PX758

DMX / DALI / DMX Interface 4x

User manual

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Manufacturer reserves the right to make modifications in order to improve device operation.

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1 Description

DMX / DALI / DMX Interface 4x is an advanced converter that allows to connect lighting installations based on the DALI protocol with DMX control systems. Using the PX758, you can connect to the controller sending the DMX signal receiving devices working in the DALI protocol. The PX758 module also allows you to convert the signal from DALI input devices (sensors / buttons) into a DMX signal.

According to the DALI standard, one line can be connected to max. 64 receiving devices (ballasts) and 64 input devices. The PX758 module is equipped with one DMX input line, one DMX output line and four DALI lines, which allow you to connect a total of up to 256 ballasts and 256 input devices.

Managing the PX758 settings is possible using the buttons and the screen on the casing or using the Web Server built into the device. Changing the settings includes:

- searching and addressing DALI devices,
- changing parameters of input devices,
- change of ballast parameters (e.g.: brightness, address, “fade time”, “fade rate”, etc.),
- configuration of the conversion of the DMX signal to DALI ballasts and the signal from the DALI input devices to the DMX signal,
- changing the module network settings,
- software update.

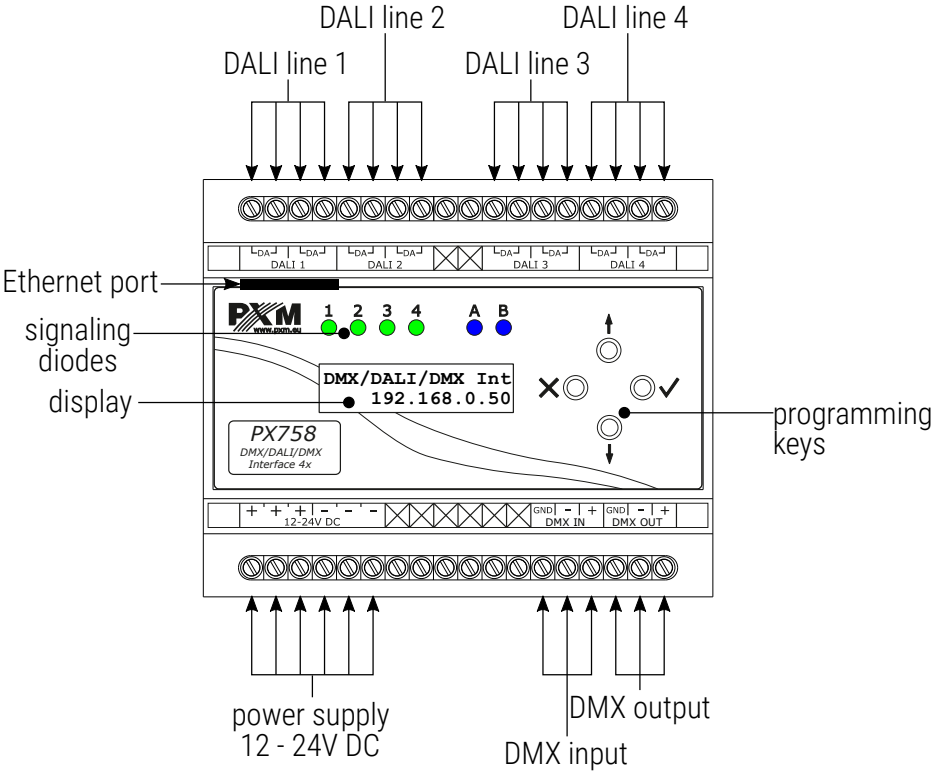
DMX / DALI / DMX Interface 4x has been placed in a housing adapted for mounting on a 35mm DIN rail and is supplied with 12 – 24V DC safe voltage. Please note that the DALI line must have external power supply.

2 Safety conditions

PX758 is a device powered with safe voltage 12 – 24V DC; however, during its installation and use the following rules must be strictly observed:

1. The device may only be connected to 12 – 24V DC with current-carrying capacity compatible with technical data.
2. All the conductors should be protected against mechanical and thermal damage.
3. In the event of damaging any conductor, it should be replaced with a conductor of the same technical data.
4. Connection of DMX signal can only be made with shielded conductor.
5. All repairs and connections of outputs or DMX signal can only be made with cut off power supply.
6. The PX758 should be strictly protected against contact with water and other liquids.
7. All sudden shocks, particularly dropping, should be avoided.
8. The device cannot be turned on in places with humidity exceeding 90%.
9. The device cannot be used in places with temperature lower than +2°C or higher than +40°C.
10. Clean with damp duster only.

3 Connectors and control elements



4 Programming using buttons

4.1 Navigating the menu

✕ (escape) – exits the currently programmed parameter without saving changes or moves to a higher level in the menu

↓ (next) – goes to the next menu item or decreases the set values

↑ (prev) – goes to the previous menu item or increases the set values

✓ (enter) – enters the device programming and confirms the set values

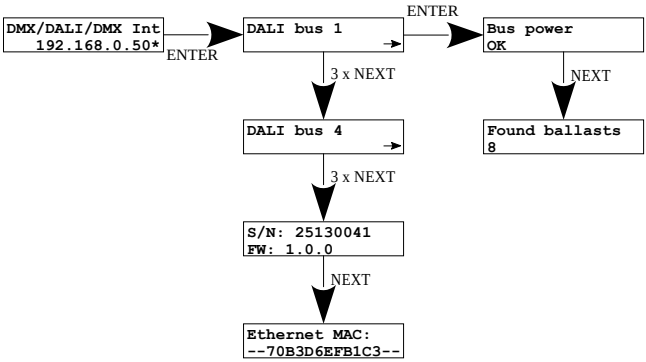
If the parameter is editable, the edit symbol is in the lower right corner, and ✓ causes the transition to the edition of the first field. The field that is being edited is indicated by the arrow ← and the buttons ↓ / ↑ change the value of the field. The ✓ button causes the transition to the next field or saving the value and exiting the parameter edition.

The → symbol informs about the possibility of entering the parameter edition tree.

4.2 Description of information parameters

On-screen menu allows to read information parameters related to the converter, such as:

- individual converter name and current IP address (if the IP address is assigned from DHCP, the "*" symbol is added),
- information about the DALI line power supply (***Bus power***),
- number of ballasts found by PX758 (e.g. 8 – ***Found ballasts***),
- converter serial number (***S/N***) and installed software version (***FW***),
- individual MAC address of the device (***Ethernet MAC***).



4.3 DALI line settings

Using the screen and buttons it is possible to search for ballasts, input devices, enable or disable signal conversion and set the priority of the DALI line.

Following options are available:

- *Init. ballasts* – searching for and re-addressing ballasts connected to the converter,

  NOTE! The *Init. ballasts* option will cause the loss of current ballast addressing.
- *Srch. ballasts* – searching for ballasts connected to the converter without interfering with their address settings,
- *Init. inputs* – searching and re-addressing DALI input devices connected to the converter,

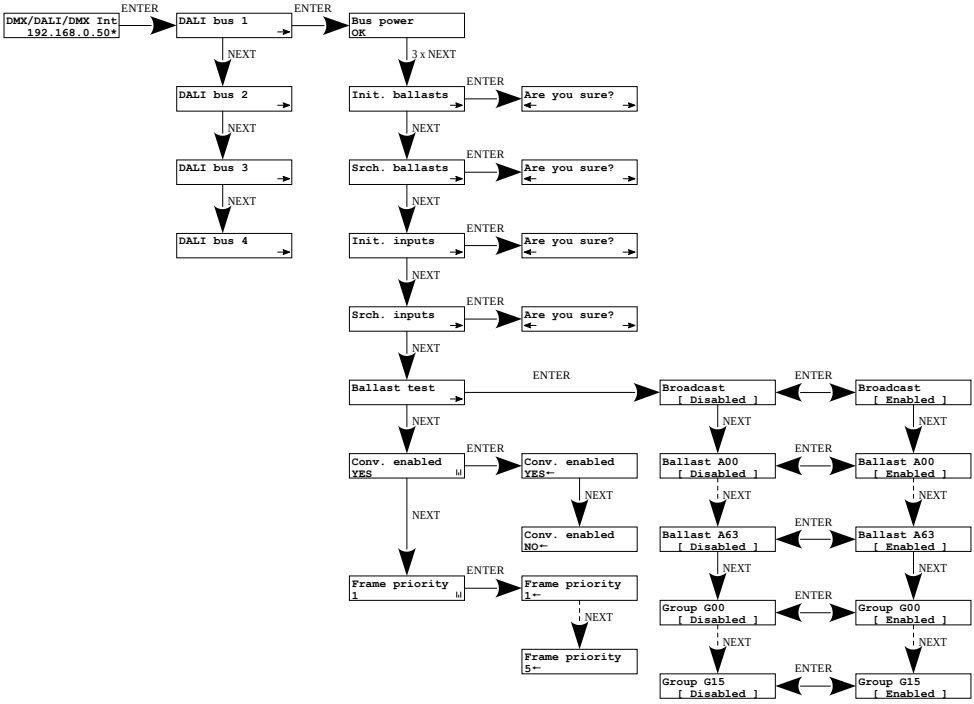
  NOTE! The *Init. inputs* option will cause the current addressing to be lost.
- *Srch. inputs* – searching for DALI input devices connected to the converter without interfering with their address settings,
- *Ballast test* – the option allows to control all ballasts (*Broadcast*), individual ballasts (*Ballast A00 – Ballast A63*) or groups (*Group G00 – Group G15*). This may be useful for testing the connection on the DALI line between the PX758 and the ballasts.

  To enable the ballast test, activate the *Enter* button (*Enabled*).
- *Conv. Enabled* – switching on or switching on the conversion of DMX signal to DALI.

  NOTE! After restarting the device, signal conversion will start automatically if it has been previously configured on the website at: *Settings → DALI / DMX → Enable conversion at startup*.

- *Frame priority* – DALI line access priority:
  - *1* – highest,
  - *2* – high,
  - *3* – medium,
  - *4* – low,
  - *5* – lowest.

When the user chooses one of the above-mentioned options, (*Are you sure?*) will appear on the display. Pressing the ✓ button will confirm the selected option and the device will execute it, while pressing the ✕ button will exit the selected option without searching / re-addressing the devices.

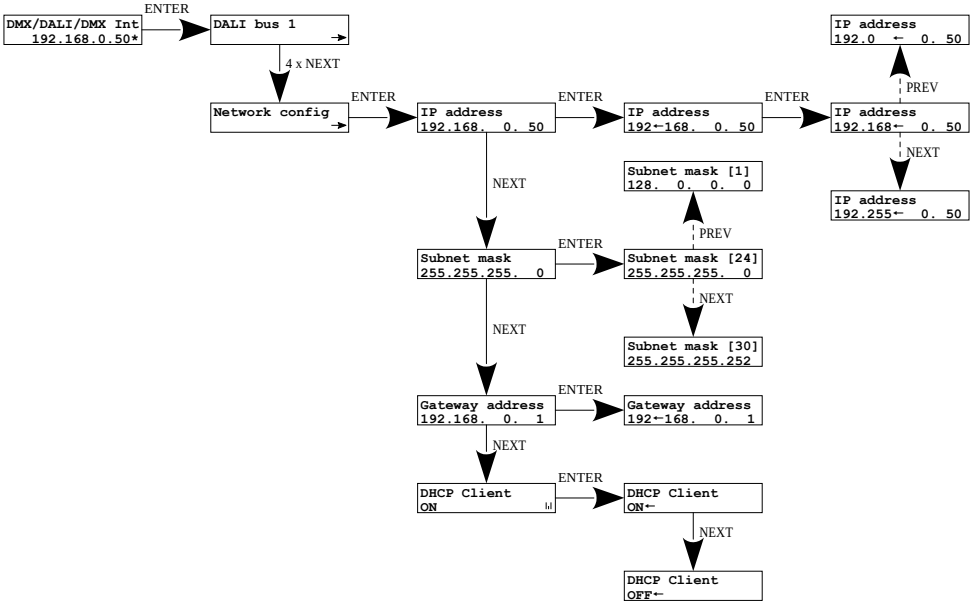


NOTE! After connecting the PX758 to an existing installation (the ballasts are addressed), select the ***Search*** option – it will not change the ballasts addresses. If the ballasts in the installation do not have assigned addresses – select the ***Initialize*** option.

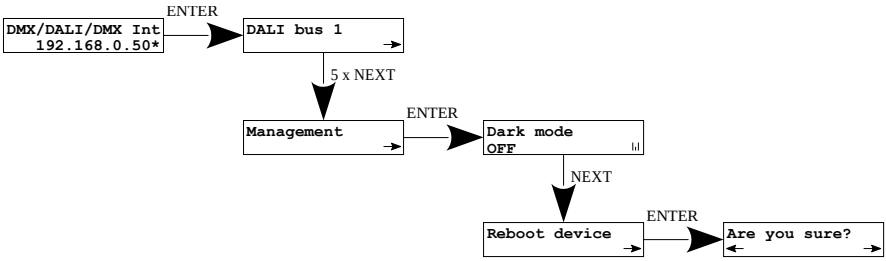
4.4 Converter network settings

PX758 gives you the ability to change network settings in the ***Network config.*** menu. The following parameters can be changed: static ***IP address***, ***Subnet mask*** (subnet mask edited by changing the CIDR in the range of 1 – 30), default ***Gateway address*** and enabling ***On*** or disabling ***Off*** support ***DHCP***.

If DHCP is **turned off**, the converter works according to the static network configuration. If DHCP is **turned on**, the converter will start up using static settings, but will attempt to acquire new network configuration from the DHCP server.



NOTE! After making changes to the network settings, restart the device in the *Management* menu by selecting *Reboot device* – according to the diagram below. The device will restart.



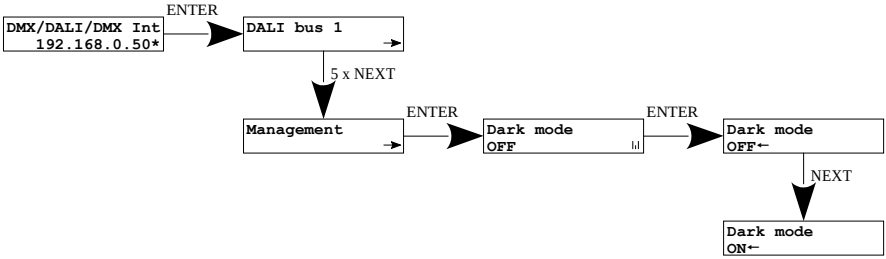
When the user selects this option, *Are you sure?* appears on the display. Pressing the ✓ button will confirm the selected option and the device will execute it, while pressing the ✕ button will exit the selected restart option.

4.5 Other parameters

The menu containing other *Management* settings allows to turn *ON* or *OFF* the screen and *Dark mode* indicator diodes, *Reboot device*, restore *Factory defaults* and set the device lock using a PIN code.

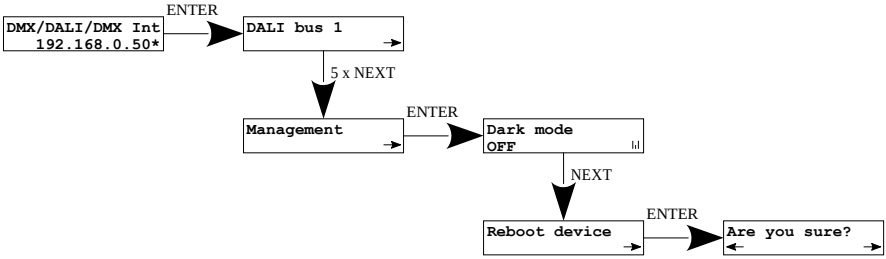
4.5.1 Dark mode

When *Dark mode* is turned on, after 10 seconds of inactivity, the display and indicator lights turn off. The device continues to work without interfering with other parameters. To restore the backlight, press any key.



4.5.2 Reboot the device

Reboot device is available and should be used after making network changes to the device using the built-in LCD and buttons.

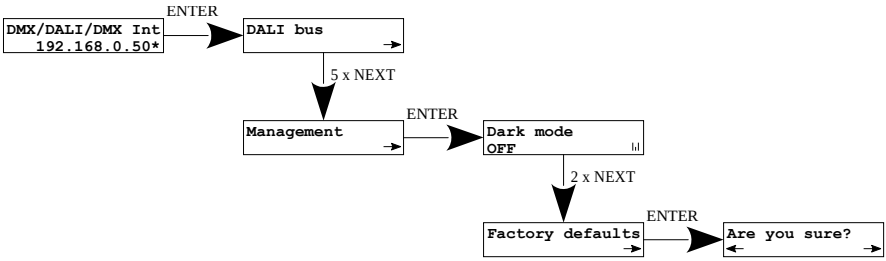


When the user selects this option, the query ***Are you sure?***. Pressing the ✓ button will confirm the selected option and the device will execute it, while pressing the ✕ button will exit the selected restart option.

