PX788

Merger DMX 3/1

User manual

Table of Contents

1 Description....4
2 Safety conditions....5
3 Connectors and control elements....6
4 Programming using buttons....7
4.1 Navigating the menu....7
4.2 Description of information parameters....8
4.3 DMX settings....9
4.3.1 Output channels....9
4.3.2 Merge signals....9
4.3.3 DMX input mapping....12
4.3.4 DMX parameters....14
4.3.5 DMX signal loss....15
4.4 Network settings....15
4.5 Other parameters....16
4.5.1 Dark mode....17
4.5.2 Reboot the device....17
4.5.3 Restore default settings....18
4.5.4 PIN code protection....19
4.6 Setting the display contrast....20
4.7 Menu scheme in PX788....21
5 Connecting the merger with a PC....22
5.1 Change of the computer network configuration....23
5.2 Connecting merger directly to the PC....26
5.3 Connecting the merger using a router....26
5.3.1 Automatic addressing....27
5.3.2 Static addressing....28
6 WWW interface....29
6.1 WWW window structure....30
6.2 Preview of DMX channels....31
6.3 DMX Merger....33
6.4 Settings → Device....37
6.5 Settings → Inputs and Outputs....39

7 Remote connection....40
7.1.1 One merger in the internal network....42
7.1.2 More than one merger in the internal network....45
8 Indication lights....47
9 DMX signal connecting....48
10 Connection scheme....49
11 Dimensions....50
12 Technical data....50

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

PXM Marek Żupnik sp.k.
Podłęże 654
32-003 Podłęże
BDO register number 000005972

tel. +48 12 385 83 06
mail: info@pxm.pl
www.pxm.pl

Rev.2-0
16.07.2024

1 Description

Merger DMX 3/1 is a DMX signal adder. It was created to work in installations in which several controllers work and there is a need to "sum up" the outputs of this type of devices, and then send them further via one DMX line.

PX788 allows to add DMX signals from different devices, and then, after selecting one of the 7 "mixing" modes, it sends the signals to a single DMX output. Merger can operate in two configurations: 3 → 1,
2 → 2, it means that the device can sum up 3 inputs and send the result DMX signal to one line or sum 2 inputs and send the result signal to two output lines.

Available methods of merging DMX signals:

- HTP,
- LTP,
- Priority,
- Capture,
- Fixed value,
- Mixed,
- Direct.

Managing PX788 settings is possible using the buttons and the screen on the casing or using the Web Server built into the device.

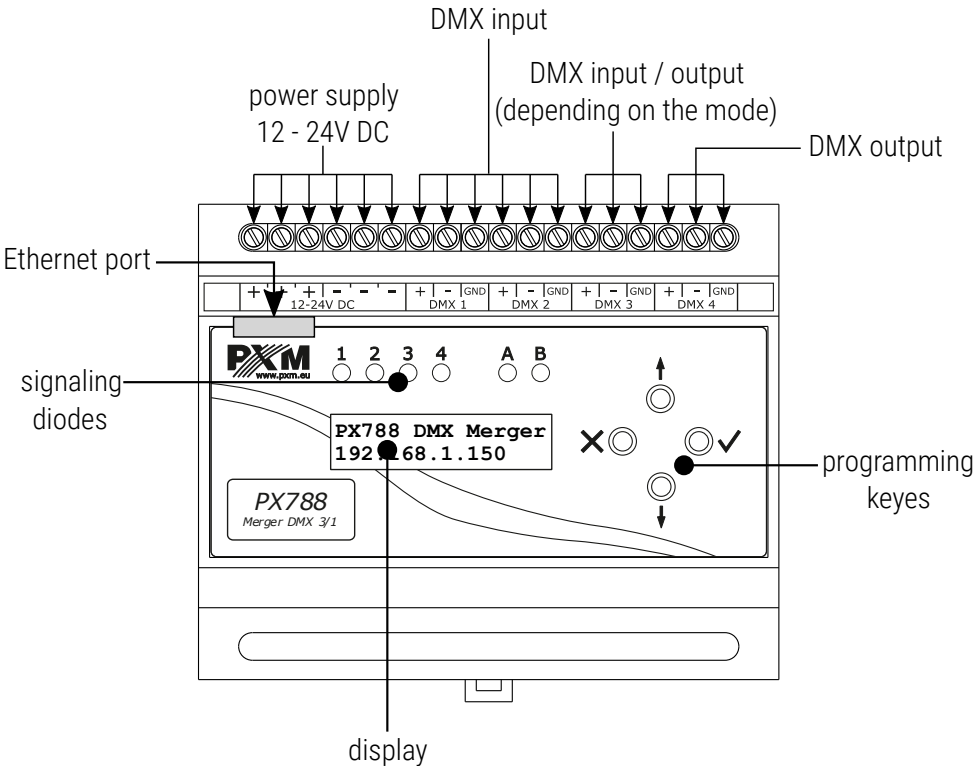
Merger DMX 3/1 has been placed in a housing adapted for mounting on a 35mm DIN rail and is powered by a safe voltage of 12 – 24V DC.

2 Safety conditions

PX788 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 PX788 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)	– allows to exit the parameter being programmed without saving any changes or to move to a higher menu level
↓ (next)	– moves you back through the menu or decreases values being set
↑ (previous)	– moves you forwarding through the menu or increases values being set
✓ (enter)	– allows to enter the programming mode and confirm the values set

If the parameter is editable then in the lower right corner there is an edit symbol, while ✓ causes the transition to the edition of the first field.

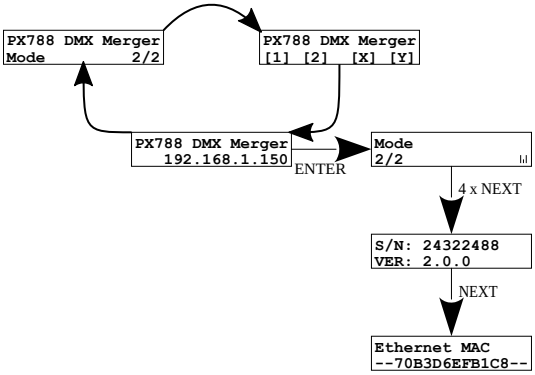
The field that is being edited is indicated by the arrow ←, and the ↓ / ↑ buttons change the field value. The ✓ button causes the transition to the next field or saving the value and exiting the parameter edition.

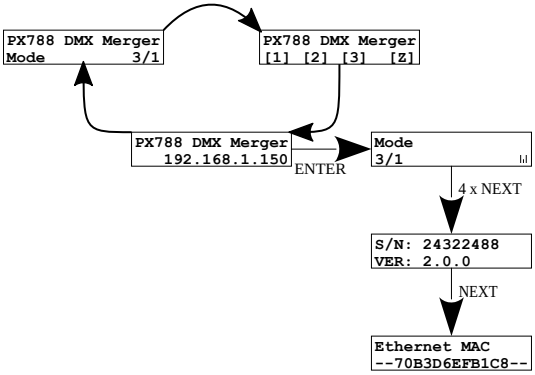
The → symbol informs about the possibility of entering the parameter editing tree.

4.2 Description of information parameters

The on-screen menu of the device enables reading information parameters, such as:

- individual name of the device and the current IP address (if the IP address is assigned from DHCP, the "*" symbol is added),
- operating mode (2/2 or 3/1),
- active DMX inputs and outputs,
- Merger serial number and version number of the software installed,
- individual MAC address of the device.

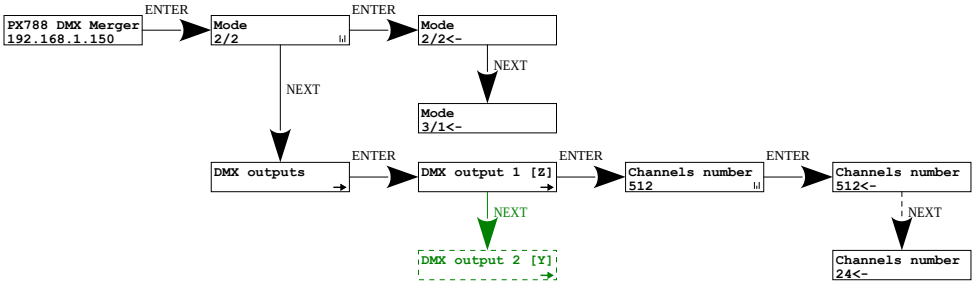




4.3 DMX settings

4.3.1 Output channels

In the ***DMX outputs*** menu you can set parameters for the DMX output. Depending on the ***Mode*** setting, one ***3→1*** or two ***2→2*** DMX outputs are available. In the case of the **2→2** mode, the parameters are set individually for each of the outputs. In the ***Channels number*** menu it is possible to configure the number of DMX channels sent on the selected output. The value must be between 32 and 512.



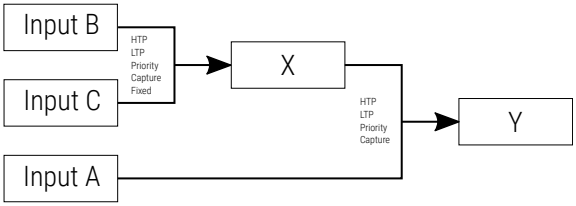
NOTE! The option available only in 2/2 mode is marked in green.

