VELBUS® DOMOTICS

makes life easy

Installation Guide

Part 2: Configuration

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

Table of contents

11 TROUBLESHOOTING 36

2

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 **"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 website. To install VelbusLink on your PC (Windows only), double click the setup file and follow the standard installation procedure.

We recommend to regularly check for updates on the website, as new modules and functions may be included. You can subscribe to the Velbus newsletter and/or updates to automatically receive notifications in your inbox.

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[1], through the VMBHIS Home Center server or through a TCP/IP server.

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 made.

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.

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

---

[1] VMBRSUSB, VMB1USB or VMB1RS

Always first connect – scan – synchronize

Whenever you start VelbusLink, it is good practice to always

1. open the project file (or start a new project)
2. connect 🖥, then
3. scan 📡, then
4. synchronize ⚠️ (read),

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 you are working with a live Velbus installation, connected to your PC 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.36 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.
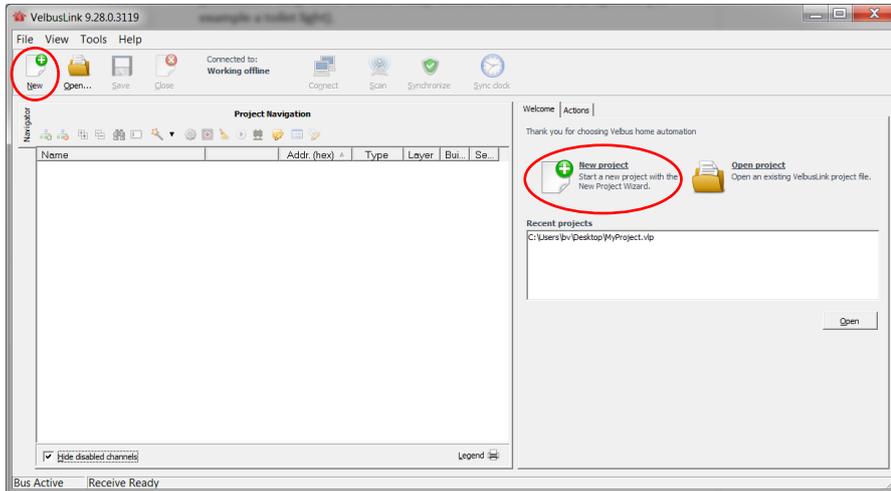
Choose a filename and folder, and click Next.
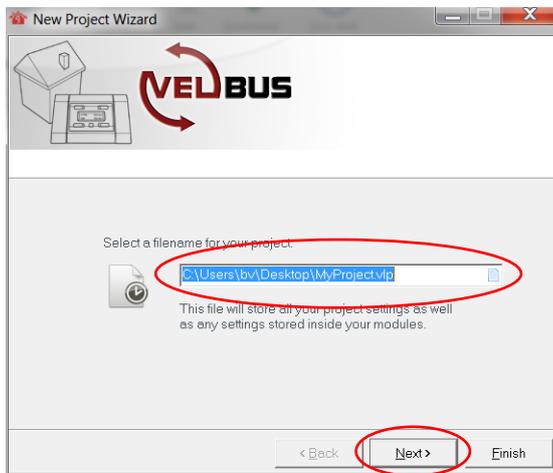
Select Connect to my existing installation and press Next.
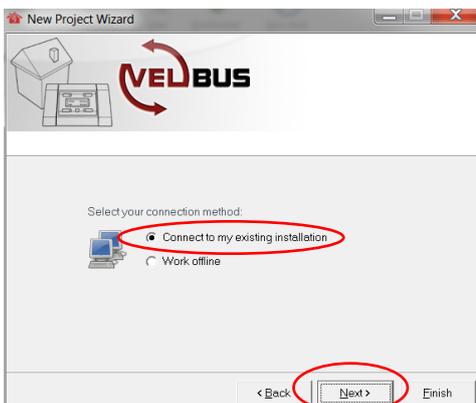
In the following window, select Direct cable connection (RS232, USB) and press Next.
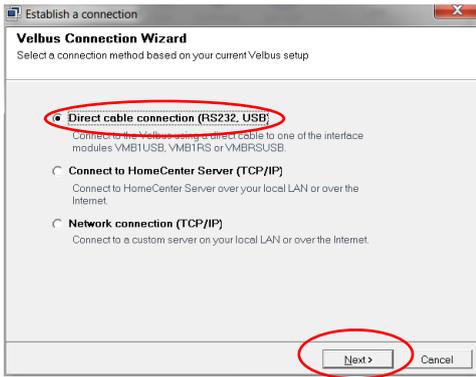
The software will automatically choose the port on which the Velbus USB module is connected. Click Finish to automatically establish a connection and start configuring your devices.
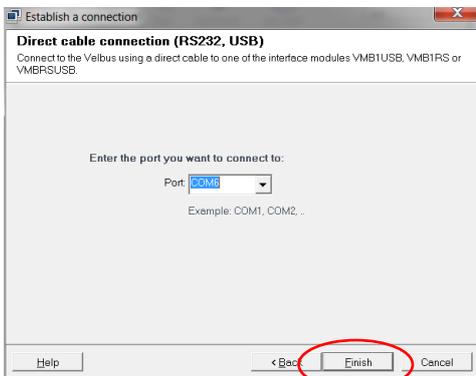
Now select Scan my installation for modules. This will make VelbusLink scan the bus for modules. Click Next to proceed.
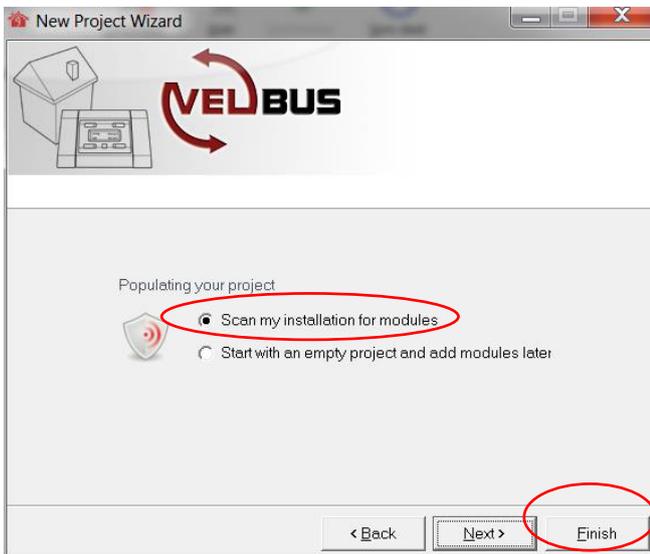
A window will pop up, showing the progress of the scan.
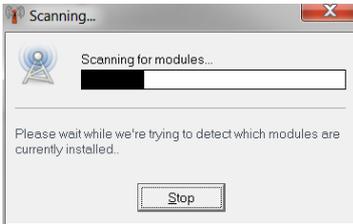
Once the scan has completed, VelbusLink will ask if you want to retrieve the module memories, or start with empty modules.
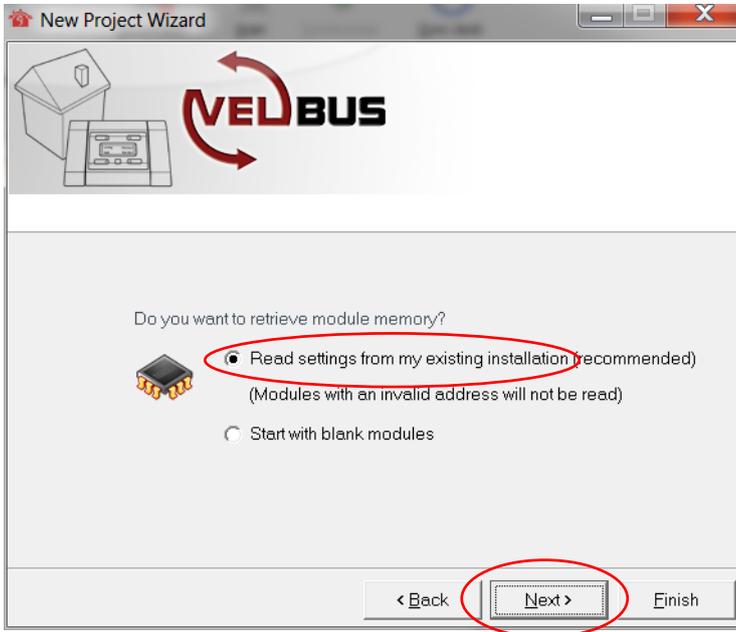
We recommend Read settings from my existing installation, as this is the only way to be sure that your project configuration in VelbusLink matches the actual configuration in the physical modules.

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.
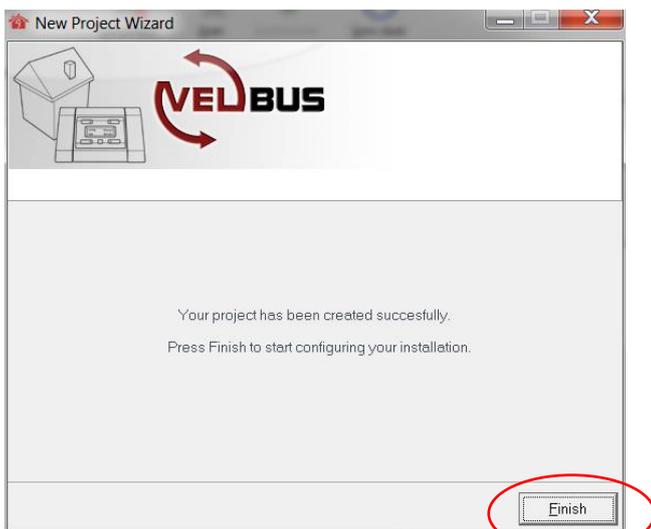
CHANGING ELECTRONIC ADDRESSES

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 (menu "View" or 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.**

Auto-assigning addresses

The easiest way to assign addresses to the modules is by using Auto-assign. This can be done by the "New project" wizard (by default auto-assign is activated during the wizard), or by pressing the button Auto-assign in the Adress Management window. This window can be opened by pressing the button Address Management ⊞ on top of the navigation view, or by right-clicking a module and selecting Change address.

Auto-assign will assign a valid address to every module in the installation.

Manually assigning addresses

In case you did not auto-assign the addresses, most modules in a new installation will probably appear with exclamation marks 🛑 next to them. This is simply because every new module with electronic addressing will be provided with the address "FF" by factory default[2]. As the system does not allow duplicate addresses, it displays exclamation marks next to these addresses.

You now need to assign a valid address to all modules that still have an "FF" address.

Select any module (it does not matter which) and click on the ⊞ icon to open the Address management dialog.
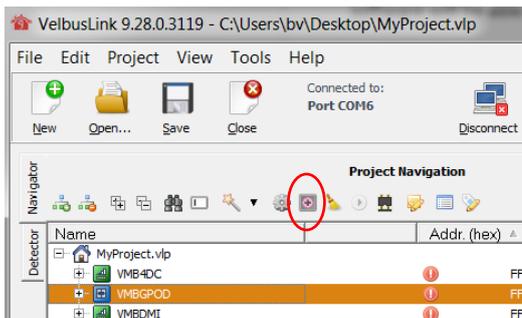
With automatic detection

The Address management dialog shows all connected modules with their current addresses. At this point, you cannot know which module is to be found where in your installation. But this is not necessary either, since VelbusLink comes with an automatic detection function.

---

[2] Modules with rotary switches for setting addresses need their address to be set beforehand. All recent modules however have electronic addresses.

Note: Only use the automatic detection function if no two modules with the same address (apart from "FF") are present in your Velbus system. If this should be the case, manually change the duplicates into new, unused addresses first.

