User Manual

Revision 1.100
English

DALI / BACnet Slave - Converter

(Order Code: HD67833-IP-B2-Y
HD67833-IP-B2-N,
HD67833-MSTP-B2-Y
HD67833-MSTP-B2-N)

for Website information:
www.adfweb.com?Product=HD67833

for Price information:
www.adfweb.com?Price=HD67833-IP-B2
www.adfweb.com?Price=HD67833-MSTP-B2

Benefits and Main Features:

- Very easy to configure
- Electrical isolation
- Temperature range: -40°C/85°C (-40°F/185°F)

For others DALI products, see also the following links:

Converter DALI to	
www.adfweb.com?Product=HD67822	**(KNX)**
www.adfweb.com?Product=HD67831	**(RS485)**
www.adfweb.com?Product=HD67832	**(BACnet/IP Master)**
www.adfweb.com?Product=HD67834	**(CAN)**
www.adfweb.com?Product=HD67835	**(CANopen)**
www.adfweb.com?Product=HD67836	**(DeviceNet Master)**
www.adfweb.com?Product=HD67837	**(DeviceNet Slave)**
www.adfweb.com?Product=HD67838	**(DMX)**
www.adfweb.com?Product=HD67839	**(Ethernet)**
www.adfweb.com?Product=HD67840	**(EtherNet/IP)**
www.adfweb.com?Product=HD67842	**(Modbus Master)**
www.adfweb.com?Product=HD67843	**(Modbus Slave)**
www.adfweb.com?Product=HD67844	**(Modbus TCP Master)**
www.adfweb.com?Product=HD67845	**(Modbus TCP Slave)**
www.adfweb.com?Product=HD67848	**(PROFINET)**
www.adfweb.com?Product=HD67849	**(SNMP Manager)**
www.adfweb.com?Product=HD67850	**(SNMP Agent)**

Do you have an your customer protocol?
www.adfweb.com?Product=HD67003

Do you need to choose a device? do you want help?
www.adfweb.com?Cmd=helpme

User Manual

INDEX:

UPDATED DOCUMENTATION:

Dear customer, we thank you for your attention and we remind you that you need to check that the following document is:

- Updated
- Related to the product you own

To obtain the most recently updated document, note the "document code" that appears at the top right-hand corner of each page of this document.

With this "Document Code" go to web page www.adfweb.com/download/ and search for the corresponding code on the page. Click on the proper "Document Code" and download the updates.

REVISION LIST:

Revision	Date	Author	Chapter	Description
1.000	15/06/2016	Ff	All	First Release
1.001	23/05/2017	Ff	All	Added MSTP version
1.100	30/04/2020	Ff	All	Added DALI 2 tables

WARNING:

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ADFweb.com is not responsible for any error this manual may contain.

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SECURITY ALERT:

GENERAL INFORMATION

To ensure safe operation, the device must be operated according to the instructions in the manual. When using the device, legal and safety regulation are required for each individual application. The same applies also when using accessories.

INTENDED USE

Machines and systems must be designed so the faulty conditions do not lead to a dangerous situation for the operator (i.e. independent limit switches, mechanical interlocks, etc.).

QUALIFIED PERSONNEL

The device can be used only by qualified personnel, strictly in accordance with the specifications.
Qualified personnel are persons who are familiar with the installation, assembly, commissioning and operation of this equipment and who have appropriate qualifications for their job.

RESIDUAL RISKS

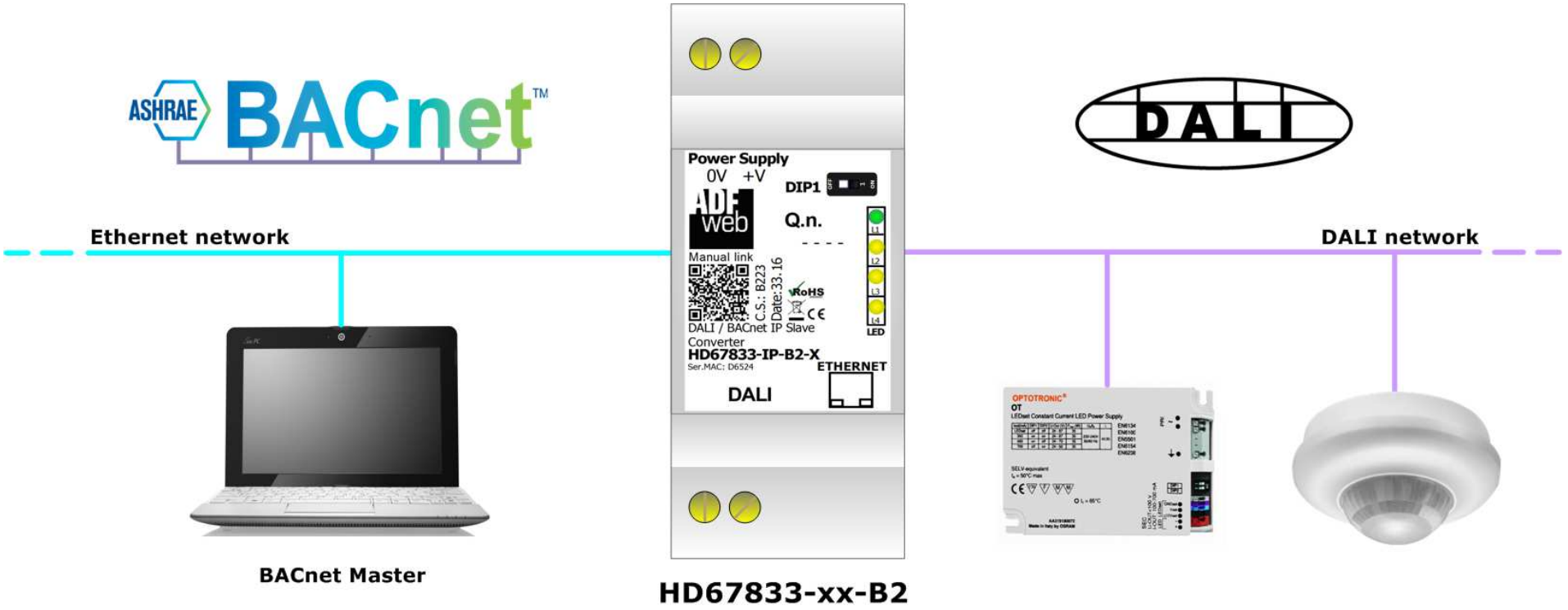
The device is state-of-the-art and is safe. The instruments can represent a potential hazard if they are inappropriately installed and operated by untrained personnel. These instructions refer to residual risks with the following symbol:

This symbol indicates that non-observance of the safety instructions is a danger for people that could lead to serious injury or death and / or the possibility of damage.

CE CONFORMITY

The declaration is made by our company. You can send an email to support@adfweb.com or give us a call if you need it.

EXAMPLE OF CONNECTION:



CONNECTION SCHEME:

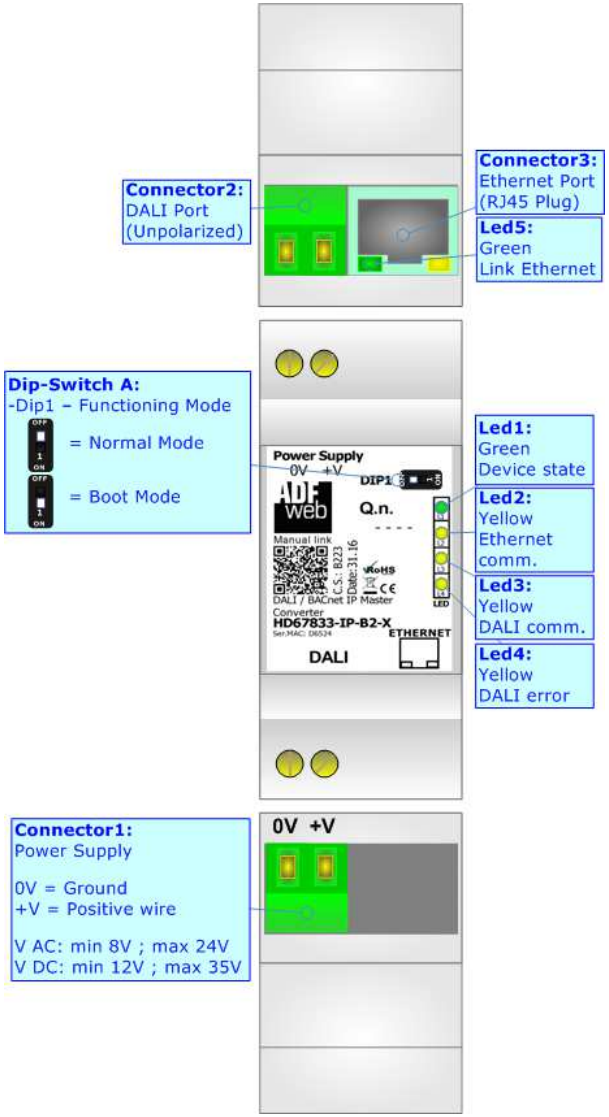


Figure 1a: Connection scheme for HD67833-IP-B2

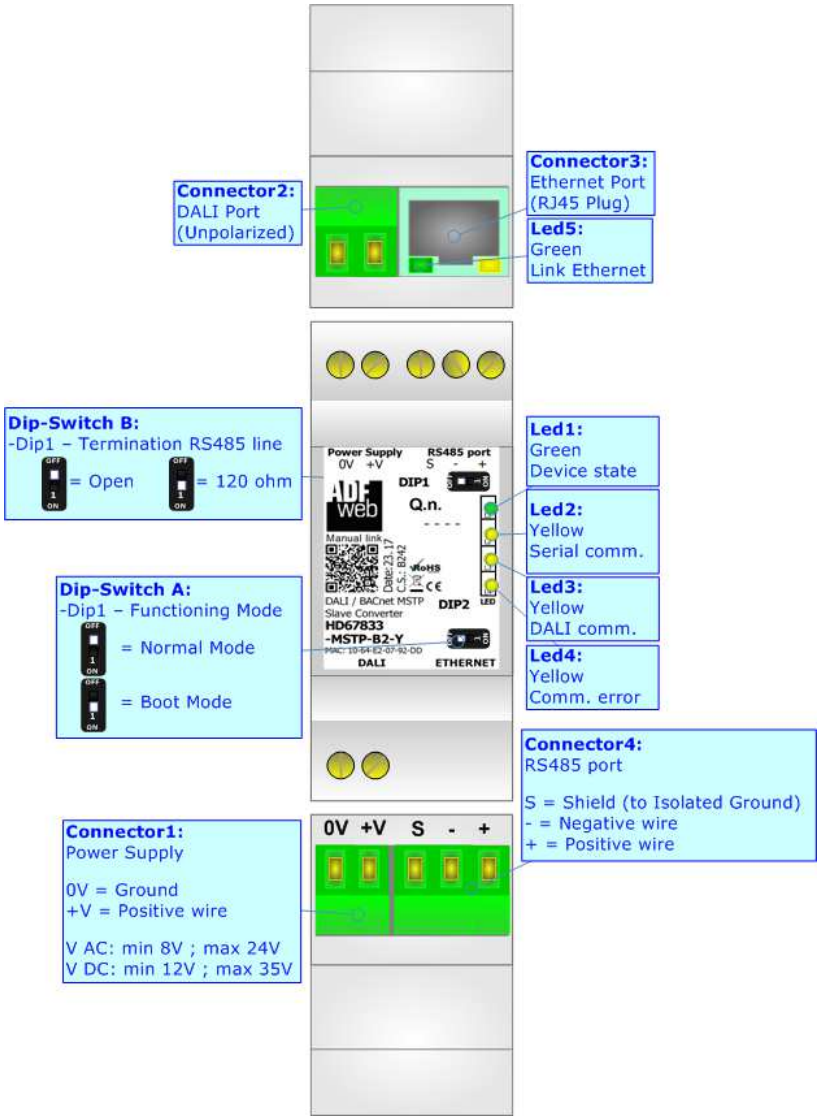


Figure 1b: Connection scheme for HD67833-MSTP-B2

CHARACTERISTICS:

The HD67833 is a DALI / BACnet Slave - Converter.

It has the following characteristics:

- Up to 64 devices on DALI bus;
- Configurator for DALI network/devices;
- Isolation between DALI – Ethernet/RS485, Power Supply – Ethernet/RS485. Additional isolation Power Supply – DALI for HD67833-x-B2-N version;
- Two-directional information between DALI bus and BACnet bus;
- Mountable on 35mm Rail DIN;
- Wide power supply input range: 8…24V AC or 12…35V DC;
- Wide temperature range: -40°C / 85°C [-40°F / +185°F].

CONFIGURATION:

You need "DALI Console" software on your PC in order to perform the following:

- Configure the DALI network;
- Setup the DALI devices (groups, scenes, IDs, …);
- Test DALI communication.

You need Compositor SW67833 software on your PC in order to perform the following:

- Define the parameter of BACnet line;
- Define the parameter of DALI line;
- Update the device.