4.3.2 Merge signals

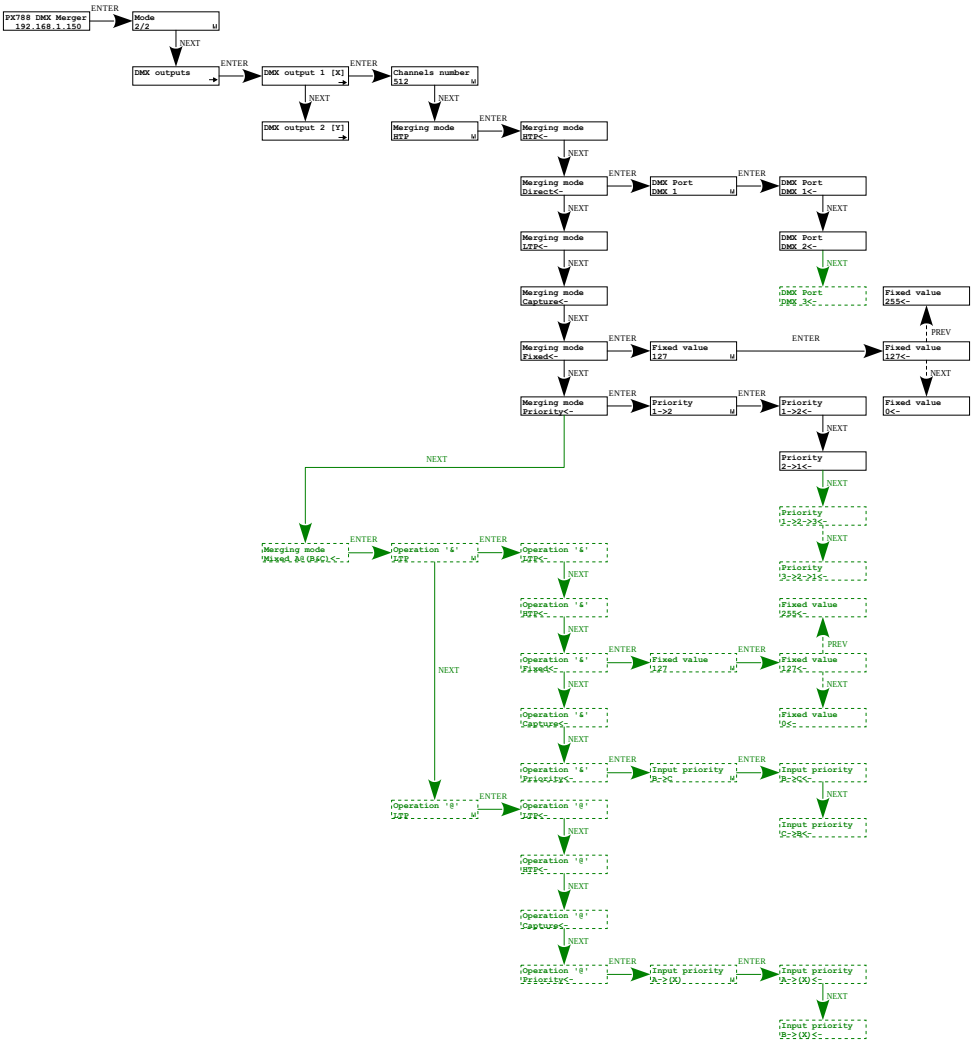
Merge mode of channels:

- *HTP* – the channel with the greater value is sent to the output (calculated for each channel separately),
- *LTP* – the last changed value is outputted (calculated for each channel separately),
- *Fixed* – fixed user-defined value (same for all channels),

- *Capture* – if the value at the input is equal to the current value at the output – the given input "takes control" over the output, (calculated for each channel separately),
- *Direct* – passes the selected input directly to the output,
- *Mixed* – merging between input 2 and 3 and between this result and input 1 (inputs can be swapped) – only available in operating mode 3→1 (*A@(B&C)*),



- *Priority* – setting priority for the input if there is a signal on it (e.g. 1 → 2 – the signal from input 1 is sent, if the signal from input 1 is lost, the signal from input 2 is sent):
  - for 2 → 2 mode:
    - 1 → 2,
    - 2 → 1,
  - for 3 → 1 mode:
    - 1 → 2 → 3,
    - 1 → 3 → 2,
    - 2 → 1 → 3,
    - 2 → 3 → 1,
    - 3 → 1 → 2,
    - 3 → 2 → 1.

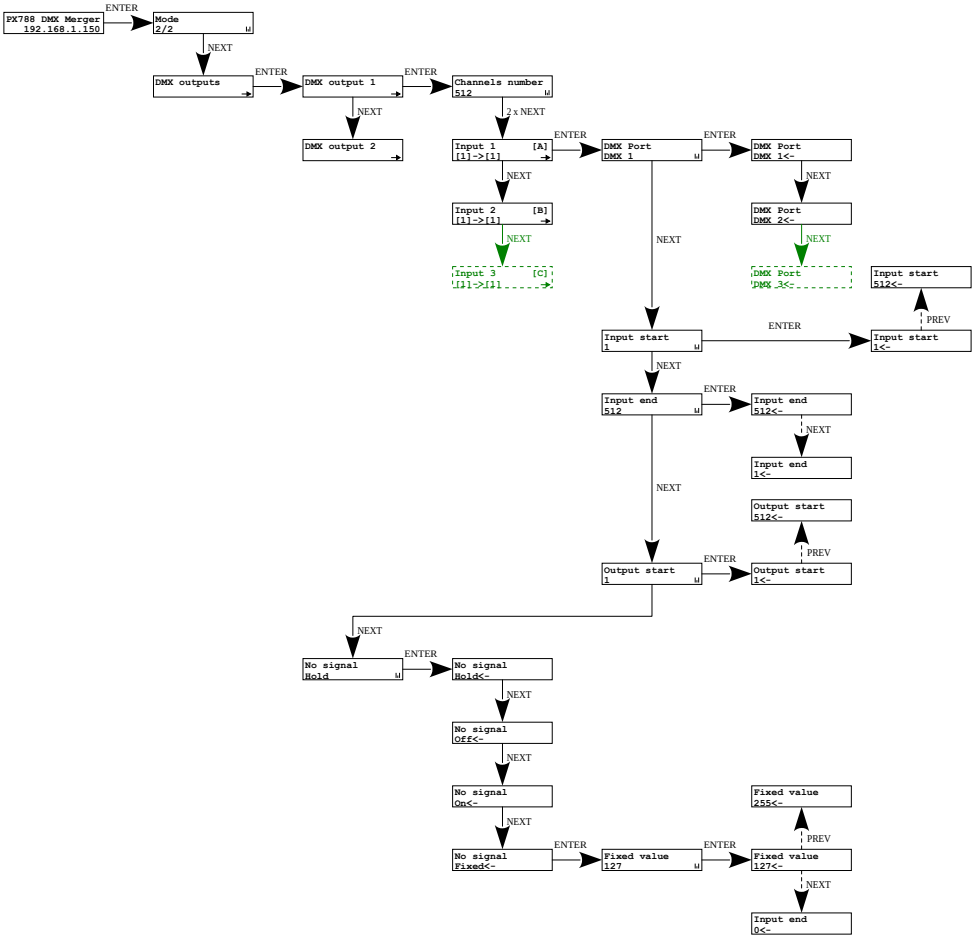


NOTE! The option available only in 3/1 mode has been marked in green.

4.3.3 DMX input mapping

In the ***Input x*** menu (from 1 to 3) you can set the mapping for each input:

- ***DMX Port*** – input port which will be assigned to input *A*, *B*, *C*,
- ***Input start*** – beginning of the range of DMX channels sent to the output, set in the range 1 – 512,
- ***Input end*** – end of the range of DMX channels sent to the output, set in the range 1 – 512, this parameter cannot be set to a value lower than in ***Input start***,
- ***Output start*** – starting DMX address on the output to which the channels are to be sent, set in the range 1 – 512,
- ***No signal*** – behavior of the device when the DMX signal disappears, possible options to choose from:
  - ***Hold*** – maintaining the last value of DMX signal,
  - ***Off*** – set all DMX output channels to 0%,
  - ***On*** – set all DMX output channels to 100%,
  - ***Fixed*** – setting a user defined value.

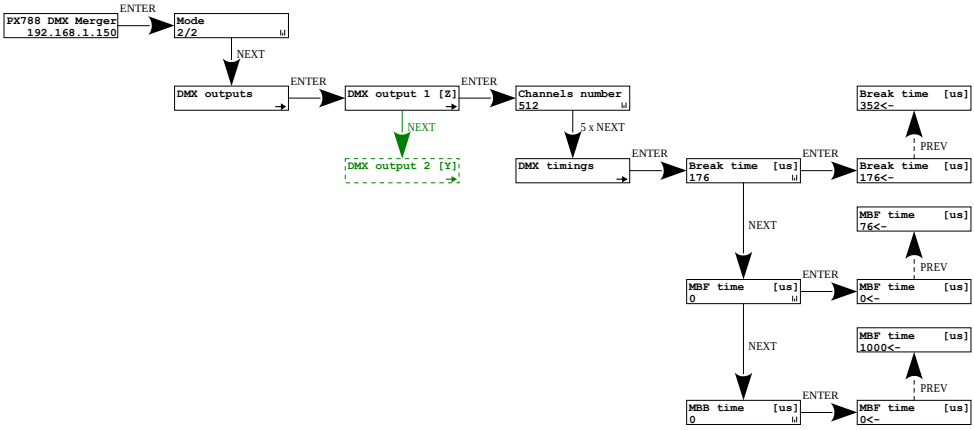


NOTE! The option available only in 3/1 mode has been marked in green.