4.5.3 Restore default settings

To restore the default settings, go to the ***Management*** menu and then select ***Factory defaults***. When restoring factory settings the device will be restart and following changes will be made to the device:

- ***IP address***: 192.168.0.50
- ***Subnet mask***: 255.255.255.0
- ***Gateway address***: 192.168.0.1
- ***DHCP***: ON
- ***Frame priority***: 1
- ***Dark mode***: ON
- removing the device's PIN protection
- clearing the DALI line addressing settings table
- deleting saved ballasts and input devices from the list



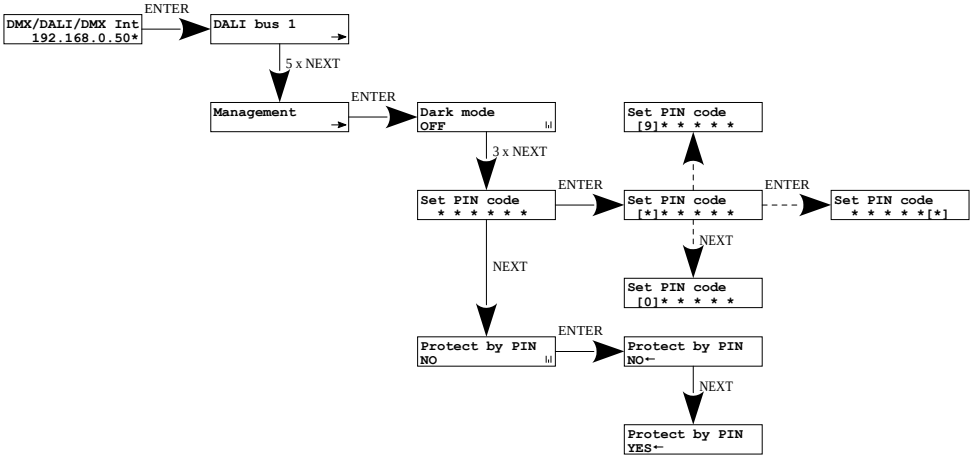
When the user selects this option, the query ***Are you sure?*** appears on the display. Selecting the ✓ button will confirm the selected option and the device will execute it, while pressing the ✕ button will exit the selected option of restoring factory settings.

Additionally, the user can restore factory settings by holding the *Prev* button for 4 seconds when turning on the power.

4.5.4 PIN code protection

The user can protect their device with a PIN by setting it in the ***Set PIN Code*** menu and then setting ***Protect by PIN*** to ***YES***. The PIN code can be set in the range 000000 – 999999.

To deactivate PIN protection, set ***Protect by PIN*** to ***NO***.

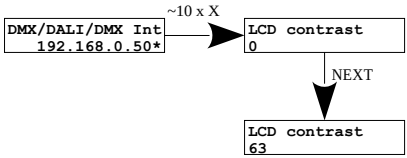


NOTE! If the user enables protection of the device with the PIN ***Protect by PIN*** code, but does not set his own code ***Set PIN code***, the device will be protected with the default PIN code – ***108000***.

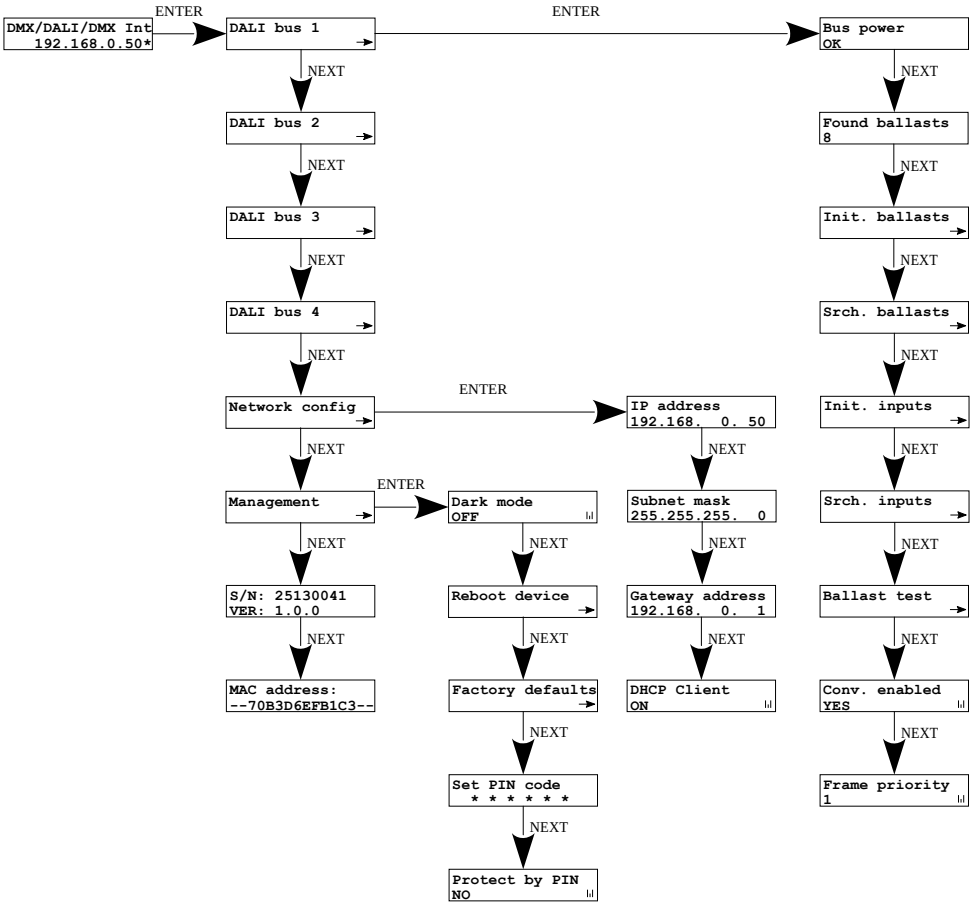
4.6 Setting the display contrast

If the device has a problem with the readability of messages displayed on the screen, it is possible to change its settings. To do this, press the ~10x ✕ button. The contrast can be set in range from 0 to 63. If the screen is illegible and only "▒" characters are visible or the screen is completely white. Being in the contrast menu is signaled by alternating green and blue diodes blinking.

With the ↓ / ↑ find the appropriate value (it is recommended to press the ↑ key to find the value in which the screen becomes readable, and then use the ↓ / ↑ keys to adjust the value to suit your needs). To exit *LCD contrast* menu, press the ✓ key.



4.7 Menu scheme in PX758



5 Connecting to the PC

The module has a built-in Web Server, which allows to change all settings via a web browser. To use the web interface, it is necessary to connect the PX758 module to a computer.

In automatic mode (DHCP), after connecting to the network the converter attempts to get the network configuration from a DHCP server (e.g router). Thanks to this, manual configuration of networks parameters is not needed. In the absence of a DHCP server on the network the converter will operate according to the static configuration (manual setup). When selecting static addressing, configure the network parameters so that the PX758 works in the same subnet as the computer and that there is no conflict of IP addresses (devices must have unique IP addresses in the network).

If the converter obtained the IP address from the DHCP server, unplugging the network cable will cause the loss of the assigned IP address. If PX758 is reconnected to the network, it will try to get a new address from the DHCP server, if it fails to receive the address, it will work according to the saved static settings.

It is recommended to use automatic addressing and connect the converter to the network with a running DHCP server

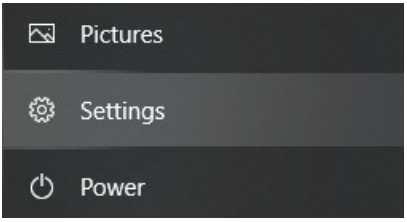
If the converter is connected directly to the computer (no DHCP server), it is necessary to manually set the network parameters of both the computer and PX758 so that they work in one network and connect the devices with a crossover Ethernet cable.

5.1 Change of the computer network configuration

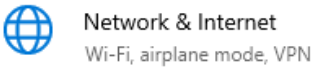
The procedure for changing the computer network configuration varies depending on the operating system. Windows® 7 system is an example here.

Change of the computer network configuration in the Windows® 7 operating system in done in the following:

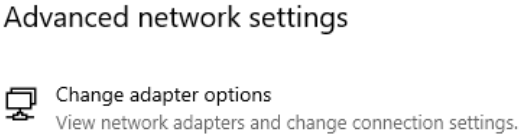
1. Click [Start] 
2. Select [Settings] tab



3. Go to [Network & Internet] tab

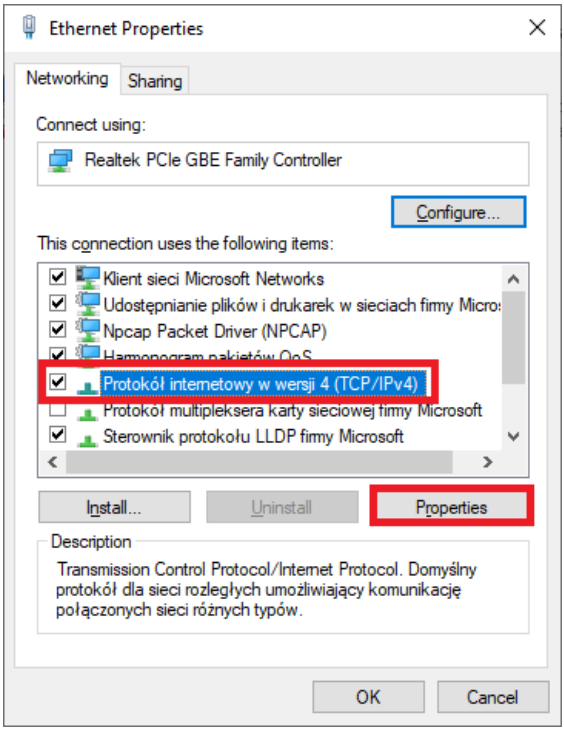


4. Select [Advanced network settings]



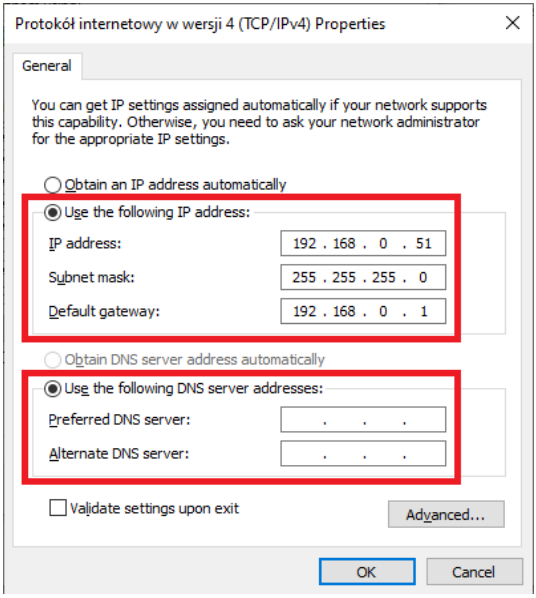
5. Right-click on the appropriate connection, for example it could be [Ethernet] and select [Properties]

6. In the new window that appears, select [Internet Protocol Version 4 (TCP/IPv4)] and then press properties



7. In the next window, select **[Use the following IP address:]**

   To connect directly (computer – driver) with a controller that has a default configuration, use the sample settings:



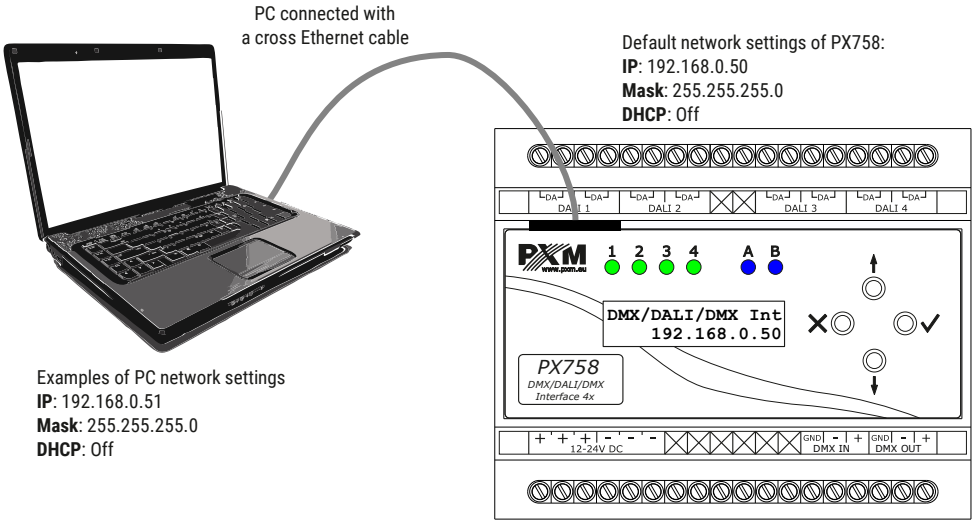
IP address: 192.168.0.51

Subnet mask: 255.255.255.0

Default gateway: 192.168.0.1

5.2 Connecting converter directly to the PC

When connecting the converter directly to a computer it is recommended to use a braided cable.



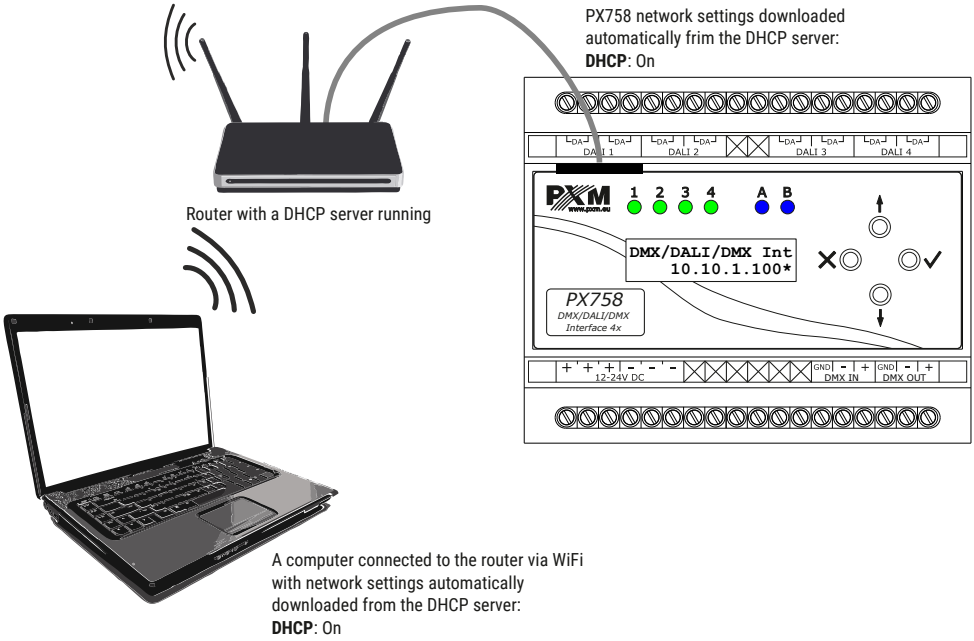
NOTE! Remember that the PX758 converter and the computer should be in the same network and there is no conflict of IP addresses.

5.3 Connecting the converter using a router

When connecting the converter to the router, there are two options for network settings. The first of these is the use router with a DHCP server running, the network configuration on all devices in the network is set automatically. The second option is to connect the converter and PC to a switch or router that does not support DHCP server, in this case all devices in the network must have manually configured network settings in such a way that each device operates in the same network and has a unique IP address.

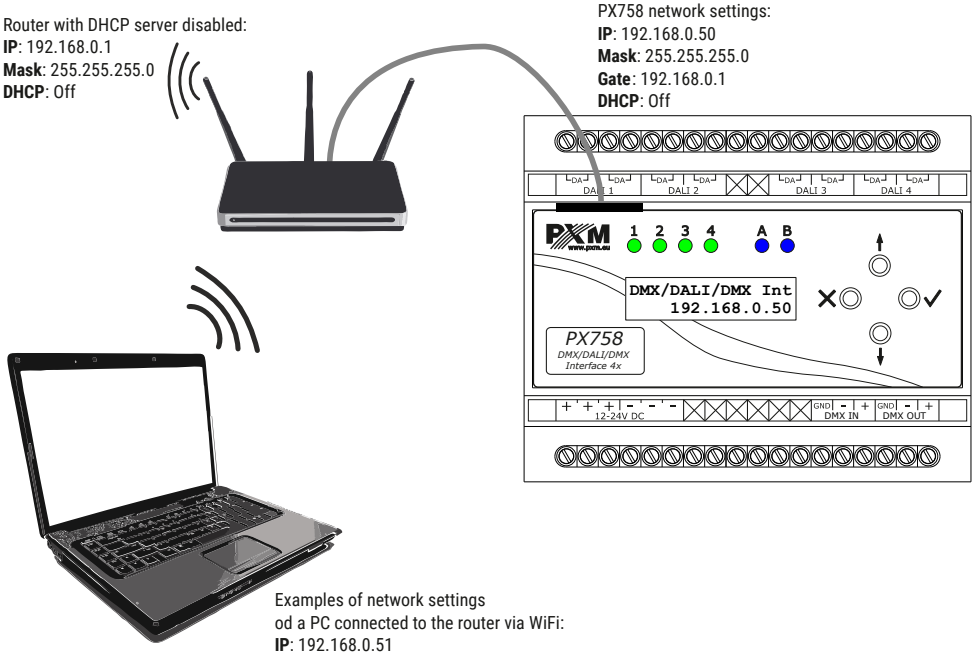
5.3.1 Automatic addressing

The diagram below shows the connection of the device with the router on which the DHCP server operates:



5.3.2 Static addressing

Below is an example diagram of network settings of the converter, router and PC, in the case when the DHCP server in the network is not running:



The advanced converter connection from the external network is described in section 7. Remote connection.

