

# Chapter 14

## Expanders

The **Expanders** tab is configuration interface dedicated for **DOMIQ/Expander** module. **DOMIQ/Expander** module allows to build low-cost smart home installation using whole potential of the **DOMIQ** system. **DOMIQ/Expander** module allows to control up to 32 **Satel** expanders. Assuming, that **Satel INT-IORS** expanders are used, it allows to build smart installation with 256 binary inputs and 256 binary outputs. Inputs can be connected with wall-mounted button (mono or bistable), motion sensors, reed relays, etc. Outputs can control any devices or electric circuits, for example: lights, shutters, electrical outlets, etc. Combination of functionality of the **DOMIQ** system and very affordable price of **Satel** expanders allows to build cheap smart home with great functionality.

Technical details about installation of **DOMIQ/Expander** can be found in installation leaflet.

The user interface was designed to give full flexibility and convenience during system configuration. Key features of the configuration are as follows:

- Configuration is based on creating assignments of outputs to inputs.
- Outputs can be freely grouped and then assigned to any input, what significantly reduces configuration time.
- Any number of outputs and groups can be assigned to a single input.
- System can be configured online and offline as well. Configuration can be done without connected expanders and even without **DOMIQ/Expander** module! Whole configuration is stored inside **DOMIQ/Base**.
- Each input has a test button, which simulates input violation (for example pressing of a wall-mounted button). This allows to test created assignments.
- Each output has a test button. Each time a test button is pressed, the toggle command is sent to a particular output. It allows to test circuit wiring.

The interface is divided into three views:

- **Main**
- **Groups**
- **Outputs**

The common part of all views are following buttons:

- **Scan** – pressing this button starts search for connected expanders. Bus scan is automatically initiated during booting of **DOMIQ/Base** module (only when **DOMIQ/Expander** is connected). Manual scan should be executed in two cases:
  - When new expander has been connected and **DOMIQ/Base** module hasn't been restarted after this.
  - When addresses of already connected expander has been changed.
- **Revert** – restores last saved configuration of the **Expanders** tab.

# 14.1. Main

The **Main** view is used to assign outputs and groups to inputs. It is divided into two tables. The table on the left is used to configure inputs and will be called in the remaining of this chapter as the **inputs table**. The table on the right is used to select outputs that will be assigned to a particular input. We will name this table - the **outputs table**.

The screenshot shows the 'Main' view of the 'Expanders' tab. It consists of two main tables. The left table, the 'inputs table', has columns for Expander, Input, Command, Description, and Groups. It lists 32 expanders (0-31) with various inputs and commands like 'Test' and 'Toggle'. The right table, the 'outputs table', has columns for Expander and Outputs. It shows 32 expanders (0-31) with checkboxes for selecting outputs 1 through 8. At the bottom right, there are buttons for 'Scan', 'Save', and 'Revert'.

Fig 14.1: The Main view of the Expanders tab

## Inputs table

This table includes the following columns:

- **Expander** – in this column select expander, for which assignment is being created. Expanders physically present in installation are marked by green color.
- **Input** – in this column select input, for which assignment is being created. Each input has the **Test** button, which allows to test the created assignment. Pressing this button simulates input violation. Commands execution using the test button might be a bit slower than in real operation.
- **Command** – the list of available commands, that can be sent to expander:
  - **Toggle** – each input violation toggles assigned output/outputs.
  - **On** – each input violation turns on assigned output/outputs.
  - **Off** – each input violation turns off assigned output/outputs.
  - **On (monostable)** – Assigned output/outputs will be turned on as long as the input is violated. This command is especially helpful for control of shutters/blinds.
  - **No command (empty line)** – there is also possibility to assign an empty command. In this case none command will be sent, when input is violated, but input violation still can trigger event in **DOMIQ/Base** module.
- **Description** – input description. Entered description will be saved in Base configuration and then visible in the **State** tab.
- **Groups** – this column is used to assign group(s) of outputs to input. By default, inputs have no assigned groups. This is indicated by the **Assign groups** inscription. Click on the **Assign groups** to open the assignment window. The assignment window contains all defined groups with its descriptions (groups creation is described later in this chapter). When any group is selected then the **Assign groups** description will be replaced by the list of selected groups. In order to add another group, click on the list and select group from the list. Groups assignments can be removed in two ways. The first option is to deselect particular group in the selection window. The second way is to click on the **Delete** button, placed next to the list of the selected groups. This option deletes all groups assignments at



## 14.2. Groups

The **Groups** view allows to create groups of outputs. It is possible to create up to 256 groups (ID from 0 to 255). Any number of outputs (also from different expanders) can be assigned to a single group. The view is divided into two tables: the **Group table** and the **Outputs table**. The **Outputs table** is the same as in the **Main** view, so we skipped its description .