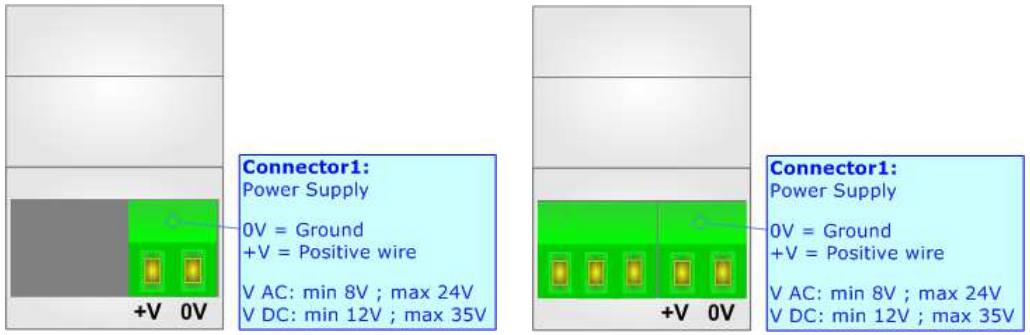
POWER SUPPLY:

The devices can be powered at 8…24V AC and 12…35V DC. For more details see the two tables below.

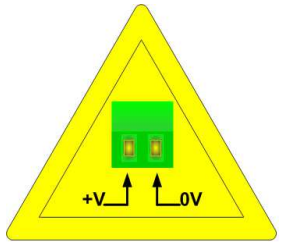
VAC ~		VDC ⎓	
Vmin	**Vmax**	**Vmin**	**Vmax**
8V	**24V**	**12V**	**35V**

Consumption at 24V DC (no load):

Device	Consumption [W/VA]
HD67833-xxx-B2	3.5



Caution: Not reverse the polarity power



HD67833-xxx-B2

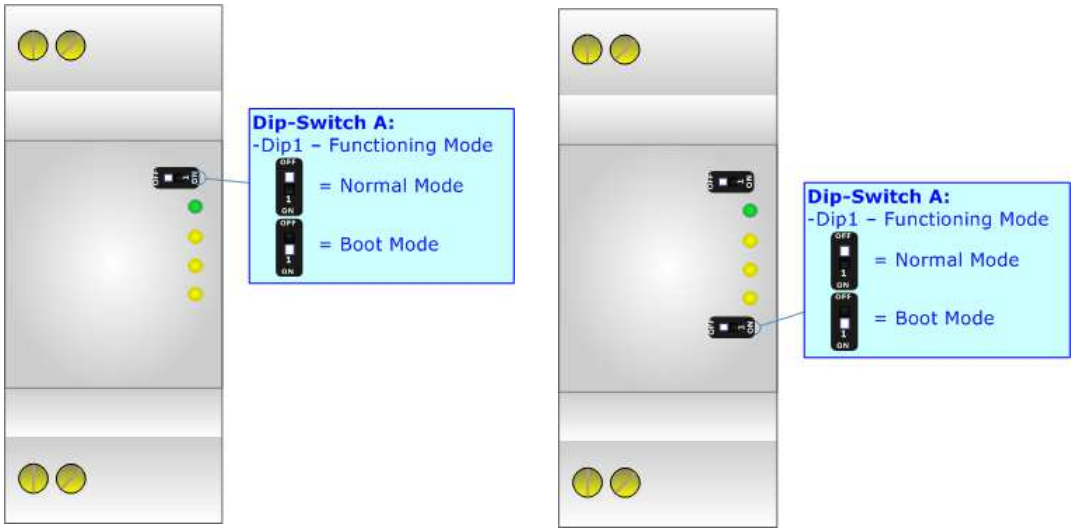
FUNCTION MODES:

The device has got two functions mode depending of the position of the 'Dip1 of Dip-Switch A':

- The first, with 'Dip1 of Dip-Switch A' at "OFF" position, is used for the normal working of the device.
- The second, with 'Dip1 of Dip-Switch A' at "ON" position, is used for upload the Project and/or Firmware.

For the operations to follow for the updating, see 'UPDATE DEVICE' section.

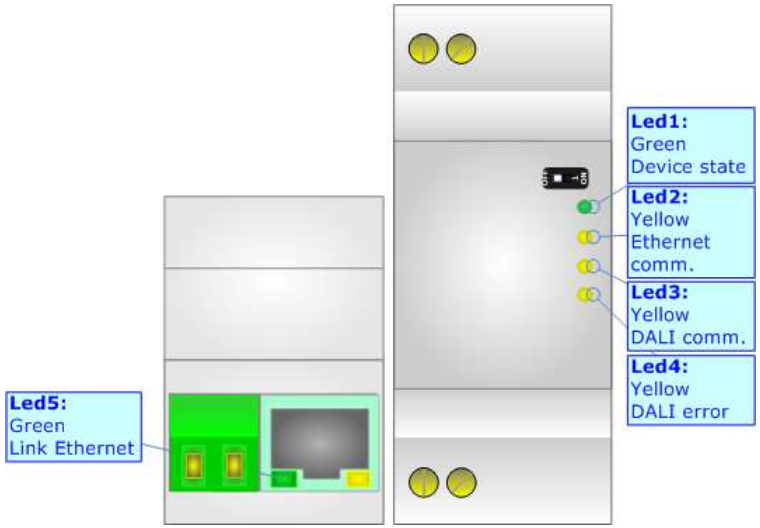
According to the functioning mode, the LEDs will have specifics functions, see 'LEDS' section.



LEDS (HD67833-IP-B2-x):

The device has got five LEDs that are used to give information of the functioning status.
The various meanings of the LEDs are described in the table below.

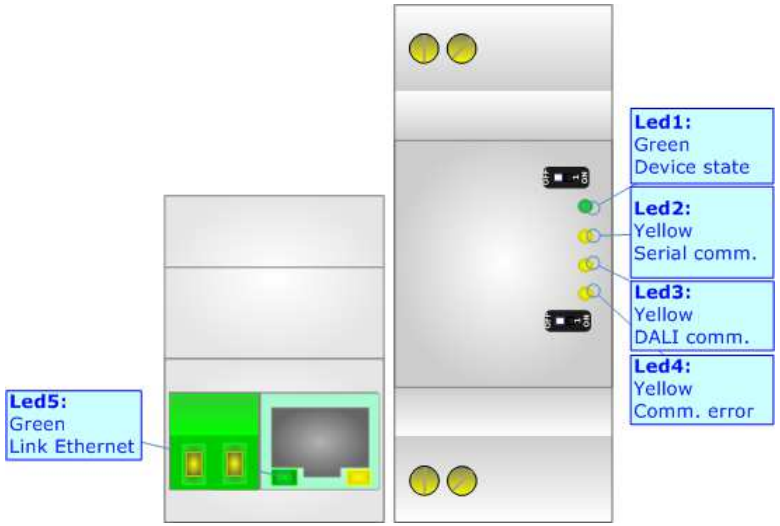
LED	Normal Mode	Boot Mode
1: Device State (green)	Blinks slowly (~1Hz)	**Blinks quickly:** Boot state **Blinks very slowly (~0.5Hz):** update in progress
2: Ethernet communication (yellow)	Blinks when Ethernet communication is running	**Blinks quickly:** Boot state **Blinks very slowly (~0.5Hz):** update in progress
3: DALI communication (yellow)	Blinks when DALI communication is running	**Blinks quickly:** Boot state **Blinks very slowly (~0.5Hz):** update in progress
4: DALI error (yellow)	Turns ON when one DALI device is not answering	**Blinks quickly:** Boot state **Blinks very slowly (~0.5Hz):** update in progress
5: Ethernet Link (green)	**ON:** Ethernet cable connected **OFF:** Ethernet cable disconnected	**ON:** Ethernet cable connected **OFF:** Ethernet cable disconnected



LEDS (HD67833-MSTP-B2-x):

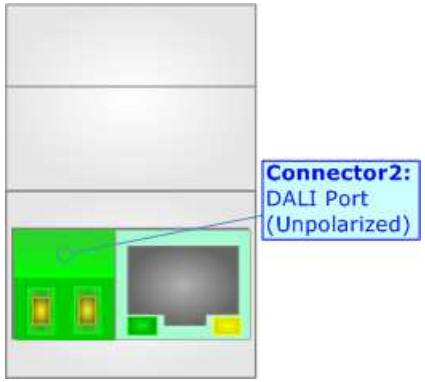
The device has got five LEDs that are used to give information of the functioning status.
The various meanings of the LEDs are described in the table below.

LED	Normal Mode	Boot Mode
1: Device State (green)	Blinks slowly (~1Hz)	**Blinks quickly:** Boot state **Blinks very slowly (~0.5Hz):** update in progress
2: Serial communication (yellow)	Blinks when BACnet MS/TP communication is running	**Blinks quickly:** Boot state **Blinks very slowly (~0.5Hz):** update in progress
3: DALI communication (yellow)	Blinks when DALI communication is running	**Blinks quickly:** Boot state **Blinks very slowly (~0.5Hz):** update in progress
4: Communication error (yellow)	Turns ON when DALI or Modbus is in error	**Blinks quickly:** Boot state **Blinks very slowly (~0.5Hz):** update in progress
5: Ethernet Link (green)	**ON:** Ethernet cable connected **OFF:** Ethernet cable disconnected	**ON:** Ethernet cable connected **OFF:** Ethernet cable disconnected



DALI:

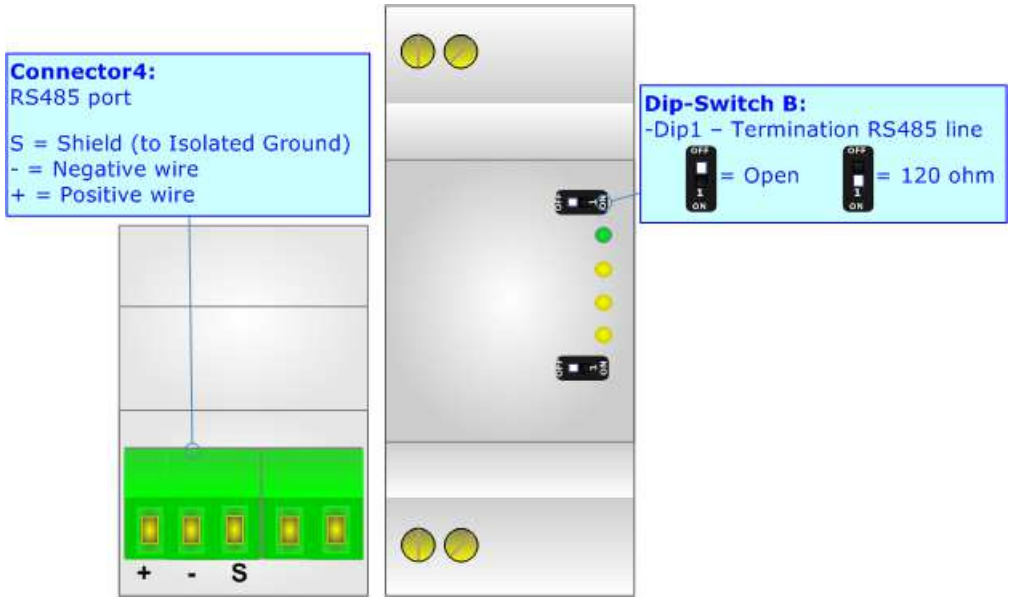
DALI stands for "Digital Addressable Lighting Interface" and it is an interface protocol for digital communication between electronic lighting equipment (electronic ballasts, transformers, etc.).
With the right choice of individual DALI components an extremely wide range of requirements can be met, from operating the lighting system from a simple light switch to lighting management systems for entire office complexes with thousands of light sources. Using ADFweb.com's DALI converters, any light source, including incandescent lamps, fluorescent lamps, high-intensity discharge lamps and even LEDs, can be controlled irrespective of whether they are installed in an office, a restaurant or a street light.



Characteristics	Description
Medium	Shielded Twisted Pair
Topology	Linear, Star or mixed
Device power consumption	Max 250 mA
DALI voltage	9.5 V – 22.5 V (typical 16 V)
Maximum cable length	300 m (1.5 mm2 wire)
Maximum number of DALI devices	64
Baud rate	1200 bps
Maximum number of DALI groups	16
Maximum number of DALI scenes	16

RS485:

For terminate the RS485 line with a 120Ω resistor it is necessary to put ON dip 1, like in figure. RS485 is used for BACnet MS/TP communication.



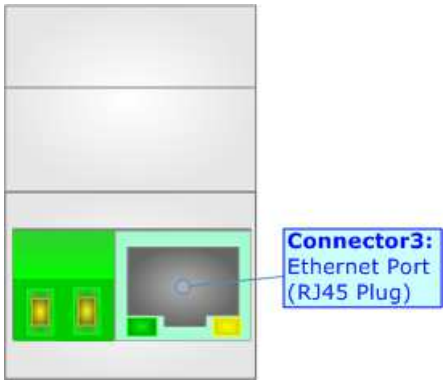
The maximum length of the cable should be 1200m (4000 feet).

Here some codes of cables:

- Belden: p/n 8132 - 2x 28AWG stranded twisted pairs conductor + foil shield + braid shield;
- Belden p/n 82842 - 2x 24AWG stranded twisted pairs conductor + foil shield + braid shield;
- Tasker: p/n C521 - 1x 24AWG twisted pair conductor + foil shield + braid shield;
- Tasker: p/n C522 - 2x 24AWG twisted pairs conductor + foil shield + braid shield.

ETHERNET:

The Ethernet port is used for the BACnet/IP communication, for programming DALI network and for programming the device.
The Ethernet connection must be made using Connector2 of HD67833-B2 with at least a Category 5E cable. The maximum length of the cable should not exceed 100m. The cable has to conform to the T568 norms relative to connections in cat.5 up to 100 Mbps. To connect the device to an Hub/Switch is recommended the use of a straight cable, to connect the device to a PC is recommended the use of a cross cable.