6 WWW interface

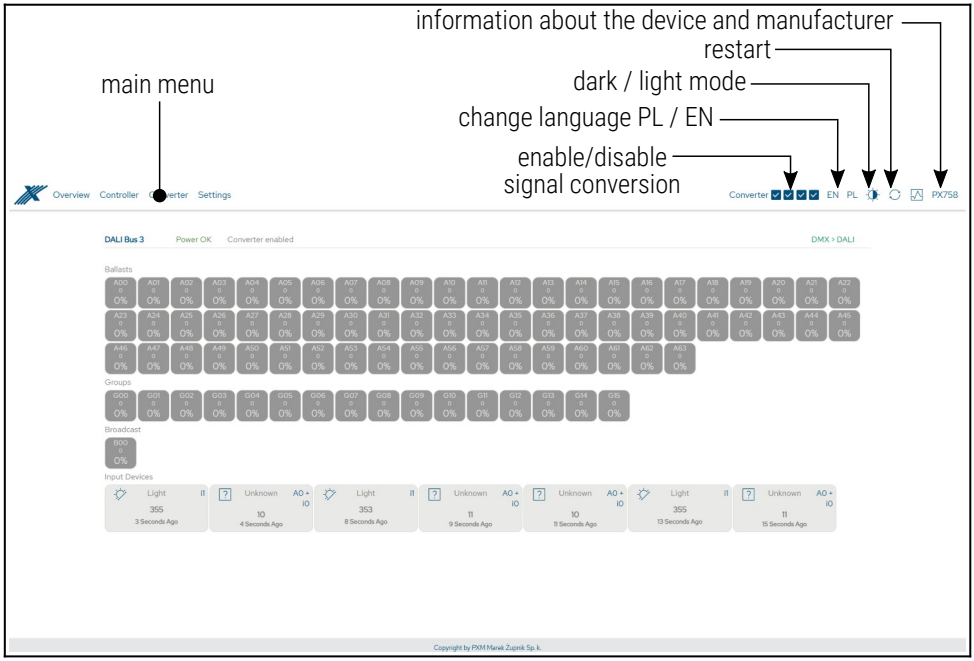
The device has a built-in Web Server that starts with the device. To open the PX758 management panel, enter the device's IP address in the browser (default is 192.168.0.50).

NOTE! Pay special attention if the PX758 is in the same network as the device on which the browser is running or in the router there are redirects configured accordingly.

Supported browsers:

- *Google Chrome* – from version *79.0.3945.117*
- *Mozilla Firefox* – from version *72.0.2*
- *Opera* – from versions *66.0.3515.44*
- *Edge* – from versions *79.0.309.71*

6.1 WWW window structure



The following tabs are available in the *main menu*:

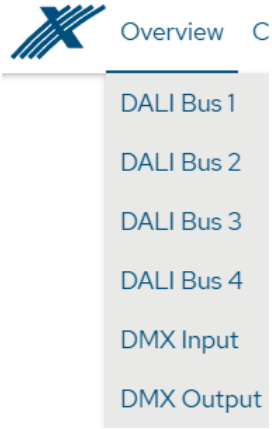
- ***Overview*** – preview of values on DALI and DMX lines,
- ***Controller*** – displays all found ballasts, in this tab you can edit their parameters (if signal conversion is disabled) as well as DALI input devices and virtual DALI ballasts,
- ***Converter*** – a tab responsible for mapping DMX and DALI channels and defining events from DALI input devices,
- ***Settings*** – used to locally change the device name, network settings, display settings, configuration management, and software updates.

The following options are in the upper right corner:

- enabling / disabling DMX → DALI / DALI → DMX signal conversion,
- change language (EN / PL),
- dark / light mode switch,
- restarting the device,
- Information about the device and manufacturer:

6.2 Overview

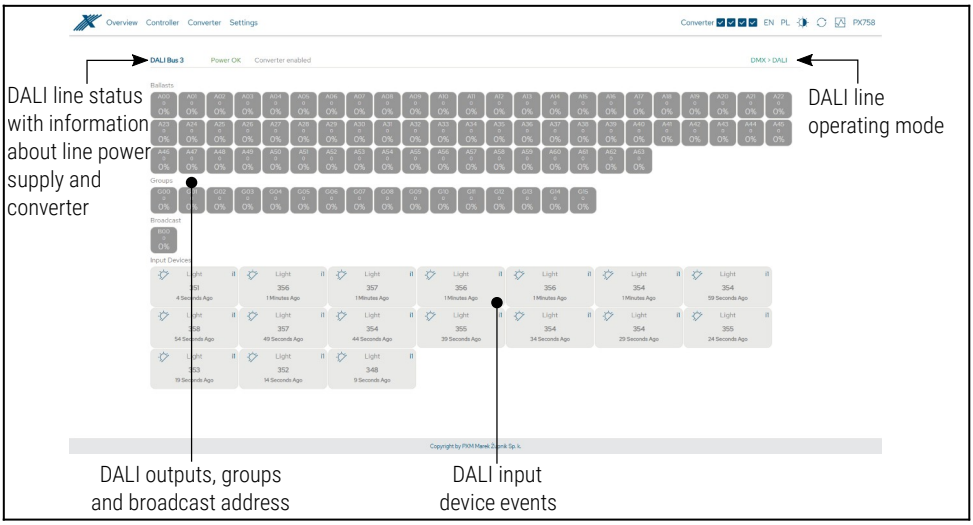
After entering the converter's website, the first tab is *Overview*. In this tab, you can read the values on the DALI lines (1 – 4), the event from DALI input devices, and DMX input and output channels.



6.2.1 DALI Bus

Readable parameters:

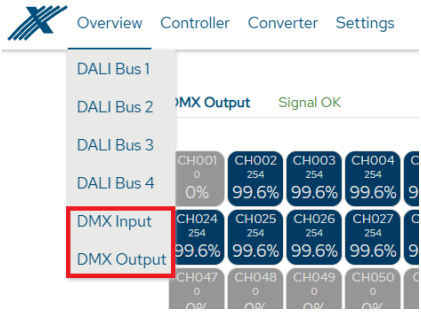
- DALI line status (*Power OK* / *No power*, converter status),
- values sent on the DALI line to all possible 64 available devices, 16 groups and on the broadcast address (*Broadcast*),
- event sent by DALI input devices,
- DALI line operating mode.

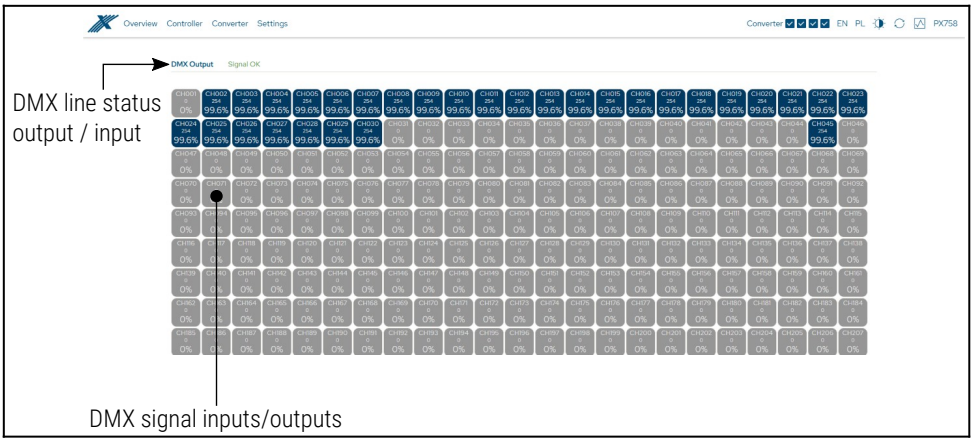


6.2.2 *DMX Input / DMX Output*

Readable parameters:

- DMX line status (*Signal OK* / *No signal*),
- values received at DMX input,
- values sent at DMX output.





NOTE! In order for the DMX output signal to be active, the virtual ballasts must be configured (6.3.3. Virtual DALI).

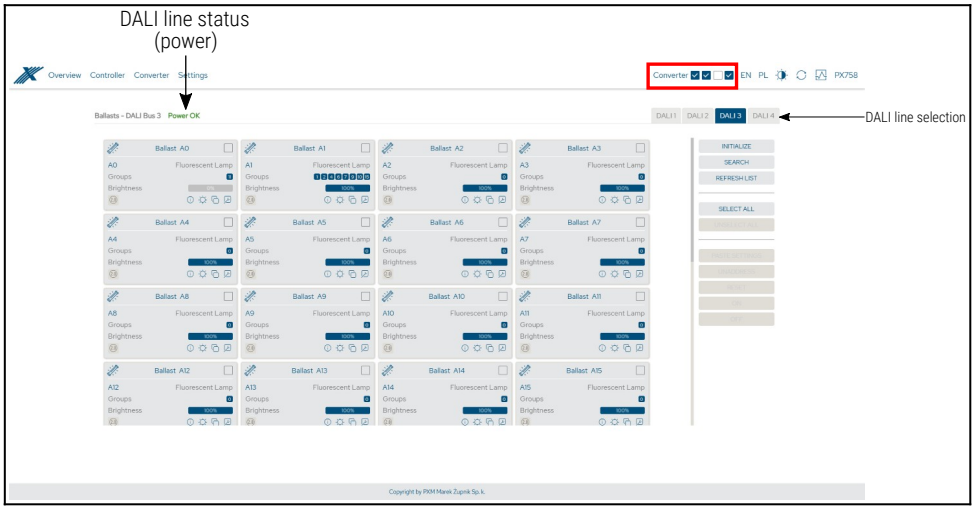
6.3 Controller

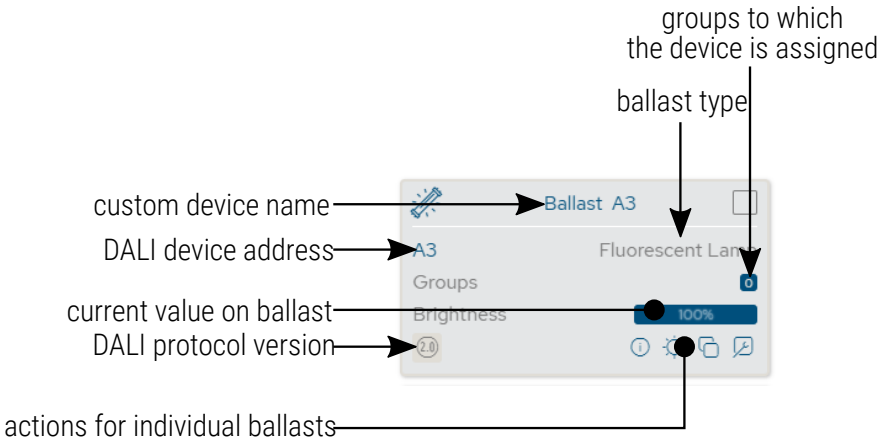
In this tab the user can search for ballasts on each of the four DALI lines, search for and configure DALI input devices and add virtual DALI ballasts (to convert DALI signal → DMX).

NOTE! To make the DALI line work in *Ballasts + Input Devices* mode or as *Virtual DALI*, you must change the operating mode (*DMX > DALI* or *VIRTUAL DALI > DMX*) of the line in *Settings → DALI / DMX* (6.5.2. DALI / DMX).

6.3.1 Ballasts

The *Ballasts* tab allows you to manage found ballasts on the DALI line. It is possible to quickly search for devices or initiate a new search for devices that were not previously in the PX758 memory. Changing the parameters of DALI ballasts and searching for them is only possible when the DMX → DALI signal conversion is disabled.





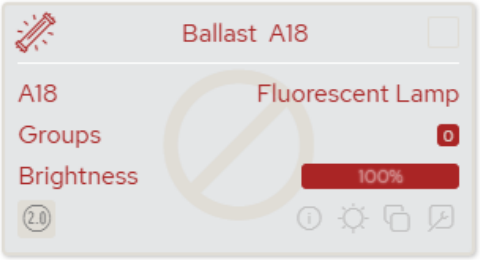
Description of displayed parameters:

- *DALI line* – if the line is powered from an external source and works correctly, the message *Power OK* is displayed, in the event of a power failure of the DALI line the message *No power* is displayed,
- *Type of ballast found* – type of ballast found (*Fluorescent lamp, Emergency lighting, Discharge lamp, Low Voltage Halogen, Supply Voltage Regulator, DALI to 0-10V, LED Module, Relay, Color control, Unknown device*),
- *Groups* – group numbers to which the ballast is assigned,
- *Address* – address to which the ballast is assigned,
- *Name* – custom ballast name (saved locally),
- *Actual level* – power with which the ballast is currently working,
- *Protocol version* – DALI protocol version supported by the ballast,
- *Actions* – advanced ballast settings,
- Buttons on the right:
  - *Initialize* – re-search for devices on the line (this involves changing the DALI address settings and deleting the non-standard name of previously configured devices),
  - *Search* – searching for devices on the line without changing device addresses,
  - *Refresh list* – refreshes the list of found DALI devices,
  - *Select all* – selects all devices,
  - *Unselect all* – deselects all devices,
  - *Paste settings* – pastes previously copied settings to selected ballasts (more information in chapter 6.3.1.2. Copy settings).

- *Unaddress* – deleting the DALI addresses assigned to all selected ballasts,
- *Reset* – resets selected devices to factory ballast settings,
- *Off* – disables selected ballasts,
- *On* – turns on selected ballasts at 100%.

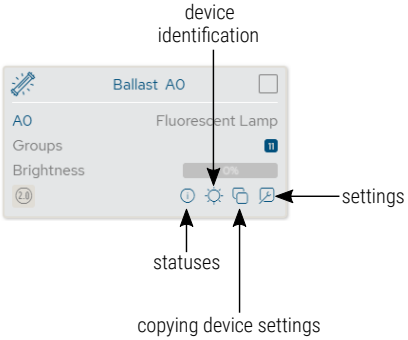
NOTE! After connecting the PX758 to the existing installation (the ballasts are addressed), select the *Search* option – it will not change the ballasts addresses. If the ballasts in the installation do not have assigned addresses – select the *Initialize* option.

In the list of found ballasts, a tile marked in red may appear, it means that the ballast was previously found and added to the list, but now it is not responding.

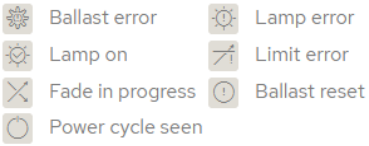


6.3.1.1 *Actions available for ballasts*

For each device found on the DALI line by the PX758 it is possible to select an action.



- ***Statuses*** – ballast information,



- ***Identify device*** – when pressed, the device brightens and dims, enabling identification – the duration is ~10s (works only with DALI 2-compatible devices),
- ***Copy settings*** – copies settings, which can then be pasted into selected devices (for more information see chapter 6.3.1.2 Copy settings),

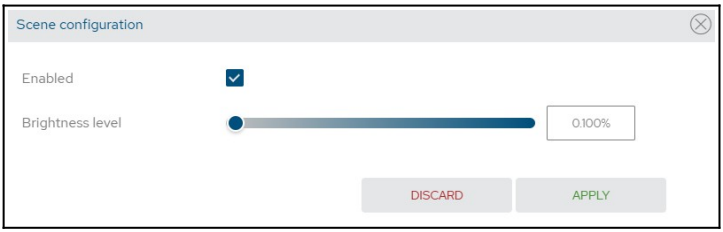
- *Settings* – goes to the ballast parameters configuration.