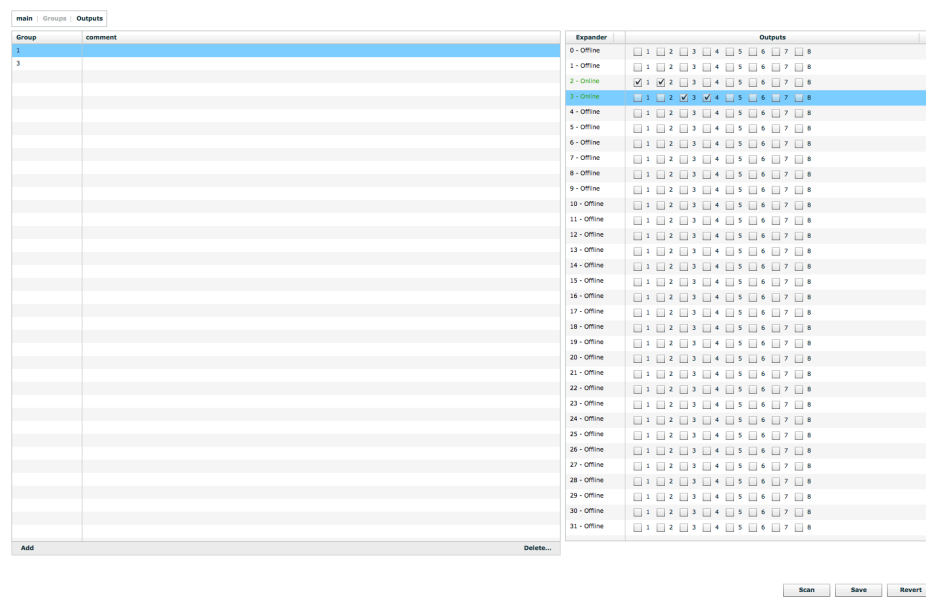


Fig 14.3: The Groups view

### Groups table

This table is used to create groups. The procedure of adding a new group is as follows:

1. Click on the **Add** button (in the left bottom corner of the table).
2. In the **Group number** field enter the number for created group (range from 0 to 255). This parameter is required. In the **Comment** field you can enter group description.

Fig 14.4: The Add group window

3. Click on the **OK** button to add group. Group will be added to the **Groups table**.
4. Next, select outputs from the **Outputs table** in order to assign them to the group.
5. Click on the **Save** button, to apply changes.

In order to delete a group, select it from the Groups table and then click on the **Delete** button (right-bottom corner of the screen). Deleting a group will also delete its assignments in the **Main** view in the **Groups** column. To delete an output from a group, just deselect it in the **Outputs table**, then click on the **Save** button to apply changes.



# 14.3. Outputs

The **Outputs** view allows to test outputs and to give them descriptions. The view is split into three columns:

- **Expander** – here you choose the expander whose output(s) you want to test or to give description. Expanders that are physically connected to installation are marked by green color.
- **Output** – in this column please select an output. The **Test** button allows to test the output (i.e. output wiring). Each time the **Test** button is pressed, the toggle command is sent to the selected relay.
- **Description** – in this column you can add description for each outputs. Description will be visible in the **State** tab, next to the relay's state.

## 14.4. Control

Control of expanders is based on created assignments - when input changes its state, then commands are sent to assigned outputs/groups according to created rules.

Moreover, considering that the **DOMIQ/Expander** module is connected with **DOMIQ/Base**, expanders can be controlled in any other way available in the **DOMIQ** system: using visualization, from the **Remote** application, using events and timers, etc. **DOMIQ/Base** can react to changes of state of both: inputs and outputs.

Expanders can be also controlled using identifiers, which are described in the subchapter 17.15 EXP  
State of each input and output is visible in the **State** tab.