Make sure Automatically select detected modules is ticked. Also check the filters to the right and verify that detection is activated for the modules you wish to detect.
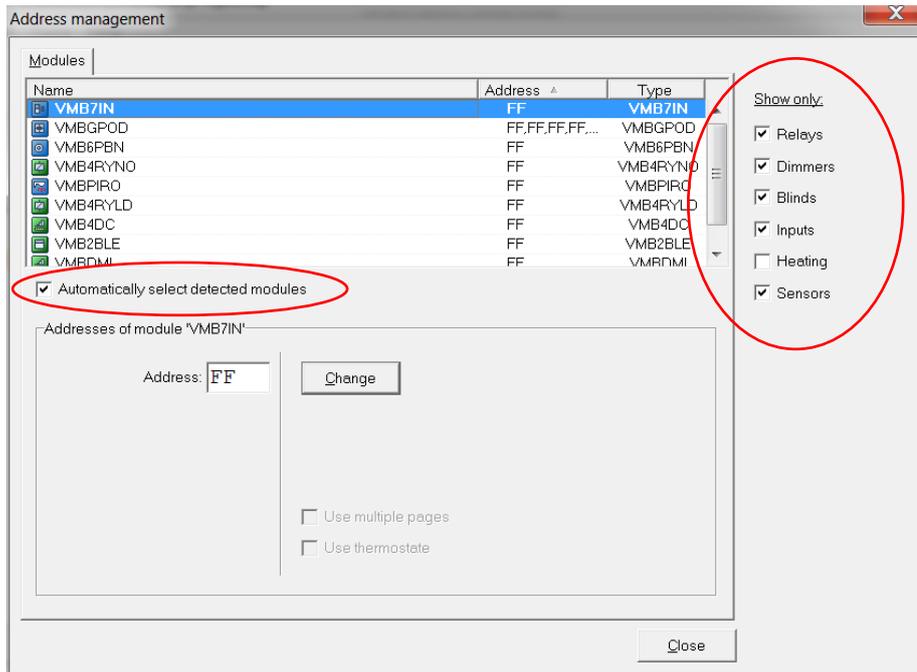
If you now physically press a button on a module, the module will be automatically selected in VelbusLink for you to change its address. (As soon as a module has been detected, the Automatically select detected modules option will be unticked in order to avoid confusion if someone else would accidentally push a button).
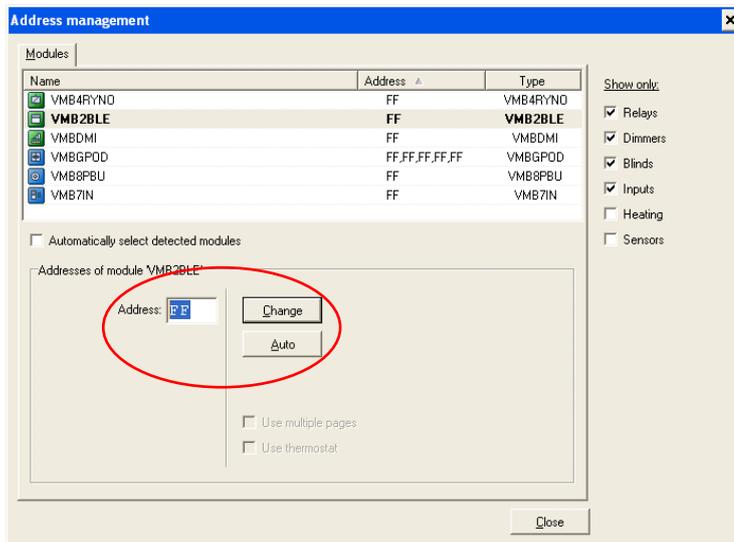
Addresses of selected modules are changed by entering a new value (01 to FE hexadecimally, or 0-254 decimally) in the address field. You can also change the name of the module by clicking on it and entering a new name (see screenshot below).
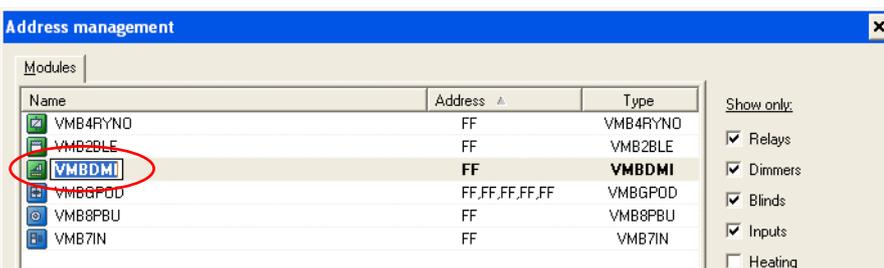
Press the Enter button on the keyboard or click on the Change button to confirm.

If you just want to assign the first free address, you can also use the Auto button.

The new address will be immediately written to the module, even without synchronising. Addresses can also be changed later without affecting the correct functioning of the system.

Each module should be selected in turn and its new address set to suit your requirements. DIN rail modules can be detected in the same way by pressing the buttons under their protective cover (which can be prised open gently with a finger nail or small screwdriver).

<u>Without automatic detection</u>

You can also set the addresses without automatic detection. To do so, just leave Automatically select detected modules unchecked, select a module and manually change its address.

When all modules have unique addresses, close the address management dialog and check the list of modules in your Velbus system to confirm that none have a red exclamation mark showing.
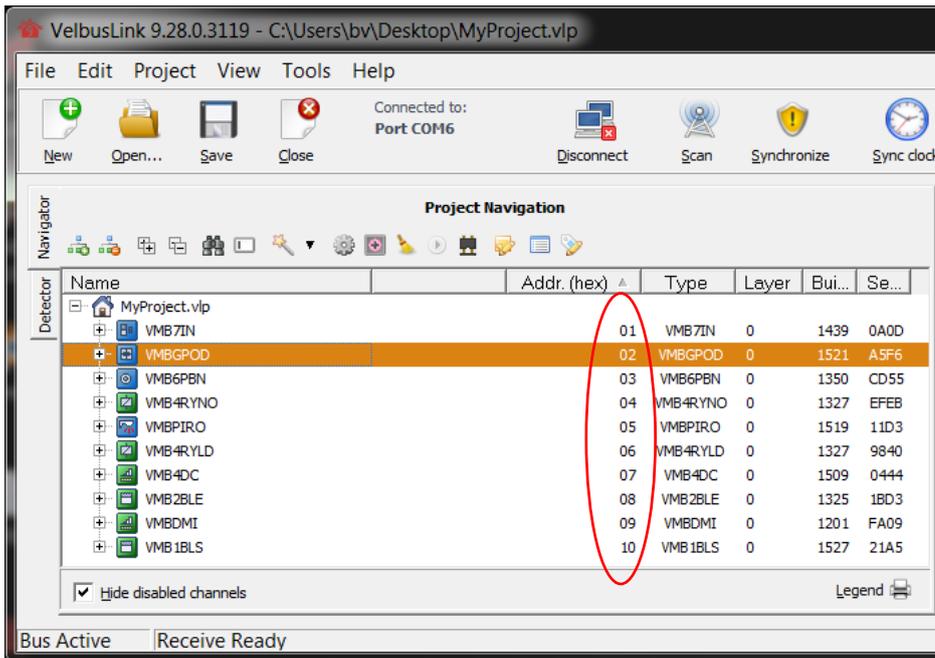
OPERATING CHANNELS FROM WITHIN VELBUSLINK

You can operate a channel from within VelbusLink by right-clicking on the channel (for instance a relay channel) and choosing operate from the drop down list that appears. A window will pop up allowing you to operate the channel, e.g. switch a relay channel on or off.
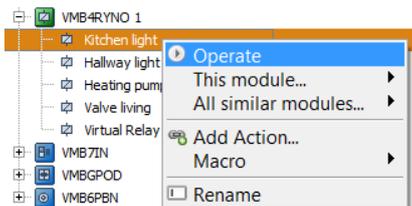
In the example above we operate a relay channel. Not only relay channels can be operated, but also push buttons, input channels, dimmer channels, blind channels, and so on.

RENAMING THE MODULES AND CHANNELS

In a new VelbusLink project the module names will default to their type, but they can then be renamed (eg. VMBGPOD could become "GPOD-Master Panel"). Names can be 15 characters long and may contain any alphanumerical character.

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

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. **Channel names are always stored in the respective modules.**

We strongly 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 on.

OPTIONAL: LAYERS

If you have many modules, you may want to organise them in layers, which you can hide or show. 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 on the Layer Manager icon 🏷️.
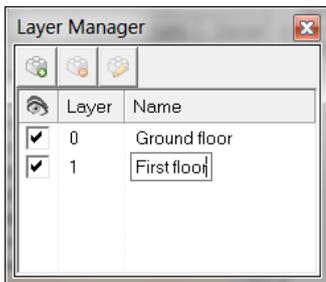
Adding a layer is done by clicking on the building block with the green "+" symbol 🧱. To delete a layer, highlight the unwanted layer and click on the building block with the red "-" symbol 🧱. Likewise, layers can be renamed by clicking on the building block with the pencil 🧱.

Once the layers have been created, go back to the navigator window. Modules can now be assigned 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 by checking or 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

A useful feature for finding modules and channels is the Detector tab. (Only to be used once all modules have received a valid, unique address). You can also use it for renaming channels.
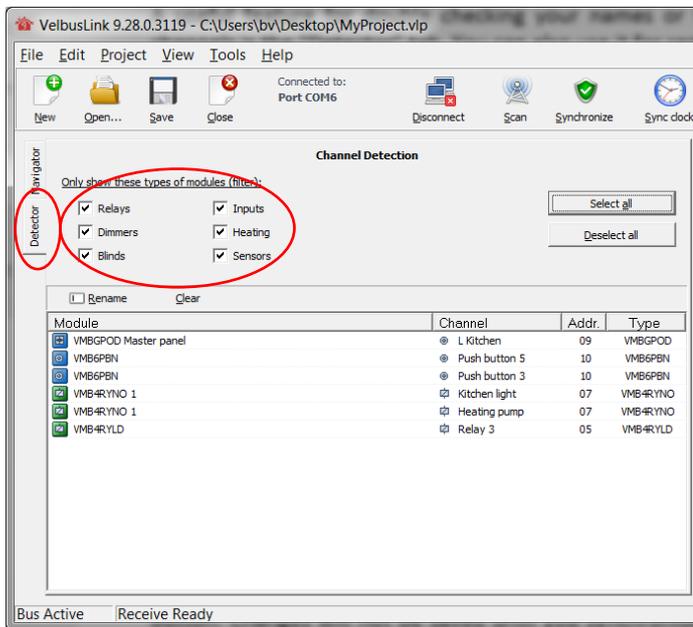
First, make sure the types of modules you want to be detected (relays, dimmers, inputs, ...) are checked in the top section of the detector window. Here you can filter out modules by unchecking the groups they belong to. This can be useful to ignore modules that periodically put data on the bus (like temperature or movement sensors) and that would otherwise appear without being activated by you.

When you press on a button (an input button or a button on the output modules themselves), the module will appear in the detector window.

The example above shows a number of entries that appeared after pushing the respective buttons.

Changing names of modules and channels here is similar as explained above under "Renaming the modules and channels" p.10.

Next to the rename button, the option clear removes all the results from the detection window so you can start anew with another detection round.

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:

- connect your Velbus installation to your PC (for instance with a USB cable to a VMBRSUSB configuration module)

- start VelbusLink

- click on New project and follow the wizard

- give all modules a unique, valid address

- rename the modules and channels

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. You can simply start a new project and read the modules (synchronize > read). All actions, configurations and even channel names will appear in your VelbusLink project, since they were saved in the modules themselves. Only the module names will be lost (for all but the most recent modules).

3 ACTIONS

INTRODUCTION

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, 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):

CREATING ACTIONS

There are many ways of creating an action between two channels (eg. a push button channel and a relay channel). Whichever way you choose to create actions within VelbusLink, the results that will be written to the modules are the same.

The list of available actions will vary depending on the channel that has been selected as "subject" of the action.

As an example, we will demonstrate the connection of an input channel (a push button) to an output channel (a relay).