Available parameters of DALI devices:

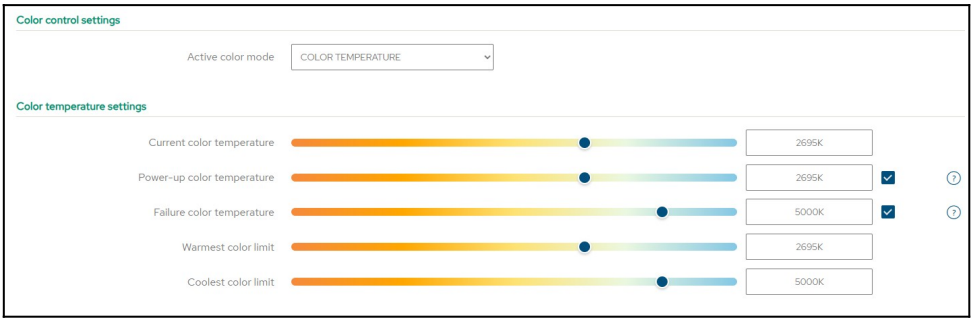
- ***Device features*** – information on the type of ballast (*Fluorescent lamp, Emergency lighting, Discharge lamp, Low Voltage Halogen, Supply Voltage Regulator, DALI to 0-10V, LED Module, Relay, Color control, Unknown device*),
- ***Device address*** – device address on the DALI line, to change it, click the *Change address* button,

  NOTE! If a device with such an address already exists on the DALI line, the addresses will be swapped.
- ***Custom name*** – individual ballast name, the name is stored in the PX758 memory,
- ***Ballast status –*** ballast information (ballast error, light source error, light source on, brightness range error, transition in progress, ballast reset, power restored),
- ***GTIN(EAN) number*** – ballast identification number,
- ***Serial number***,
- ***Firmware version***,
- ***Hardware revision***,
- ***DALI protocol version***,
- ***Groups*** – assigning ballast to selected group / groups,
- ***Fade time*** – time determining the speed of transition between brightness levels,
- ***Extended fade time*** – time that determines how quickly it changes between user-defined brightness levels (only DALI 2.0),

- ***Fade rate*** – concerns the speed of brightening and dimming when holding an external button configured in the Inputs tab.
- ***Set brightness level*** – brightness level for which the ballast is to be set in the range 0 – 100%,
- ***Power-up level*** – default brightness after turning on the ballast in the range *0 – 100%* or *LAST* – if the ballast supports the memory function,
- ***Minimum level*** – minimum ballast brightness,
- ***Maximum level*** – maximum ballast brightness,
- ***Emergency level*** – ballast brightness in case of DALI line failure in the range *0 – 100%* or *LAST* – if the ballast supports the memory function,
- ***Physical minimum*** – minimum brightness level factory set in the ballast,
- ***LED module settings –*** change of brightness control curve (logarithmic / linear) – applies only to DALI *LED module* devices,
- *Color control settings* – changing the color control settings – only applies to DALI devices that have a color temperature change function,
- ***Scenes*** – scene brightness level. Click on the selected scene tile, then select that the scene should be *Enabled* and set the *Brightness* in [%].



If the device supports changing the color temperature, then additional color control settings are available:



- ***Active color mode*** – the PX758 device currently only supports *Color Temperature*,
- ***Current color temperature*** – color temperature to which the ballast is to be set in the range of 1000 – 20000K,
- ***Power-up color temperature*** – default color temperature after turning on the ballast (it is possible deactivate this option),
- ***Failure color temperature*** – ballast color temperature in case of DALI line failure (this option can be deactivated),
- ***Warmest color limit*** – limit of the range of color temperature control via DMX, e.g.: by setting the value to 4500K, the DMX value 0 will be responsible for this color temperature,
- ***Coolest color limit*** – limit of the range of color temperature control by DMX, e.g.: by setting the value to 6500K, the DMX 255 value will be responsible for this color temperature,

NOTE! It is possible to set reverse color temperature control via DMX, so that as the DMX value increases, the temperature decreases.

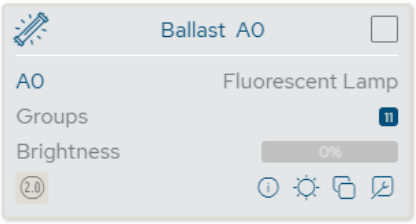
Additionally, the dialog box in which the user defines the *Scene* changes. There is an option to change the color temperature.

NOTE! Changes made can be canceled by selecting the ***Back*** button. The settings can be downloaded from the ballast by clicking the ***Download*** button. The changes made should be sent to the device by clicking ***Upload***.

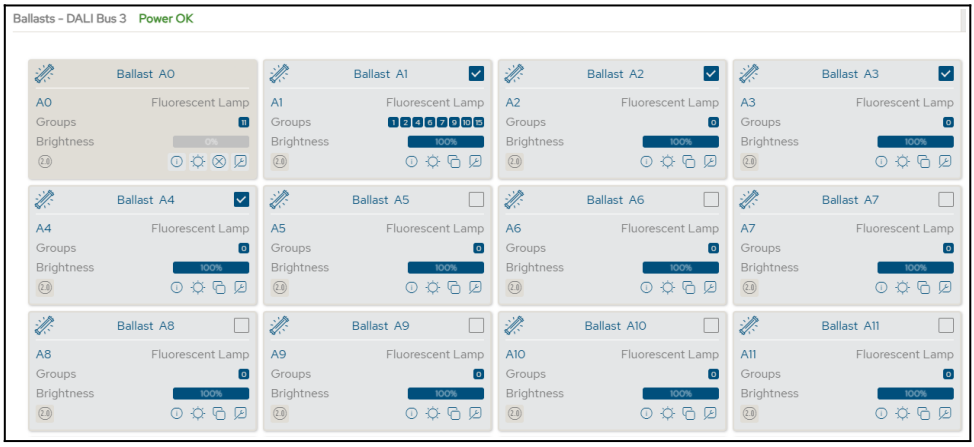
6.3.1.2 *Copy settings*

The web interface allows you to copy the settings of the configured ballast to other devices on the DALI line. This option speeds up the configuration of multiple ballasts (as long as they have the same parameters).

To do this, first configure the device and then in the *Controller* tab on the appropriate DALI line, select the icon next to the selected ballast.

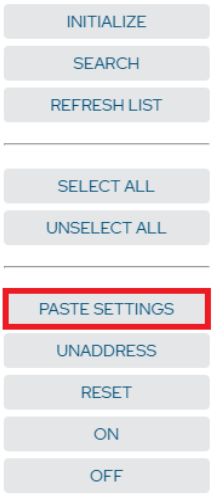


After copying the parameters, you need to select the devices to which they are to be pasted. You can choose the *Select all* option on the right.



NOTE! The ballast from which the parameters were copied cannot be selected.

If the parameters have been copied and the devices to which they are to be pasted are selected, the *Paste settings* button becomes active. Selecting *Paste settings* will start the process of copying the settings to the selected ballasts.



NOTE! DALI ballast parameters can only be copied within one DALI line.

6.3.2 Input Devices (DALI)

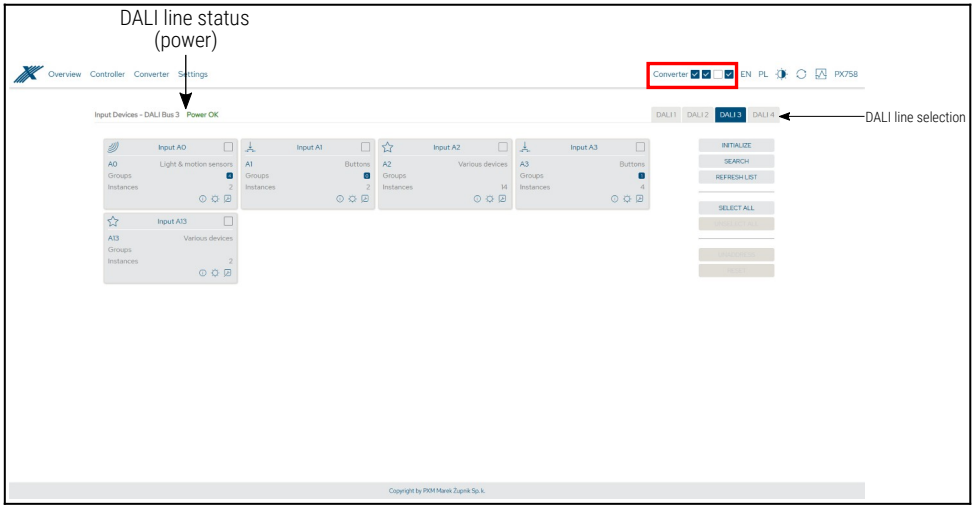
The PX758 converter allows you to connect up to 64 input devices (in addition to the 64 receivers) to each DALI line.

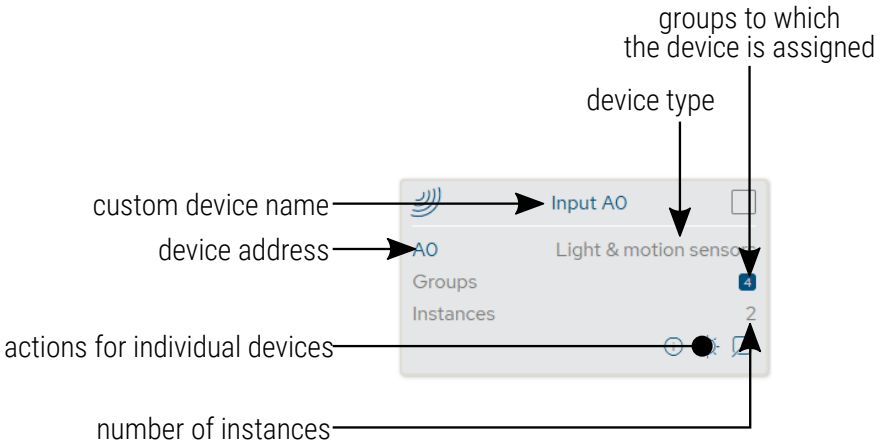
The user can connect the following types of input devices:

- button (configuration – monostable / bistable),
- absolute input,
- presence sensor (configuration – occupancy / movement),
- light sensor,
- *unknown* – other unclassified DALI input devices.

In addition to connecting DALI input devices, for the system to function correctly, the user must configure DALI → DMX events accordingly. (6.4.2. DALI > DMX Events). Full configuration of system operation with DALI input devices requires a DMX controller, for example PX340+ / PX710+.

To search and edit input device settings, DMX → DALI signal conversion must be disabled.





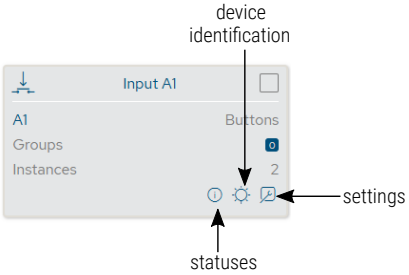
Description of displayed parameters:

- *DALI line* – if the line is powered from an external source and is working correctly, the message *Power OK* is displayed, if the DALI line is not powered, the message *No power* is displayed,
- *Type of device found*,
- *Groups* – group numbers to which the device is assigned,
- *Address* – the address to which the device is assigned,
- *Name* – custom device name (locally saved),
- *Actions* – advanced device settings,
- *Instances* – number of instances in device,

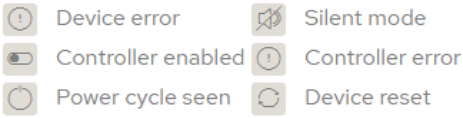
- Buttons on the right:
  - *Initialize* – re-searching for devices on the line (this involves changing the DALI address settings and deleting the custom name assigned to previously configured devices),
  - *Search* – searching for devices on the line without changing device addresses,
  - *Refresh list* – refreshing the list of found DALI devices,
  - *Select all* – selects all devices,
  - *Unselect all* – unselects all devices,
  - *Unaddress* – deleting assigned DALI addresses for all selected devices,
  - *Reset –* resets selected devices to factory ballast settings,

6.3.2.1 *Actions available for input devices*

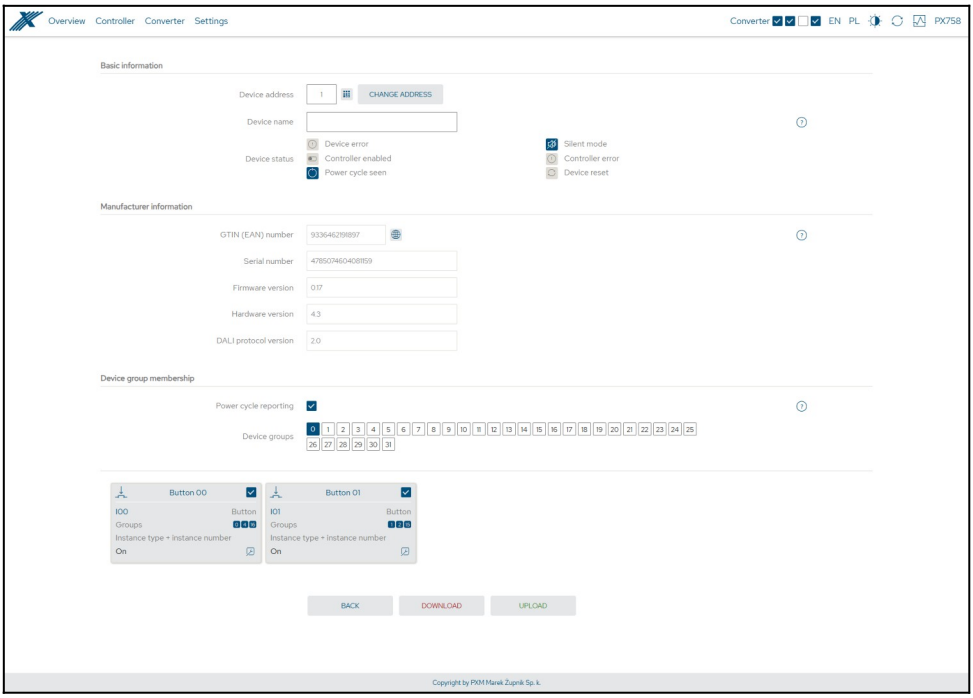
For each input device found on the DALI line by the PX758 it is possible to select an action.



- *Statuses* – information about ballast,



- *Device identification* – when pressed, the device brightens and dims, allowing identification (it can also be an audible signal) – duration is ~10s (works only with DALI 2 compatible devices),
- *Settings* – proceeds to the configuration of device parameters.


Overview
Controller
Converter
Settings
Converter
EN
PL
PX758
Basic information
Device address
1
CHANGE ADDRESS
Device name
Device status
Device error
Controller enabled
Power cycle seen
Silent mode
Controller error
Device reset
Manufacturer information
GTIN (EAN) number
9336462198897
Serial number
4785074604081159
Firmware version
0.17
Hardware version
4.3
DALI protocol version
2.0
Device group membership
Power cycle reporting
Device groups
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
26 27 28 29 30 31
Button 00
I00
Button
Groups
Instance type + instance number
On
Button 01
I01
Button
Groups
Instance type + instance number
On
BACK
DOWNLOAD
UPLOAD
Copyright by PXM Marek Zupnik Sp. k.

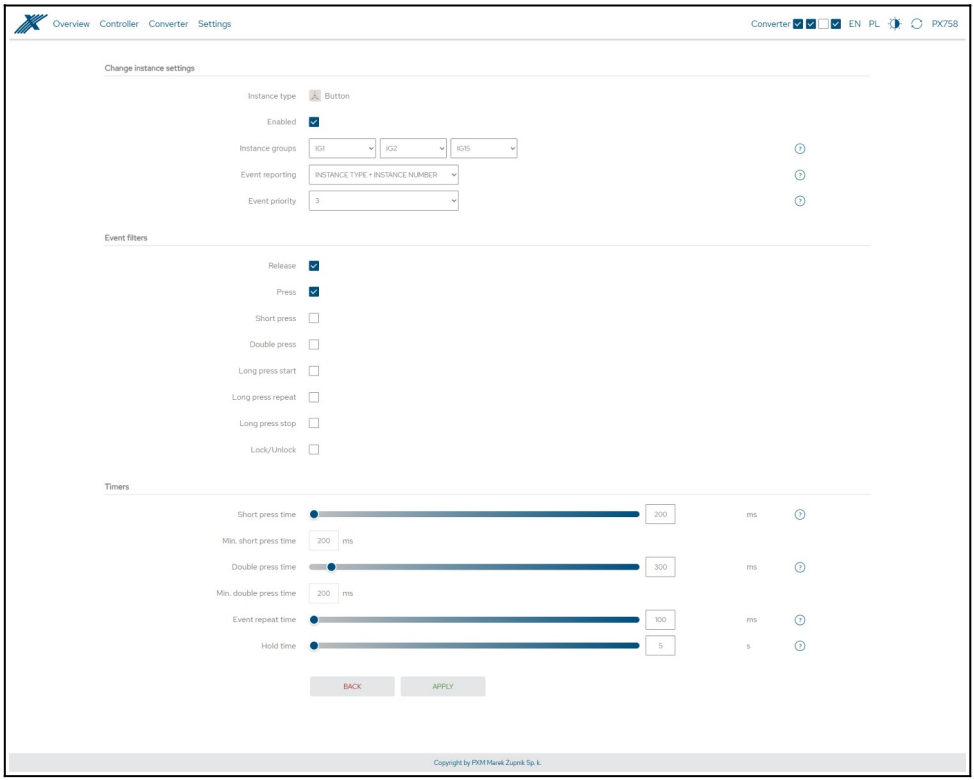
Available DALI device parameters:

- *Device address* – address of the device on the DALI line, to change it, select the address and then click the *Change address* button,
  NOTE! If a device with such an address already exists on the DALI line, the addresses will be swapped.
- *Device name* – individual device name, the name is stored in the PX758 memory,
- *Device status* – device information (*device error, controller enabled, power cycle seen, silent mode, controller error, device reset*),
- *GTIN (EAN) number* – device identification number,
- *Serial number*,
- *Firmware version*,
- *Hardware version*,
- *DALI protocol version*,
- *Power cycle reporting* – sending event *power restored*,
- *Groups* – assigning device to the selected group / groups,
- *Instances* – available input signal channels that a given device can report.

