan only be done through push buttons. To do so, create an action with as initiator a push button, as subject “Module actions” of the module containing the alarms, and use one of the actions concerning alarms (numbers 1001 through 1014).

## ACTIONS RELATED TO PROGRAM STEPS AND PROGRAMS

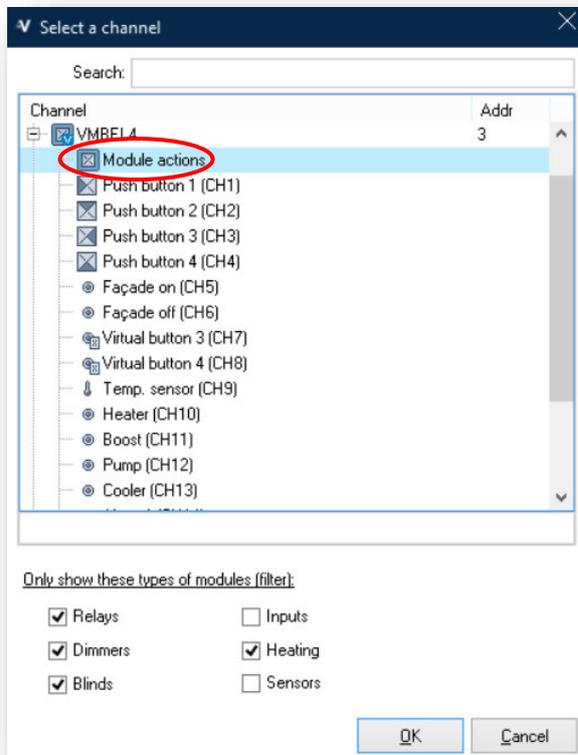
### Manipulating program steps

**Program steps** can be activated and deactivated by other Velbus channels. To do so, create an action and as **subject** choose the input channel for which the program steps have been configured.

Possible actions are activating and deactivating (temporary or permanent) the program steps on that channel.

### Manipulating programs

The active **program** of an input module can also be configured by another channel. To do so, create an action and as **subject** choose the input module, channel “Module actions” (see screenshot below).

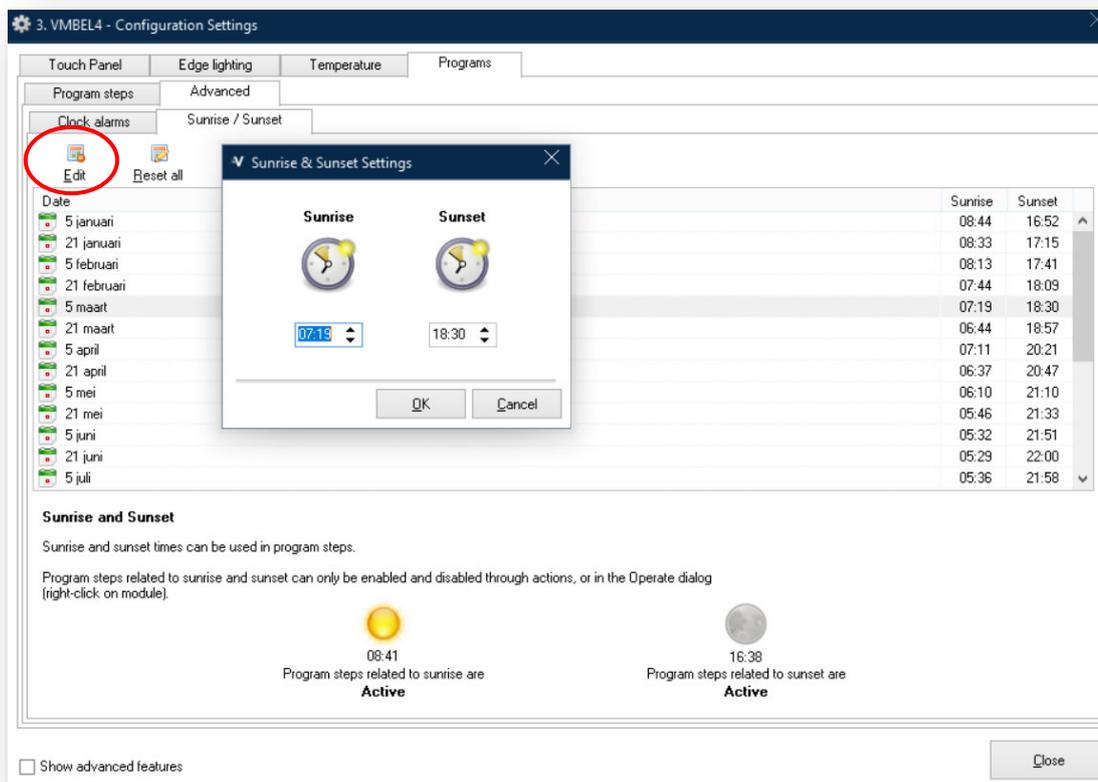


Available actions are: setting the active program on the module, deactivating all programs, and so on.

## MODIFYING THE SUNSET AND SUNRISE TIMES

Every input module contains a table with sunrise and sunset times. These can be used for program steps.