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" your input module button onto the desired output module channel. Here you see the "L Kitchen" being dropped on top of VMB4RYNO's relay channel no. 1 "Kitchen light".
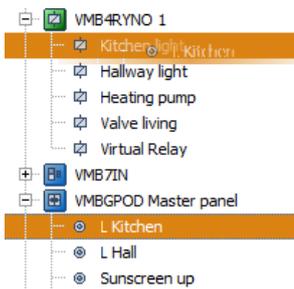
Doing this will cause the Action properties window to appear, and be pre-populated with the combination selected by this "drag and drop" process.
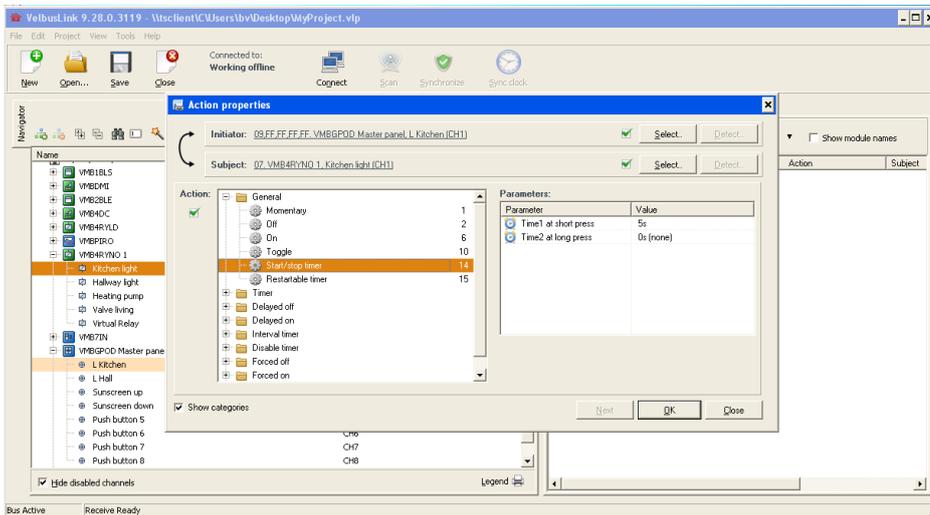
All that remains to do to complete the configuration of the action is to define the type of action that you want to happen when this button is pressed. If necessary, the action parameters (for instance a delay time) can be specified in the right hand panel.

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. Here we have double clicked the same "L Kitchen" button as above.
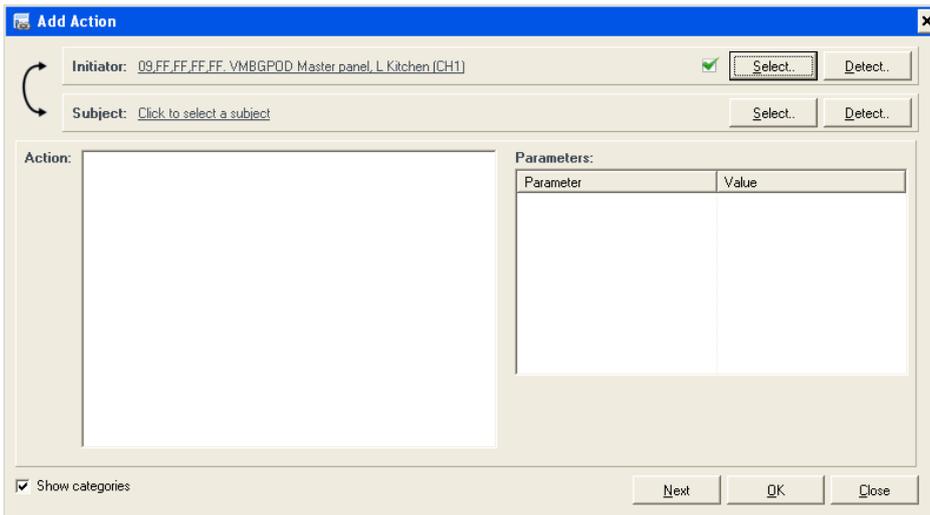
As before, the Add action window will appear, and the input selection will be pre-populated with the button selected here. Note the double arrow to the left of "initiator" and "subject": clicking on the arrow will switch the selected channels around.

Clicking on Click to select a subject or the Select button (see below) will bring up a new window, from where you can locate and select the module and channel that you want this new action to work with. Here we have selected, as above, the "Kitchen light" (CH1) relay.
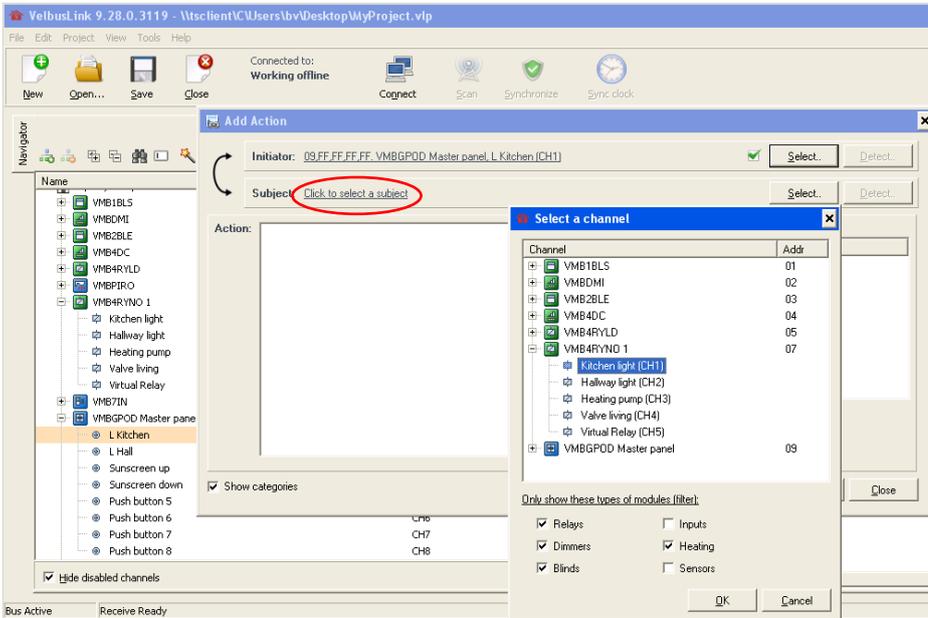
Each module's channels are only shown after the module has been expanded (by clicking on the + sign to the left of it). If you can't find the module you're looking for, make sure its type is checked in the filter at the bottom of the Select a channel dialog.

With the desired output channel highlighted, click on OK. The selection window will close and take you back, 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 in the select a channel dialog, a channel can also be selected by detecting it.

In the Add action window, click on Detect.

A window will pop up Attempting to detect…. Press the physical button you want to use, and its corresponding channel will be detected by VelbusLink.

If the detection does not seem to work, make sure the appropriate filters are checked at the bottom of the Attempting to detect… dialog.

Here we have pressed the small button for channel 1 located on the relay module itself.
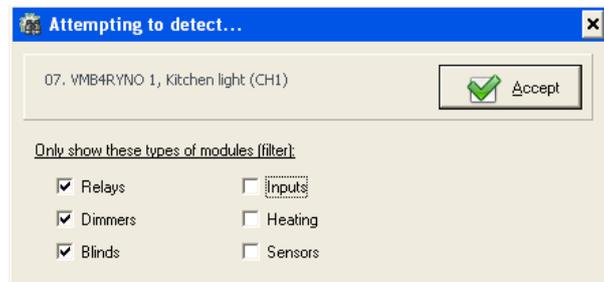
Pressing Accept will fill in this channel in the Add action dialog at the appropriate place. You can then select the type of action you want to happen. (Remember to modify any parameters in the right hand pane if necessary.)

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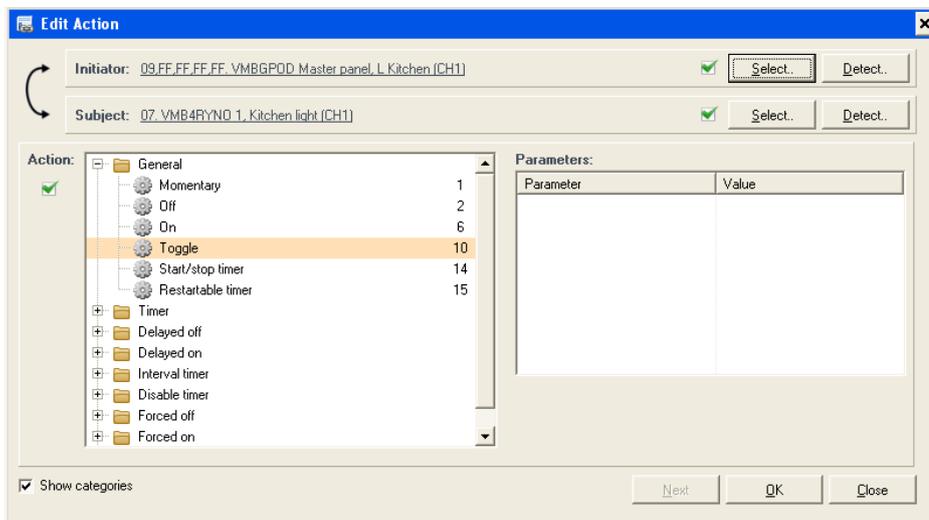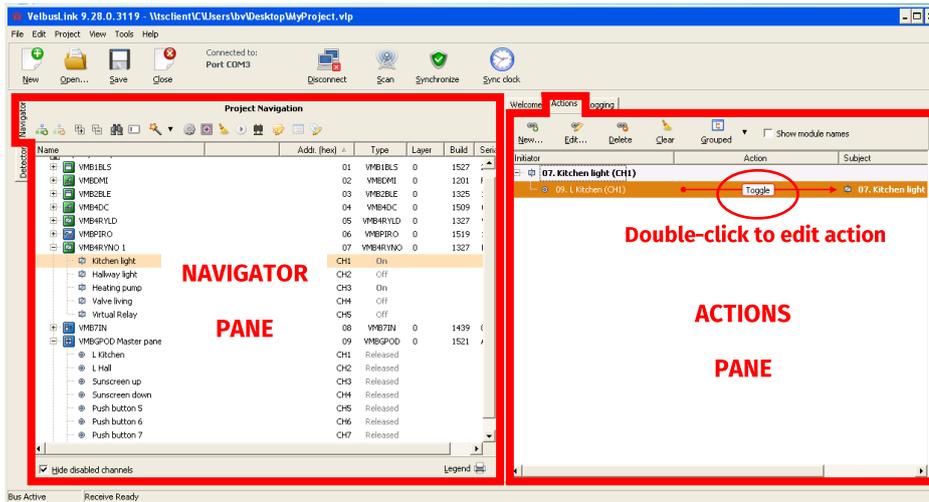
In the navigator window, you can also see that next to every channel associated with an action, a "chain link" icon 🔗 appears. According to what has been configured into them, other icons may appear next to modules or channels. The icon key can be shown by pressing the Legend button at the bottom of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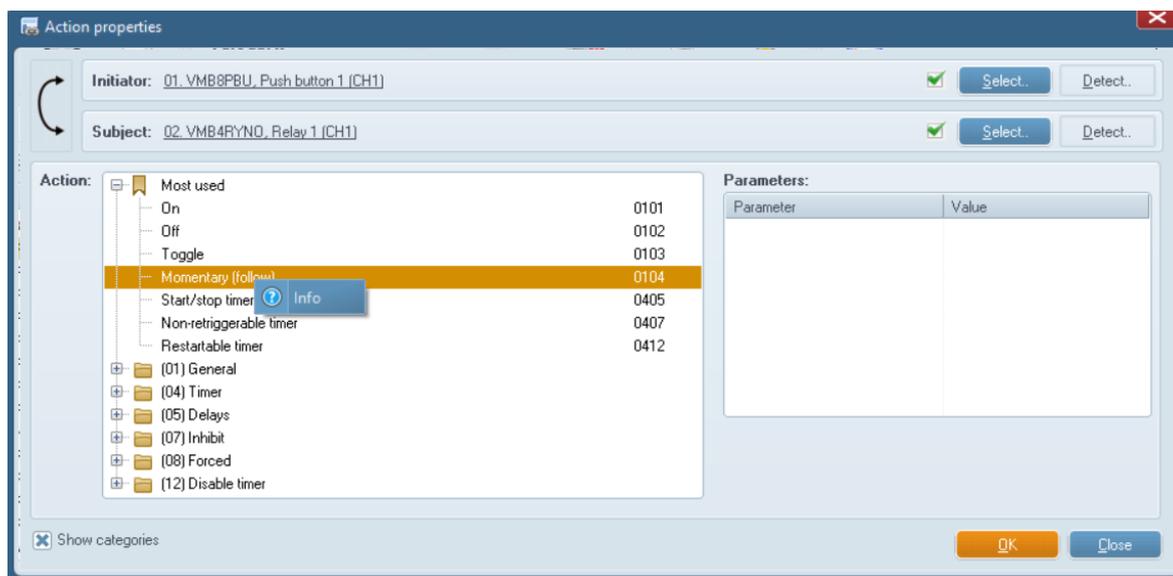
COPYING ACTIONS

Actions can be copied from one channel (initiator or subject) to another of the same type.