4.3.4 DMX parameters

Configuration of DMX signal parameters ***DMX timings***:

- ***Break time*** – length of the low state on the line, at the beginning of DMX packet transmission (range 176µs – 352µs),
- ***MBF time*** – (Mark Between Frames) – spacing between DMX512 frames (channels). MBF separates the stop bits of one channel from the next start bit (range 0µs – 76µs).
- ***MBB time*** – (Mark Before Break) – time interval before Break, which occurs in each packet according to the DMX512 standard (range 0s – 1000µs).

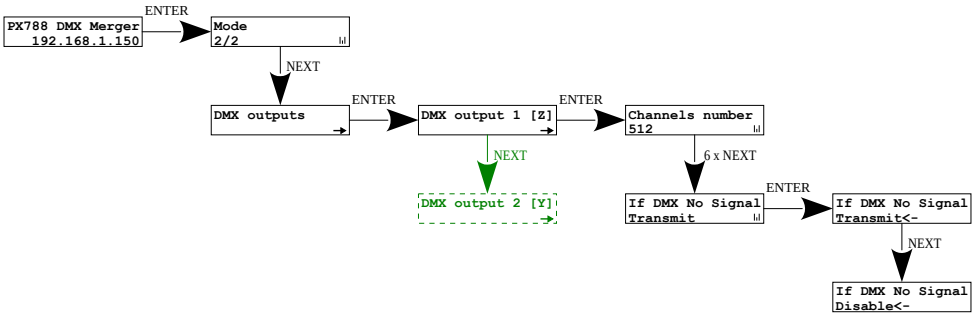


NOTE! The option available only in 2/2 mode has been marked in green.

4.3.5 DMX signal loss

The user can set the device output behavior when DMX input signal disappear in the ***If DMX No Signal*** menu:

- ***Transmit*** – the actions set in the DMX signal loss at inputs *A*, *B* and *C* are performed,
- ***Disable*** – the DMX output is completely turned off – the channel is turned off.



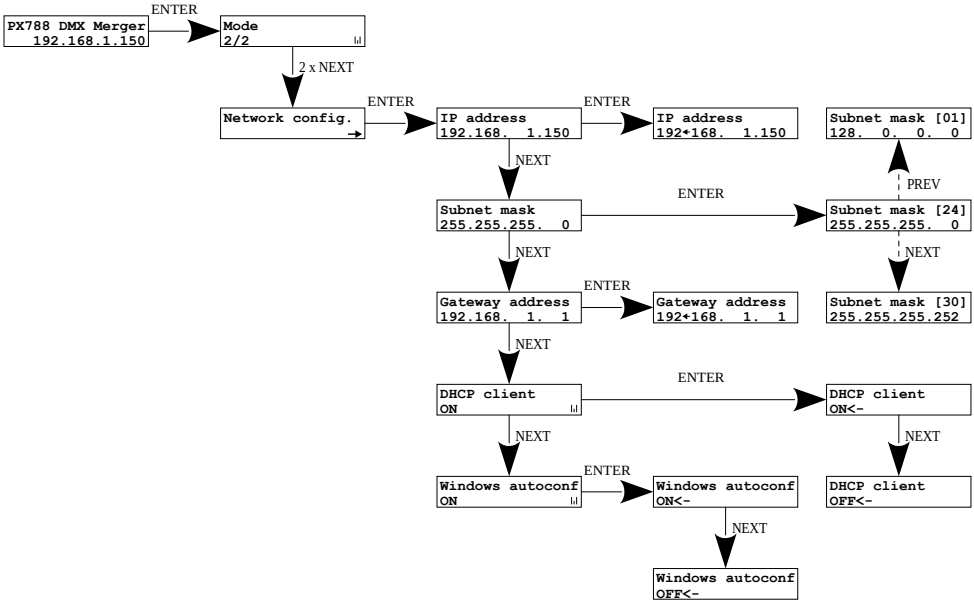
NOTE! The option available only in 2/2 mode has been marked in green.

4.4 Network settings

PX788 allows to change network settings in the ***Network config.*** menu. The following parameters can be changed: static ***IP address***, ***Subnet mask*** (the subnet mask is edited by changing the CIDR in the range 1 – 30), default gateway ***Gateway address*** and enabling or disabling DHCP ***DHCP client***.

If DHCP is **turned off**, Merger works according to static network configuration. If DHCP support is **enabled**, the device will start up with static settings, however it will try to get network configuration from DHCP server.

Additionally, the user can enable the ***Windows autoconf*** option, which negotiates the IP address with the Windows computer, so-called APIPA.



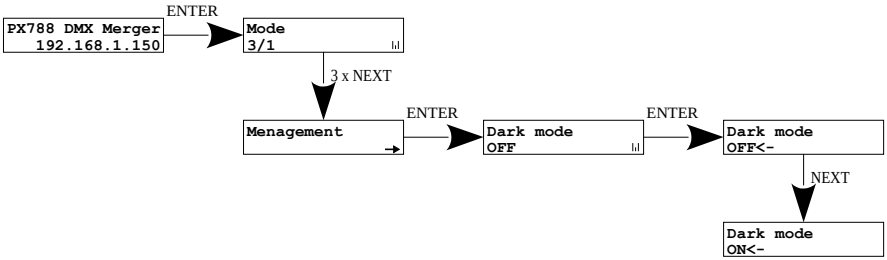
NOTE! After making changes to the network settings, restart the device in the *Management* menu by selecting *Reboot device* – according to the diagram in 4.5.2. Reboot the device.

4.5 Other parameters

The menu containing the other settings *Management* allows to turn on *ON* or turn off *OFF* the screen and the indicator lights *Dark mode*, restart the device *Reboot device* and restore the factory settings to *Factory defaults*.

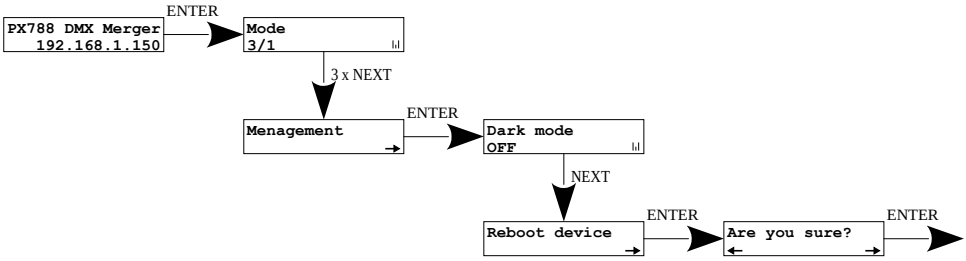
4.5.1 Dark mode

When ***Dark mode*** is turned on, after 10 seconds of inactivity, the display and all 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

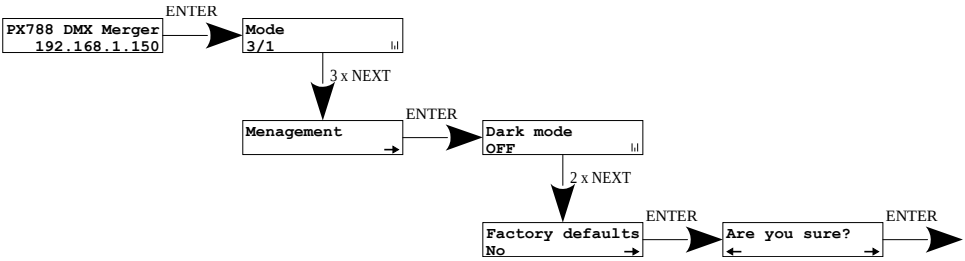
Reboot device is available, which should be used after making network changes to the device using the built-in LCD display and buttons.



4.5.3 Restore default settings

To restore the default settings, go to the ***Management*** menu and then select ***Factory defaults***. In the course of a factory reset, the device will restart and the device will be changed as follows:

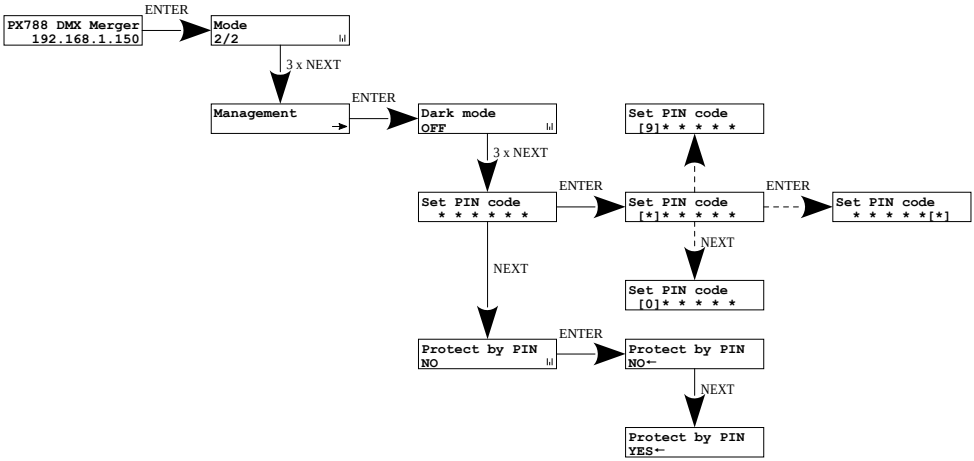
- Mode: 2/2
- Channels number: 512
- Merging mode: HTP
- Input 1 / 2 / 3: [1] → [1] (in the 2→2 mode, there is no input number 3)
- Break time: 176 [µs]
- MBF time: 0 [µs]
- MBB time: 0 [µs]
- IP address: 192.168.0.50
- Subnet mask: 255.255.255.0
- *Gateway address*: 192.168.0.1
- *DHCP client*: ON
- *Dark mode*: OFF
- *If DMX No Signal*: Transmit
- *Windows autoconf*: ON
- removing the device's PIN protection



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***.