6.3.2.2 *Bistable button*

Events from input devices on the DALI line cause the converter to send the appropriate value to the DMX output line:

- *release* – value 0 until another event occurs,
- *press* – value 255 until another event occurs,
- *released* – value 0 until another event occurs,
- *lock / unlock* – value 127 until another event occurs,



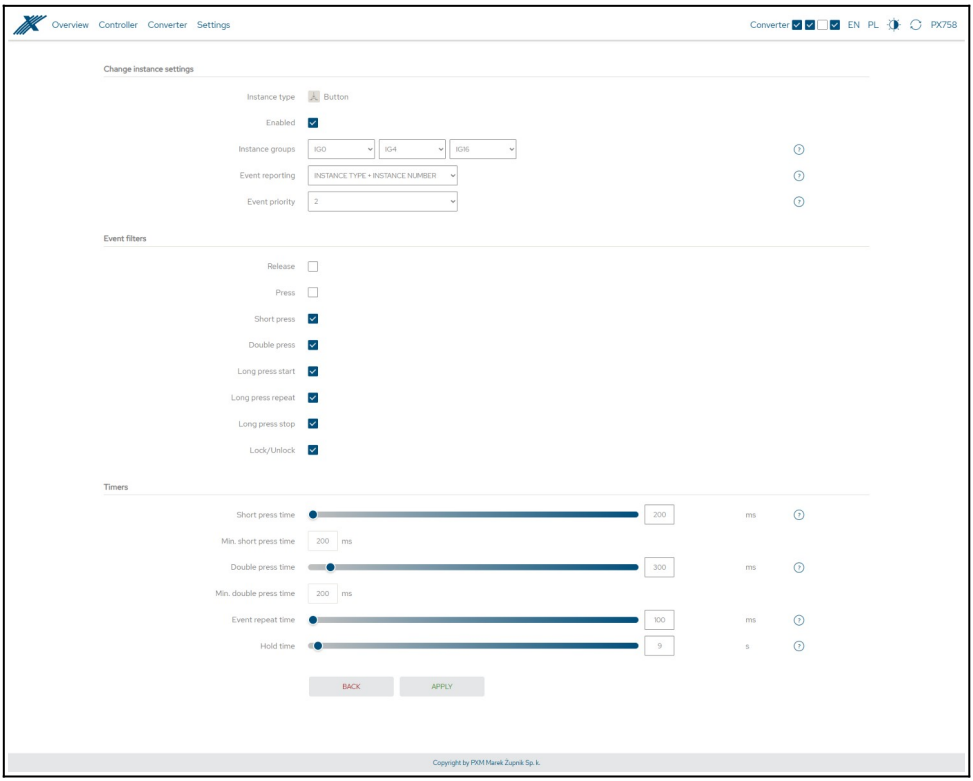
Available DALI device parameters:

- *Instance type*
- *Enabled* – whether the instance should report events,
- *Instance groups* – enable grouping of instances across multiple devices,
- *Event reporting* – the way events will be reported – crucial for frames to be correctly identified by the converter (the setting will have to be the same as in *DALI > DMX Events*– 6.4.2. DALI > DMX Events).
- *Event priority* – when more than one instance transmits at the same time, the event with the higher priority takes precedence,
- *Event filters* – selection of reported events – bistable button only *release*, *press* and *lock*,
- *Timers*:
    - *Short press time* – time that distinguishes a short press from a long press. If the button is released within this time, a short press event will occur,
    - *Min. short press time* – pressing for a shorter time than the specified time will be ignored,
    - *Double press time – not applicable*,
    - *Min. double press time – not applicable*,
    - *Event repeat time – not applicable*,
    - *Hold time* – time after which the pressed button will start reporting a blocked event.

6.3.2.3 Monostable button

Events from input devices on the DALI line cause the converter to send the appropriate value to the DMX output line:

- *short press* – value 255 for 50ms, then value 0,
- *double press* – value 200 for 50ms, then value 0,
- *long press start* – value 150 for 50ms or until the *long press stop* event, then value 0,
- *long press repeat* – value 150 for 50ms repeats at a set time interval or until the *long press stop* event, then value 0,
- *long press stop* – wartość 100 przez 50ms, następnie wartość 0,
- *released* – value 0 until another event occurs,
- *lock* – value 127 until another event occurs,



Available DALI device parameters:

- *Instance type*
- *Enabled* – whether the instance should report events,
- *Instance groups* – enable grouping of instances across multiple devices,
- *Event reporting* – the way events will be reported – crucial for frames to be correctly identified by the converter (the setting will have to be the same as in *DALI > DMX Events*– 6.4.2. DALI > DMX Events).
- *Event priority* – when more than one instance transmits at the same time, the event with the higher priority takes precedence,

- *Event filters* – selection of reported events – monostable button all except *release* and *press*,
- *Timers*:
  - *Short press time* – time that distinguishes a short press from a long press. If the button is released within this time, a short press event will occur,
  - *Min. short press time* – pressing for a shorter time than the specified time will be ignored,
  - *Double press time* – if the button is pressed again within this time, a *double press* event will occur, if not, a *short press* will occur,
  - *Min. double press time* – pressing for a shorter time than the specified time will be ignored,
  - *Event repeat time – long press* event repeat interval,
  - *Hold time* – time after which the pressed button will start reporting a blocked event.

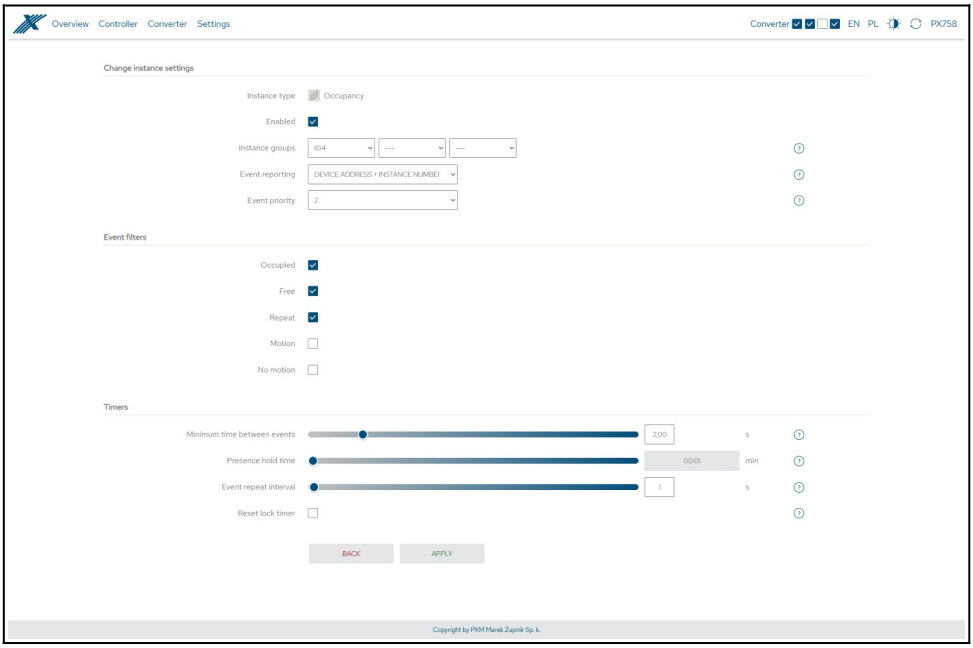
6.3.2.4 Absolute input

Direct values are transmitted from DALI to DMX output.

6.3.2.5 *Occupancy sensor*

Events from input devices on the DALI line cause the converter to send the appropriate value to the DMX output line:

- *occupied* – value 255 until another event occurs,
- *repeat* – value 255 until another event occurs,
- *free* – value 0 until another event occurs,
- *repeat free* – value 0 until another event occurs,



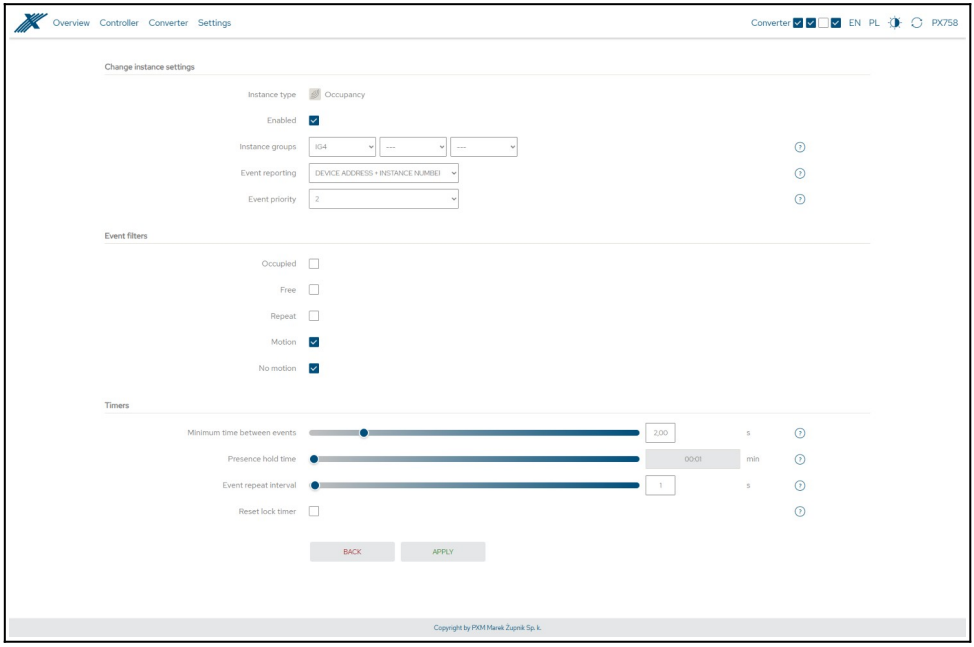
Available DALI device parameters:

- *Instance type*
- *Enabled* – whether the instance should report events,
- *Instance groups* – enable grouping of instances across multiple devices,
- *Event reporting* – the way events will be reported – crucial for frames to be correctly identified by the converter (the setting will have to be the same as in *DALI > DMX Events*– 6.4.2. DALI > DMX Events).
- *Event priority* – when more than one instance transmits at the same time, the event with the higher priority takes precedence,
- *Event filters* – selection of reported events – occupancy sensor only *occupied*, *free* and *repeat*,
- *Timers*:
    - *Minimum time between events* – the time that must elapse between sending the next event to the DALI line,
    - *Presence hold time* – the time to maintain an *occupied* event even if a *free* event should be sent,
    - *Event repeat interval* – time how often an event is repeated, even if it has not changed,
    - *Reset lock timer* – allows you to ignore the presence lockout time and allow events to be sent immediately.

6.3.2.6 *Motion sensor*

Events from input devices on the DALI line cause the converter to send the appropriate value to the DMX output line:

- *motion* – value 255 until another event occurs,
- *no motion* – value 0 until another event occurs,



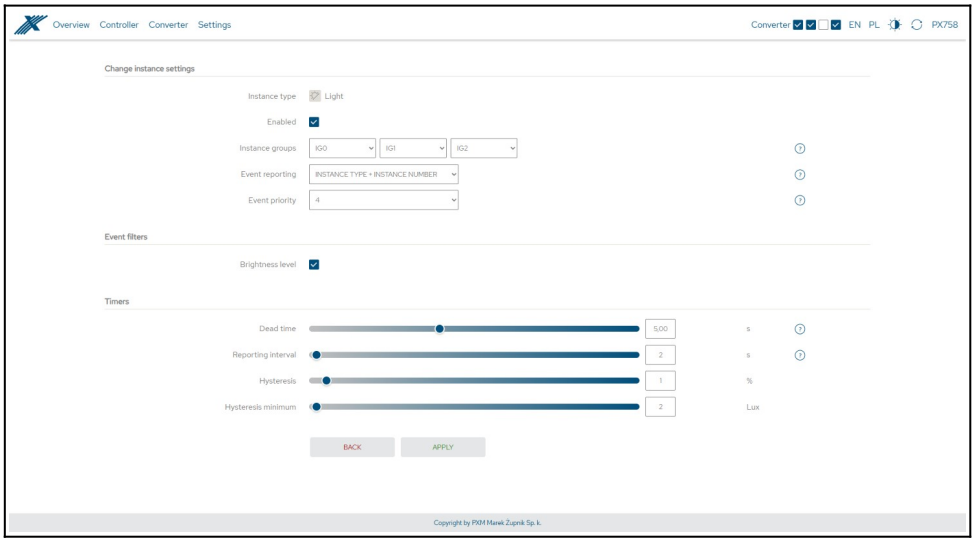
Available DALI device parameters:

- ***Instance type***
- ***Enabled*** – whether the instance should report events,
- ***Instance groups*** – enable grouping of instances across multiple devices,
- ***Event reporting*** – the way events will be reported – crucial for frames to be correctly identified by the converter (the setting will have to be the same as in *DALI > DMX Events*– 6.4.2. DALI > DMX Events).

- *Event priority* – when more than one instance transmits at the same time, the event with the higher priority takes precedence,
- *Event filters* – selection of reported events – motion sensor only *motion* and *no motion*,
- *Timers*:
    - *Minimum time between events* – the time that must elapse between sending the next event to the DALI line,
    - *Presence hold time – not applicable*,
    - *Event repeat interval – not applicable*,
    - *Reset lock timer – not applicable*.

6.3.2.7 *Light sensor*

Direct transmission of values to DMX output.



Available DALI device parameters:

- *Instance type*
- ***Enabled*** – whether the instance should report events,
- ***Instance groups*** – enable grouping of instances across multiple devices,
- ***Event reporting*** – the way events will be reported – crucial for frames to be correctly identified by the converter (the setting will have to be the same as in *DALI > DMX Events*– 6.4.2. DALI > DMX Events).

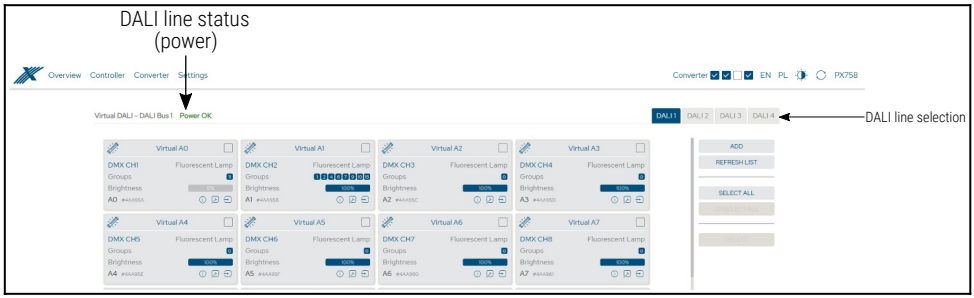
NOTE! The *Device Address + Instance Number* reporting scheme will be displayed in the DALI line preview as *Unknown*.

- ***Event priority*** – when more than one instance transmits at the same time, the event with the higher priority takes precedence,
- ***Event filters*** – selection of reported events – light sensor only *brightness level*,
- *Timers*:
  - *Dead time* – the time that must elapse since the previous event for the next one to be sent,
  - *Reporting interval* – time how often an event is repeated, even if it has not changed,
  - *Hysteresis* – change in value in [%] that must occur for the event to be sent,
  - *Hysteresis minimum* – the minimum change in [Lux] that must occur for the event to be sent.

6.3.3 *Virtual DALI*

In order to convert a DALI signal to a DMX output signal, it is necessary to add virtual DALI devices that represent DMX receivers (single DMX channels). DMX receivers will work exactly the same as ballasts on the DALI line.

This allows DALI and DMX based lighting systems to be combined into one coherent system.

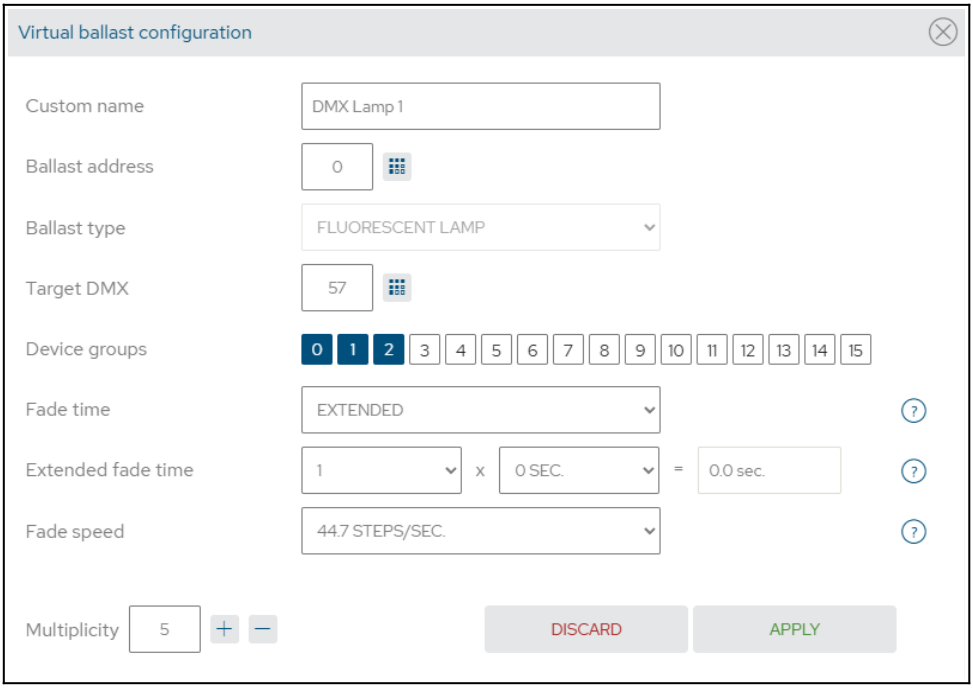


Buttons on the right:

- ***Add*** – adding new virtual ballast,
- ***Refresh list*** – refreshing the list,
- ***Select all*** – selects all virtual ballasts,
- ***Unselect all*** – unselects all virtual ballasts,
- Delete – removes the selected virtual ballasts.