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 dialog 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 (eg. 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 (eg. 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 (eg. All on, All off), but also with any other action. To make a custom macro wizard, click the wizard symbol ⚡ ▾ and select Macro wizard. Follow the wizard's instructions.

4 CHANGING FEEDBACK CHARACTERISTICS OF INPUT MODULES

By default any feedback provided by an input module (eg. 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 (eg. the push button)

2. click on the Configure module symbol ⚙

3. in the Configuration settings window that appears, click on the tab LED Feedback (if this tab isn't 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 on OK, then on Done.
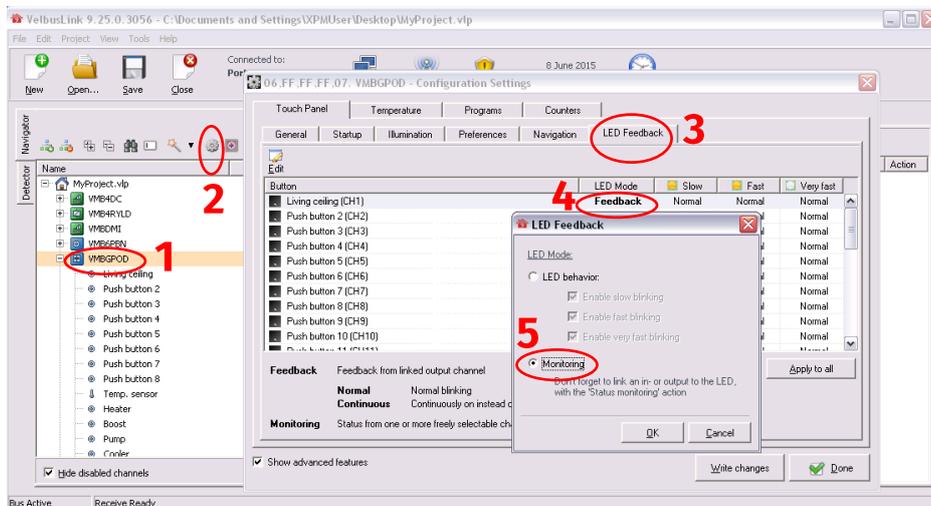
Step 2 is defining which output channel has to be monitored. Create the following action (see also "Actions" p.13):

- initiator: **output** channel (eg. relay)

- subject: **input** channel (eg. push button)

- action: 0135. Monitor status of initiator

VELBUS INSTALLATION GUIDE
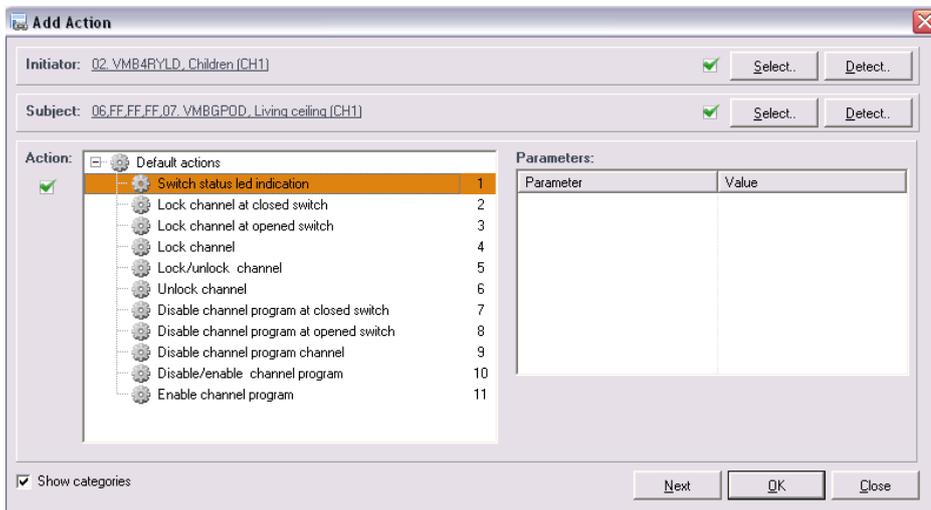
As always, don't forget to synchronize (write) your project.

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.

© 2018 Velbus – v02   19   www.velbus.eu

5 FORCING AND INHIBITING

For many modules forcing and inhibiting actions are available.

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.

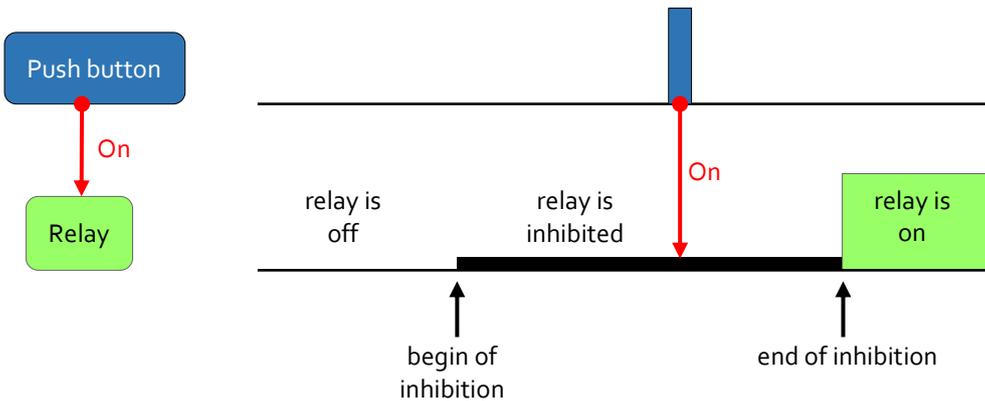*For instance: a push button is connected to a relay channel by means of the action "On". While the relay is inhibited, the push button is pressed. As long as the inhibit mode is active, the relay will stay off (but the button push is registered). As soon as the inhibit mode ends, the "on" will be executed.*

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.

Example: 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.
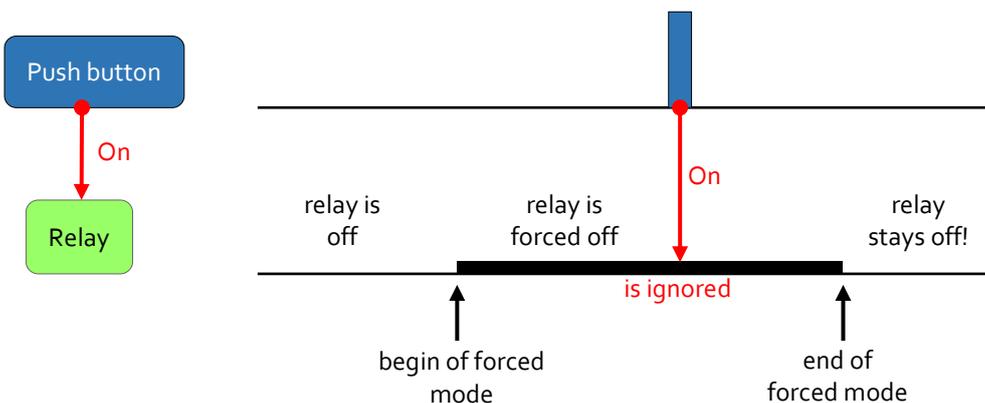
PRIORITIES

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 (eg. "inhibit but preset down at closed switch"), and a forced action for the wind alarm (eg. "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.

FORCING AND INHIBITING STATUS IN CASE OF POWER LOSS

In case of power loss, inhibit and forced statuses may be lost. To make sure they are automatically activated when power is restored, use a (virtual) normally closed input channel (e.g. a push button) to set these statuses. When power comes up, this input channel will close immediately and make sure the installation starts up in the correct state.

- use a virtual relay (hereafter called the "startup" relay) to set all desired channels of your installation to the right states at startup. For instance, if you want a light to be "inhibited" on startup, configure an "inhibit" action between the virtual "startup" relay (initiator) and the relay channel (subject).

- next, configure a (virtual) button (eg. on a VMB8PBU universal push button interface) to activate the "startup" relay during one second (use action no. 412, restartable timer, with "time at short press" set to 1 second).

- finally, set the (virtual) button to "Normally Closed". (Select the module, click on the "configure" symbol ⚙, open the tab "NO/NC" and set the button to NC by double-clicking on it). On power up, the button will instantly close, sending a "1 second on" signal to the "startup" virtual relay, which in turn will set the channels to the desired states.

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 (eg. 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 dialog of a module, select the module in the navigator and click on the gear icon ⚙. In the example below, we opened the configuration dialog of a VMBGPOD module.
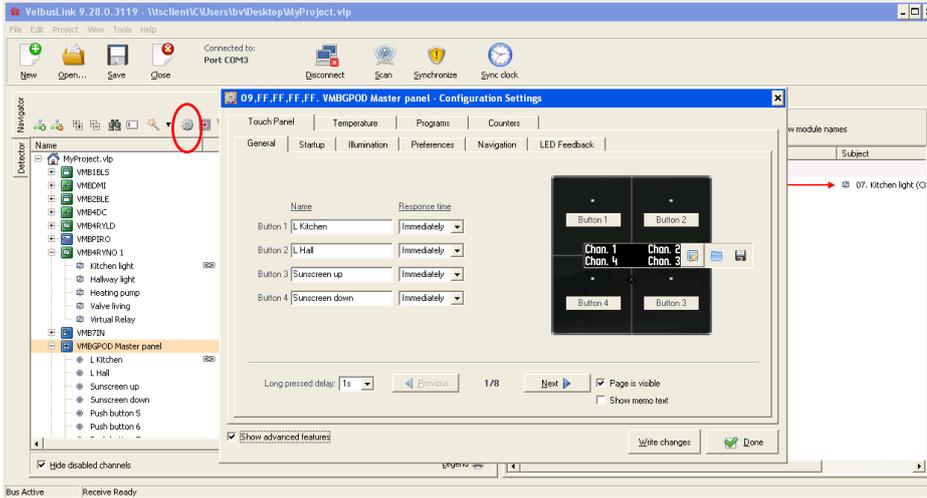
For detailed explanations per module, please visit the Velbus products pages on www.velbus.eu > Products.

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 (eg. all off), and another one when long pressed (eg. all on).

What will actually happen is that when the channel is long pressed, the module will simulate a different channel. For instance: long pressing button 2 will actually activate button 8. 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[3].

As an example we will configure push button no. 2 to act as "on" when short pressed and as "off" when long pressed.

MAKE VIRTUAL CHANNELS AVAILABLE

The most logical way to proceed, is to use a virtual channel for the long press function. Virtual channels are by default disabled. In order to use them, we first have to make them available in VelbusLink.

Select the input module and click on ⚙ to open the configuration window. In the tab General, set the response time of one of the virtual channels to Immediately. (In the screenshot below, we chose button 8).
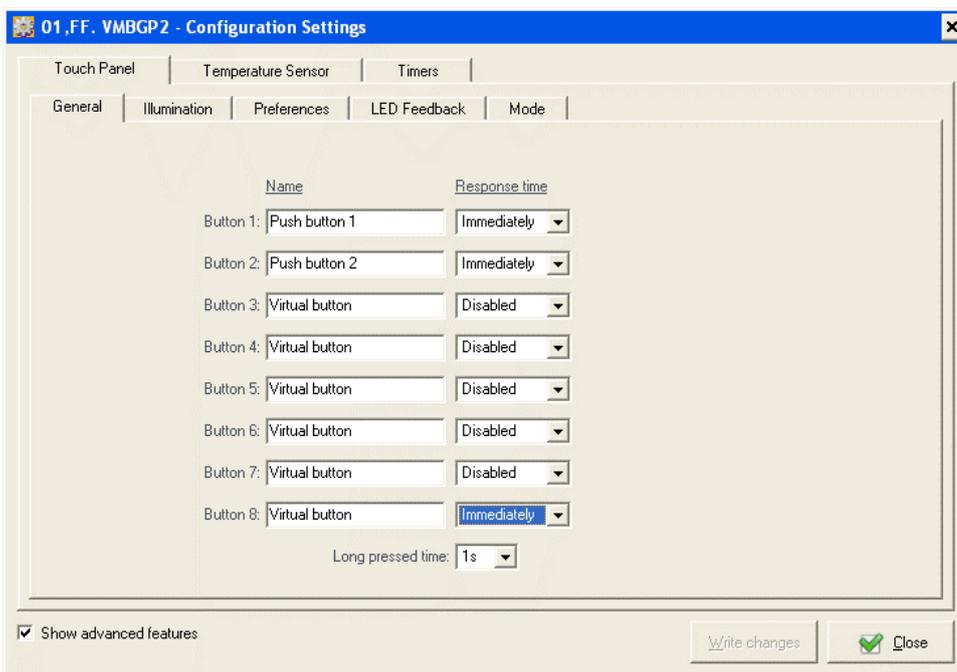
Close the configuration window. The virtual button is now available in the navigation pane.