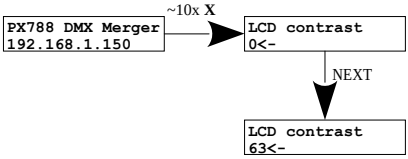
NOTE! If the user enables protection of the device with the PIN ***Protect by PIN*** code, but does not set his own code ***Set PIN code***, the device will be protected with the default PIN code – ***108000***. If the user forgets the PIN, a factory reset must be performed.

4.6 Setting the display contrast

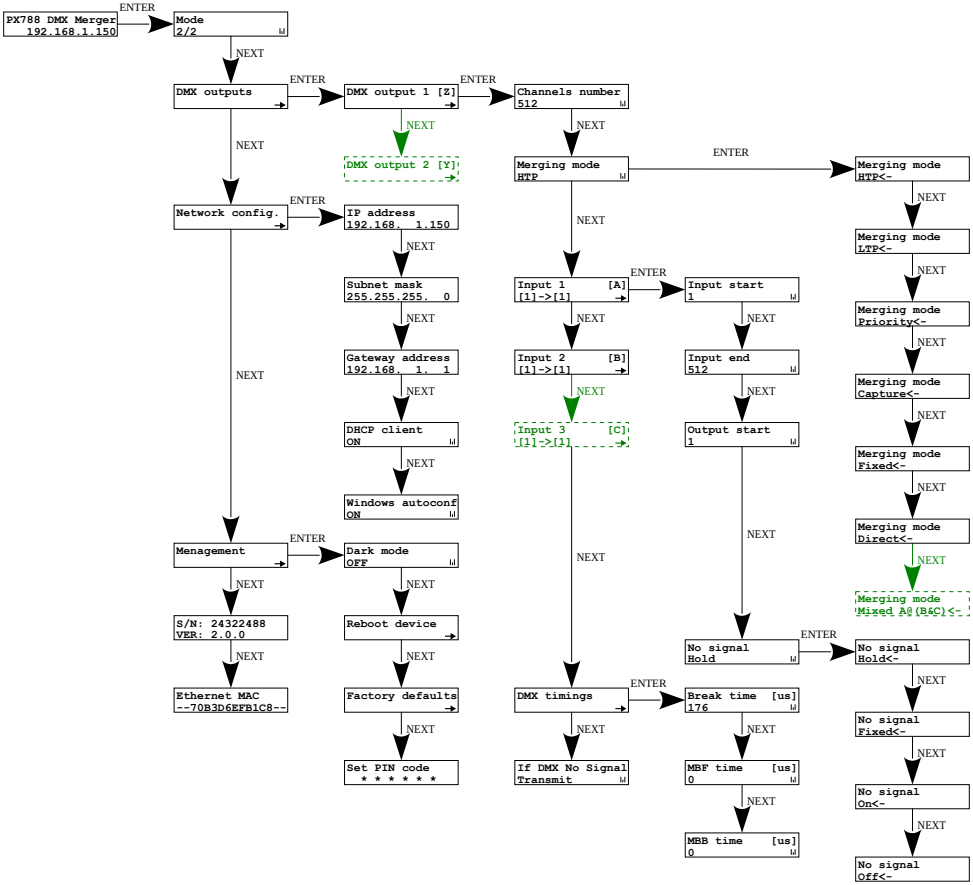
If the device has a problem with the readability of messages displayed on the screen, it is possible to change its settings. To do this, press the ✕ button ~10x. The contrast can be set between 0 and 63. If the screen is unreadable and only the "▒" characters are visible or the screen is completely white, then after pressing the *Esc* button ~10x, the device will signal its presence in the ***LCD contrast*** menu by blinking the *Power* indicator diode in yellow.

Use the ↓ / ↑ keys to find the appropriate value in which the screen becomes legible.

To exit the ***LCD contrast*** menu, press the ✓ button.



4.7 Menu scheme in PX788



5 Connecting the merger with a 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 PX788 module to a computer.

In automatic mode (DHCP), after connecting to the network the merger 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 merger will operate according to the static configuration (manual setup). When selecting static addressing, configure the network parameters so that the PX788 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 merger obtained the IP address from the DHCP server, unplugging the network cable will cause the loss of the assigned IP address. If PX788 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 merger to the network with a running DHCP server.

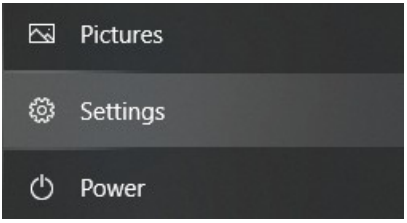
If the merger is connected directly to the computer (no DHCP server), it is necessary to manually set the network parameters of both the computer and PX788 so that they work in one network and connect the devices with a crossover Ethernet cable.

5.1 Change of the computer network configuration

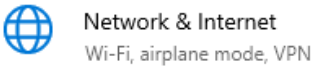
The procedure for changing the computer network configuration varies depending on the operating system. Windows® 7 system is an example here.

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

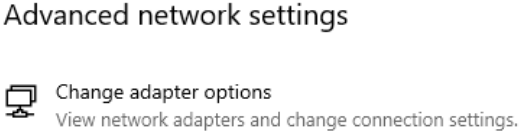
1. Click **[Start]** 
2. Select **[Settings]** tab



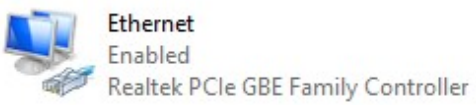
3. Go to **[Network & Internet]** tab



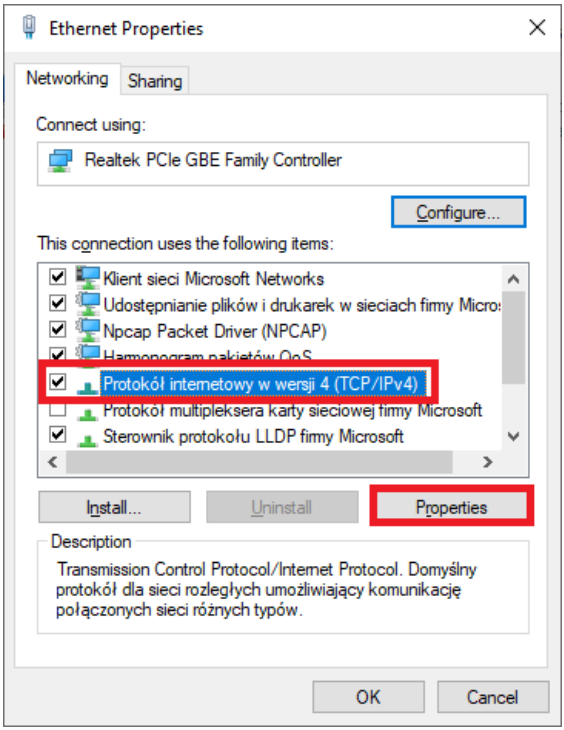
4. Select **[Advanced network settings]**



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

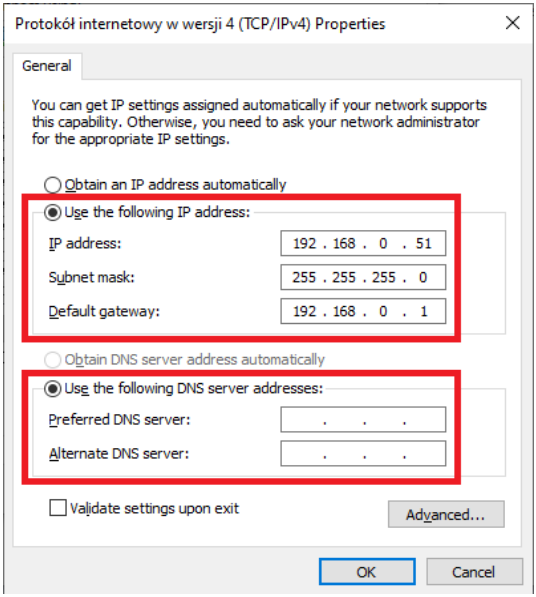


6. In the new window that appears, select **[Internet Protocol Version 4 (TCP/IPv4)]** and then press properties



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:



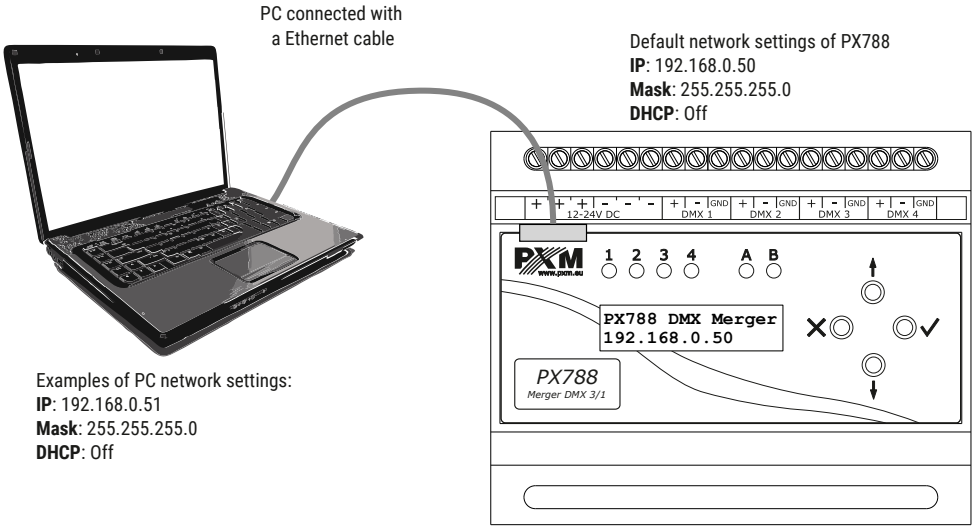
IP address: 192.168.0.51

Subnet mask: 255.255.255.0

Default gateway: 192.168.0.1

5.2 Connecting merger directly to the PC

When connecting the merger directly to a computer it is recommended to use a braided cable. Newer network cards will work both on a braided cable or a non-braided cable, but older ones may require a braided cable.



