DOMIQ/Light – first steps

Lighting is apart form heating, ventilation and air conditioning one of the major costs of the use of building. In this tutorial we present the use of **DOMIQ/Light** module. It lets you build a cheap and efficient lighting control system. In the next part of this tutorial we described a standard configuration and software path of the lighting installation built of the **DALI** ballasts.

1. DOMIQ/Light – opportunities

DOMIQ/Light plays role of a master device in the **DALI** lighting installation. According to the **DALI** standard it can be connected with 64 DALI ballasts. The communication between the **DALI** installation and the **Light** module is fully bidirectional. This is why the below functionality is available immediately:

· brightness update;

· notification about the lamp failure;

· notification about no power supply;

Each **DALI** ballast can be assigned to 16 groups. It makes it much easier to order the lighting control. This allows to create more advanced lighting control scenarios and makes the system more flexible.

Configuration of the entire installation can be carried out with a simple interface, which is a part of the configuration interface of the **DOMIQ/Base** module (the **Base** module is necessary for the **Base** module to work). **The configuration software is free and very easy to use.**

All these features make **DOMIQ/Light** perfect for lighting installations in offices or industrial buildings and wherever large-area lighting with low operation cost is required.

2. Addressing of the installation

The configuration of the installation should be started from addressing the **DALI** ballasts. The **Light** module allows the use of two types of addressing: fully automatic or manual. All the described features are available in the interface of the **DOMIQ/Base** module in the **DALI** tab.

2.1. Automatic addressing

This type allows you to program the entire installation with a single click. In the case of automatic programming you can choose from its two forms. When you are dealing with a new or even unprogrammed installation, use the **All** button in the section **Random addressing**.

If the button is pressed, addressing of the entire installation is initiated. Once the process is started the lamps will receive addresses in the range from 0 to 63. Assignment of the address will be confirmed by lighting of a given lamp. Bear in mind that once you start addressing, all the previous addresses are deleted.

If your installation is already partially programmed and you would like to add new ballasts to it, you should initiate the programming by pressing the **Unassigned** button. It causes calling the procedure of addressing of those ballasts only that do not have any addresses assigned and the current addressing remains unchanged. In this case if the address is assigned, it is confirmed by lighting of the lamp.

The **Starting address** field allows you to set the starting address, towards which the addresses will be assigned in the procedure of the automatic addressing.

Automatic addressing is sometimes also called random addressing due to the fact that during the automatic addressing the addresses are assigned to the ballasts on the random basis. Therefore the addresses are not a reflection of the ordered assembly of lamps.

2.2. Manual addressing

If you would like to keep the order of addresses in accordance with the order of assembly of ballasts, you should first of all conduct the automatic addressing and then use the option of changing the address manually. To do this select the lamp on the list of available ballasts and then in the **Addressing** section enter a new address and confirm it by pressing **Set**. In some cases you may need to change addresses of the two ballasts. In this case, you should lead to a situation in which both ballasts have an identical address, and then turn addresses crosswise.

3. Ballasts configuration

3.1. Ballasts parametrization

All **DALI** ballasts have a set of the predefined parameters: maximum level, minimum level, level by error, step and ramp. These parameters can be changed using the configuration interface. In the preview window of the installation first 5 columns are read-only, while the other ones allow you to change the above mentioned parameters of the ballast. The new value of the parameter is automatically sent to the ballast at the time of switching the cursor elsewhere in the interface

3.2. Groups

Each ballast can be assigned to max. 16 groups. Grouping lets you organize controlling in a given way - for example, division into rooms or sections of the room etc. Grouping also helps to reduce configuration and movement on the bus, because instead of multiple commands you can send just one - to the group.

Assignment to the group is very simple - just check the box next to the number of the selected group. If you uncheck the box, the ballast will be removed from the group.

The full list of commands to control **DALI** groups can be found in the **DOMIQ/Base** documentation.

3.3. Light scenes

16 scenes can be programmed in each lamp. This allows for convenient control of lighting levels. In order to set the scene, select it from the list and then enter the brightness value in the **Brightness** column (range from 0 to 255). Confirm it by pressing the **Save** button. To load the scene just press the **Load** button.

Saving and loading scenes is also available by using commands that can be combined with buttons in the Remote application, on visualization or as effect of an event etc.

The following command is used to load scenes in single ballasts:

`C.DALI.1.evg.`**`adr`**`=load:`**`xx`**, where **adr**, stands for ballast address and **xx** is the scene number.

The following command is used to load the scenes in a group of ballasts:

`C.DALI.1.group.`**`g`**`=load:`**`xx`**, where **g**, stands for the number of the group and **xx** is the scene number.