USE OF COMPOSITOR SW67833:

To configure the Converter, use the available software that runs with Windows called SW67833. It is downloadable on the site www.adfweb.com and its operation is described in this document. *(This manual is referenced to the last version of the software present on our web site)*. The software works with MSWindows (XP, Vista, Seven, 8, 10; 32/64bit).

When launching the SW67833, the window below appears (Fig. 2).

Note:
It is necessary to have installed .Net Framework 4.

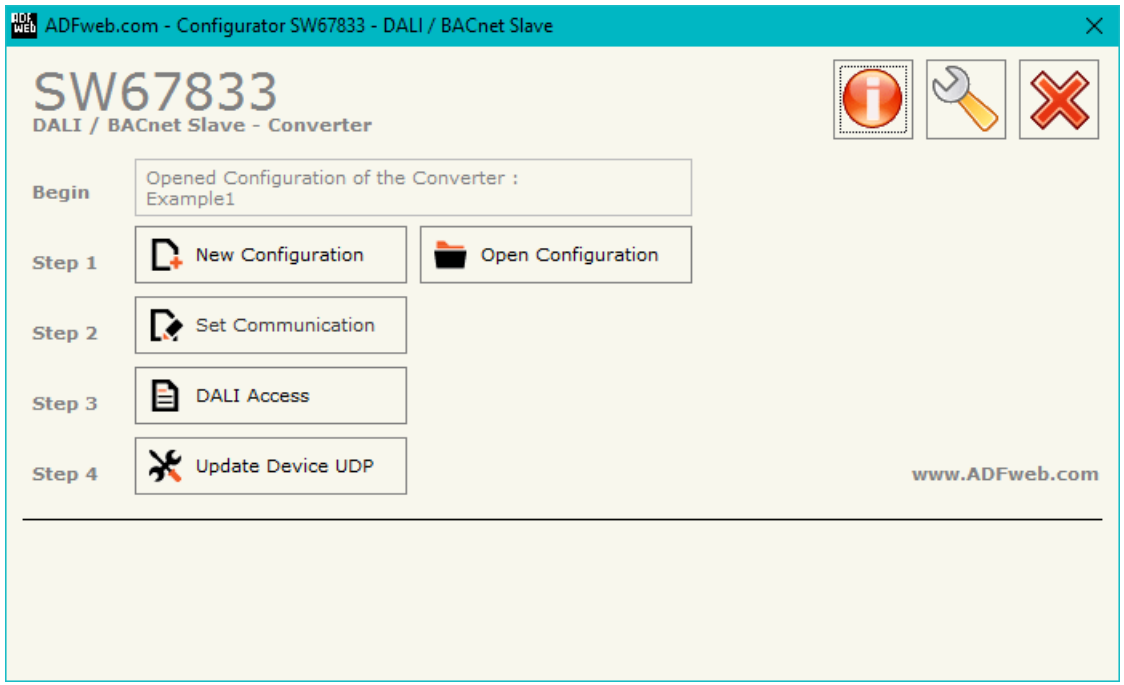
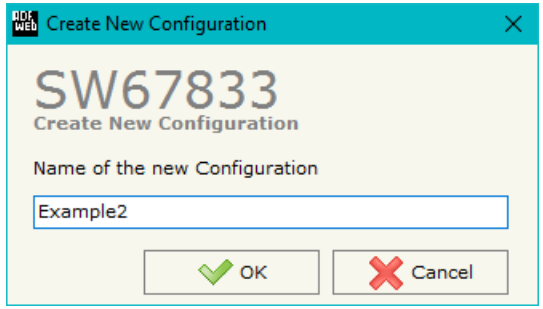


Figure 2: Main window for SW67833

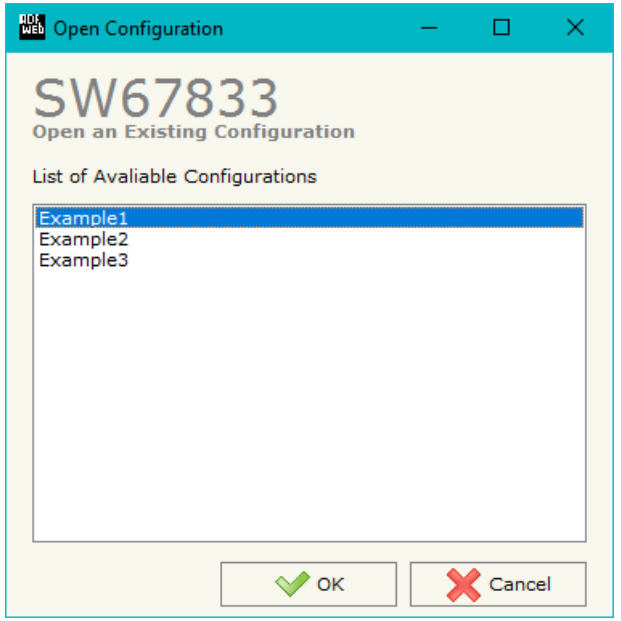
NEW CONFIGURATION / OPEN CONFIGURATION:

The "**New Configuration**" button creates the folder which contains the entire device's configuration.



A device's configuration can also be imported or exported:

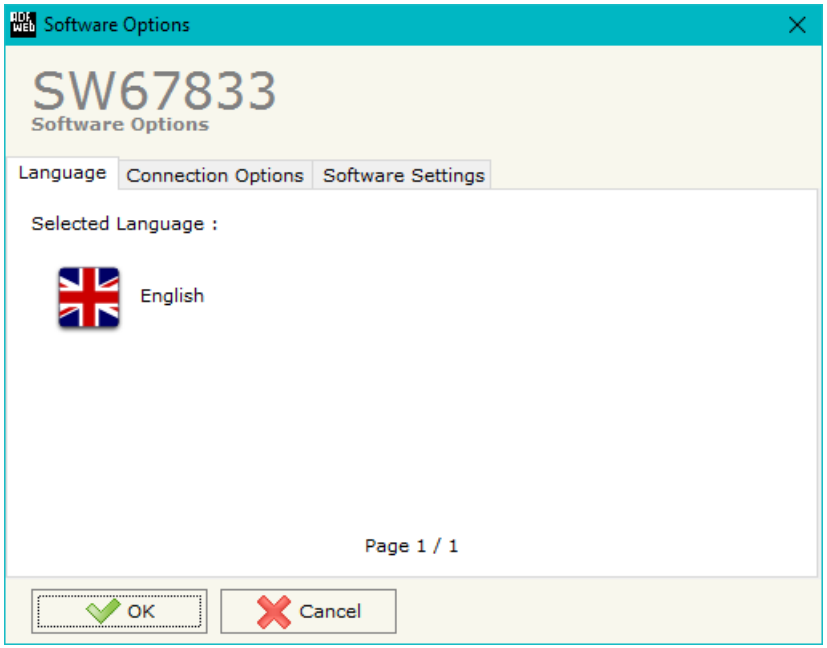
- To clone the configurations of a Programmable "DALI / BACnet Slave - Converter" in order to configure another device in the same manner, it is necessary to maintain the folder and all its contents;
- To clone a project in order to obtain a different version of the project, it is sufficient to duplicate the project folder with another name and open the new folder with the button "**Open Configuration**".

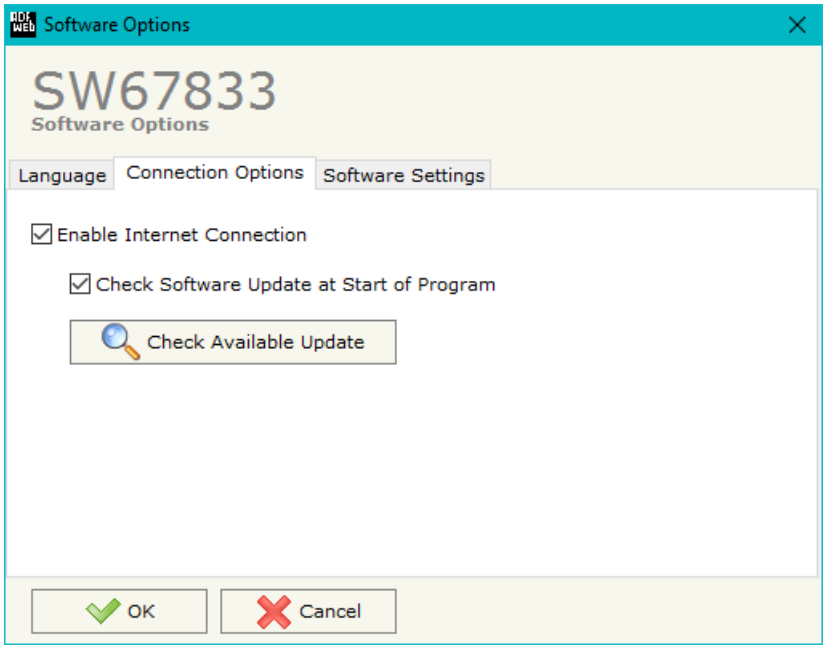


SOFTWARE OPTIONS:

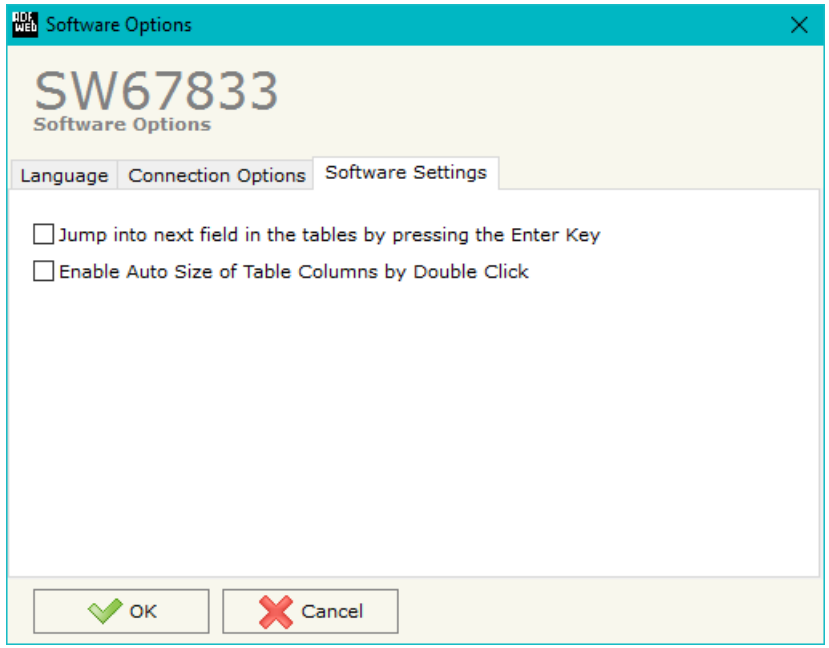
By pressing the "**Settings**" ( ) button there is the possibility to change the language of the software and check the updatings for the compositor.

In the section "Language" it is possible to change the language of the software.





In the section "Connection Options", it is possible to check if there are some updatings of the software compositor in ADFweb.com website.
Checking the option "**Check Software Update at Start of Program**", the SW67833 check automatically if there are updatings when it is launched.



In the section "Software Settings", it is possible to enable/disable some keyboard's commands for an easier navigation inside the tables contained in the different sections of the software.

SET COMMUNICATION:

This section define the fundamental communication parameters of BACnet and DALI bus.

By Pressing the "**Set Communication**" button from the main window for SW67833 (Fig. 2) the window "Set Communication" appears (Fig. 3).

In the section "BACnet Type" is possible to select the type of BACnet to use from:

- BACnet/IP (uses Ethernet);
- BACnet MS/TP (uses RS485).

If selected "BACnet/IP" the means of the fields for "BACnet" are:

- In the fields "**IP ADDRESS**" the IP address of BACnet/IP side of the converter is defined;
- In the fields "**SUBNET Mask**" the SubNet Mask of BACnet/IP side of the converter is defined;
- In the fields "**GATEWAY**" the default gateway of the network is defined. This feature can be enabled or disabled pressing the Check Box field. This feature is used for going out of the net;
- In the field "**Port**" the port used for BACnet communication is defined. The default port used for BACnet communication is 47808, but is possible to insert any value;
- In the field "**BACnet Device Name**" the name of BACnet/IP side of the converter is defined;
- In the field "**Device Identifier**" the ID of BACnet/IP side of the converter is defined.

The means of the fields for the "DALI" section are:

- In the field "**DALI Console Port**" the port for the Ethernet communication with the DALI Console software is defined;
- If the field "**Enable DALI 2**" is checked, DALI 2 protocol is enabled.