NOTE! To be able to operate in virtual DALI mode, you must change the line mode in the *Settings → DALI / DMX* tab. (6.5.2. DALI / DMX).

Adding virtual ballast:



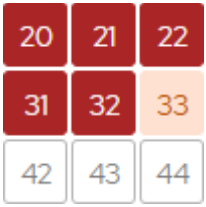
- *Custom name* – individual ballast name, the name is stored in the PX758 memory,
- *Ballast address* – device address on the DALI line,
  - 

– there is an address conflict,
    - *red* – address occupied (in address table),

NOTE! The virtual ballast address can have the value *MASK* – not assigned to any address. 

- ***Ballast type*** – information on the type of ballast (invariably *FLUORESCENT LAMP*),
- ***Target DMX*** – DMX output address to which the value will be sent after conversion from the DALI signal,
  - 

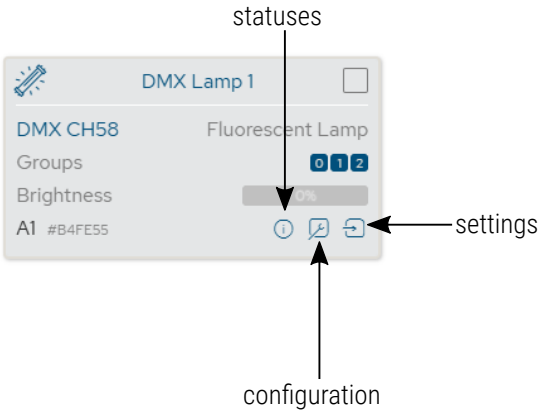
– there is an address conflict,
    - *red* – address occupied (in address table),
    - *light red* – address occupied by the DALI input device (in the address table),



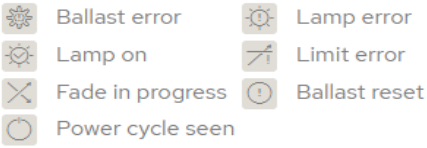
- ***Device groups*** – assigning ballast to the selected group/groups,
- ***Fade time*** – time defining the speed of transition between brightness levels,
- ***Extended fade time*** – user-defined time to adjust the speed of transition between brightness levels (DALI 2.0 only),
- ***Fade speed*** – the number of steps per second determining the speed of switching between brightness levels,
- ***Multiplicity*** – the number of virtual ballasts that will be added – DALI ballast addresses and DMX target addresses will be assigned in ascending order.

6.3.3.1 *Actions available for virtual ballasts*

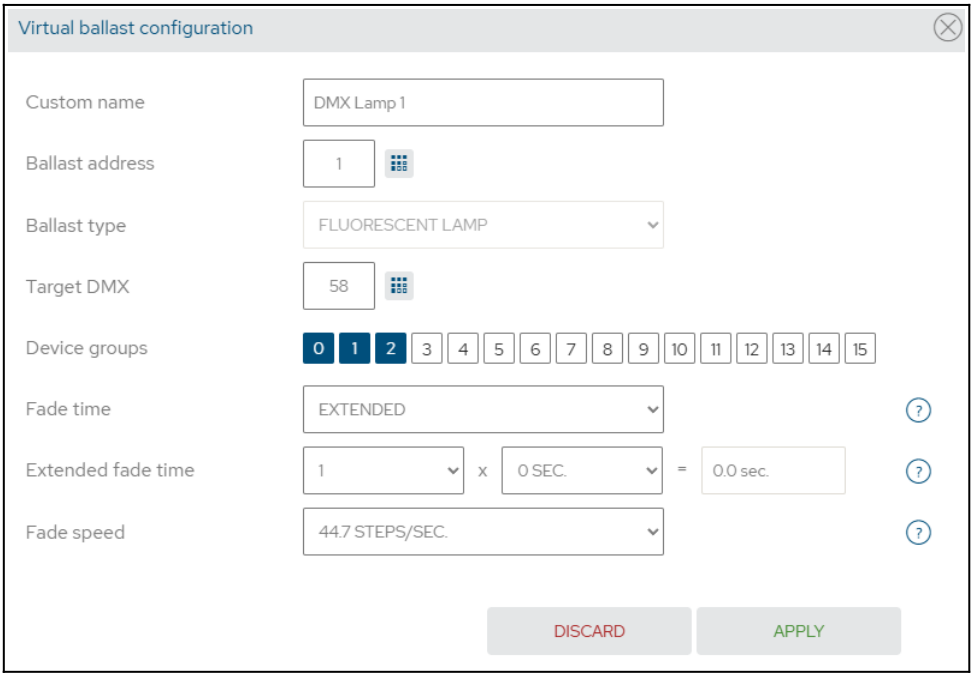
For each virtual ballast of the DALI line it is possible to select an action via the PX758.



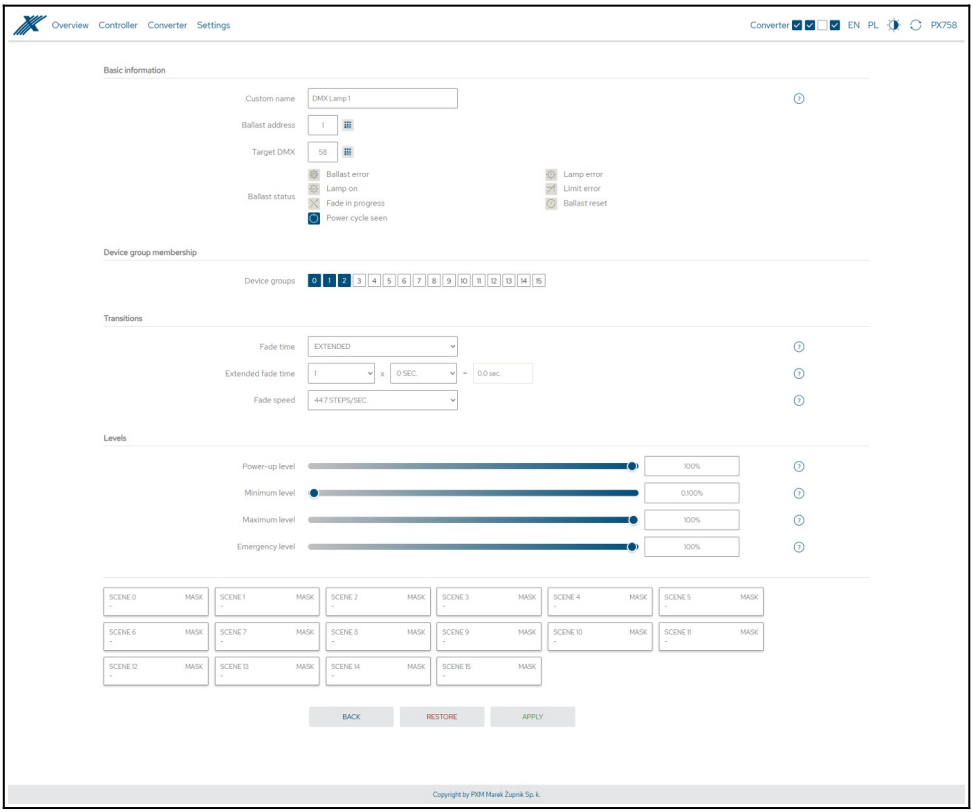
- ***Statuses*** (i) – ballast information (active light is ***blue***),



- *Configuration* – quick configuration of virtual ballast – opens a pop-up window,



- *Settings* – proceeds to the configuration of ballast parameters.

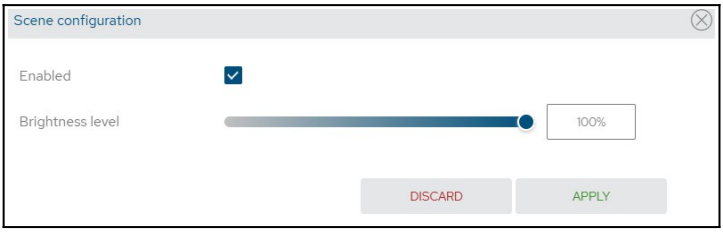


Available virtual ballast parameters:

- Custom name – individual ballast name, the name is stored in the PX758 memory,
- *Ballast address* – address of the virtual ballast on the DALI line, to change it,

  NOTE! If a device with such an address already exists on the DALI line, the addresses will be swapped.
- *Target DMX* – DMX output address to which the value will be sent after conversion from the DALI signal,
- *Ballast status –* ballast information (*ballast error, lamp error, lamp on, limit error, fade in progress, ballast reset, power cycle seen*),
- *Device groups* – assigning ballast to the selected group/groups,
- *Fade time* – time defining the speed of transition between brightness levels,
- *Extended fade time* – user-defined time to adjust the speed of transition between brightness levels (DALI 2.0 only),
- *Fade speed* – the number of steps per second determining the speed of switching between brightness levels,
- *Power-up level* – default brightness after switching on the ballast in the range of *0 – 100%* or *LAST*,
- *Minimum level* – minimum ballast brightness,
- *Maximum level* – maximum ballast brightness,
- *Emergency level* – ballast brightness in the event of a DALI line failure in the range of *0 – 100%* or *LAST*,

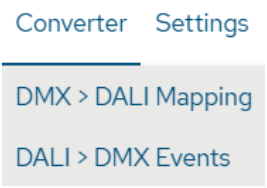
- *Scenes* – scene brightness level. Click on the selected scene tile, then select the scene to be *Enabled* and set the *Brightness level* in [%].



6.4 Converter

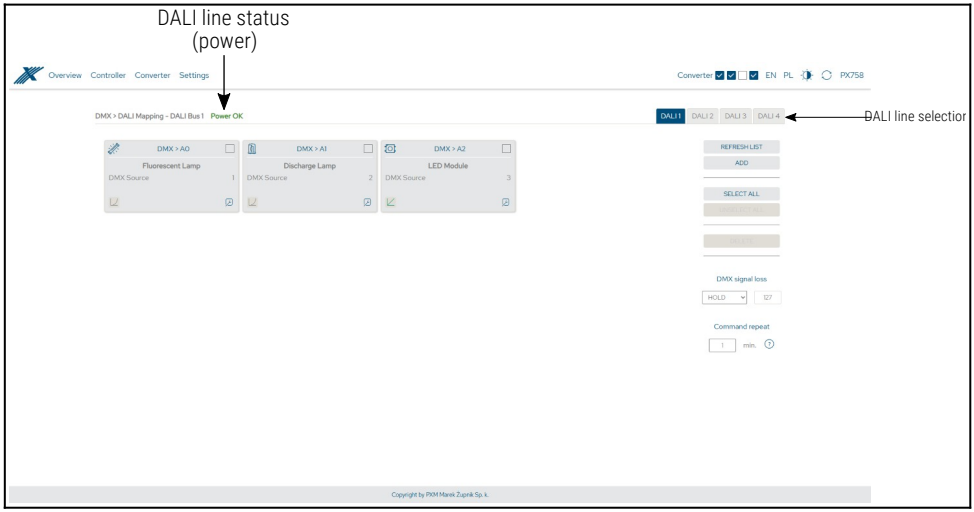
This tab is responsible for assigning DALI addresses or groups to specific DMX input addresses, defining the reaction to DMX signal loss and optionally setting the DALI broadcast address, which is responsible for sending values to all ballasts.

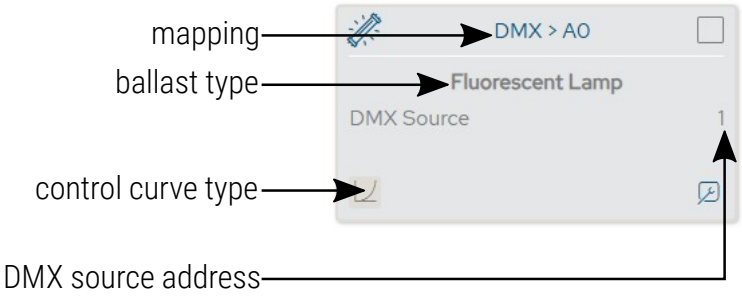
Additionally, setting DALI events – i.e. configuring input devices and assigning DMX addresses.



6.4.1 DMX > DALI Mapping

In this tab, the user can map DMX input channels to specific DALI addresses or groups and to broadcast on individual DALI lines.





Description of displayed parameters:

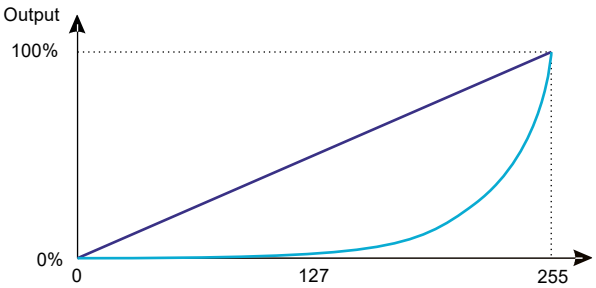
- ***DALI line*** – if the line is powered from an external source and works correctly, the message *Power OK* is displayed, in the event of a power failure of the DALI line the message *No power* is displayed,
- ***Mapping*** – information to which address/group/broadcast the DMX value is sent,
- ***Source DMX Address*** – DMX address from which the address / group / broadcast is controlled,
- ***Control curve*** – DALI or linear control curve,
- ***Type of ballast found*** – type of ballast found (*Fluorescent lamp, Emergency lighting, Discharge lamp, Low Voltage Halogen, Supply Voltage Regulator, DALI to 0-10V, LED Module, Relay, Color control, Unknown device*),
- Buttons and additional options on the right:
  - ***Refresh list*** – refreshes the list of mappings,
  - ***Add*** – adding new DMX channel mapping,
  - ***Select all*** – selects all mappings,
  - ***Unselect all*** – deselects all mappings,
  - ***Delete*** – removes selected DMX → DALI mappings,
  - ***DMX signal loss*** – behavior on the DALI line in the absence of a DMX signal,
    - *on* – enabling all mapped DALI addresses at 100%,
    - *off* – disabling all mapped DALI addresses at 0%,
    - *hold* – maintaining the last DMX signal value,

        - *brightness* – setting the brightness of the mapped DALI addresses (0 – 255),
    - ***Command repeat*** – repeating sending of commands to DALI ballasts at specified intervals (when there are no changes on the DMX input).

To address any DALI address, group or broadcast address you must first add such a device by clicking *Add*.

A new window will be displayed where the user can select:

- address,
- ballast type,
- control curve:
    - *DALI* – DMX values are converted in a 1:1 ratio to the ballast control level,
    - *Linear* – DMX values are converted linearly into ballast control percentages,

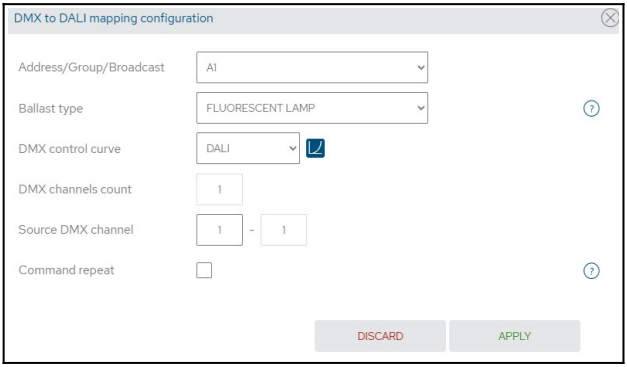


Curves:

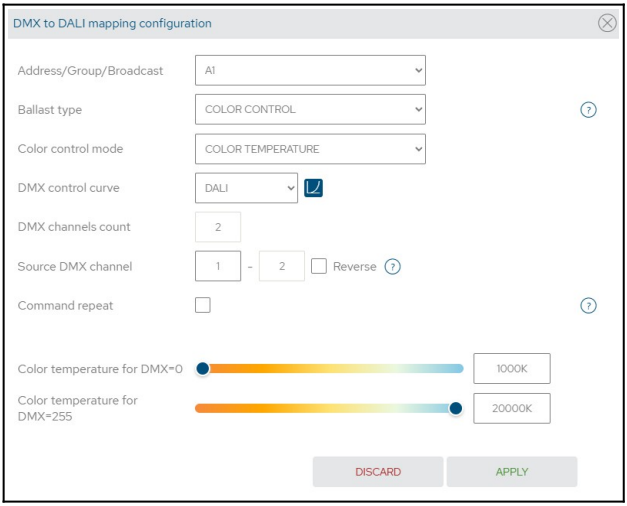
linear

DALI

- DMX channel count – number of DMX channels that will be used,
- DMX channels,
- command repeat.