Saving scenes using commands is similar: just replace the word `load` with `save`. The command which saves the scene will assign the current brightness to the scene.

4. Integration with LCN

The **DOMIQ/Base** module allows you to control the **Light** module directly from the LCN system. In the next part of this chapter we will present how to control the **DALI** lighting using the LCN wall buttons. In order to minimize costs just use any logic LCN module, which allows connection of buttons such as LCN–UPS or LCN-SHS.

4.1. Configuration of the LCN module

The LCN module should be configured in such a way, that pressing the buttons is passed to the **Base** module. For this purpose use the **Send buttons** key, while as the recipient of the command indicate the **Base** module. The definition of the command **Send buttons** should be repeated for all **DALI** commands that will be controled with wall buttons. In this case we describe the use of four commands: on/off and lighter/darker. For this purpose we are going to reserve keys from D1 to D4 with the command **short** and assume that the address of our module is 10.

4.2. Configuration of the DOMIQ/Base module

If you would like pressing buttons to result in sending commands to the **Light** module and to the **DALI** bus, you should define the events that will implement it. In this case there are four events, each for another **DALI** command. All definitions are the same, so we will present the first in details but in case of the next ones we will just indicate the differences. For this purpose let's assume that the command is sent to the ballast with address 1.

1. Add a new event.
2. In the **Channel** field enter: `E.LCN.key.0.10.D1`, and in **Value**: `hit`.
3. In the actions click on **Add command...**. In the new window in the **Name** field enter: `C.DALI.1.evg.1`, and in **Value**: `on`.
4. For the other commands repeat steps from 1 to 3. Remember to change the number of the button and change the names of the commands to : `off`, `up`, `down`.

The above example can be expanded by adding support for invoking scenes, controlling groups etc. Similarly you can control a group.

4.3. Direct sending of the DALI commands

Due to the fact that the **Base** in **LCN–Pro** is a segment coupler, the **LCN–Pro** software will not allow you to select **Base** as the recipient of the **DALI** commands. You can do this, however, by assigning another LCN module or group as the recipient of the table and then changing the recipient to the **Base** module. The procedure is as follows:

1. As recipient select any LCN logic module.
2. As command type select **DALI** and set the type of command that should be sent.
3. Save the module configuration.
4. Change the recipient of the command for the **Base** module.
5. Repeat the above mentioned actions for all **DALI** commands, that should be controlled using LCN wall buttons.

5. Notifications about failures

As mentioned in the introduction, thanks to the bidirectional communication the **Light** module receives information about failures from the ballasts: information about burning out lamps and power failure. In the aspect of service it is very important to receive notifications of failures which occur in the installation.

The **Base** module allows you to send an e-mail. In the next part of this chapter we will present how to use this functionality in order to send notification about failures. In view of the fact that there are two types of failures, you should define two separate events for each type. In both cases the definition is almost the same. It was described below.

At first we will present the event informing about the power failure.

1. Add a new event.

2. In the **Channel** field enter: `E.DALI.1.evg.%d+.powerfail`, and in **Value**: 1

3. In **Actions** click on **Add command...**. In the new window in the **Name** field enter: `SC.EMAIL.<address1>`, where `<address1>` stands for the e-mail address on which the notification should be sent. There may be several recipients. In such case divide them with a comma. Examples of usage:

    1. A single recipient: `SC.EMAIL.service@example.com`

    2. Many recipients: `SC.EMAIL.service1@example.com,service2@example.com,service3@example.com`.

4. In the **Value** cell enter the subject of the message and then the contents divided from the subject with a semicolon: `subject;contents`. In this case we will send information about the lamp with a failure: `Power failure;Power failure occured: ballast $C1`.

5. Similarly we create an event informing that a lamp has burn out. In the **Channel** field replace the word `powerfail` with `lampfail` and modify the subject and message. The other actions remain unchanged.

The presented events will be triggered in case of failure of any lamp (pattern matching `%d+` is responsible for this).

6. DALI on visualization

In this chapter we present how to display the status and control the DALI ballast on the visualization. The configuration is very easy:

1. Add **Light** to visualization.

2. In the **Channel** field enter: `DALI.1.evg.xx`, where `xx` stands for the address of the lamp.

3. Save the configuration. From now on you can just turn on and off light and at the same time the current status of ballast will displayed.

Example visualization of the DALI installation is shown in the picture below:

More information on the DALI control commands and a detailed description of the configuration interface can be found in the configuration manual of the **DOMIQ/Base** module.