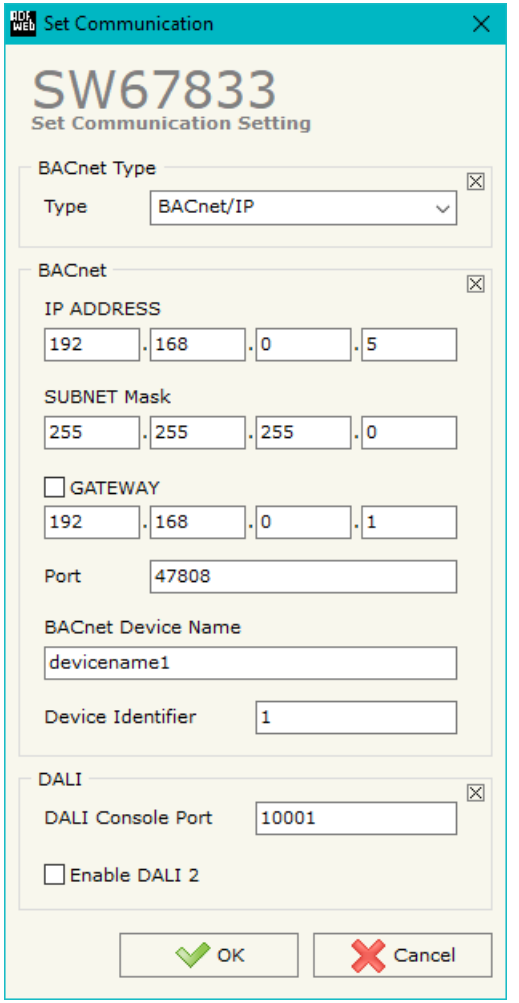


Figure 3a: "Set Communication" window

If selected "BACnet MS/TP", the means of the fields for "BACnet" are:

- In the field "**Baudrate**" the data rate of the BACnet line is defined;
- In the field "**Parity**" the parity of the line is defined;
- In the field "**BACnet Device Name**" the name to give to the BACnet node is defined;
- In the field "**MAC Address**" the MAC of BACnet node (from 0 to 254) is defined;
- The field "**Max Master**" specifies the highest allowable address for master nodes. The value shall be less than or equal to 127;
- The field "**Max Info Frames**" specifies the maximum number of information frames the node may send before it must pass the token;
- In the field "**Device Instance**" the of the BACnet MS/TP side of the converter is defined;
- In the field "**Network**" the BACnet MS/TP network number is defined.

The means of the fields for the "Ethernet Update" section are:

- In the fields "**IP ADDRESS**" the IP address of the converter is defined;
- In the fields "**SUBNET Mask**" the SubNet Mask of the converter is defined;
- In the fields "**GATEWAY**" the default gateway of the network is defined. This feature can be enabled or disabled pressing the Check Box field. This feature is used for going out of the net.

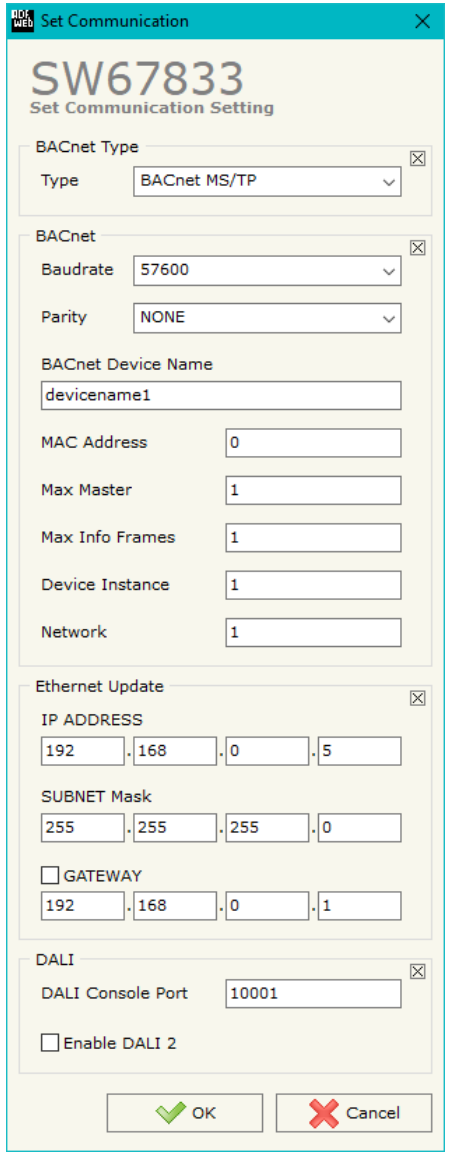


Figure 3b: "Set Communication" window

DALI ACCESS:

By pressing the "**DALI Access**" button from the main window for SW67833 (Fig. 2) the window "Select the DALI Device Present in the Network" appears (Fig. 4).
This section is composed by three tables used to define the list of DALI devices to control, the DALI sensors to read and the DALI router's functions.

SELECT DEVICE

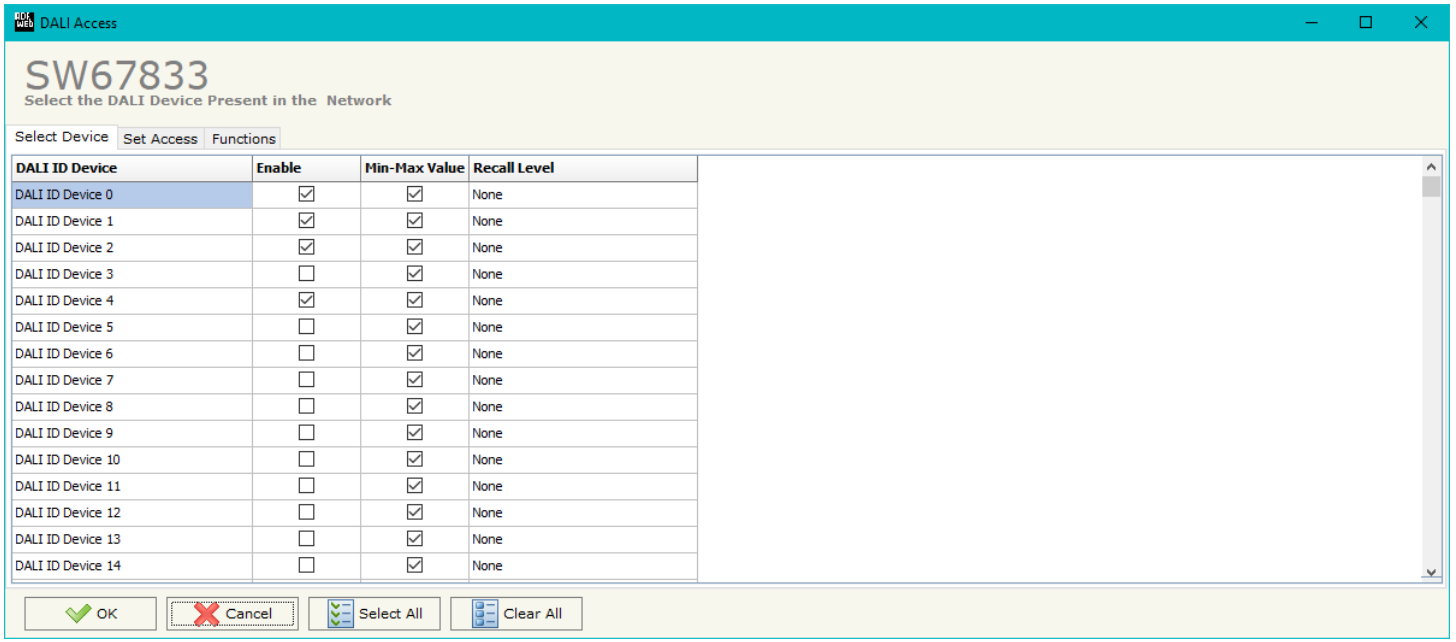


Figure 4a: "Select Device" window

The "**Select Device**" section (Fig. 4a) is used to list the DALI ballast to read/write. The means of the fields are:

- If the field "**Enable**" is checked, the DALI ballast is present in the network and connected to the converter;
- If the field "Min-Max Value" is checked, the DALI ballast will be dimmed only between the configured minimum and maximum light levels;

- In the field "Recall Level" the light level to command when the ballast is toggled (ON/OFF) is defined. It is possible to define:
  - None: function not enabled;
  - Recall Min-Max Level for Switch: the DALI device is toggled between configured minimum and maximum light levels;
  - Recall Old Value Level for Switch: the DALI device is toggled between 0 and last light level.

SET ACCESS

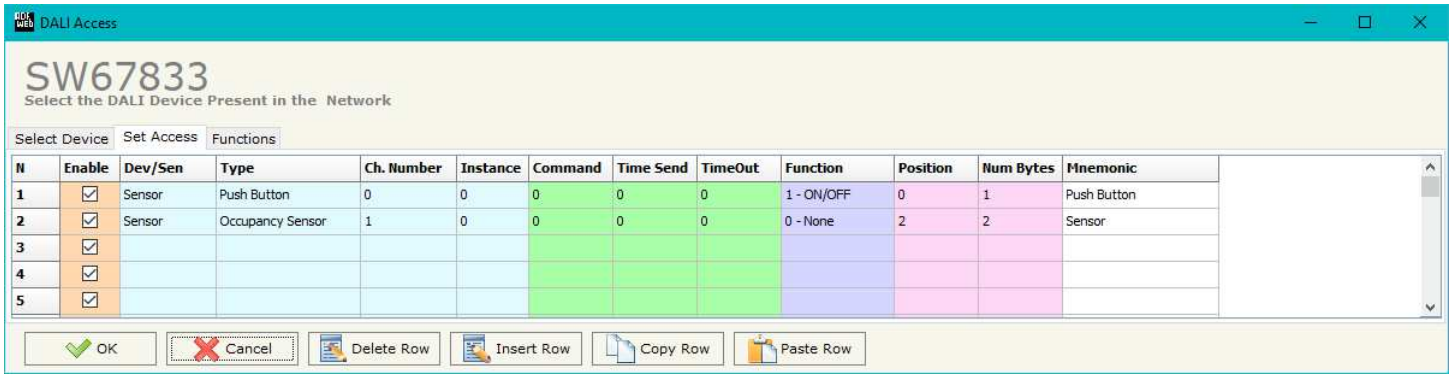


Figure 4b: "Set Access" window

The "**Set Access**" section (Fig. 4b) is used to list the DALI sensors to read and the DALI commands to send to the DALI ballasts. The means of the fields are:

- If the field "**Enable**" is checked, the DALI device/sensor is enabled;
- In the field "**Dev/Sen**" the DALI node is defined;
- In the field "**Type**" the type of DALI node to read/write is defined;
- In the field "**Ch. Number**" the ID of the DALI node is defined;
- In the field "**Instance**" the instance of the DALI node is defined;
- In the field "**Command**" the command code to send is defined. If not used, this column can be set to '0';
- In the field "**Time Send**" the delay in ms between the commands is defined. If not used, this column can be set to '0';
- In the field "**Timeout**" the timeout in ms for the reception of the response is defined. If not used, this column can be set to '0';
- In the field "**Function**" the DALI function to recall is define. This feature is used to control DALI ballasts automatically from a DALI 2 device as a DALI router;

- In the field "**Position**" the byte of the internal memory array where mapping the data is defined;
- In the field "**Num Bytes**" the dimension of the data is defined;
- In the field "**Mnemonic**" a description of the row is defined.

Note:
This table is not required if the HD67833-B2 is used to communicate with DALI 1 devices only.

Note:
The 'Position' field represents a byte of the internal memory array of the converter. If this table is filled, each row of the table corresponds to a new BACnet object with the data from the device/sensor defined to add to the existing map described under "BACNET MAP" chapter.

FUNCTIONS

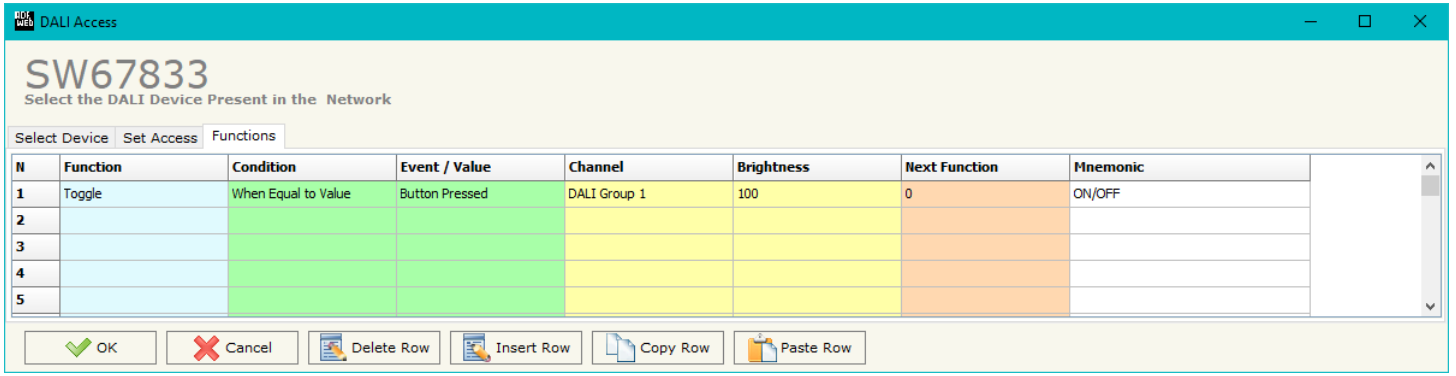


Figure 4c: "Functions" window

The "**Functions**" section (Fig. 4c) is used to list the DALI function to control the DALI ballasts in relation to the data from DALI 2 devices (buttons, sensors, exc.) like a DALI router. The means of the fields are:

- In the field "**Function**" the DALI operation to execute is defined;
- In the field "**Condition**" the logic operation to apply on the data is defined;
- In the field "**Event / Value**" the type of event received from the DALI 2 devices is defined;
- In the field "**Channel**" the DALI ballast/group to control is defined;
- In the field "**Brightness**" the light level to command is defined;
- In the field "**Next Function**" it is possible to concatenate another function;
- In the field "**Mnemonic**" a description of the row is defined.

UPDATE DEVICE:

By pressing the "**Update Device**" button, it is possible to load the created Configuration into the device; and also the Firmware, if necessary.