CREATE THE ACTIONS

To make things easier, change push button 1's name to "On" and the virtual button's name to "Off".

Then create the two actions (cfr. "Actions" p.13).

---

[3] For the VMBGPOD four touch button glass input module with OLED display, dual button mode is only available on the first page (with firmware 1640 or higher)

SET UP DUAL MODE

Select the module in the navigation pane and click on ⚙. In the configuration window, select the Mode tab.
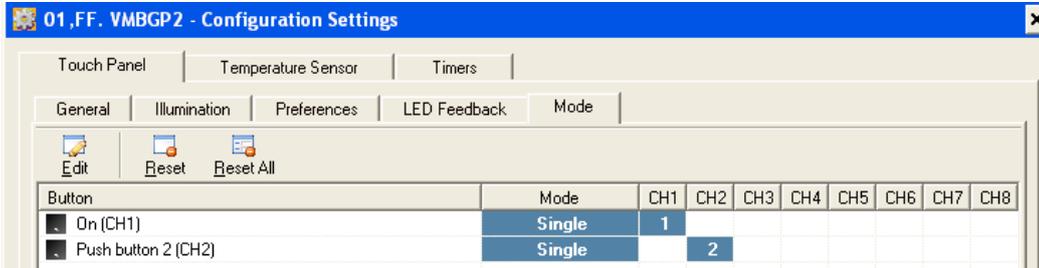
Double click the button that needs to be set to dual mode (in our example channel 1 "On"). The Mode configuration dialog pops up. Select Dual in the upper left corner. Then select next to Long press button which (virtual) button needs to be activated on long press. In our example, we select "Off" (channel 8).
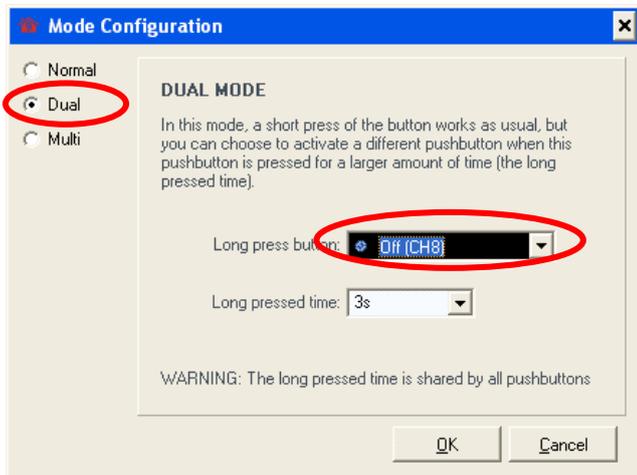
The long pressed time can be set to 1, 2 or 3 seconds.

Select OK. In the tab 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 (3s) channel 8.
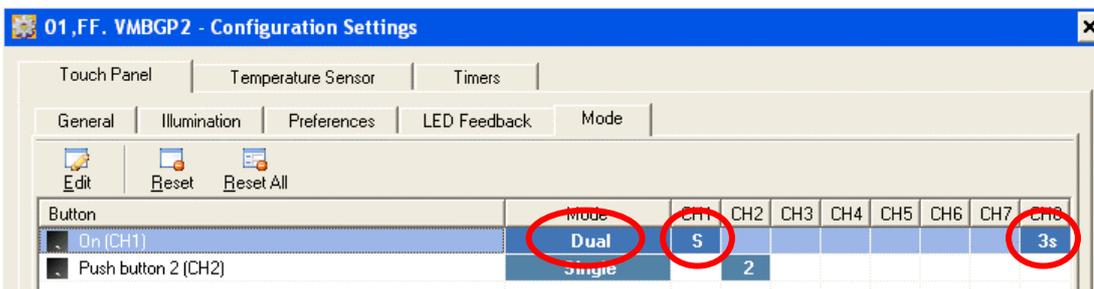
8 MULTI BUTTON MODE

Apart from dual button mode (p. 23), 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.

Eg.: 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.

Eg. 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[4].

MAKE VIRTUAL CHANNELS AVAILABLE

Like dual mode (cfr. p.23) the most logical option is using virtual channels. In this example we will activate virtual buttons 1 to 4, by setting their reaction times to Immediately in the tab Touch Panel > General).

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)

CONFIGURING MULTI MODE

Select the module in the navigation pane and click on ⚙. In ythe configuration window, select the tab General > Mode.

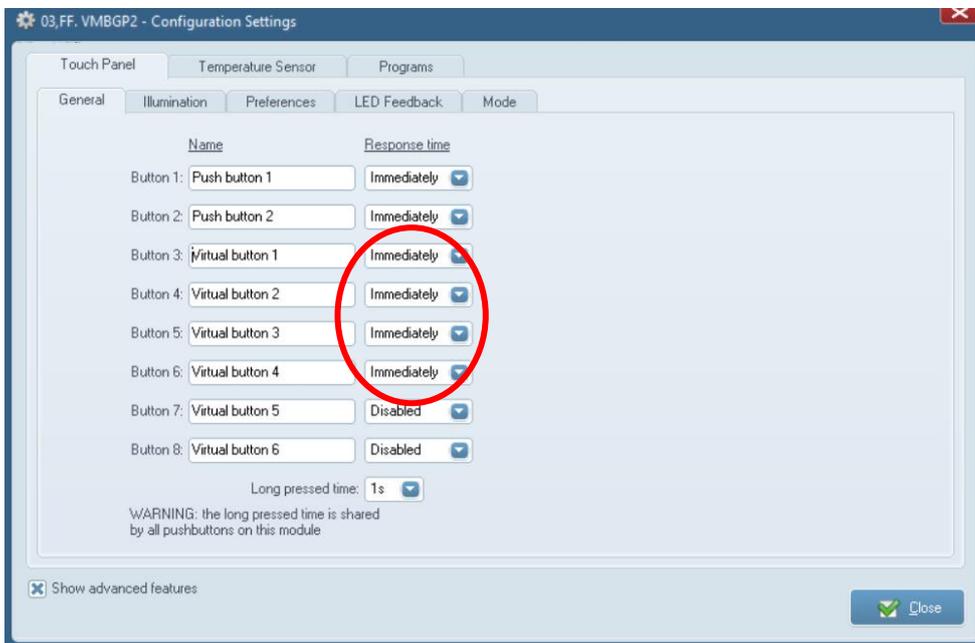[4] Except the VMBGPOD glass control module with oled display.
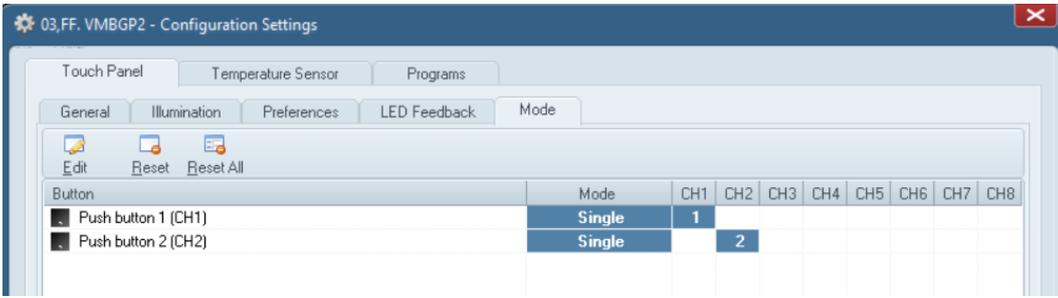
Double-click the button that needs to function in dual mode (in our example Push button 1 (CH1)). The dialog Mode configuration appears (see screenshot below). Select Dual on the top left. Then select to the right the first channel of the series (in our example Virtual 1 (CH3)) and the last (in our example Virtual 4 (CH6)). This way, at each button press on Push button 1 (CH1) , virtual button 1 (CH3), then 2 (CH4), then 3 (CH5) and 4 (CH6) will be activated.
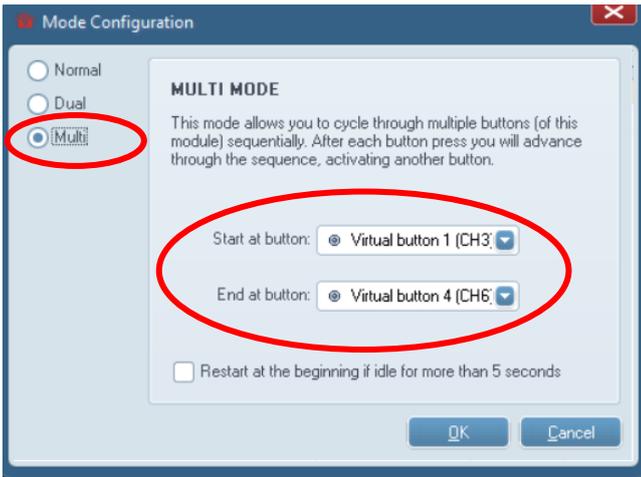
If the option Restart at the beginning if idle for more than 5 seconds is selected, after 5 seconds of inactivity, pressing the button will activate the first button in the series. If not, the module will remember the last channel that has been activated and continue from there.

Press OK. The tab Mode of the configuration dialog now shows that multi mode is enabled for the first button, and that when pressed, channels 3 to 6 will be activated.
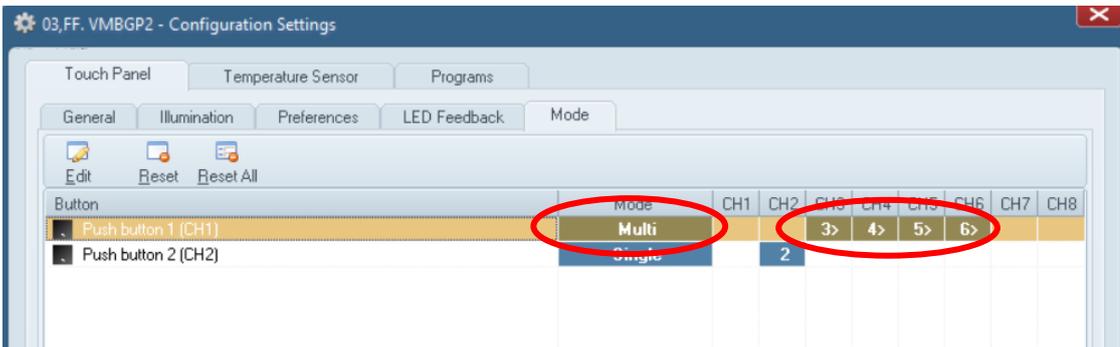
9 HEATING/COOLING CONTROL

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 dialog by clicking on ⊕. Below, as an example, we have selected the VMBGPOD.
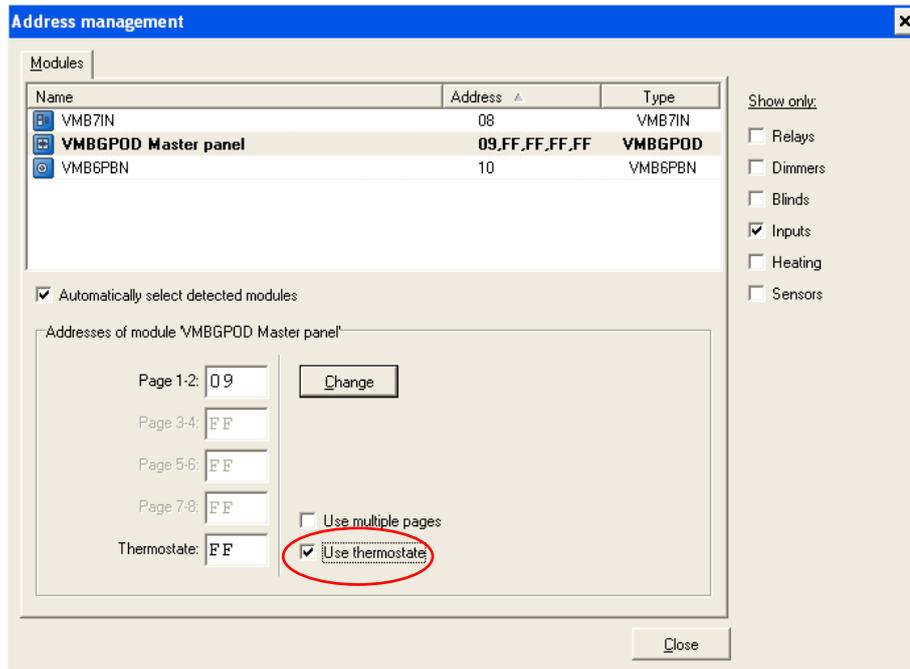
Check the Use thermostat checkbox. The input field for the thermostat will become active. Fill in a free address between 01 and FE and press Enter or click on the Change button. Do the same for other modules as necessary. Then press Close.