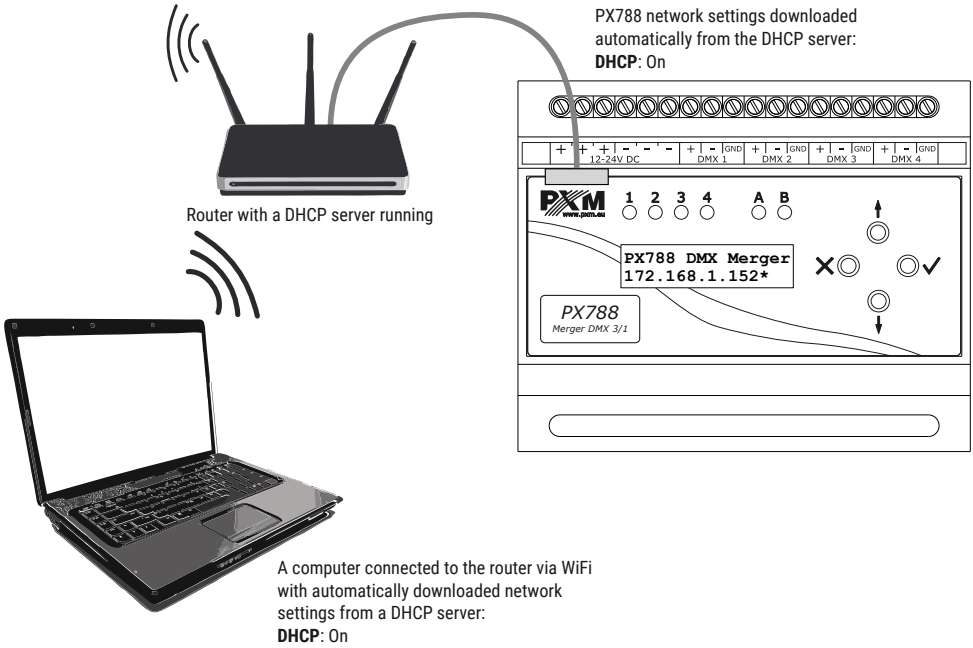
NOTE! Remember that the PX788 merger and the computer should be in the same network and there is no conflict of IP addresses.

5.3 Connecting the merger using a router

When connecting the merger 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 merger 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.

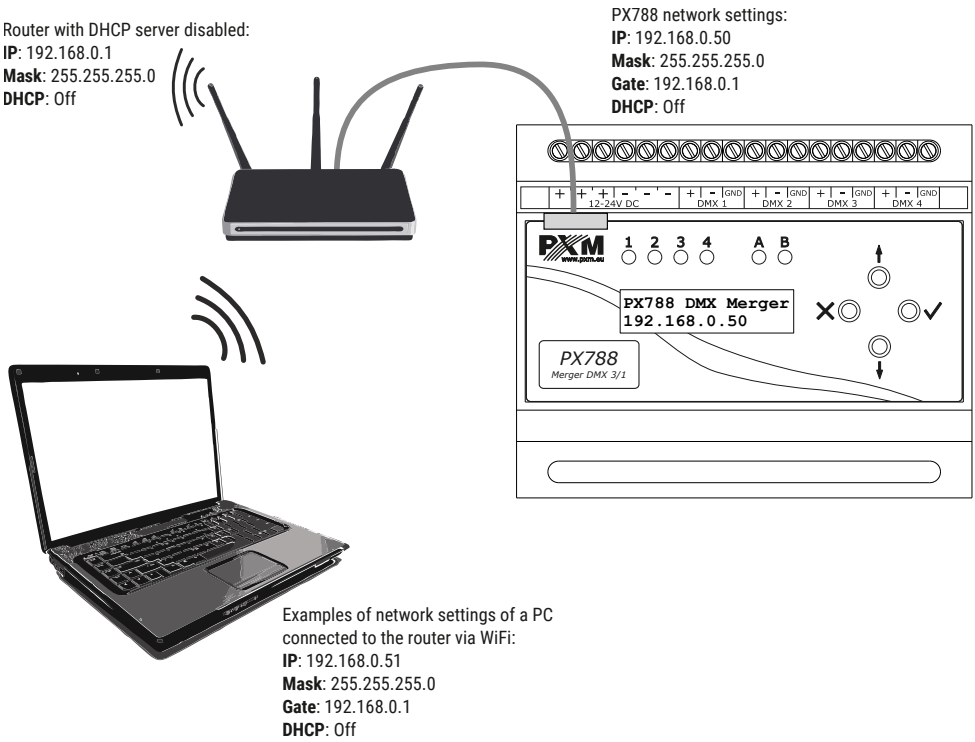
5.3.1 Automatic addressing

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 merger, router and PC, in the case when the DHCP server in the network is not running:



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

6 WWW interface

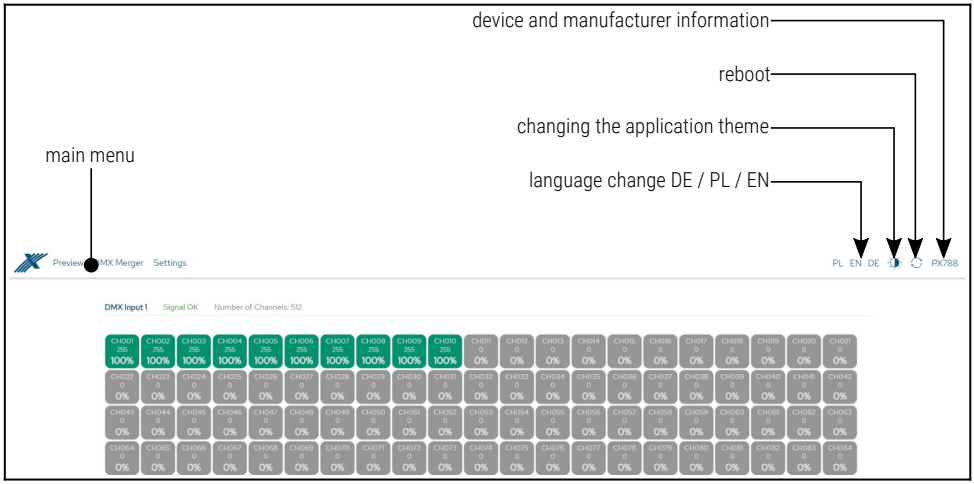
The device has a built-in Web Server that starts with the device. To open the PX788 management panel, enter the device's IP address in the browser (the current IP address is always displayed on the home screen of the device).

NOTE! Pay special attention if the PX788 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 84.0.4147.125
- *Mozilla Firefox* – from version 72.0.2
- *Opera* – from version 66.0.3515.44
- *Edge* – from version 79.0.309.71

6.1 WWW window structure

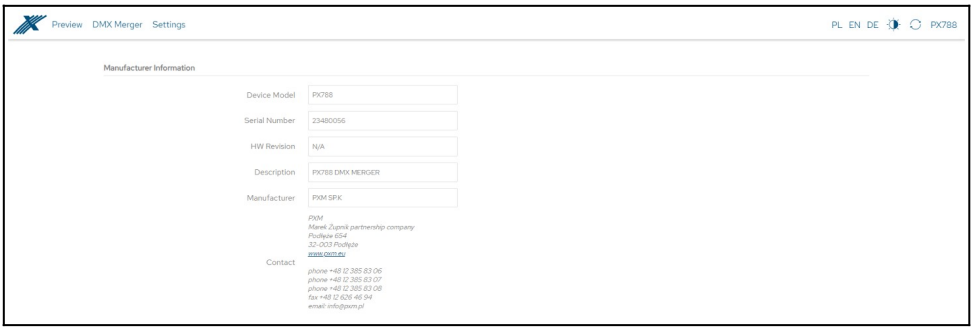


The following tabs are available in the *main menu*:

- ***Preview*** – preview of current values on DMX inputs and outputs,
- ***DMX Merger*** – DMX output signal settings,
- ***Settings*** – changing the device name, operating mode, network settings, setting the PIN, updating the software and changing the operating mode and DMX input labels.