If you don't know the actual IP address of the device you have to use this procedure:

- Turn OFF the Device;
- Put Dip1 of 'Dip-Switch A' in ON position;
- Turn ON the device
- Connect the Ethernet cable;
- Insert the IP "**192.168.2.205**";
- Select which operations you want to do;
- Press the "**Execute update firmware**" button to start the upload;
- When all the operations are "OK" turn OFF the Device;
- Put Dip1 of 'Dip-Switch A' at OFF position;

If you know the actual IP address of the device, you have to use this procedure:

- Turn on the Device with the Ethernet cable inserted;
- Insert the actual IP of the Converter;
- Select which operations you want to do;
- Press the "**Execute update firmware**" button to start the upload;
- When all the operations are "OK" the device automatically goes at Normal Mode.

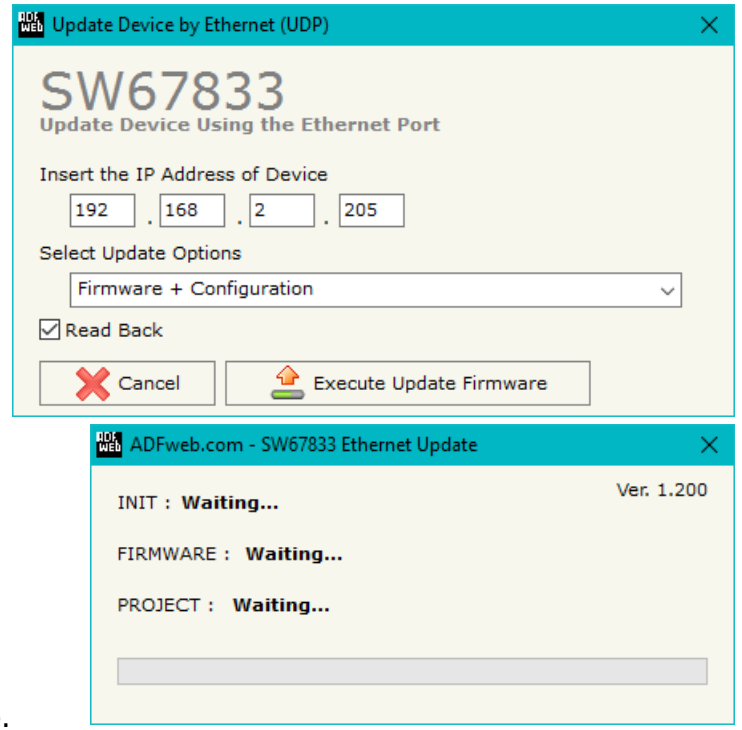


Figure 5: "Update device" windows

At this point the configuration/firmware on the device is correctly update.

Note:
When you install a new version of the software, if it is the first time it is better you do the update of the Firmware in the HD67833 device.

Note:
When you receive the device, for the first time, you also have to update the Firmware in the HD67833 device.

Warning:
If Fig. 6 appears when you try to do the Update try these points before seeking assistance:

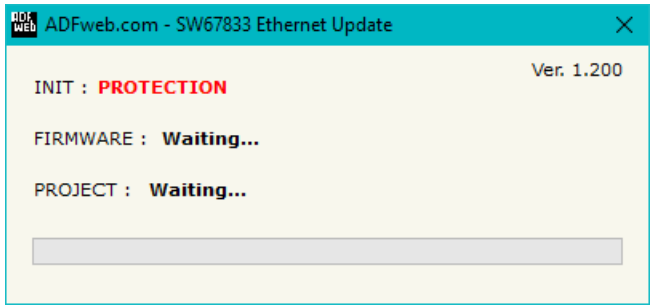


Figure 6: "Protection" window

- Try to repeat the operations for the updating;
- Try with another PC;
- Try to restart the PC;
- Check the LAN settings;
- Check the Wi-Fi settings;
- If you are using the program inside a Virtual Machine, try to use in the main Operating System;
- If you are using Windows Seven, Vista, 8 or 10 make sure that you have the administrator privileges;
- In case you have to program more than one device, using the "UDP Update", you have to cancel the ARP table every time you connect a new device on Ethernet. For do this you have to launch the "Command Prompt" and write the command "arp -d". Pay attention that with Windows Vista, Seven, 8, 10 you have to launch the "Command Prompt" with Administrator Rights;
- Pay attention at Firewall lock.

In the case of HD67833 you have to use the software "SW67833": www.adfweb.com\download\filefold\SW67833.zip.

USE OF DALI CONSOLE SOFTWARE:

To configure DALI network and test the communication, it is possible to use the available software that runs with Windows called "DALI Console". It is downloadable on the site www.adfweb.com and its operation is described in this document. *(This manual is referenced to the last version of the software present on our web site)*. The software works with MSWindows (XP, Vista, Seven, 8, 10; 32/64bit).

When launching the DALI Console, the window below appears (Fig. 7).

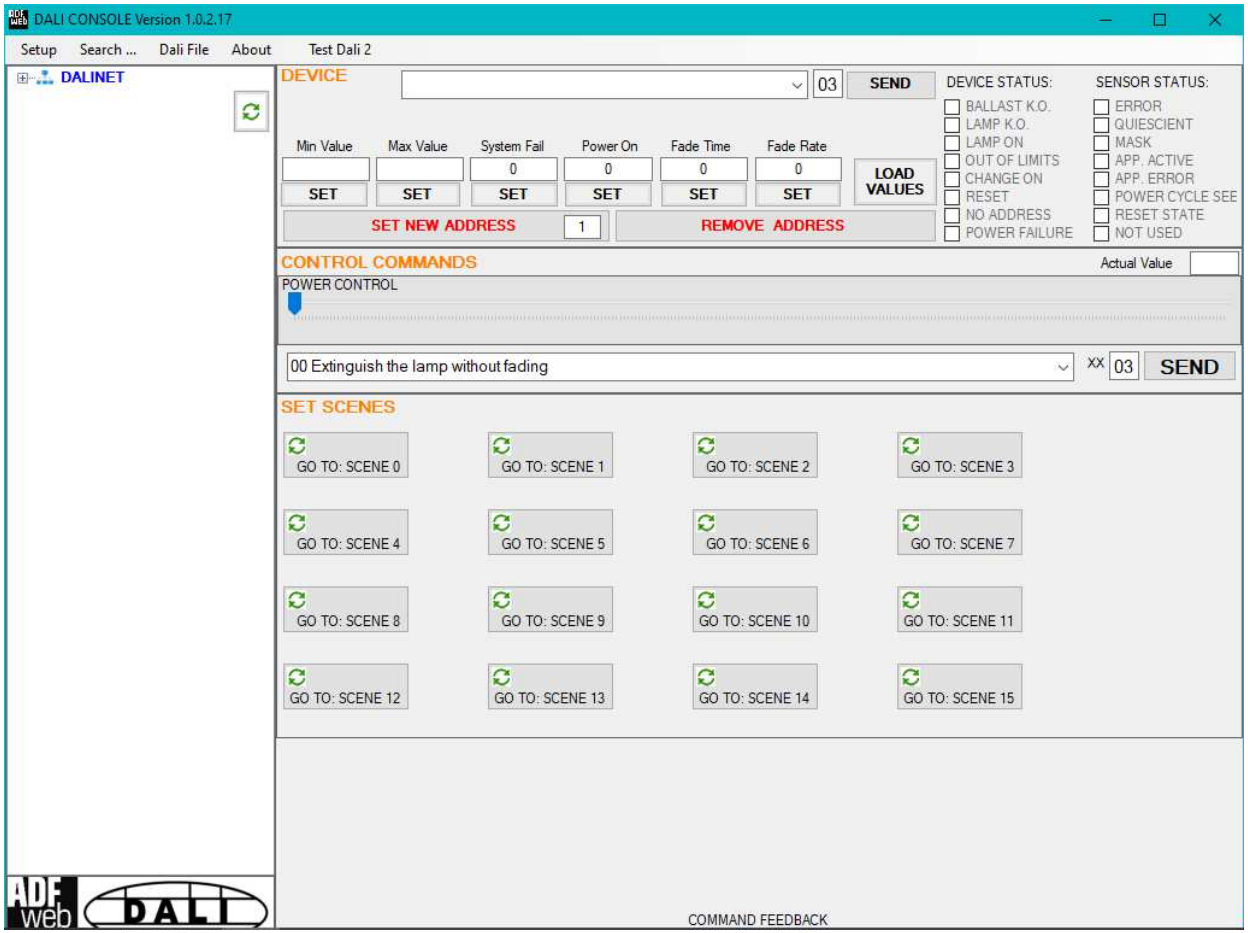


Figure 7: Main window for DALI Console

STRUCTURE OF THE SOFTWARE:

The software layout is very simple and it is structured in this way:

- "**Menu bar**" (Fig. 8, Point 1): it is possible to open the setup window ("Setup" menu), scan the DALI network and program automatically the IDs ("Search..." menu), export/import the results of the communication ("Dali File" menu), see the informations about the DALI Console software ("About" menu) and test DALI 2 communication ("Test Dali 2" menu).
- "**Network view**" (Fig. 8, Point 2): it is possible to see all the DALI devices/sensors connected to the HD67833 converter, the groups and the scenes set;
- "**Settings / commands view**" (Fig. 8, Point 3): it is possible to set and manage the parameters to the single DALI device/sensor, to the groups or for the full network.

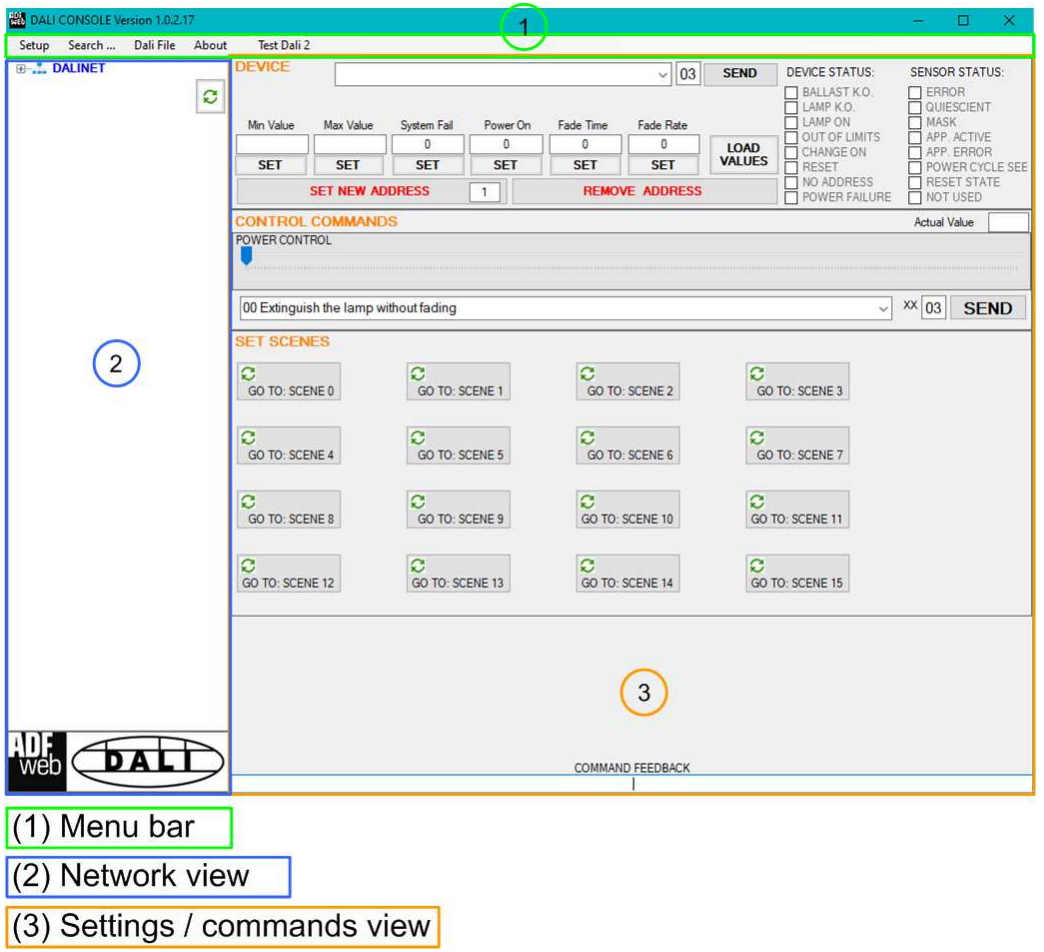


Figure 8: Structure of DALI Console software

SETUP:

This section defines the parameters of the HD67833 converter.
By Pressing the "**Setup**" button from the menu bar of the DALI Console software, the "SETUP" window appears (Fig. 9).