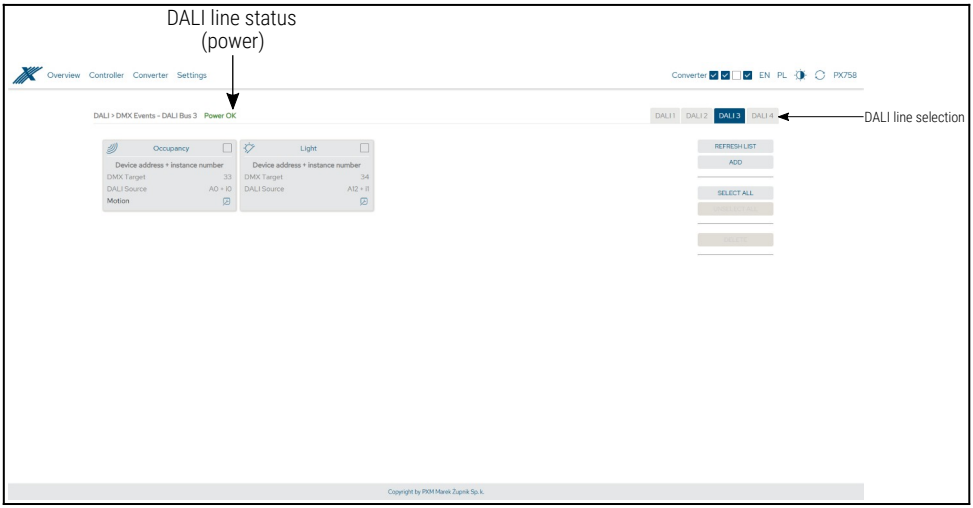
By selecting the ballast type as *color control*, the user can additionally invert DMX channel control (by default, the first channel is responsible for color temperature and the next for brightness) and set DMX-controlled color temperature limits.

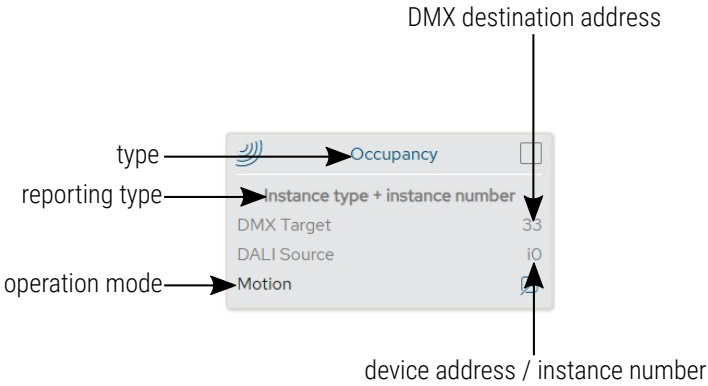


6.4.2 DALI > DMX Events

In order for DALI input devices to be operated, the user must define the DMX addresses to which the value from the defined event will be sent.

Examples of events are a button press, current movement, or light intensity.





Description of displayed parameters:

- ***DALI line*** – if the line is powered from an external source and works correctly, the message *Power OK* is displayed, in the event of a power failure of the DALI line the message *No power* is displayed,
- ***Type*** – information about the input device, for example: presence sensor, light sensor, button,
- ***DMX Target*** – DMX address to which the value from the event from the DALI input device will be sent,
- ***Reporting type*** – available reporting types:
  - *instance type + instance number*,
  - *device address + instance type*,
  - *device address + instance number*,
  - *device group + instance type*,
  - *instance type + group instance*,
- ***DALI Source*** – displayed depending on the reporting type,
- ***Working mode*** – applies only to the presence sensor, can work as *motion* or *occupancy*,
- Buttons on the right:
  - ***Refresh list*** – refreshing the list,
  - ***Add*** – adding a new DALI event, the value of which will be sent to the selected DMX channel,
  - ***Select all*** – selecting all events,
  - ***Unselect all*** – unselecting all events,
  - ***Delete*** – removes selected DALI → DMX events,

NOTE! Full configuration of system operation with DALI input devices requires a DMX controller, for example PX340+ / PX710+.

To add a DALI event, click *Add*. A new window will be displayed where the user selects:

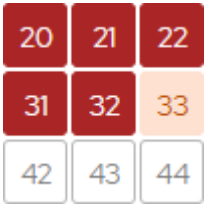
- instance type:
  - *unknown*,
  - *button*,
  - *absolute*,
  - *occupancy*,
  - *light*,

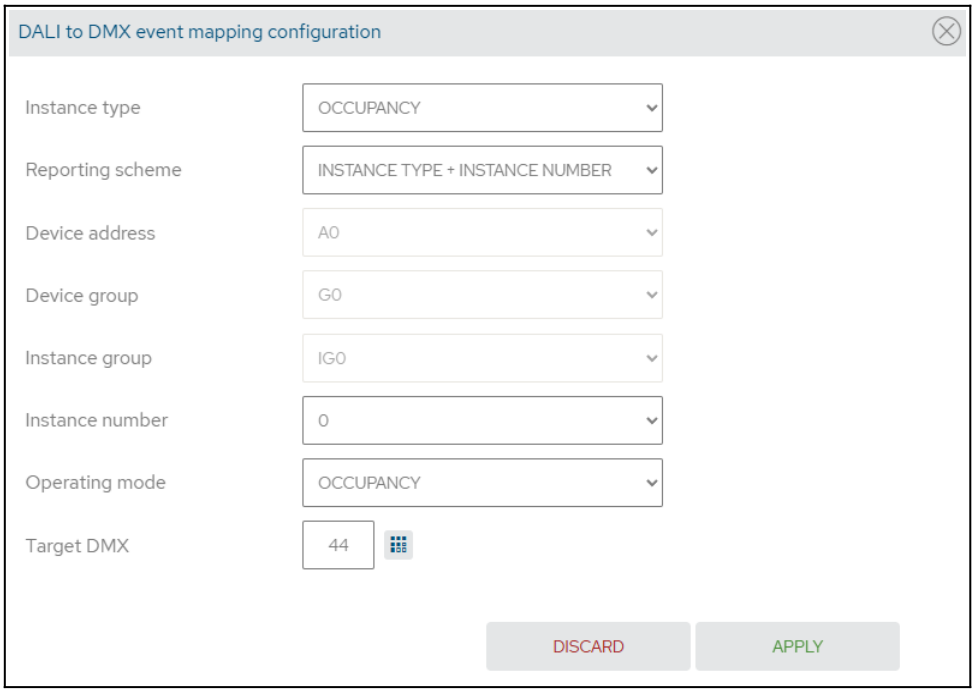
NOTE! The types of input devices and the DMX values transmitted from events are described in section 6.3.2. Input Devices (DALI).

- reporting scheme:
  - *instance type + instance number*,
  - *device address + instance type*,
  - *device address + instance number*,
  - *device group + instance type*,
  - *instance type + group instance*,
- device address – only when reporting as:
  - *device address + instance type*,
  - *device address + instance number*,
- device group – only when reporting as:
  - *device group + instance type*,
  - *instance type + group instance*,

- instance number – only when reporting as:
  - *instance type + instance number*,
  - *device address + instance number*,
- operating mode – only if the instance type is selected *occupancy*:
  - *occupancy*,
  - *motion*,
- DMX destination – DMX address to which the value from the DALI input event will be sent,
  - 

– there is an address conflict,
    - *red* – address occupied (in address table),
    - *light red* – address occupied by the DALI input device (in the address table),





NOTE! For correct reporting of events from DALI input devices, the DALI → DMX event must be configured the same as the input device (6.3.2. Input Devices (DALI)) – the instance type and reporting scheme must be the same, and the device must be indicated accordingly (address / device group / instance group / instance number).

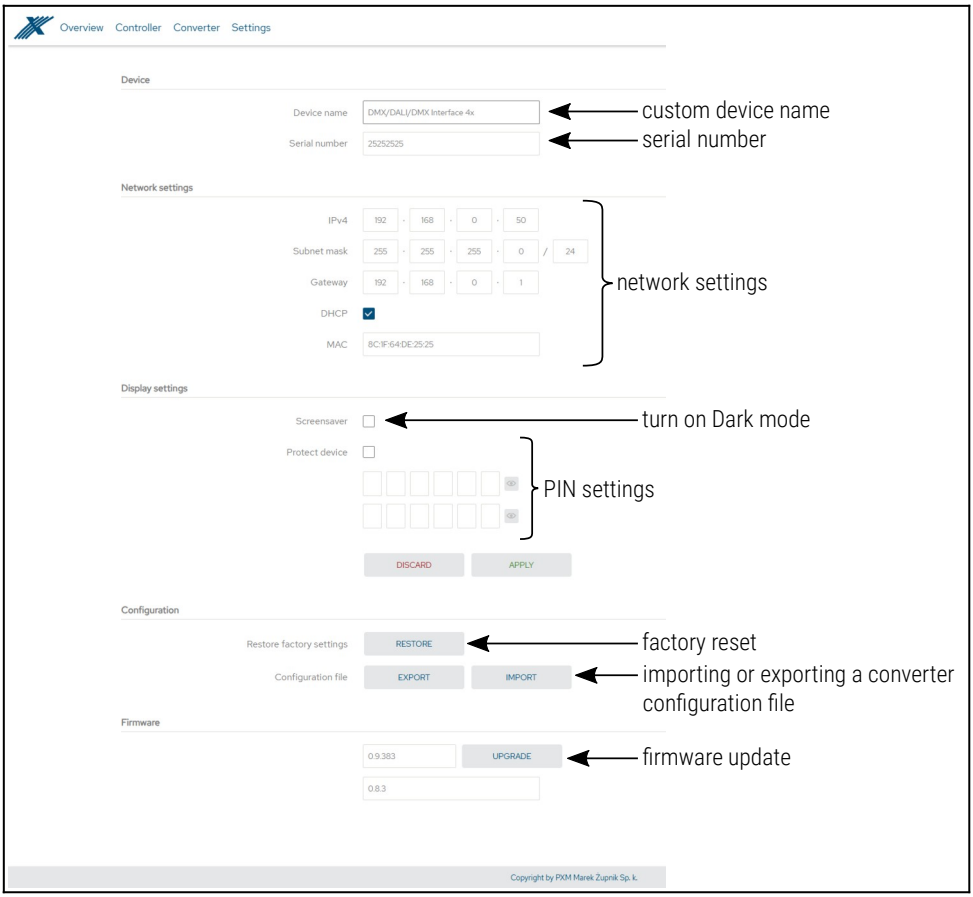
NOTE! The *Device Address + Instance Number* reporting scheme will be displayed in the DALI line preview as *Unknown*.

6.5 Settings

6.5.1 Device

In this tab the user can:

- change device name (locally saved),
- change the converter's network settings,
- change display settings,
- set device security (PIN code),
- restore factory settings,
- export and import settings to and from a file,
- update the software.



Available options:

- ***Device name*** – custom device name set by the user,
- ***Serial number***,
- ***IPv4*** – setting IP address,
- ***Subnet mask*** – setting the subnet mask,
- ***Gateway*** – setting the default gateway,

- *DHCP* – enable or disable DHCP support,

  NOTE! After making changes to network settings, you must restart your device (button).
- *MAC* – individual MAC address of the network card,
- *Screensaver* – turning off the screen and signal diodes after 10 seconds,
- *Protect device –* the user can protect the device with a PIN code (6 digits). After activating the security, the PIN code must be entered on the website and LCD screen.
- *Restore factory settings*:
  - *IPv4*: 192.168.0.50
  - *Mask*: 255.255.255.0
  - *Gateway*: 192.168.0.1
  - *DHCP*: enabled
  - *DMX signal loss*: hold
  - *Screensaver*: enabled
  - *Bus mode*: DMX > DALI (all lines)
  - *Bus priority*: 1 (all lines)
  - *Enable conversion on startup*: enabled
  - removing the device PIN protection
  - clearing the DMX → DALI mapping table
  - clearing the DALI → DMX event table
  - removing from the list of saved ballasts
  - removing virtual ballasts
  - deleting all found DALI devices

By selecting *Export* you can save the network settings, DALI line addressing and digital inputs to a file, by clicking *Import* you can load the configuration from a file.

The software can be updated by selecting the *Upgrade* button and then selecting the update file.

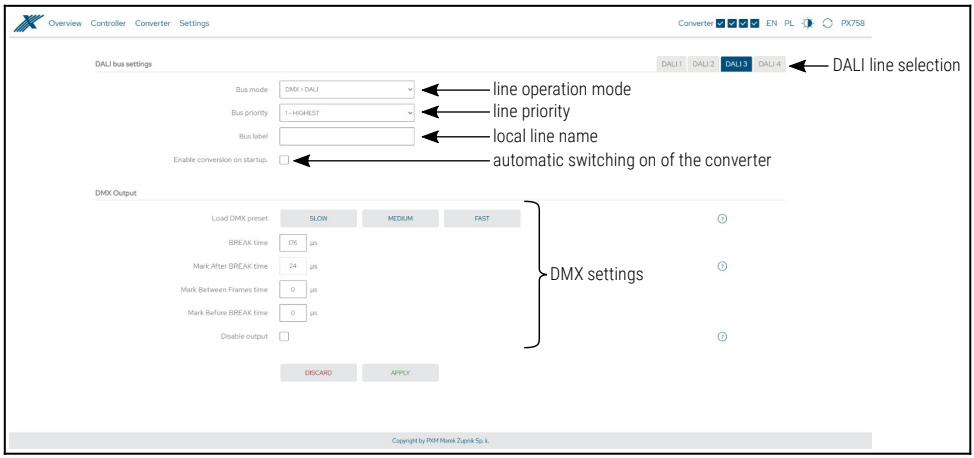
6.5.2 DALI / DMX

Each DALI line can operate in two modes:

- *DMX > DALI* – the DMX signal is converted to a DALI line,
- *Virtual DALI > DMX* – the PX758 simulates the operation of DALI ballasts, transmitting the corresponding values to the DMX output. Function used to connect DMX and DALI control systems.

In this tab the user can:

- change the line operating mode,
- set line priority,
- add line label – saved locally,
- define whether signal conversion should be started automatically after the device is started,
- change the DMX signal settings by selecting the selected preset or entering the settings manually,
- turn off the DMX output completely – if not in use.



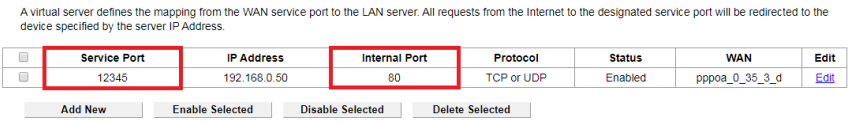
7 Remote connection

The converter allows to log in to device from an external network via the internet, for this purpose it should be:

- have an external IP address on the router assigned by the internet provider and be able to establish connection from outside (incoming packets are not blocked by the provider's and router's firewall),
- redirect port 80 to the IP address of the converter working in the local network (so-called forwarding port),
- unblock selected port in the router's firewall,
- the address of the converter / converters in the local network can not change (the converter must have a static IP address set or the DHCP server must assign the same addresses to the same devices each time).

NOTE! The destination port of the device is always port 80, for added security it is recommended to redirect other ports from the external network to port 80 in the local network.

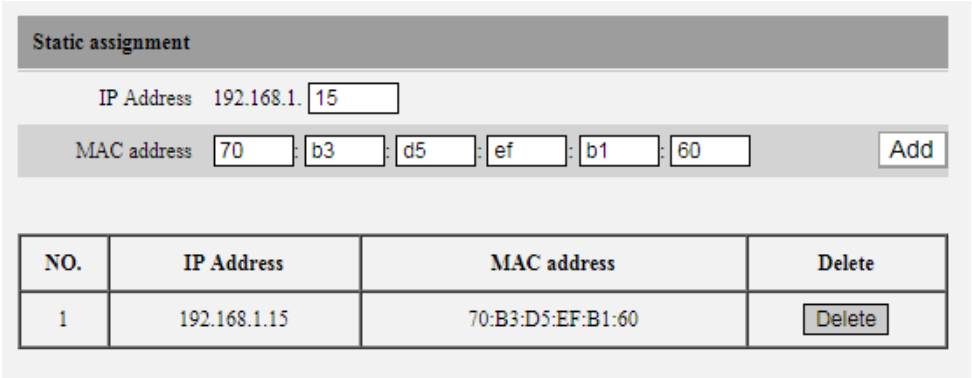
Example: by sending a query to the external IP address of a router with port number 12345 (e.g. 66.77.88.99:12345), the router will forward this query to the address of the device with port number 80 (e.g. 192.168.0.50:80).


A virtual server defines the mapping from the WAN service port to the LAN server. All requests from the Internet to the designated service port will be redirected to the device specified by the server IP Address.