The following options are in the upper right corner:

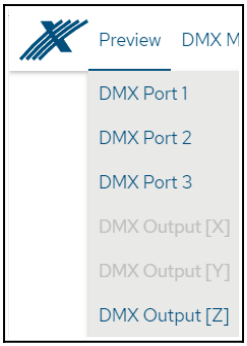
- language change (EN / DE / PL),
- changing the application theme,
- restarting the device,
- device and manufacturer information.



6.2 Preview of DMX channels

After entering the merger website, the first tab is *Summary*. In this tab, you can read:

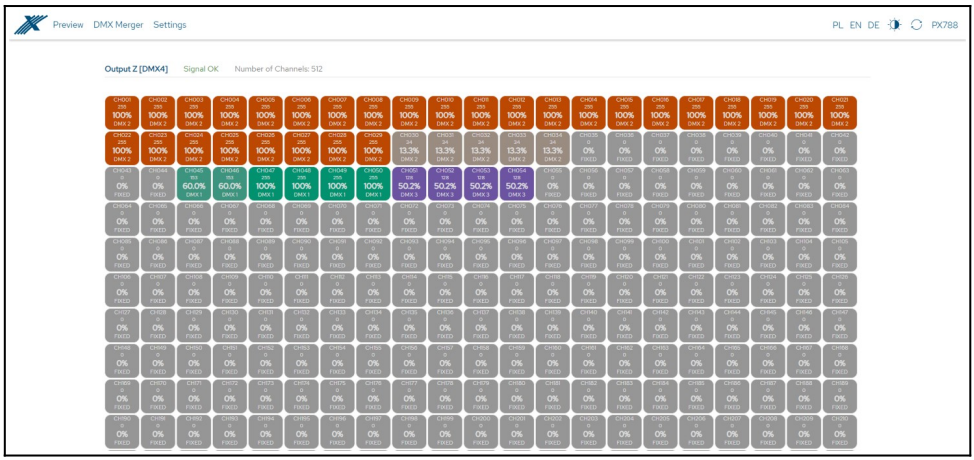
- number of DMX input channels and their values (depending on the mode – 2 or 3 inputs),
- number of DMX output channels and their values (depending on the mode – 1 or 2 outputs).



Depending on the mode, there is a view of 2 DMX input lines and 2 DMX output lines or 3 DMX input lines and 1 DMX output line. Each input line has its own individual color:

- *Input DMX 1* – green,
- *Input DMX 2* – orange,
- *Input DMX 3* – violet.

Example of DMX output signal view in 3/1 mode:

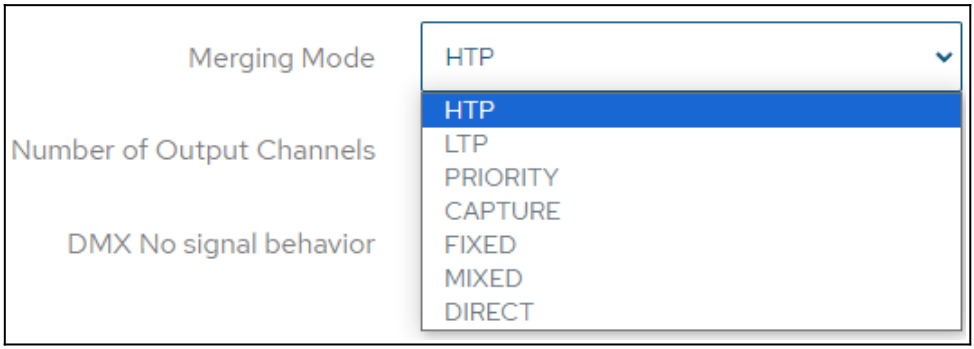


6.3 DMX Merger

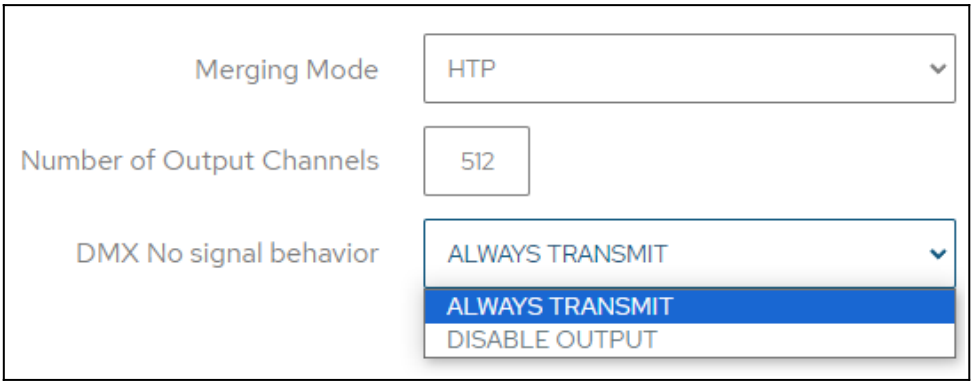
Depending on the operating mode, one or two *DMX output* tabs are available. For each output you can change the way input signals are merged, specify the number of channels sent to the output, change the DMX output signal settings, change the DMX input mapping settings and the behavior in the event of a DMX input signal loss.

The possible merging methods (described in detail in section 4.3.2 Merge signals) are:

- *HTP*,
- *LTP*,
- *Fixed*,
- *Capture*,
- *Direct*,
- *Mixed*,
- *Priority*:
  - 1→2, 2→1 for mode 2→2,
  - 1→2→3, 1→3→2, 2→1→3, 2→3→1, 3→1→2, 3→2→1 for mode 3→1.

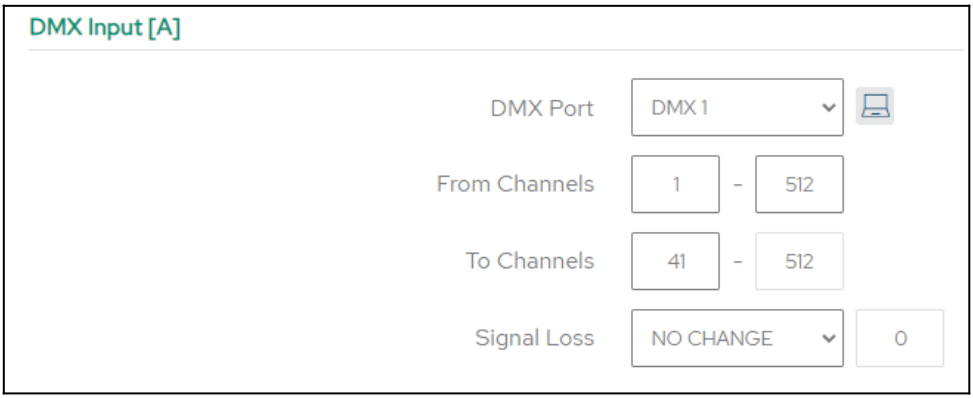


The behavior in the event of DMX signal loss is described in section 4.3.5. DMX signal loss.