2. CONFIGURE THE TEMPERATURE SETTINGS

Now, in the navigator window, select the VMBGP2 panel and access its configuration dialog by clicking on ⚙.
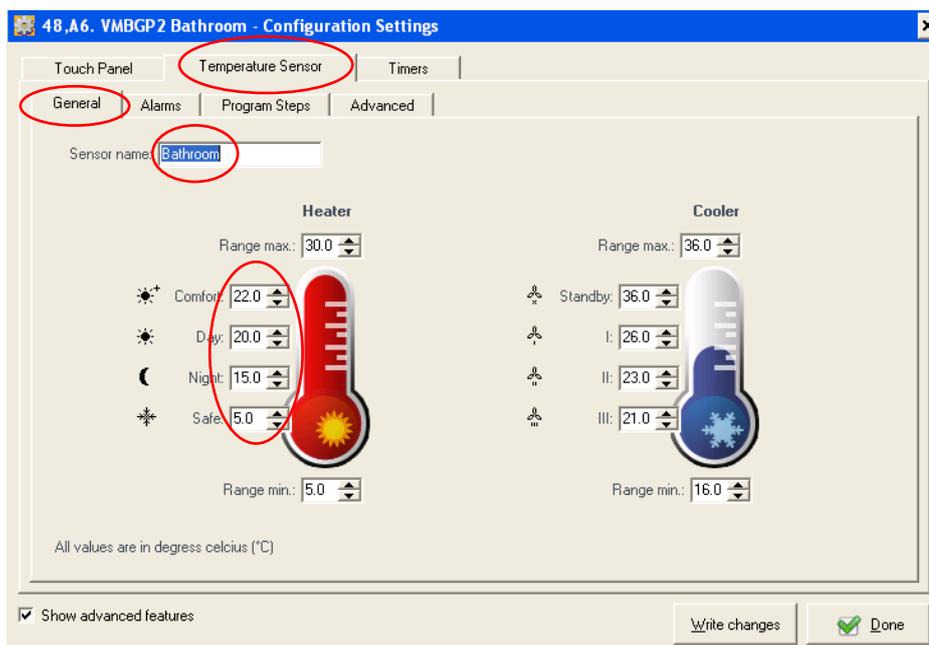
Edit the settings in the tab Temperature > General. Change the sensor name (we chose "Bathroom"), and set the desired target temperatures for each heating mode. The sensor name chosen here will also appear on the VMBGPOD display when we configure this later on. Click on Done.

Next, configure the VMBGPOD master panel.
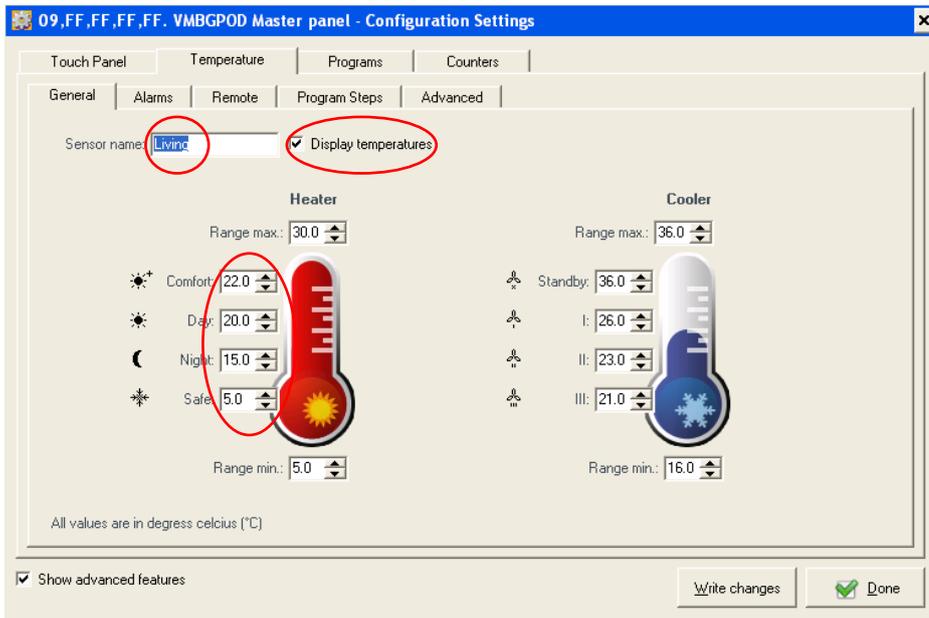
In the VMBGPOD configuration settings, do the same as above for the VMBGP2, and also check the Display temperatures checkbox. This makes the thermostat page accessible on the OLED display of the VMBGPOD.

3. LINK SENSORS

Next, we will link the VMBGP2 "Bathroom" temperature sensor to the VMBGPOD master panel, so the first can be accessed from the latter's display. In the VMBGPOD configuration settings, go to the tab Temperature > Remote, select the "Bathroom" sensor and click on Show.
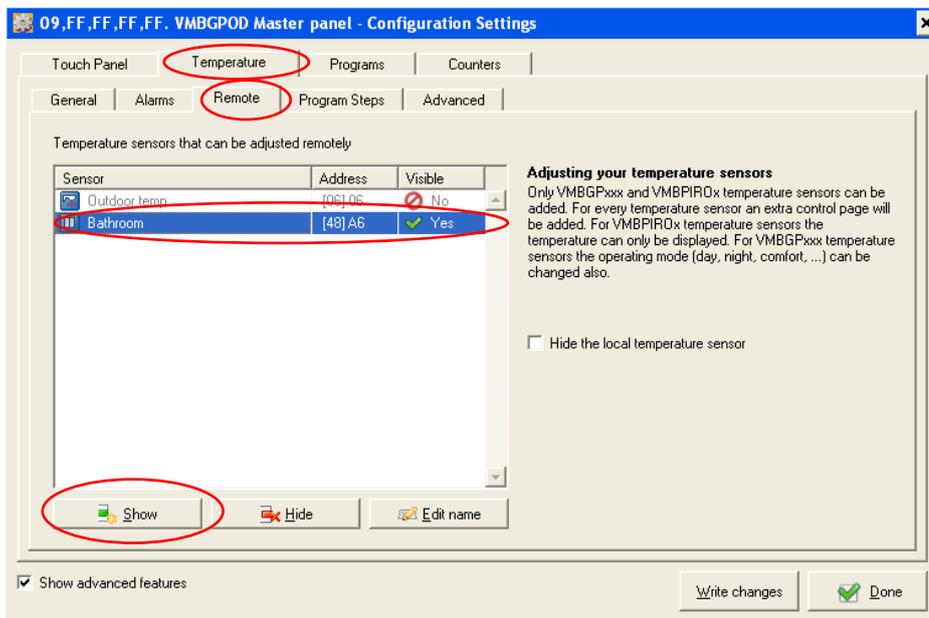
Press Done to exit the dialog.

After synchronization > 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 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.

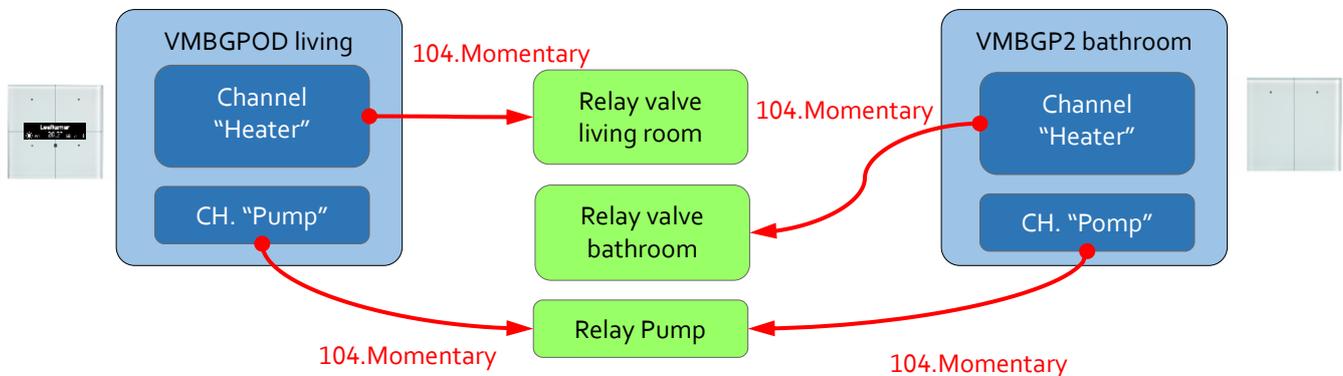The glass panels have 8 special channels for heating and cooling (see screenshot below). In our example the pump and heater channels interest us most. Whenever the measured temperature drops below the target temperature, these channels will be closed ("Pressed"). Once the temperature is again equal to 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").

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 on a glass panel close, the connected relays also close and thus activate the heating system. Once the heater and pump 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 ("Pressed"), 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 of the modules. For details, please refer to www.velbus.eu (product, FAQ and support pages).

5. AUTOMATING 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 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.
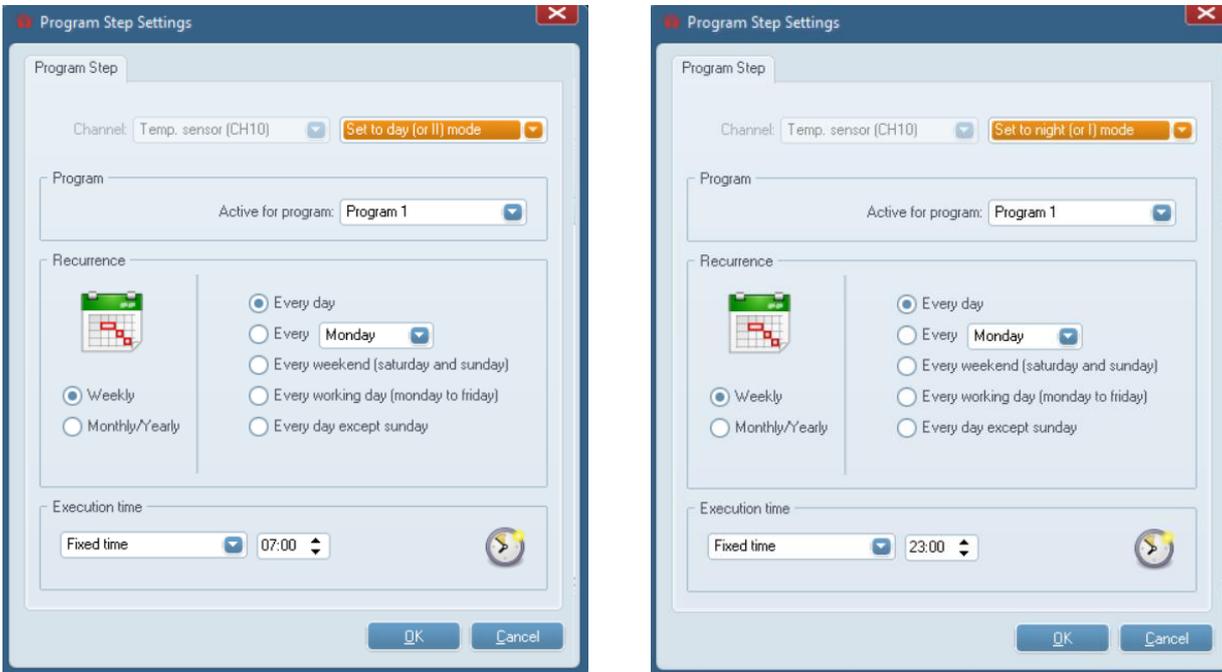
Don't forget to check that the right program is active. This can only be done when VelbusLink is connected to the installation.
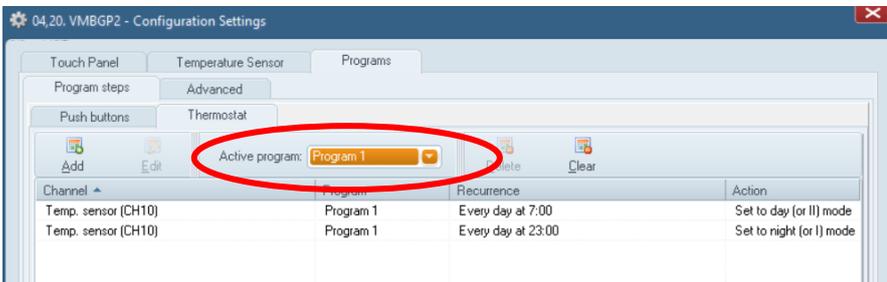
5. USING INPUT CHANNELS TO SET THE HEATING / COOLING MODE (OPTIONAL)