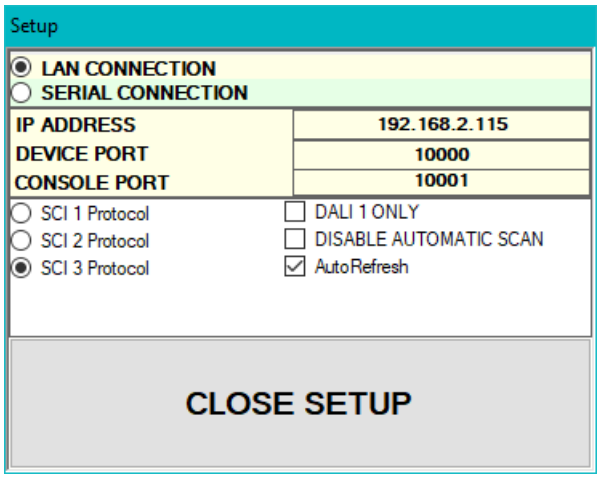


Figure 9: "Setup" window

The means of the fields for the "SETUP" window are:

- In the field "**DEVICE IP ADDRESS**" the IP address set inside the converter is defined;
- In the field "**DEVICE PORT**" the communication port is defined. It is fixed to '10000';
- In the field "**CONSOLE PORT**" the communication port for the DALI commands is defined. It is the one defined in the field "DALI Console Port" of the section "Set Communication" of SW67833;
- In the fields "**SCI x Protocol**" the type of Ethernet communication used is defined. It is possible to leave the default setting;
- If the field "**DALI 1 ONLY**" is checked, the converter will manage just DALI 1 communication;
- If the field "**DISABLE AUTOMATIC SCAN**" is checked, the converter will stop the automatic scan of DALI network;
- If the field "**AutoRefresh**" is checked, the converter automatically refreshes the data when a command is sent.

SEARCH:

This section is used to scan the DALI network, discover the devices and address them consecutively.
The options available under this menu are different:

- Full Device Search: this function will scan and address all the DALI devices;
- Partial Device Search: this function will scan and address only the DALI devices without ID;
- Full Sensor Search: this function will scan and address all the DALI sensors;
- Partial Sensor Search: this function will scan and address only the DALI sensors without ID;
- Scan Devices and Sensors: this function will read the data from all available DALI devices/sensors;
- Disable Polling: this function will stop the DALI readings;
- Enable Polling: this function will start the DALI readings.

TEST DALI 2:

This section is used to monitor the DALI 2 messages received by the converter.
It allows to see the sensor that is communicating, the instance and the information available in the event.

NETWORK SETTING:

By pressing the button in the Network view, it is possible to read the converter and check the DALI devices/sensors discovered, the groups set and the scenes configured.

By selecting the single DALI devices found, the single groups, the single scene or the entire DALI network, it is possible to manage and test the functioning of the network.

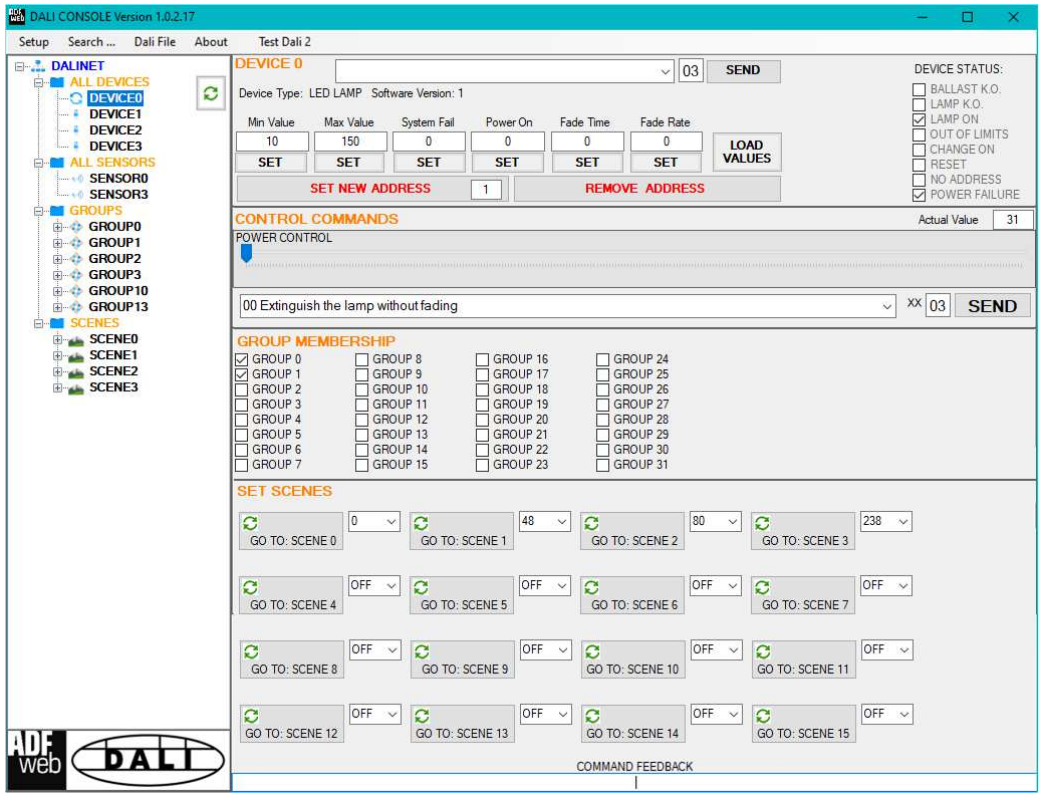


Figure 10: "Device settings" window

DEVICES:

The means of the fields for "DEVICE INFO" are:

- In the field "**Device Type**" the type of DALI device is printed;
- In the field "**Software version**" the software version of the DALI device is printed;
- In the fields "**Power Range**" Min value, Actual value, Max value, System Fail value, Power On value, Fade Time and Fade Rate of the DALI device is defined. It is possible to read the actual value and set a new value;
- In the fields "**DEVICE STATUS**" the actual status of the DALI device is printed;
- In the field "**SET NEW ADDRESS**" it is possible to program a new ID to the DALI node;
- In the field "**REMOVE ADDRESS**" it is possible to delete the ID from the DALI node.

The means of the fields for the "CONTROL COMMANDS" section are:

- In the "**POWER CONTROL**" bar it is possible to change the actual ADV of the selected DALI device;
- In the field "**COMMAND**" it is possible to select a DALI command to send to the selected DALI device. For set commands, it is possible to insert the value to set in the field "**xx**". As soon as the command to send is selected, the command is sent: in order to send the same command more times, it is possible to press the "**SEND COMMAND**" button;
- In the field "**COMMAND FEEDBACK**" the response from the DALI device is printed.

Note:
This section is used to test the functioning of the DALI device in the network and to set specific parameters if ned (like new Minimum or Maximum ADV value).

In the "GROUP MEMBERSHIP" section it is possible to see the Groups which the selected DALI device is in. The checked checkboxes mean that the device is in the correspondent groups, the unchecked checkboxes mean that the device is not included in the correspondent groups. It is possible to change the group settings for the selected DALI device by checking/unchecking the correspondent checkboxes.

In the "SET SCENES" section it is possible to see the programmed scenes of the selected DALI device, program new ones and activate them:

- By pressing the buttons "**GO TO: SCENE X**" it is possible to activate the correspondent scene inside the selected DALI device; the programmed ADV for the selected scene is defined in the drop-down list on the right;
- By selecting a value into the drop-down lists next to the "GO TO: SCENE x" buttons, it is possible to set the ADV associated to the correspondent scene. It is possible to select:
  - Value between 0 and 255: the scene will have the defined value of ADV;
  - ACT: the scene will take the programmed ADV value into the "POWER CONTROL" bar;
  - OFF: the scene is disabled.

SENSORS:

The means of the fields for "SENSOR INFO" are:

- In the field "**Software version**" the software version of the DALI sensor is printed;
- In the field "**COMMAND**" it is possible to select a DALI command to send to the selected DALI sensor. For set commands, it is possible to insert the value to set in the field "**xx**". As soon as the command to send is selected, the command is sent: in order to send the same command more times, it is possible to press the "**SEND**" button;
- In the fields "**SENSOR STATUS**" the actual status of the DALI sensor is printed;
- In the field "**SET NEW ADDRESS**" it is possible to program a new ID to the DALI sensor;
- In the field "**REMOVE ADDRESS**" it is possible to delete the ID from the DALI sensor.

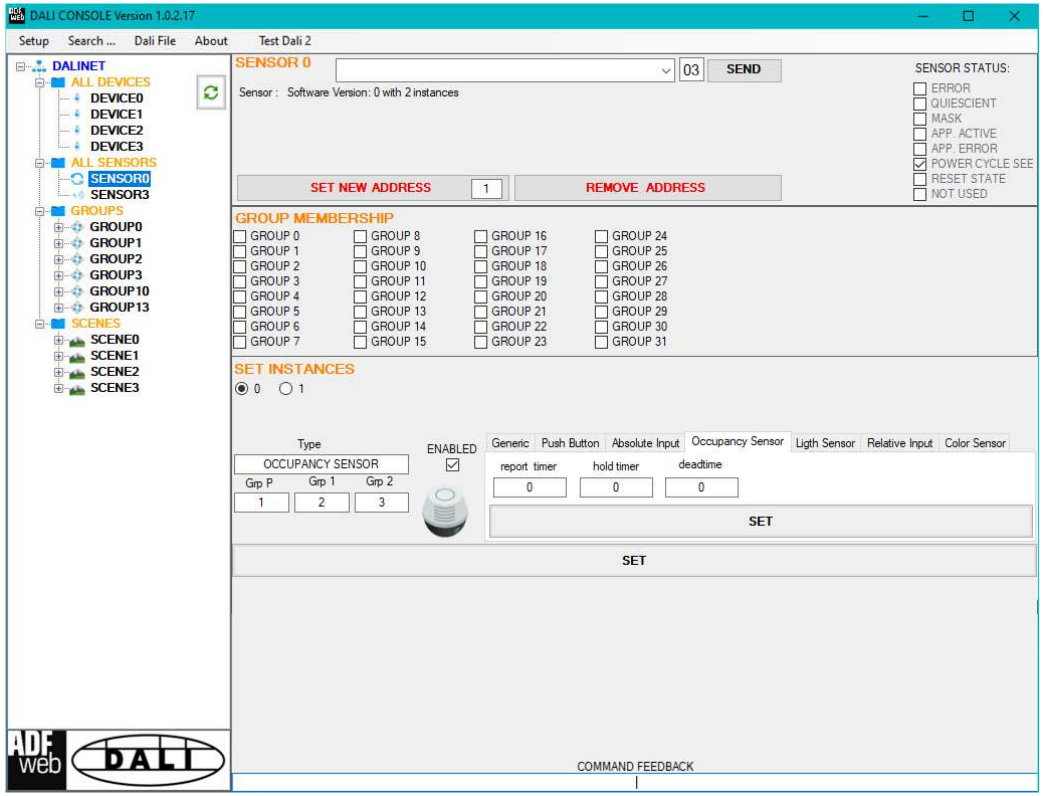


Figure 11: "Sensors settings" window

In the "GROUP MEMBERSHIP" section it is possible to see the Groups which the selected DALI sensor is in. The checked checkboxes mean that the device is in the correspondent groups, the unchecked checkboxes mean that the device is not included in the correspondent groups.
It is possible to change the group settings for the selected DALI sensor by checking/unchecking the correspondent checkboxes.

In the "SET INSTANCES" section it is possible to program the parameters for each instance available in the sensor. Each sensor's type has specific parameters defined in DALI 2 specifications.

GROUPS:

The means of the fields for the "CONTROL COMMANDS" section are:

- In the "**POWER CONTROL**" bar it is possible to change the actual ADV of the selected DALI group;
- In the field "**COMMAND**" it is possible to select a DALI command to send to the selected DALI group. For set commands, it is possible to insert the value to set in the field "**xx**". As soon as the command to send is selected, the command is sent: in order to send the same command more times, it is possible to press the "**SEND COMMAND**" button;
- In the field "**COMMAND FEEDBACK**" the response from the DALI group is printed.

Note:
This section is used to test the functioning of the DALI groups in the network.

In the "SET SCENES" section it is possible to activate the programmed scenes to the selected group:

- By pressing the buttons "**GO TO: SCENE X**" it is possible to activate the correspondent scene inside the selected DALI group.

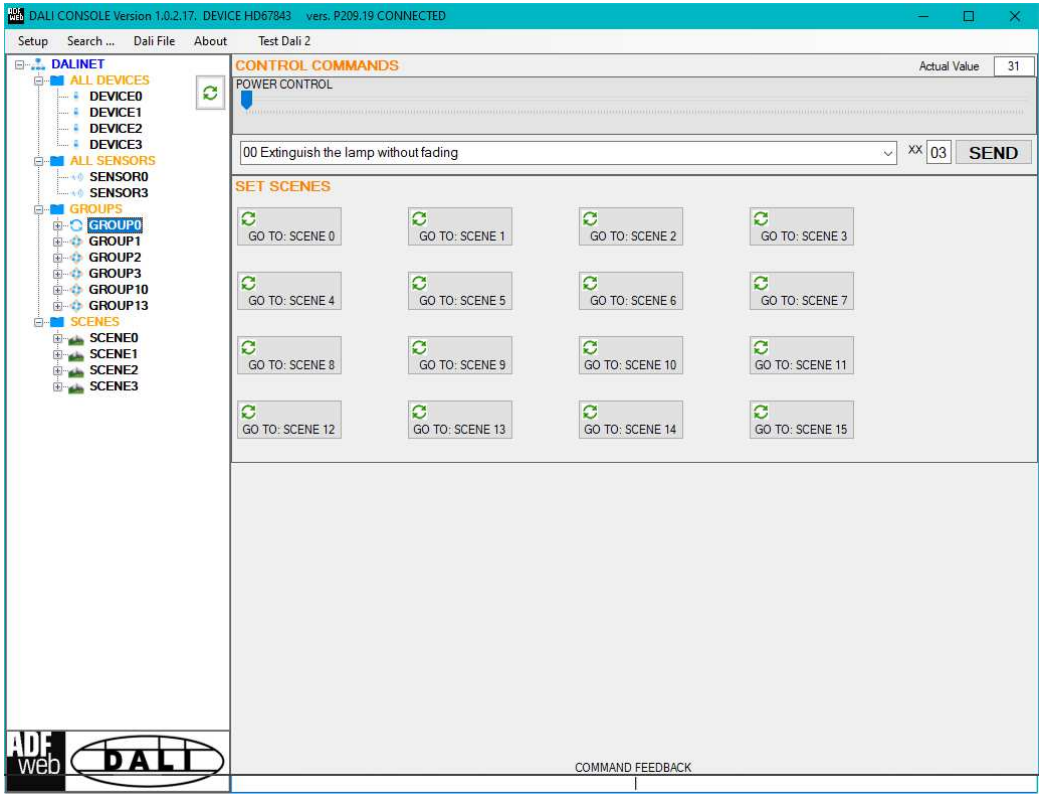


Figure 12: "Groups settings" window

SCENES:

By selecting a DALI scene from the Network view, it is possible to see the devices that have programmed the selected scene.
It is also possible to activate it by pressing the "**ACTIVATE SCENE X**" button.