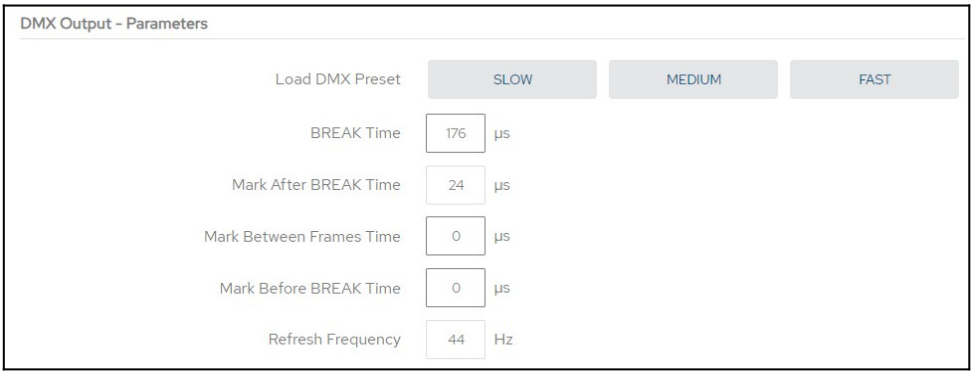


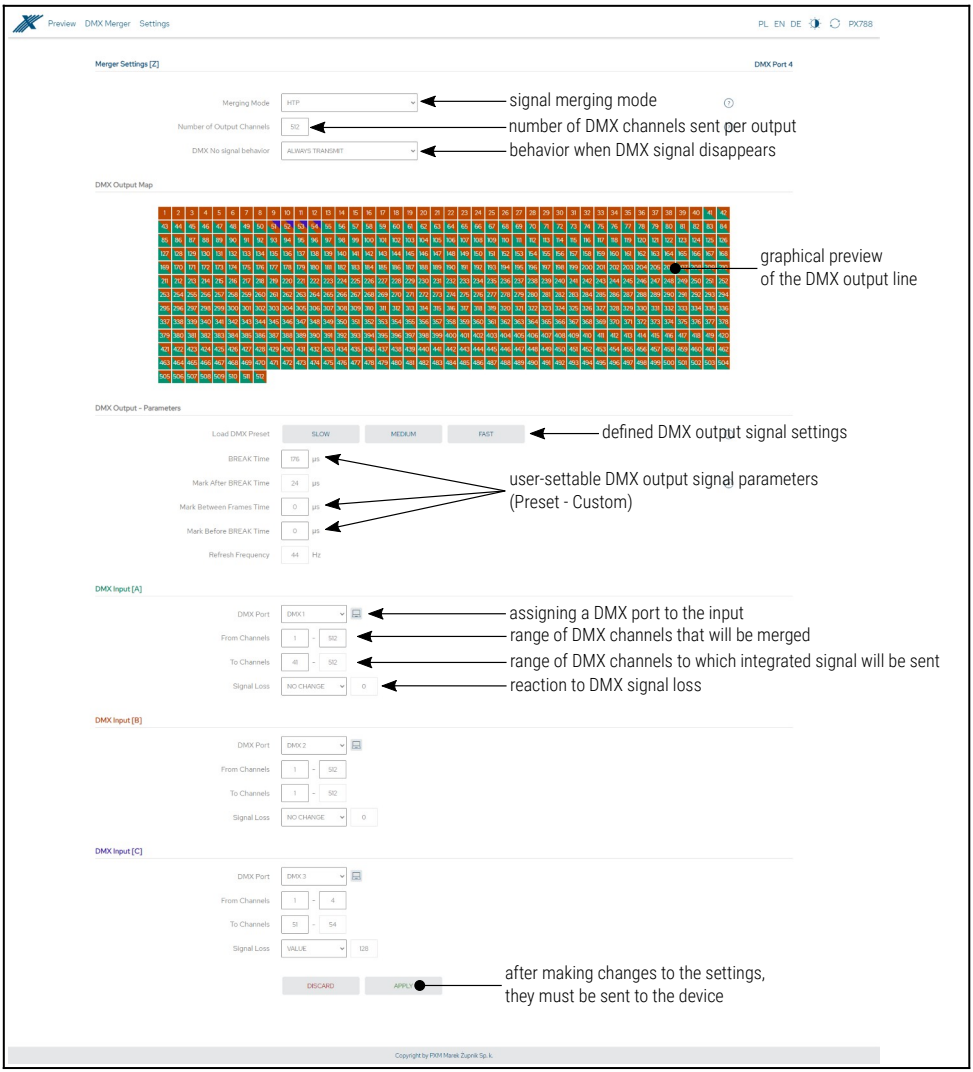
For each input, the user can change the DMX port assignment (useful option, e.g. to change the characteristics of the ***Mixed A@B&C*** mode). Specify the range of input channels to be sent to the output, the range of output channels to which the values are to be sent (if the range of output channels exceeds the number of channels sent to the output – a warning is displayed) and the behavior in the event of a lack of DMX signal at the input. Available behaviors when the DMX signal is lost (described in detail in section 4.3.3. DMX input mapping):

- *On*,
- *Off*,
- *No change – Hold*,
- *Value – Fixed*.



Another parameter is the settings of the DMX output signal – described in section 4.3.4 DMX parameters.

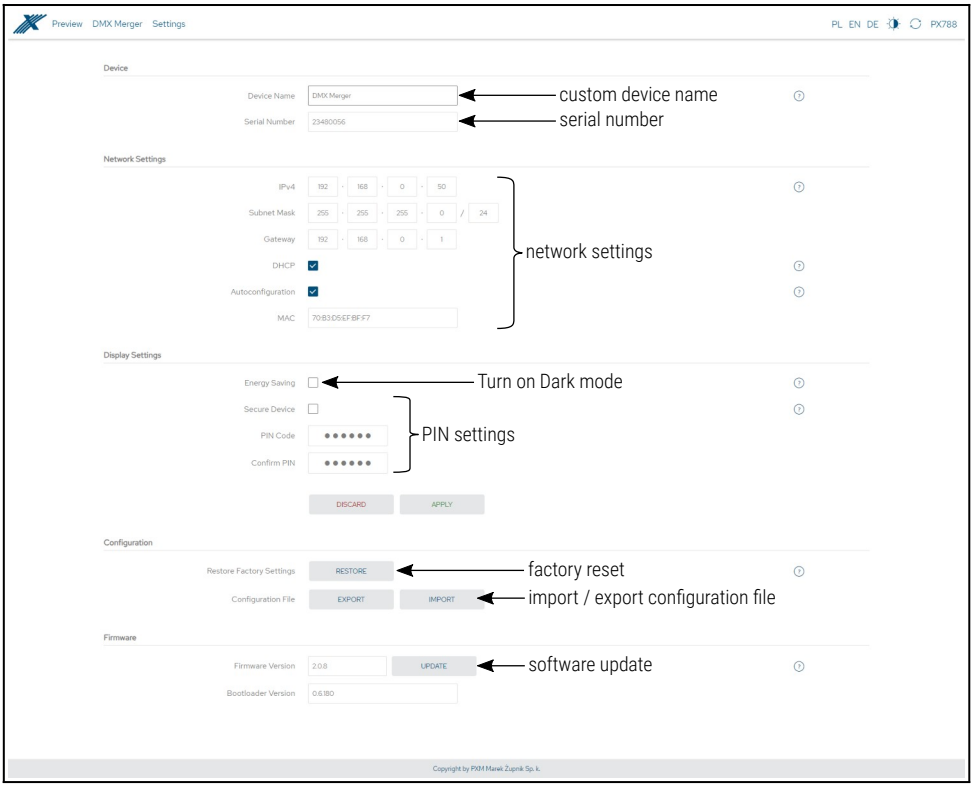




NOTE! The changes made should be sent to the device by selecting the ***Send*** button.

6.4 Settings → Device

The merger's network settings, changing its name, and updating its software can be configured in the *Settings* → *Device* tab.



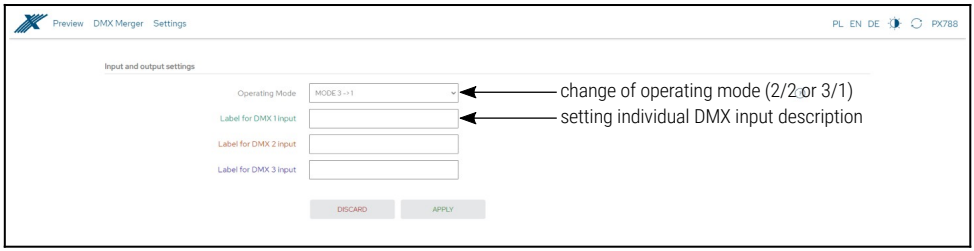
- *Device name* – user-set custom device name,
- *Serial number*,
- *IPv4* – setting the IP address,
- *Mask* – setting the subnet mask (edited by changing the CIDR in the range 1 – 30),
- *Gate* – default gateway setting,

- *Autoconfiguration* – the user can enable an option that negotiates an IP address with a Windows computer, so-called APIPA.
- *DHCP* – enable or disable DHCP support,
- *MAC* – individual MAC address of the network card,
- *Energy Saving* – the description of the mode is available in section 4.5 Other parameters (so-called *Dark mode*),
- *Secure Device* – the user can secure the device with a PIN code (6 digits – default 108000), after activating the security, the PIN code must be entered on the website and LCD screen,
- *Factory settings* – restore factory settings in the device (4.5.3 Restore default settings),
- *Update* – device software update (the latest version for download is available on the manufacturer's website https://pxm.pl/),

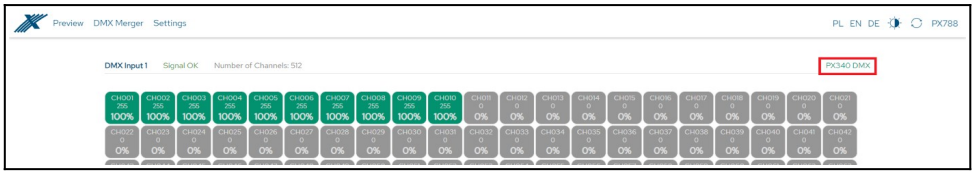
NOTE! After making the changes, the device may have a different IP address, then you should enter it in the browser window..

6.5 Settings → Inputs and Outputs

The merger operating mode settings and the change of DMX input labels are available in the *Settings* → *Inputs* and outputs tab.



- ***Operating mode*** – selectable 2→2 or 3→1,
- ***Label of DMX [no.] input*** – individual DMX input name, displayed in the *Preview* tab.



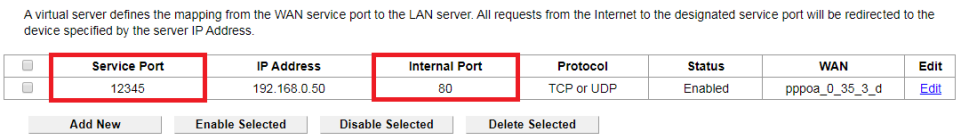
7 Remote connection

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

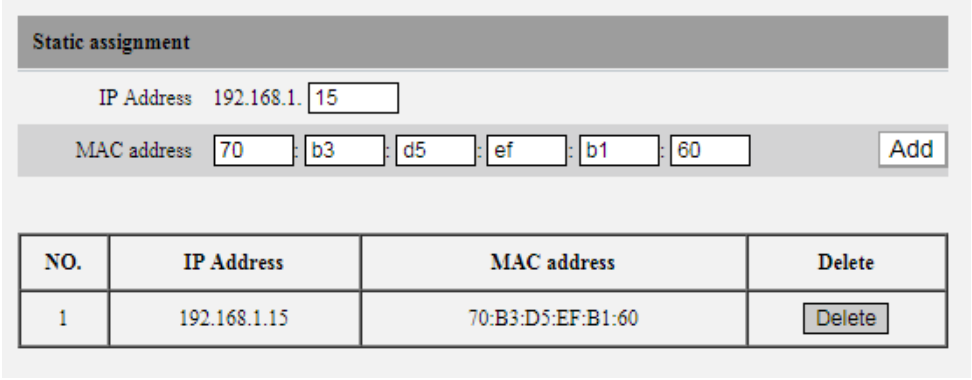
- have an external IP address on the router assigned by the internet provider and be able to establish connection from outside (incoming packets are not blocked by the provider's and router's firewall),
- redirect port 80 to the IP address of the merger working in the local network (so-called forwarding port),
- unblock selected port in the router's firewall,
- the address of the merger / mergers in the local network can not change (the merger 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).