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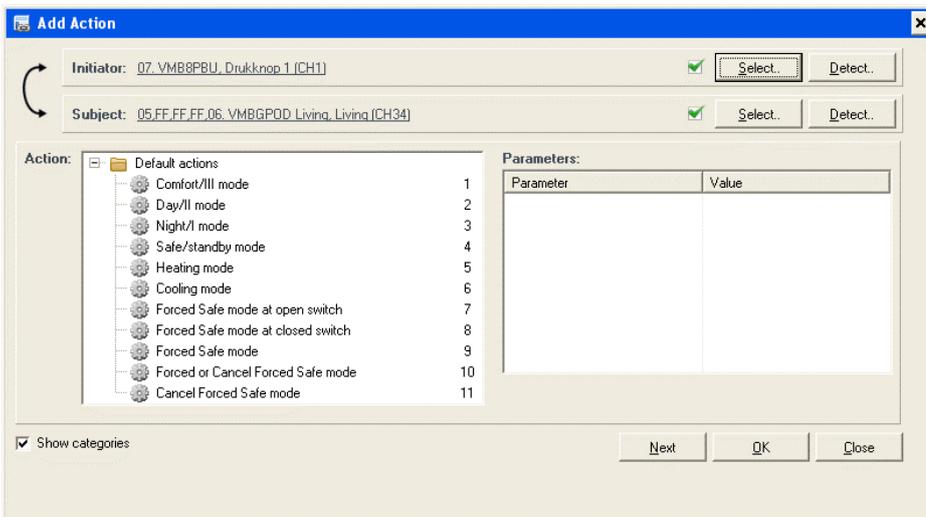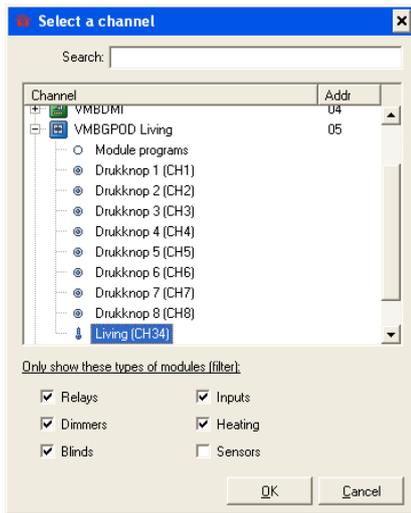
Available actions are switching to day/night/safe/comfort mode, to heating or cooling mode, and so on.

10 CREATING AND MODIFYING PROGRAM STEPS

PROGRAM STEPS FOR INPUT CHANNELS

All Velbus input modules 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. Program steps can be repeated daily, weekly, only on weekends, and so on. Every input module has a built-in astronomical clock with sunset and sunrise hours predefined.

In each module a maximum of 64 or 85 program steps can be defined, depending on the type of module.

Program steps are configured on the Program steps or Timers tab of the configuration dialog (see "Configuring modules" p.22 for instructions on how to access the configuration dialog). Click on the Add button 🖳 to create a new program step.
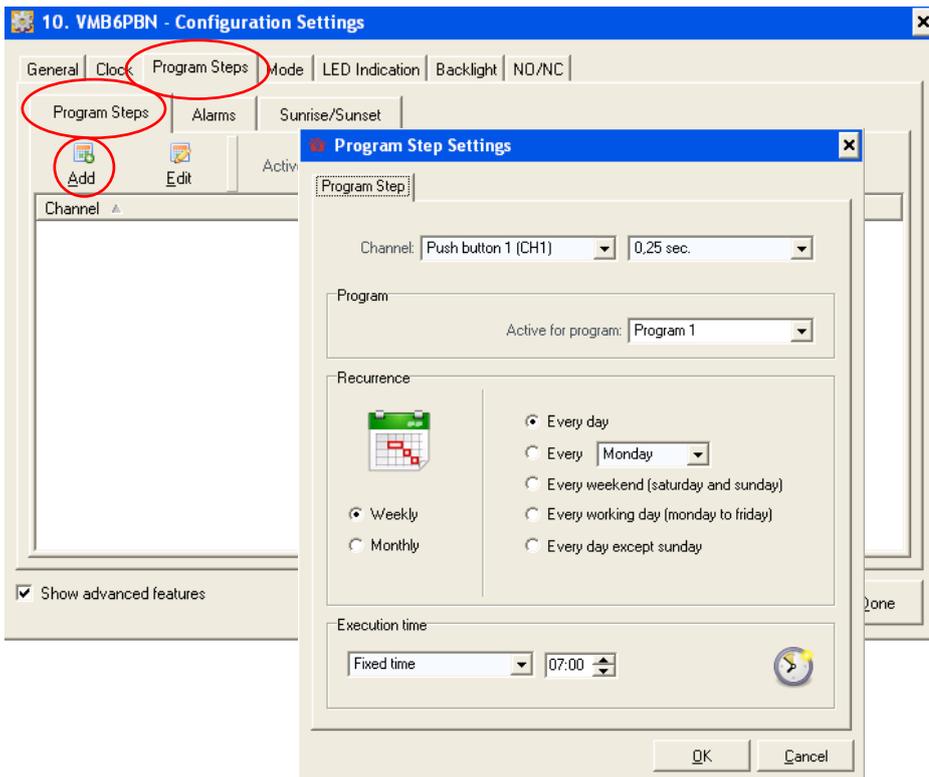
In the Program Step Settings dialog, the details of the program step can be configured. When all fields have been set as needed, click on OK to to add the program step.

To modify a program step, simply select it in the Program Steps tab and click on the Edit button 📝.

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, cfr. "5. Automating heating and cooling" p. 30).

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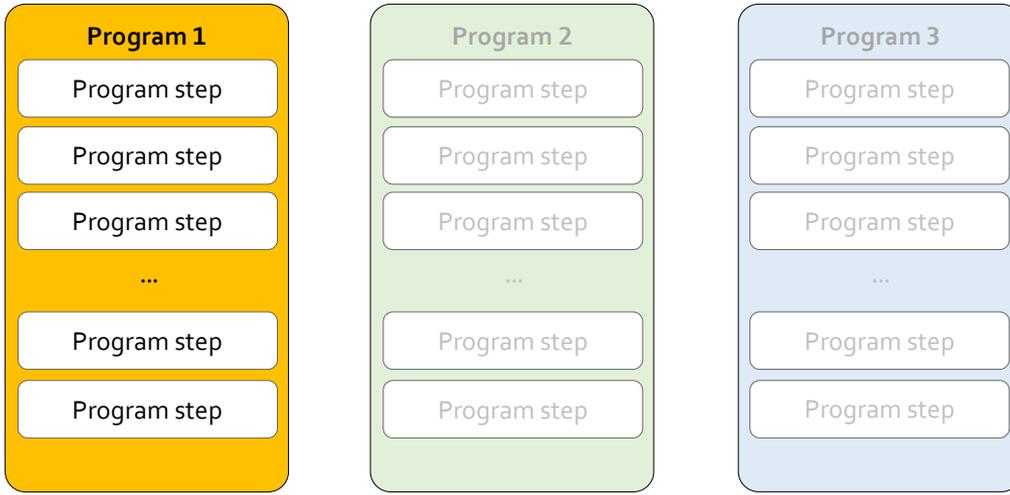
For the **program steps** to be executed on a module, the **program** they belong to needs to be active (see screenshot below). This setting is only accessible when VelbusLink is connected, as the active program is immediately set on the module, even without syncing.
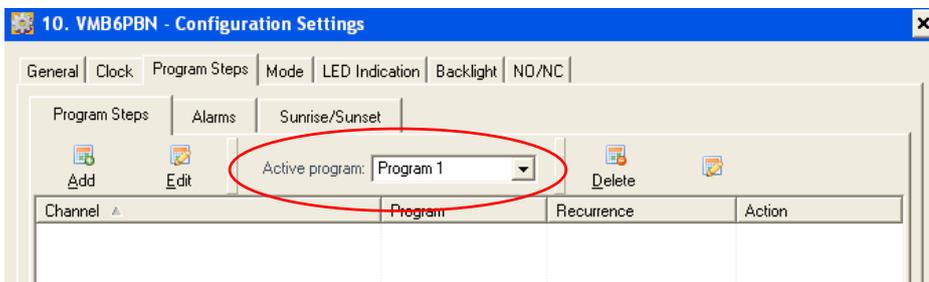
WAKEUP- AND BEDTIMES (OPTIONAL)

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.
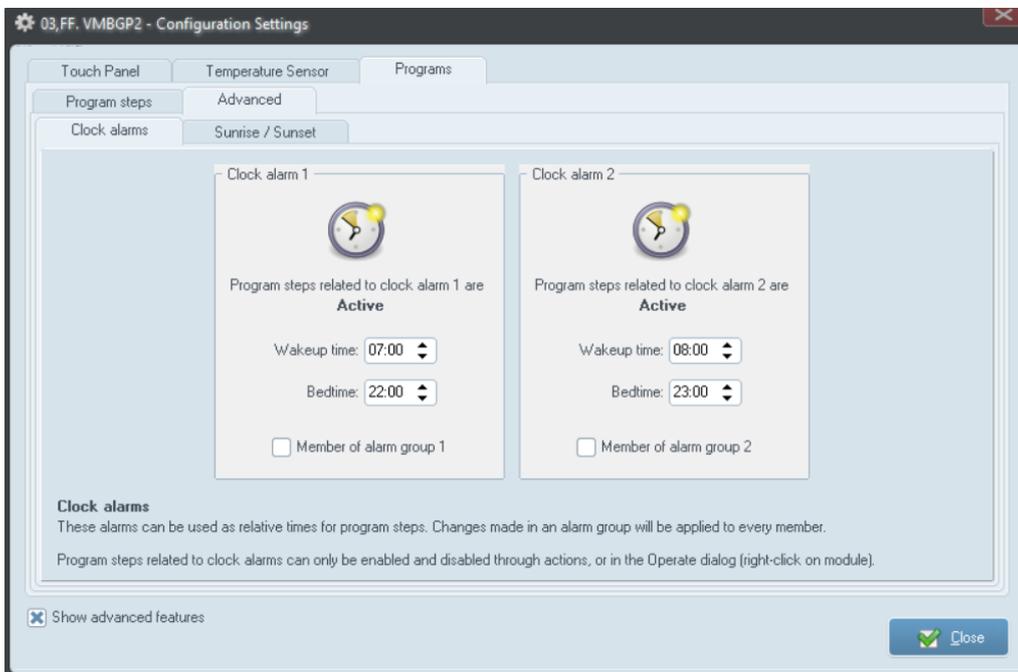
Wakeup- and bedtimes can be seen as variables, whose value can be set in the tab Programs > Clock alarms of VelbusLink, or on the oled screen of a VMBGPOD glass control module. The scope of this variable is initially limited to the module. But wakeup- and bedtimes can be made member of alarm groups. 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.