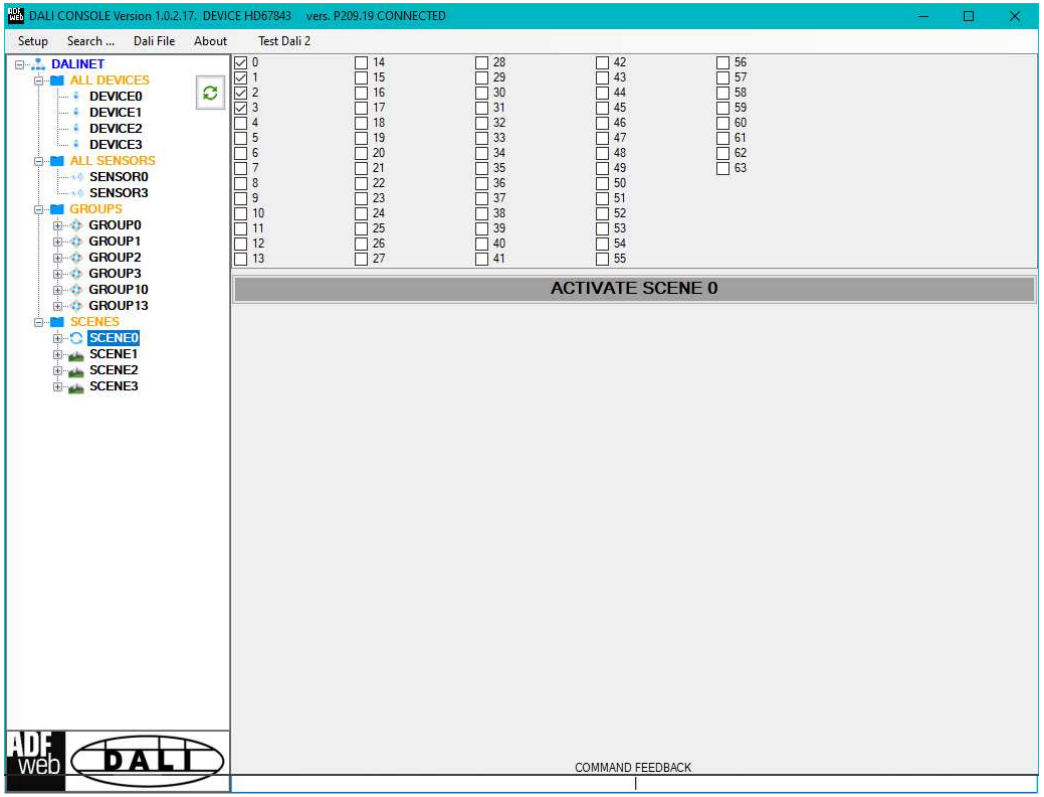


Figure 13: "Scenes settings" window

ALL DEVICES (BROADCAST):

The means of the fields for the "CONTROL COMMANDS" section are:

- In the "**POWER CONTROL**" bar it is possible to change the actual ADV of the entire DALI network;
- In the field "**COMMAND**" it is possible to select a DALI command to send to the entire DALI network. For set commands, it is possible to insert the value to set in the field "**xx**". As soon as the command to send is selected, the command is sent: in order to send the same command more times, it is possible to press the "**SEND COMMAND**" button;
- In the field "**COMMAND FEEDBACK**" the response from the DALI network is printed.

Note:
This section is used to test the functioning of the DALI network.

In the "SET SCENES" section it is possible to activate the programmed scenes into all the DALI devices that have them:

- By pressing the buttons "**GO TO: SCENE X**" it is possible to activate the correspondent scene in the DALI network. Only the devices that have it will accept the command.

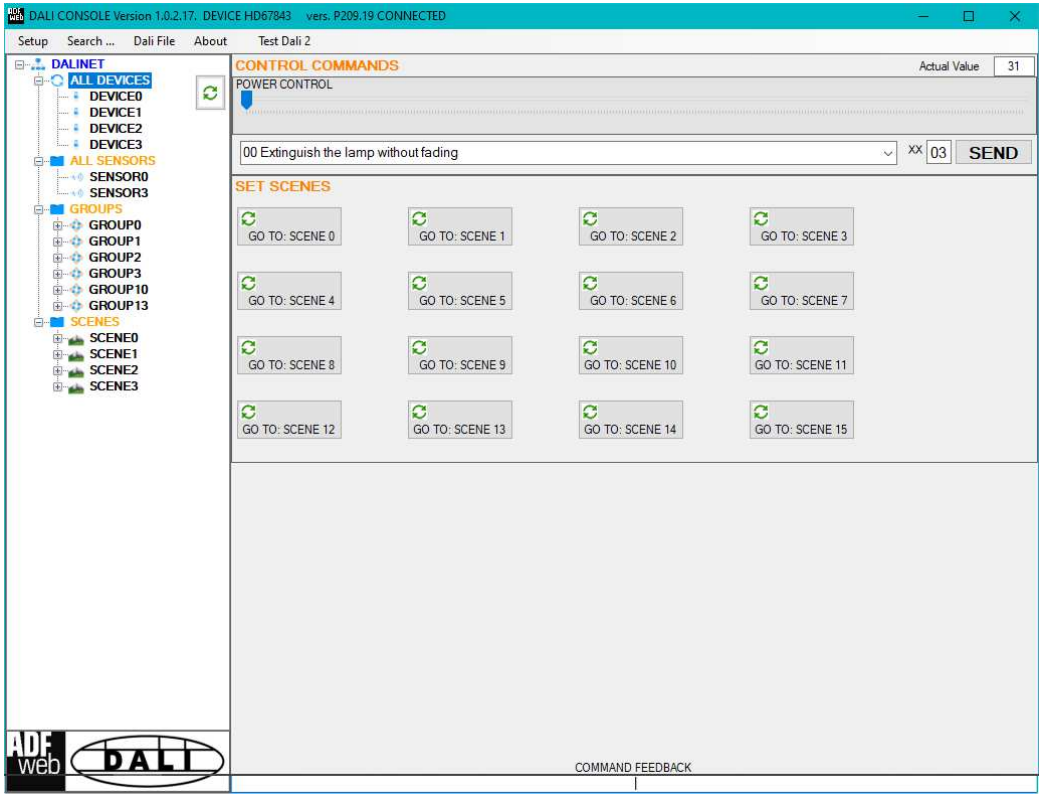


Figure 14: "Broadcast settings" window

BACNET MAP:

BACnet Objects with the data read from the DALI nodes (readable by the Master)

The converter has internally 128 BACnet Object (in read) with which it is possible to get the data from the configured DALI nodes.
The first 64 objects are "Characterstring-value" and the available informations are:

- Status;
- ADV set;
- Type;
- Version;
- Minimum settable value;
- Maximum settable value;
- Group configuration (bit-to-bit definition).

The last 64 objects are "Multistate Input" and they contain the status byte of each DALI device.

BACnet Objects with the data to write to the DALI nodes (writeable by the Master)

The converter has internally 194 BACnet Object (in write) with which it is possible to set the data to the configured DALI nodes (singularly, groups, scenes or broadcast).
It is possible to use "Analog Output" objects (value written in Floating Point format) or "Integer Value" objects (value written in Integer format) to manage the DALI network.

Analog Output objects:

ADV SETTING FOR SINGLE DALI NODES		
Type of Object	**Object Instance**	**Description**
Analog Output	0	ADV to set on DALI node 0
Analog Output	1	ADV to set on DALI node 1
Analog Output	2	ADV to set on DALI node 2
Analog Output	3	ADV to set on DALI node 3
Analog Output	4	ADV to set on DALI node 4
Analog Output	5	ADV to set on DALI node 5
Analog Output	6	ADV to set on DALI node 6
Analog Output	7	ADV to set on DALI node 7
Analog Output	8	ADV to set on DALI node 8
Analog Output	9	ADV to set on DALI node 9
Analog Output	10	ADV to set on DALI node 10
Analog Output	11	ADV to set on DALI node 11
Analog Output	12	ADV to set on DALI node 12
Analog Output	13	ADV to set on DALI node 13
Analog Output	14	ADV to set on DALI node 14
Analog Output	15	ADV to set on DALI node 15

Analog Output	16	ADV to set on DALI node 16
Analog Output	17	ADV to set on DALI node 17
Analog Output	18	ADV to set on DALI node 18
Analog Output	19	ADV to set on DALI node 19
Analog Output	20	ADV to set on DALI node 20
Analog Output	21	ADV to set on DALI node 21
Analog Output	22	ADV to set on DALI node 22
Analog Output	23	ADV to set on DALI node 23
Analog Output	24	ADV to set on DALI node 24
Analog Output	25	ADV to set on DALI node 25
Analog Output	26	ADV to set on DALI node 26
Analog Output	27	ADV to set on DALI node 27
Analog Output	28	ADV to set on DALI node 28
Analog Output	29	ADV to set on DALI node 29
Analog Output	30	ADV to set on DALI node 30
Analog Output	31	ADV to set on DALI node 31
Analog Output	32	ADV to set on DALI node 32
Analog Output	33	ADV to set on DALI node 33
Analog Output	34	ADV to set on DALI node 34
Analog Output	35	ADV to set on DALI node 35
Analog Output	36	ADV to set on DALI node 36
Analog Output	37	ADV to set on DALI node 37
Analog Output	38	ADV to set on DALI node 38
Analog Output	39	ADV to set on DALI node 39
Analog Output	40	ADV to set on DALI node 40

Analog Output	41	ADV to set on DALI node 41
Analog Output	42	ADV to set on DALI node 42
Analog Output	43	ADV to set on DALI node 43
Analog Output	44	ADV to set on DALI node 44
Analog Output	45	ADV to set on DALI node 45
Analog Output	46	ADV to set on DALI node 46
Analog Output	47	ADV to set on DALI node 47
Analog Output	48	ADV to set on DALI node 48
Analog Output	49	ADV to set on DALI node 49
Analog Output	50	ADV to set on DALI node 50
Analog Output	51	ADV to set on DALI node 51
Analog Output	52	ADV to set on DALI node 52
Analog Output	53	ADV to set on DALI node 53
Analog Output	54	ADV to set on DALI node 54
Analog Output	55	ADV to set on DALI node 55
Analog Output	56	ADV to set on DALI node 56
Analog Output	57	ADV to set on DALI node 57
Analog Output	58	ADV to set on DALI node 58
Analog Output	59	ADV to set on DALI node 59
Analog Output	60	ADV to set on DALI node 60
Analog Output	61	ADV to set on DALI node 61
Analog Output	62	ADV to set on DALI node 62
Analog Output	63	ADV to set on DALI node 63

ADV SETTING FOR GROUPS		
Type of Object	**Object Instance**	**Description**
Analog Output	64	ADV to set on Group 0
Analog Output	65	ADV to set on Group 1
Analog Output	66	ADV to set on Group 2
Analog Output	67	ADV to set on Group 3
Analog Output	68	ADV to set on Group 4
Analog Output	69	ADV to set on Group 5
Analog Output	70	ADV to set on Group 6
Analog Output	71	ADV to set on Group 7
Analog Output	72	ADV to set on Group 8
Analog Output	73	ADV to set on Group 9
Analog Output	74	ADV to set on Group 10
Analog Output	75	ADV to set on Group 11
Analog Output	76	ADV to set on Group 12
Analog Output	77	ADV to set on Group 13
Analog Output	78	ADV to set on Group 14
Analog Output	79	ADV to set on Group 15

ADV SETTING FOR BROADCAST		
Type of Object	**Object Instance**	**Description**
Analog Output	80	ADV to set on the entire DALI network

Note:
The range of ADV can be from 0 to 255. The minimum and the maximum value of the ADV for each DALI node depends on the setting of the DALI node. These values can be programmed using "DALI Console" software.