	Service Port	IP Address	Internal Port	Protocol	Status	WAN	Edit
☐	12345	192.168.0.50	80	TCP or UDP	Enabled	pppoa_0_35_3_d	Edit

Add New | Enable Selected | Disable Selected | Delete Selected

NOTE! In most routers available on the market, you can set a static IP address by the DHCP server based on the MAC address of the device. For example, for a device with the MAC address 70:B3:D5:EF:B1:60 the IP address 192.168.1.15 will always be assigned by the DHCP server (example below).



Most routers available on the market usually have several parameters in port forwarding options:

- forwarding number,
- port or port range for redirection,
- the IP address of the device to be redirected to,
- protocol type (TCP / UDP or both),
- attach / delete diversion.

7.1.1 One converter in the internal network

Examples of network settings:

- external IP address: 66.77.88.99 (example address)
- converter IP address: 192.168.1.50
- mask: 255.255.255.0
- target device port: 80
- protocol: TCP or TCP/UDP (in this case option "*Both*")

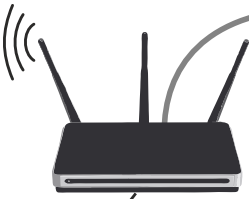
Below is the screen of the example setting in the router:

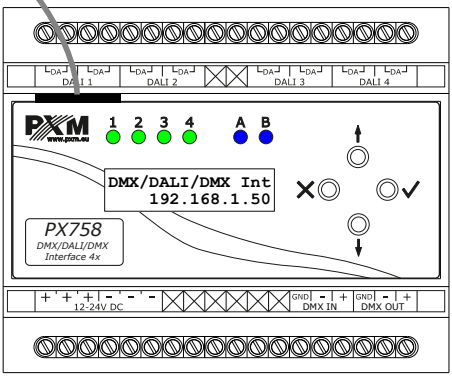
NO.	Start Port-End Port	LAN IP	Protocol	Enable	Delete
1.	80 - 80	192.168.1. 50	Both	☑	☐
2.	-	192.168.1.	TCP	☐	☐
3.	-	192.168.1.	TCP	☐	☐
4.	-	192.168.1.	TCP	☐	☐
5.	-	192.168.1.	TCP	☐	☐
6.	-	192.168.1.	TCP	☐	☐
7.	-	192.168.1.	TCP	☐	☐
8.	-	192.168.1.	TCP	☐	☐
9.	-	192.168.1.	TCP	☐	☐
10.	-	192.168.1.	TCP	☐	☐

If the router does not have the option to set up one port forwarding, create a range (from 80 to 80). If everything is correctly configured to open the web interface, enter the external IP address in the browser window (e.g. 66.77.88.99) or if you have redirected another port to internal port number 80 (e.g. 66.77.88.99:12345) – described in detail in section 7.1.2. More than one converter in the internal network.

Example of connection without using other ports:

Router network settings:
IP: 192.168.1.1
Mask: 255.255.255.0
DHCP: Off
Port 80 forwarding
to device address (192.168.1.50)





External IP address
e.g. 66.77.88.99

Computer connected to the internet

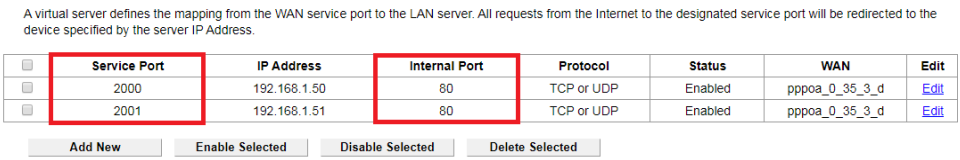
PX758 network settings:
IP: 192.168.1.50
Mask: 255.255.255.0
Gate: 192.168.1.1
DHCP: Off

7.1.2 More than one converter in the internal network

Examples of network settings:

- external IP address: 66.77.88.99 (example address)
- IP address of the first converter: 192.168.1.50
- IP address of the second converter: 192.168.1.51
- mask: 255.255.255.0
- target device port: 80
- protocol: TCP or TCP/UDP (in this case option "*Both*")

Below is a screen with examples of settings in the router (port forwarding 2000 and 2001 to the appropriate IP address of the converter and port 80):

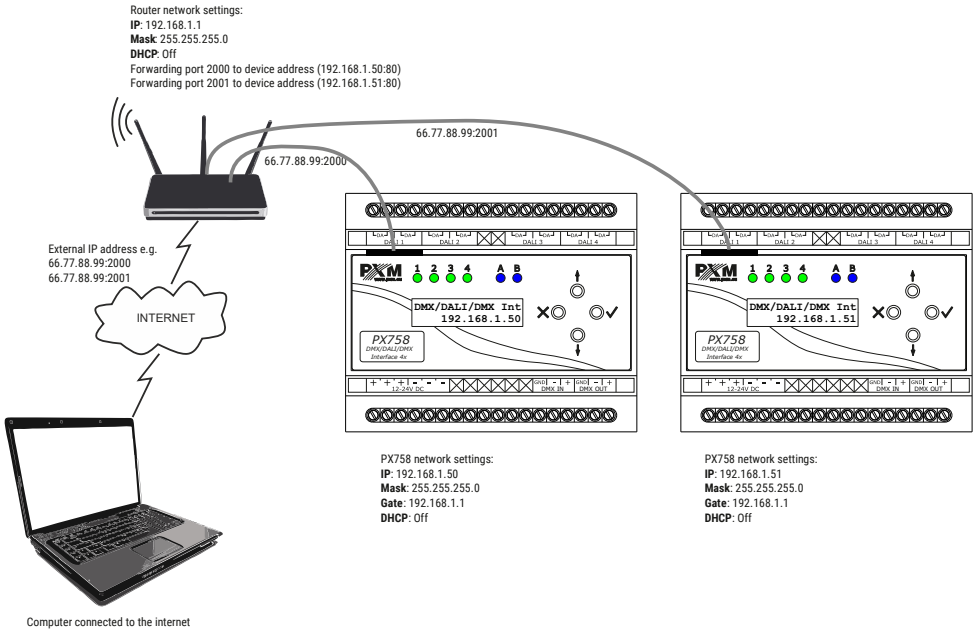

A virtual server defines the mapping from the WAN service port to the LAN server. All requests from the Internet to the designated service port will be redirected to the device specified by the server IP Address.

	Service Port	IP Address	Internal Port	Protocol	Status	WAN	Edit
☐	2000	192.168.1.50	80	TCP or UDP	Enabled	pppoa_0_35_3_d	Edit
☐	2001	192.168.1.51	80	TCP or UDP	Enabled	pppoa_0_35_3_d	Edit

Add New | Enable Selected | Disable Selected | Delete Selected

In this case, port 2000 indicates a device with IP address 192.168.1.50 and sends a query to port 80 in the internal network. The query sent to port 2001 will send a query to the other device with the address 192.168.1.51.

Example of connecting more than one converter with port forwarding:



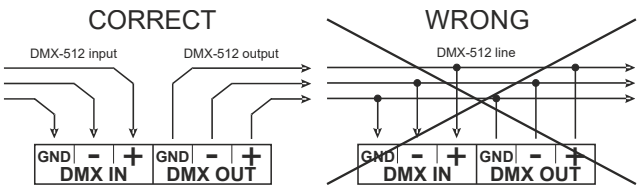
8 Indication lights

Converter is equipped with 6 indicators signaling:

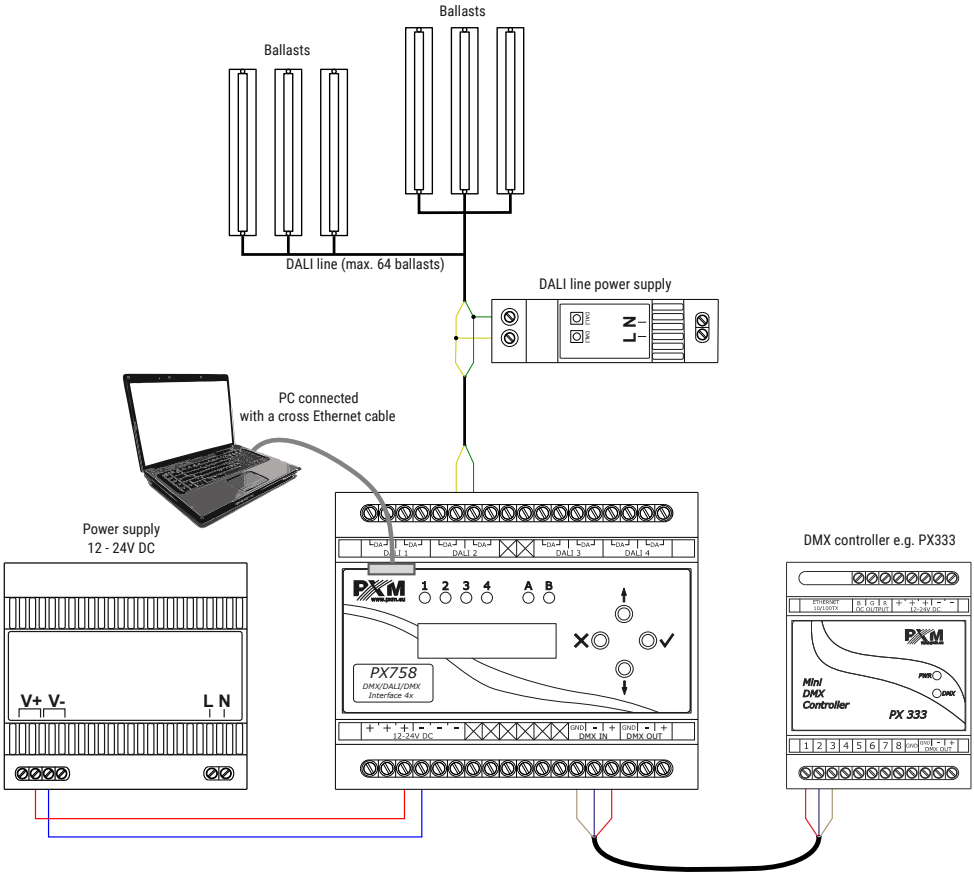
Indicator	Action	Function
greens DALI	is on	• DALI line powered • converter on
	squinting while lighting	DALI packets are sent to the line
	flashing (1Hz)	• DALI line powered • converter off
	is off	• no power line • converter in any condition
blue DMX	flashing	receiving (IN) / transmitting (OUT) DMX
	is off	no DMX signal

9 DMX signal connecting

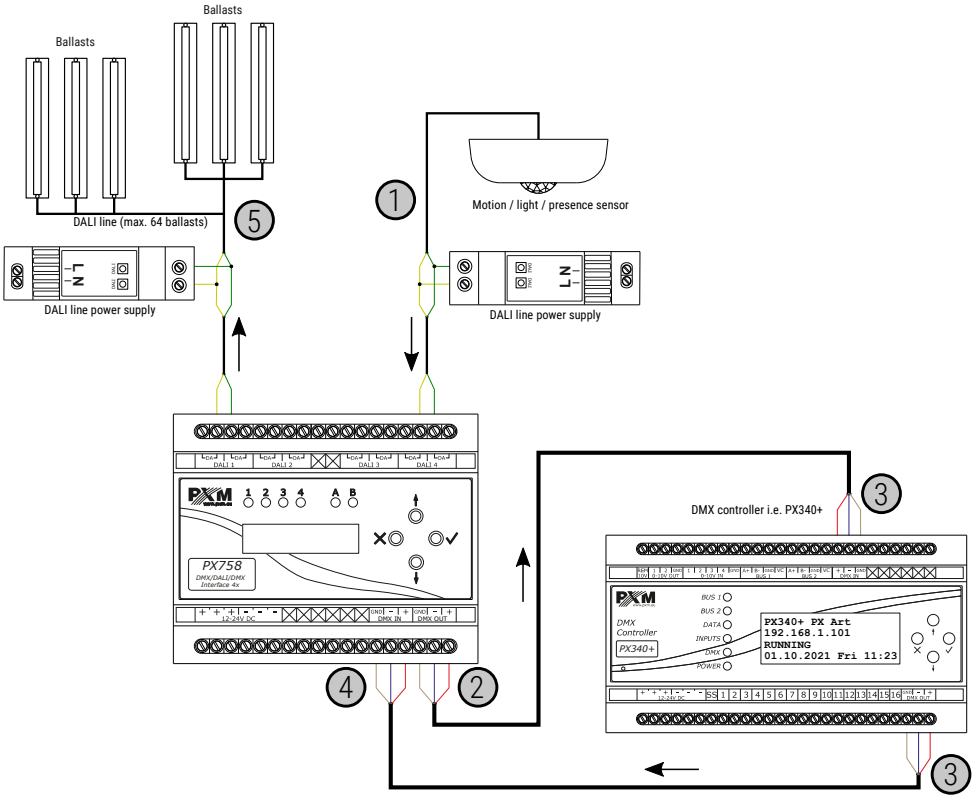
The PX758 must be connected to the DMX line in series, without branches on the control cable. This means that a control cable must be run to the ***DMX IN*** pins on the PX758. From the ***DMX OUT*** pins lead to the DMX receivers.



10 Connection scheme



Example of PX758 operation with a motion / light / presence sensor working in the DALI system and with a DMX controller:



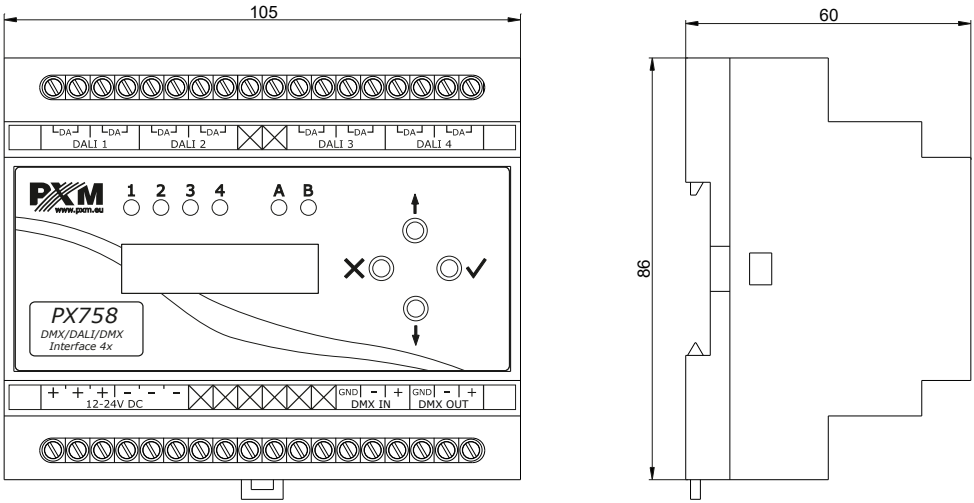
1. The motion / light / presence sensor works on the DALI line and sends a signal to the PX758.
2. The DMX / DALI / DMX Interface 4x signal converter converts the signal from the **DALI 4** input into a DMX signal and sends it to the **DMX OUT** output.
3. The controller (e.g. PX340+) receives the DMX input signal (**DMX IN**), performs the actions that were previously configured in PxDesigner

and sends a new DMX signal (**DMX OUT**) to the PX758 or other DMX signal receiver.

4. PX758 receives the DMX signal at the **DMX IN** input and converts it into a DALI signal.
5. The converted signal from DMX to DALI is sent to the **DALI 1** line (ballast control).

NOTE! The above configuration is only an example and is intended to illustrate the operation of the device. The sensor can be connected to any DALI line, additionally it can be connected to a line where ballasts are also connected – then the PX758 should be properly configured.

11 Dimensions



12 Technical data

type	PX758
power supply	12 – 24V DC
DMX input / output	1 / 1
DALI ports	4
Ethernet ports	1
DMX channels	512 / 512
number of supported DALI IN / OUT devices	256 / 256 (64 inputs + 64 outputs for one line)
supported ballasts	DT0 – DT8
control characteristics	DALI / linear
DALI line test	from the LCD
max. power consumption	2W
programming	LCD display 2 x 16 and 4 buttons Web Server
version of the DALI protocol	2.0
weight	0.2kg
dimensions	width: 105mm height: 86mm depth: 60mm

Podłęże, 05.05.2025

DECLARATION OF CONFORMITY

PXM Marek Żupnik spółka komandytowa
Podłęże 654, 32-003 Podłęże

we declare that our product:

Product name:	DMX / DALI / DMX Interface 4x
Product code:	PX758

meets the requirements of the following standards, as well as harmonised standards:

PN-EN IEC 63000:2019-01	EN IEC 63000:2018
PN-EN 62386-101:2015-06	EN 62386-101:2014
PN-EN 62386-102:2015-06	EN 62386-102:2014
PN-EN 61000-4-2:2011	EN 61000-4-2:2009
PN-EN IEC 61000-6-1:2019-03	EN IEC 61000-6-1:2019
PN-EN IEC 61000-6-3:2021-08	EN IEC 61000-6-3:2021

and meets the essential requirements of the following directives:

2011/65/UE DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment
Text with EEA relevance.

2014/30/UE DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility (recast)
Text with EEA relevance.

PXM
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