Module 1		Module 2		Module 3
Alarm 1 Wakeup 07:00 Bedtime 22:00	**X**	**Alarm 1** Wakeup 08:30 Bedtime 23:30		**Alarm 1** Wakeup 08:30 Bedtime 23:30
☐ Member of alarm group 1		☒ Member of alarm group 1		☒ Member of alarm group 1

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

Changes to wakeup- and bedtime affect both modules 2 and 3

(because both are members of the same alarm group)

Program step: "Set to day mode at wakeup time" is activated at 07:00	Program step: "Set to day mode at wakeup time" is activated at 08:30	Program step: "Set to day mode at wakeup time" is activated at 08:30

Eg. 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.

Manipulating programs

An input channel (eg. a push button) can also be configured to act upon the active program of an input module.

To do so, create an action and as **subject** choose the input module, channel Module programs (see screenshot below).
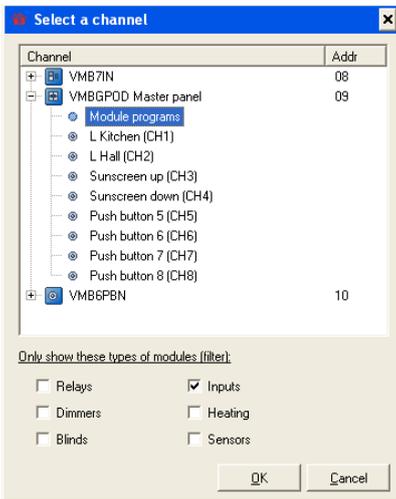
Available actions are: setting the active program on the module, deactivating all programs, and so on.

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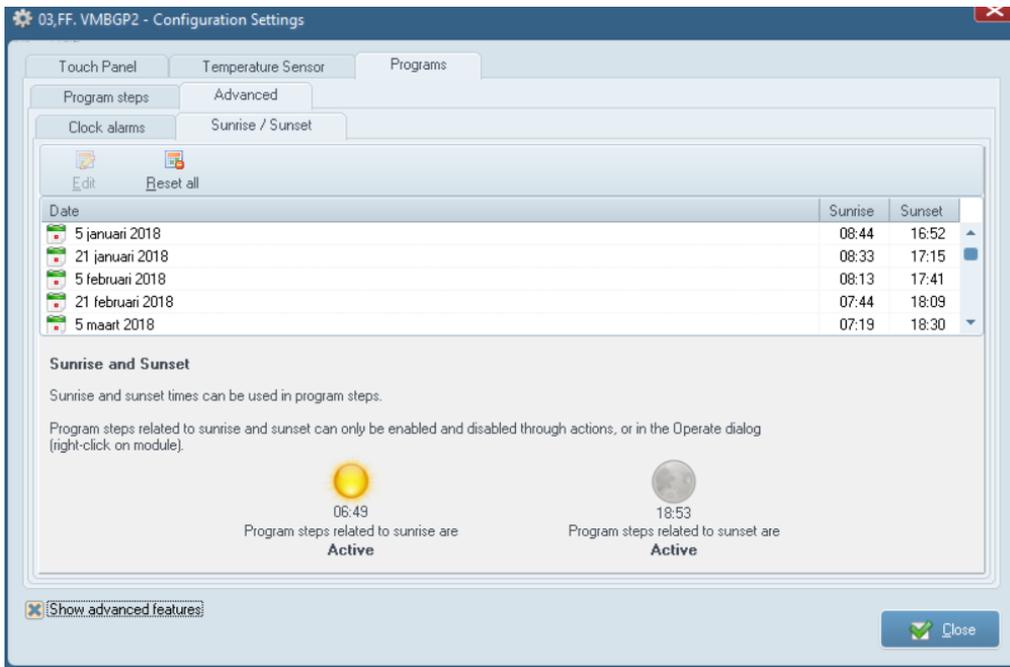
Select a row and press the button Edit to change the value. Each module has its own table with sunrise and sunset times, so changes to the table only have an effect in the module you are editing.

> 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 TROUBLESHOOTING

THE BUS IS NOT SCANNED CORRECTLY DUE TO AN INCORRECT WINDOWS DEVICE DRIVER

During the installation of VelbusLink, the necessary drivers should automatically be installed on your PC. Depending on the system, this can be in the folder C:\Program Files\Velleman\VelbusLink\Driver, C:\Program Files (x86)\Velleman\VelbusLink\Driver, or still another one.

If necessary, you can manually install this driver into your Windows system. To do so, open your Windows Start menu and do a search for *devmgmt.msc* (or Device Manager). Start this program and scroll down to Ports (COM & LPT).
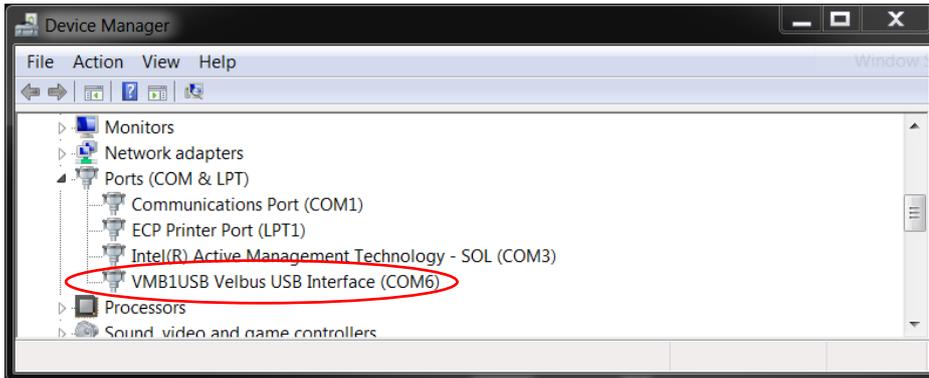

Display the contents of the Ports (COM & LPT) category by clicking on the small triangle to the left. Right click on VMB1USB Velbus USB Interface and select Update driver.

A window will pop up asking you how you want to search for driver software. Select Browse my computer for driver software, browse to the VelbusLink folder mentioned above, and click Next. Install the driver following the instructions that Windows will provide.

Once the correct driver installed, VelbusLink will automatically choose the correct port for communication with the Velbus network.

WHEN I TRY TO SCAN, VELBUSLINK GIVES AN ERROR MESSAGE "COMMUNICATION ERROR RECEIVED", DOES NOT FIND ALL THE MODULES, GIVES ERROR MESSAGES WHILE SYNCING, …

- Is the supply voltage minimum 12V on all modules? Due to voltage drops over the wiring, or not enough power supplies for the number of modules, the voltage on some modules can be too low. In case the voltage on a module is too low, the channel LEDs will blink 3 times in a row. In case it's too high, they will blink 4 times.

- maybe the terminators have not been (correctly) set. A standard Velbus installation should have two terminators set, not more, not less, ideally at the outer ends of the installation (with the longest distance of cable between them). See also "Installation Guide, Part 1: Hardware and Cabling".

- the installation may have a wiring problem. Maybe somewhere a supply cable (+ or – 12 V) has been connected to a data cable (H or L) by mistake? Are the screws into the screw terminals of the bus correctly tightened? Is the cable interrupted or broken somewhere? If necessary, disconnect as many parts of the installation as possible, try to connect and scan, and gradually reconnect the other parts until the problem happens again. This may give an indication of where the problem is situated.

- Is the USB port on the PC blocked or broken? Try connecting the USB cable to another socket.

- the PC interface module (VMBRSUSB, VMB1USB or other) is defective or in error mode. Power down your installation, wait 5 seconds and power up again. Unplug the USB cable and plug it in again (preferably using another PC-port), reconnect VelbusLink and perform a new scan. If this does not solve the problem, the PC interface module might be defective. In most cases however the problem lies with faulty wiring or a terminator problem.

- Does your configuration module VMB1USB or VMBRSUSB have contact with the bus? This module is sometimes connected with a loose piece of cable in which a bus wire can easily break!

- Is your configuration module VMB1USB in good condition? When used without a protective housing VMBFBI, a short circuit can easily happen.

THE SCAN WORKED PERFECTLY BUT NOW, USING THE SAME PORT, I CAN'T FIND MY INSTALLATION ANYMORE

The hardware of your USB port may lose communication with your Velbus system, for instance after your PC enters sleep mode. The simplest solution is to plug the USB cable into another port, forcing the system to re-initialise.

THE SCAN IS OVER BUT THERE ARE MISSING MODULES

- See the above advice concerning wiring problems ("When I try to scan, VelbusLink gives an error message "communication error received", does not find all the modules, gives error messages while syncing, …")

- Double check the addresses of the "missing" modules. There is a chance that addresses have been duplicated.

- Do not forget that addresses of the VMB4PD and VMB1TC can be manually set via the module.

- Are you using the latest version of VelbusLink? (Free download on www.velbus.eu > Support > Downloads.) Modules that are more recent than your Velbuslink version cannot be scanned.

THE SCAN IS OVER BUT SOME MODULES HAVE A RED 'X' MARK ⊗ ON THE MODULE NAME

Modules are shown with a red 'X' mark ⊗ over the module name when they have not been found during a scan. This typically happens when a module has been removed from the installation, after which a new scan is performed.

If you did not remove modules but still have a red cross over a module, check the following:

- have you replaced the module? VelbusLink takes into account the serial number of the modules. If you replace a module by a new one, VelbusLink will consider this new module as being different from the original one (even if you gave both the same address). Both modules will appear in VelbusLink after a scan, one with a red 'X' mark ⊗ (namely the original, removed one), one without the red 'X' (the new one). Simply delete the crossed out module from the VelbusLink project file (select it and press the remove module icon) and scan again.

- in case the Velbus installation has not been changed and red crosses ⊗ appear after a new scan, there is probably a wiring or terminator problem. See "**Error! Reference source not found.**" **Error! Reference source not found.** for solutions.

- Check that you have not accidentally changed the address of the module? You can find the module by opening the detection window in VelbusLink and physically operate the module. You will see the module appear in VelbusLink along with its correct address.

MY VMB8PBU MODULES GIVE A DIFFERENT ADDRESS THAN THE ONE I SET

Care is needed when connecting these modules, as the left two wires are common (marked "COM").
If, instead of these, you use other wires (of the channels) as common wires, you will get such strange effects. Do not blindly follow the colours of any wires.

THE ADDRESSES OF MY MODULES HAVE SUDDENLY CHANGED

Sometimes addresses *appear* to have been changed in VelbusLink simply because the view has been switched from decimal to hexadecimal (this setting can be changed in the View menu on top or by clicking the FF - 255 button). See also "Changing electronic addresses" p. 8.

SOME INPUT CHANNELS PROVIDE A WRONG "PRESSED" STATUS

If you connect feedback LEDs, you must respect the polarity of these LEDs. If you mount them backwards you get the effect of an activated push button. Some LEDs are now available in "Dual Polarity", which can adversely affect the push-button interface. A simple diode in line will correct this.

THE LEDS ON SOME MODULES BLINK OR DO NOT RESPOND

Check if there are no wiring problems and restart the system if necessary (power down, wait a few seconds and power up again). See "**Error! Reference source not found.**" **Error! Reference source not found.** for solutions for wiring problems.

In case of error, modules may have their LEDs blinking as follows:

- blinking 2 x, pause, blinking 2 x, etc: communication error

- blinking 3 x, pause, blinking 3 x, etc.: supply voltage too low

- blinking 4 x, pause, blinking 4 x, etc.: supply voltage too high

This may vary between modules. Check the documentation of the specific modules for further details.

AN INPUT MODULE STOPS RESPONDING

Check if you haven't configured a delay in the button or input channel. Push the button for at least three seconds to make sure.

The channel may also be locked. In VelbusLink, right click on the channel, select Operate, and unlock the channels there. If this fails to unlock the channel, temporarily configure a push button to unlock the channel (by creating an "unlock" action between the two), then unlock the channel by pushing the button. Once the channel unlocked, you can remove the "unlock" action.

In case of a static electrical discharge, power down the system, wait a few seconds and power up again.

AUTOMATIC DETECTION SELECTS THE WRONG MODULE

The address of the module you are expecting is probably also attributed to another module. Check for exclamation signs ⓘ next to modules and assign a new, unique address to these modules. Then re-scan your installation. In any case, only use the detection function if there are no more duplicate addresses (apart from 'FF') in the system.

See also

"Installation Guide, Part 1: Hardware and Cabling"

www.velbus.eu > Support