To manually modify the table with sunrise and sunset times, go to the tab **Programs** > **Advanced** > **Sunrise/Sunset**.



Select a row and press the button **Edit** to change the value. Each module has its own table with sunrise and sunset times, so changes to the table only have an effect in the module you are editing.

Caution: the difference between two consecutive sunrise times in the table, or two consecutive sunset times, must not be greater than 128 minutes (two hours and 8 minutes).

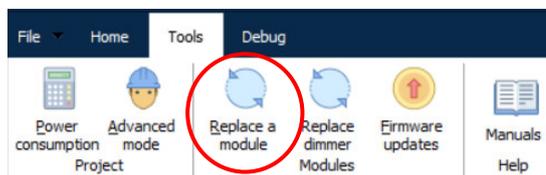
To reset all values to factory defaults, press the button **Reset all**.

## 11 SPECIAL FUNCTIONS

### REPLACING A (FAULTY) MODULE

A faulty module in the installation can easily be replaced with a new one. VelbusLink contains a wizard which will write all settings from the old module to the new module. The old module will be deleted automatically from the project. If the faulty module still reacts on the bus, the module memory can be read. If it does not react, the VelbusLink project map must be available to copy the settings to the new module.

To start the wizard **Replace a module**, click the corresponding button in the **Tools** menu. Next, follow the instructions of the wizard.

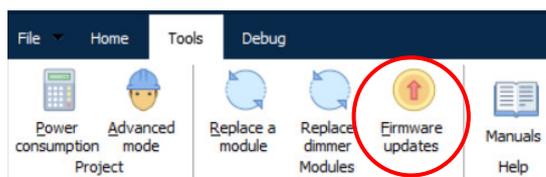


### FIRMWARE UPDATES

All modules connected to the bus contain firmware. This firmware can be updated free of charge to the latest version from VelbusLink. An Internet connection is not necessary, since firmware files are registered in VelbusLink.

A firmware update may be desirable or necessary to activate new features, or to detect or fix a bug. When important firmware updates are available, an icon  will appear on top of the navigation pane.

Firmware updates can be executed by pressing the button **Firmware updates** in the **Tools** menu, and to follow the instructions. This will allow to do all firmware updates one after another without any intervention.



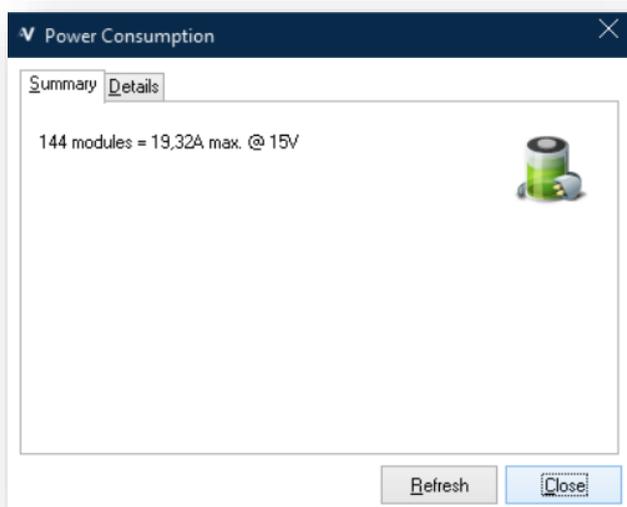
Calculate the power consumption

In the Tools menu, a calculator allows you to calculate the maximum energy consumption of the installation based on the used modules.



To do this, press the calculator icon .

A window appears displaying the total power consumption at 15V, allowing you to check the detailed calculation.



If several power supplies are connected, interconnect all the negative poles and distribute the positive poles over the modules.

## SET THE INSTALLATION IN A CERTAIN STATE DURING START-UP

In some installations, it is desirable or important that certain channels return to a certain state when power returns after a power cut. To do this, you can use a (virtual) push button which is set on "N.C.". When the power supply returns, the input channel will immediately close, and the corresponding actions will execute immediately.

- Set a (virtual) button of a VMB8PBU, VMB6PBN, VMB7IN or VMB2PB(A)N-R input module<sup>4</sup> on "N.C." ("Normally Closed"). Select the module, click on the configuration symbol , go to the tab **NO/NC** and set the corresponding button on **NC**. At start-up, this button will close immediately.
- Make an action 412 "restartable timer" (1s) with the N.C. push button as initiator and an unused (virtual) relay at random as subject (the "start-up relay"). This start-up relay will be used as initiator to set all channels in the correct state at start-up. For instance, if a relay must be suppressed when the power returns, configure an action "suppress" between the virtual start-up relay (as initiator) and the relay channel (as subject).
- Now, create all actions to set the desired channels in the correct state at start-up. Use the start-up relay as initiator.

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<sup>4</sup> The push button channels of the command modules cannot be set on N.C..

## 12 TROUBLESHOOTING

Please consult the [Velbus Troubleshooting Guide](#) (free download on [www.velbus.eu](http://www.velbus.eu)).

### See also

Installation Guide, Part 1: Hardware and Cabling

[www.velbus.eu](http://www.velbus.eu) > Support