ADV SETTING FOR SCENES		
Type of Object	**Object Instance**	**Description**
Analog Output	81	Node – Group for which setting the Scene 0
Analog Output	82	Node – Group for which setting the Scene 1
Analog Output	83	Node – Group for which setting the Scene 2
Analog Output	84	Node – Group for which setting the Scene 3
Analog Output	85	Node – Group for which setting the Scene 4
Analog Output	86	Node – Group for which setting the Scene 5
Analog Output	87	Node – Group for which setting the Scene 6
Analog Output	88	Node – Group for which setting the Scene 7
Analog Output	89	Node – Group for which setting the Scene 8
Analog Output	90	Node – Group for which setting the Scene 9
Analog Output	91	Node – Group for which setting the Scene 10
Analog Output	92	Node – Group for which setting the Scene 11
Analog Output	93	Node – Group for which setting the Scene 12
Analog Output	94	Node – Group for which setting the Scene 13
Analog Output	95	Node – Group for which setting the Scene 14
Analog Output	96	Node – Group for which setting the Scene 15

For setting the Scenes, it is necessary to write inside the associated Analog Output the ID of the node/group to command:

- 0-63 = Single DALI device
- 64-79 = Groups
- 127 = Broadcast

Integer Value objects:

ADV SETTING FOR SINGLE DALI NODES		
Type of Object	**Object Instance**	**Description**
Integer Value	0	ADV to set on DALI node 0
Integer Value	1	ADV to set on DALI node 1
Integer Value	2	ADV to set on DALI node 2
Integer Value	3	ADV to set on DALI node 3
Integer Value	4	ADV to set on DALI node 4
Integer Value	5	ADV to set on DALI node 5
Integer Value	6	ADV to set on DALI node 6
Integer Value	7	ADV to set on DALI node 7
Integer Value	8	ADV to set on DALI node 8
Integer Value	9	ADV to set on DALI node 9
Integer Value	10	ADV to set on DALI node 10
Integer Value	11	ADV to set on DALI node 11
Integer Value	12	ADV to set on DALI node 12
Integer Value	13	ADV to set on DALI node 13
Integer Value	14	ADV to set on DALI node 14
Integer Value	15	ADV to set on DALI node 15
Integer Value	16	ADV to set on DALI node 16
Integer Value	17	ADV to set on DALI node 17
Integer Value	18	ADV to set on DALI node 18
Integer Value	19	ADV to set on DALI node 19
Integer Value	20	ADV to set on DALI node 20

Integer Value	21	ADV to set on DALI node 21
Integer Value	22	ADV to set on DALI node 22
Integer Value	23	ADV to set on DALI node 23
Integer Value	24	ADV to set on DALI node 24
Integer Value	25	ADV to set on DALI node 25
Integer Value	26	ADV to set on DALI node 26
Integer Value	27	ADV to set on DALI node 27
Integer Value	28	ADV to set on DALI node 28
Integer Value	29	ADV to set on DALI node 29
Integer Value	30	ADV to set on DALI node 30
Integer Value	31	ADV to set on DALI node 31
Integer Value	32	ADV to set on DALI node 32
Integer Value	33	ADV to set on DALI node 33
Integer Value	34	ADV to set on DALI node 34
Integer Value	35	ADV to set on DALI node 35
Integer Value	36	ADV to set on DALI node 36
Integer Value	37	ADV to set on DALI node 37
Integer Value	38	ADV to set on DALI node 38
Integer Value	39	ADV to set on DALI node 39
Integer Value	40	ADV to set on DALI node 40
Integer Value	41	ADV to set on DALI node 41
Integer Value	42	ADV to set on DALI node 42
Integer Value	43	ADV to set on DALI node 43
Integer Value	44	ADV to set on DALI node 44
Integer Value	45	ADV to set on DALI node 45

Integer Value	46	ADV to set on DALI node 46
Integer Value	47	ADV to set on DALI node 47
Integer Value	48	ADV to set on DALI node 48
Integer Value	49	ADV to set on DALI node 49
Integer Value	50	ADV to set on DALI node 50
Integer Value	51	ADV to set on DALI node 51
Integer Value	52	ADV to set on DALI node 52
Integer Value	53	ADV to set on DALI node 53
Integer Value	54	ADV to set on DALI node 54
Integer Value	55	ADV to set on DALI node 55
Integer Value	56	ADV to set on DALI node 56
Integer Value	57	ADV to set on DALI node 57
Integer Value	58	ADV to set on DALI node 58
Integer Value	59	ADV to set on DALI node 59
Integer Value	60	ADV to set on DALI node 60
Integer Value	61	ADV to set on DALI node 61
Integer Value	62	ADV to set on DALI node 62
Integer Value	63	ADV to set on DALI node 63

ADV SETTING FOR GROUPS		
Type of Object	**Object Instance**	**Description**
Integer Value	64	ADV to set on Group 0
Integer Value	65	ADV to set on Group 1
Integer Value	66	ADV to set on Group 2
Integer Value	67	ADV to set on Group 3
Integer Value	68	ADV to set on Group 4
Integer Value	69	ADV to set on Group 5
Integer Value	70	ADV to set on Group 6
Integer Value	71	ADV to set on Group 7
Integer Value	72	ADV to set on Group 8
Integer Value	73	ADV to set on Group 9
Integer Value	74	ADV to set on Group 10
Integer Value	75	ADV to set on Group 11
Integer Value	76	ADV to set on Group 12
Integer Value	77	ADV to set on Group 13
Integer Value	78	ADV to set on Group 14
Integer Value	79	ADV to set on Group 15

ADV SETTING FOR BROADCAST		
Type of Object	**Object Instance**	**Description**
Integer Value	80	ADV to set on the entire DALI network

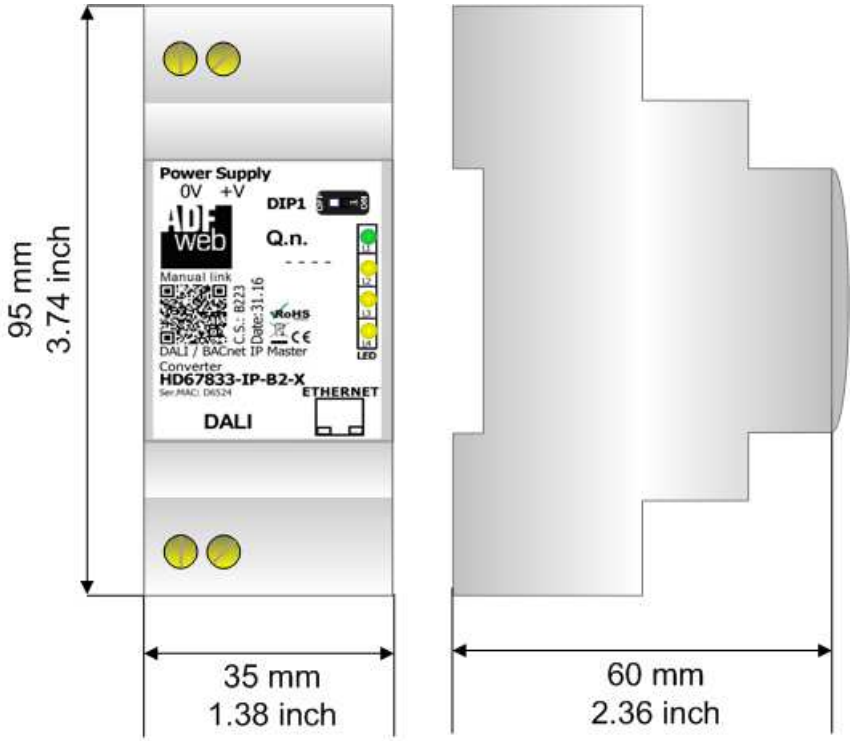
Note:
The range of ADV can be from 0 to 255. The minimum and the maximum value of the ADV for each DALI node depends on the setting of the DALI node. These values can be programmed using "DALI Console" software.

ADV SETTING FOR SCENES		
Type of Object	**Object Instance**	**Description**
Integer Value	81	Node – Group for which setting the Scene 0
Integer Value	82	Node – Group for which setting the Scene 1
Integer Value	83	Node – Group for which setting the Scene 2
Integer Value	84	Node – Group for which setting the Scene 3
Integer Value	85	Node – Group for which setting the Scene 4
Integer Value	86	Node – Group for which setting the Scene 5
Integer Value	87	Node – Group for which setting the Scene 6
Integer Value	88	Node – Group for which setting the Scene 7
Integer Value	89	Node – Group for which setting the Scene 8
Integer Value	90	Node – Group for which setting the Scene 9
Integer Value	91	Node – Group for which setting the Scene 10
Integer Value	92	Node – Group for which setting the Scene 11
Integer Value	93	Node – Group for which setting the Scene 12
Integer Value	94	Node – Group for which setting the Scene 13
Integer Value	95	Node – Group for which setting the Scene 14
Integer Value	96	Node – Group for which setting the Scene 15

For setting the Scenes, it is necessary to write inside the associated Integer Value the ID of the node/group to command:

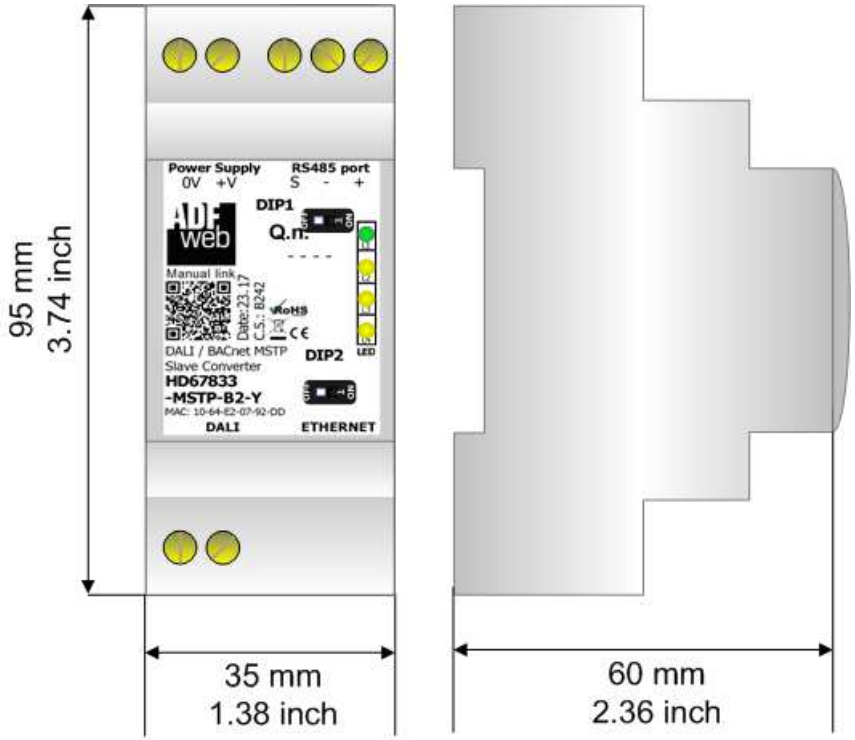
- 0-63 = Single DALI device
- 64-79 = Groups
- 127 = Broadcast

MECHANICAL DIMENSIONS:



Housing: PVC
Weight: 200g
(Approx)

Figure 15a: Mechanical dimensions scheme for HD67833-IP-B2-x



Housing: PVC
Weight: 200g
(Approx)

Figure 15b: Mechanical dimensions scheme for HD67833-MSTP-B2-x

ORDERING INFORMATIONS:

The ordering part number is formed by a valid combination of the following:

HD67833 – xx - B 2 - x

DALI Bus power supply
Y: present (the converter feeds the DALI bus)
N: not present (the converter doesn't feed the DALI bus)

Connectors Type
2: Fixed 5mm Screw Terminal

Enclosure Type
B: 2M, 35mm DIN Rail mounting

BACnet Type
IP: BACnet/IP
MSTP: BACnet MS/TP

Device Family
HD67833: DALI / BACnet - Converter

Order Code:	**HD67833-IP-B2-Y**	-	DALI / BACnet/IP Slave – Converter (DALI bus power supply present)
Order Code:	**HD67833-IP-B2-N**	-	DALI / BACnet/IP Slave – Converter (DALI bus power supply not present)
Order Code:	**HD67833-MSTP-B2-Y**	-	DALI / BACnet MS/TP Slave – Converter (DALI bus power supply present)
Order Code:	**HD67833-MSTP-B2-N**	-	DALI / BACnet MS/TP Slave – Converter (DALI bus power supply not present)

ACCESSORIES:

Order Code:	**AC34011**	-	35mm Rail DIN - Power Supply 220/240V AC 50/60Hz – 12 V DC
Order Code:	**AC34012**	-	35mm Rail DIN - Power Supply 220/240V AC 50/60Hz – 24 V DC

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OTHER REGULATIONS AND STANDARDS:

WEEE INFORMATION

Disposal of old electrical and electronic equipment (as in the European Union and other European countries with separate collection systems).

This symbol on the product or on its packaging indicates that this product may not be treated as household rubbish. Instead, it should be taken to an applicable collection point for the recycling of electrical and electronic equipment. If the product is disposed correctly, you will help prevent potential negative environmental factors and impact of human health, which could otherwise be caused by inappropriate disposal. The recycling of materials will help to conserve natural resources. For more information about recycling this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

RESTRICTION OF HAZARDOUS SUBSTANCES DIRECTIVE

The device respects the 2002/95/EC Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (commonly referred to as Restriction of Hazardous Substances Directive or RoHS).

CE MARKING

The product conforms with the essential requirements of the applicable EC directives.

WARRANTIES AND TECHNICAL SUPPORT:

For fast and easy technical support for your ADFweb.com SRL products, consult our internet support at www.adfweb.com.
Otherwise contact us at the address support@adfweb.com

RETURN POLICY:

If while using your product you have any problem and you wish to exchange or repair it, please do the following:

- Obtain a Product Return Number (PRN) from our internet support at www.adfweb.com. Together with the request, you need to provide detailed information about the problem.
- Send the product to the address provided with the PRN, having prepaid the shipping costs (shipment costs billed to us will not be accepted).

If the product is within the warranty of twelve months, it will be repaired or exchanged and returned within three weeks. If the product is no longer under warranty, you will receive a repair estimate.

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