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 merger in the internal network

Examples of network settings:

- external IP address: 66.77.88.99 (example address)
- merger 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*")

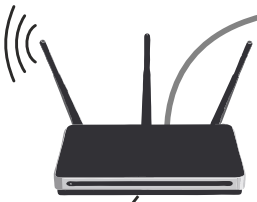
Below is the screen of the example setting in the router:

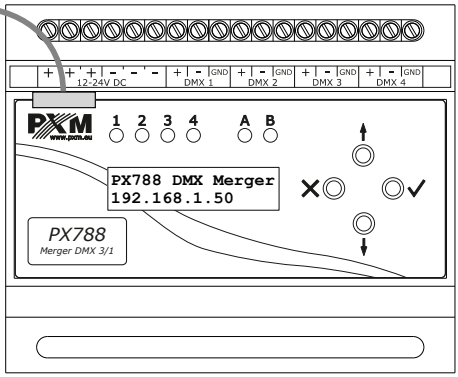
NO.	Start Port-End Port	LAN IP	Protocol	Enable	Delete
1.	80 - 80	192.168.1. 50	Both	☑	☐
2.	-	192.168.1.	TCP	☐	☐
3.	-	192.168.1.	TCP	☐	☐
4.	-	192.168.1.	TCP	☐	☐
5.	-	192.168.1.	TCP	☐	☐
6.	-	192.168.1.	TCP	☐	☐
7.	-	192.168.1.	TCP	☐	☐
8.	-	192.168.1.	TCP	☐	☐
9.	-	192.168.1.	TCP	☐	☐
10.	-	192.168.1.	TCP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

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. More than one merger 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 the device address (192.168.1.50)





External IP address
e.g. 66.77.88.99



PX788 network settings
IP: 192.168.1.50
Mask: 255.255.255.0
Gate: 192.168.1.1
DHCP: Off



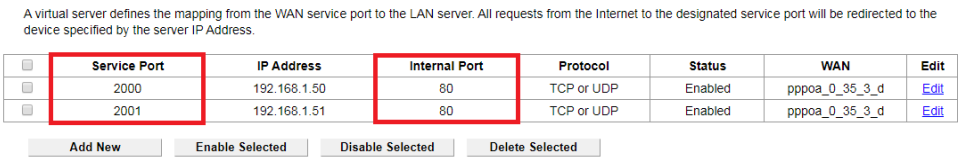
A computer connected to the internet

7.1.2 More than one merger in the internal network

Examples of network settings:

- external IP address: 66.77.88.99 (example address)
- IP address of the first merger: 192.168.1.50
- IP address of the second merger: 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 merger and port 80):

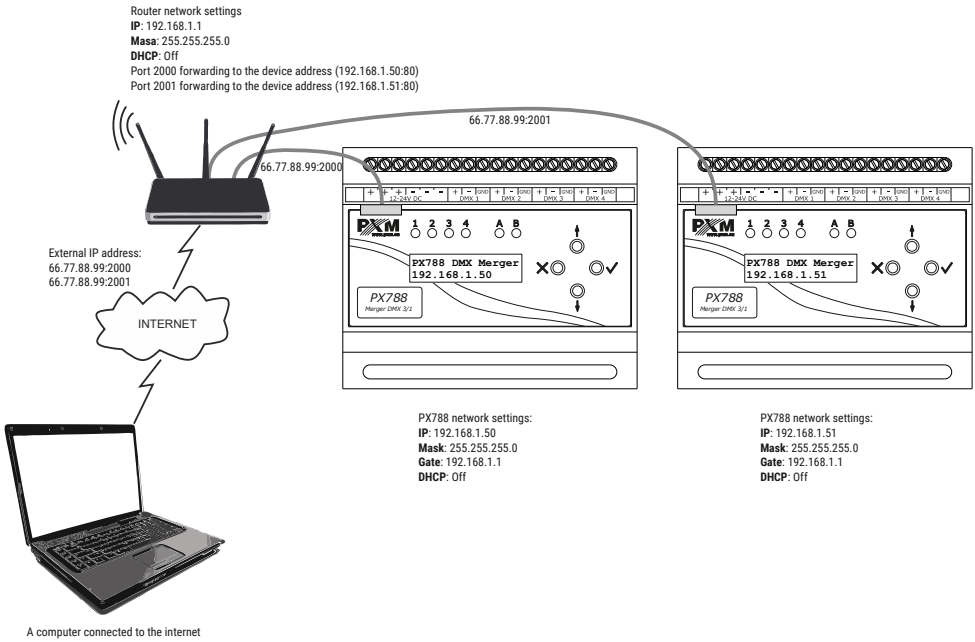

A virtual server defines the mapping from the WAN service port to the LAN server. All requests from the Internet to the designated service port will be redirected to the device specified by the server IP Address.

	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 merger with port forwarding:

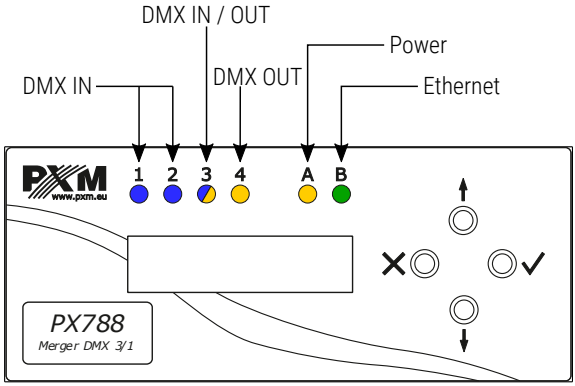


8 Indication lights

Merger is equipped with 6 indicators signaling:

Indicator	Action	Function
green Ethernet	steady on	active network connection
	if off	no network connection
yellow Power	steady on	the device is working properly
	flashes	contrast editing mode
DMX input / output (1 – 4)	blinks blue	receiving DMX signal
	is off	no DMX signals at the input
	blinks yellow	DMX signal is sent at the output

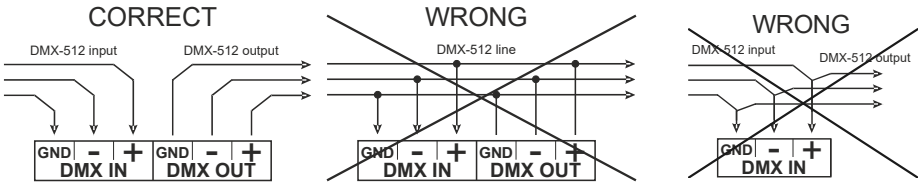
NOTE! The DMX signaling diode number 3 may indicate receiving (3/1) or sending (2/2) DMX signal depending on the selected operating mode of the device.



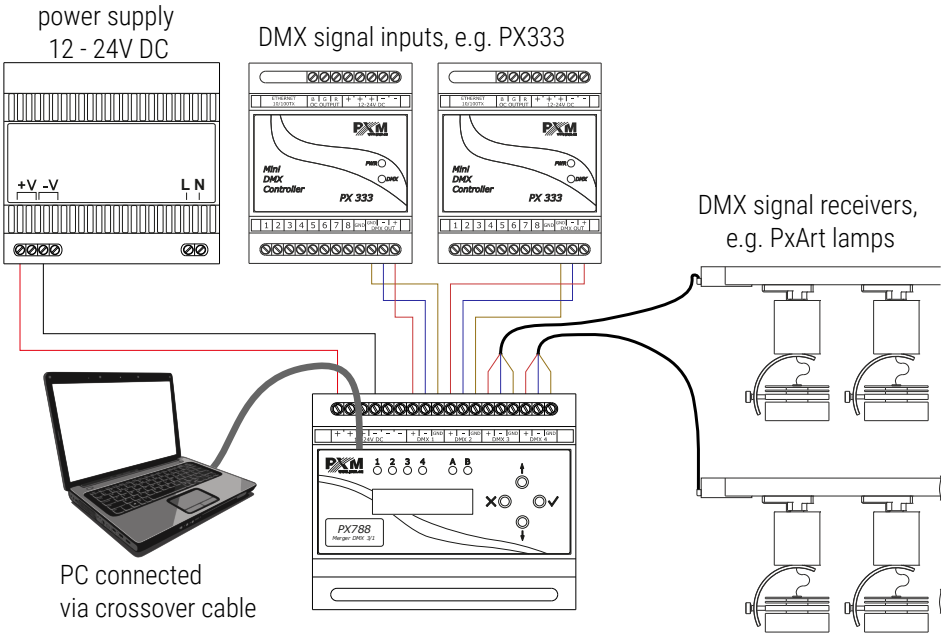
9 DMX signal connecting

PX788 have to be connected to DMX line in serial mode, with no branches on DMX control cable. This means that the control cable should be connected to the ***DMX IN*** pins in PX788 and not to the next DMX receivers.

From ***DMX OUT*** pins (outgoing DMX signal) you should route the signal to DMX receivers.

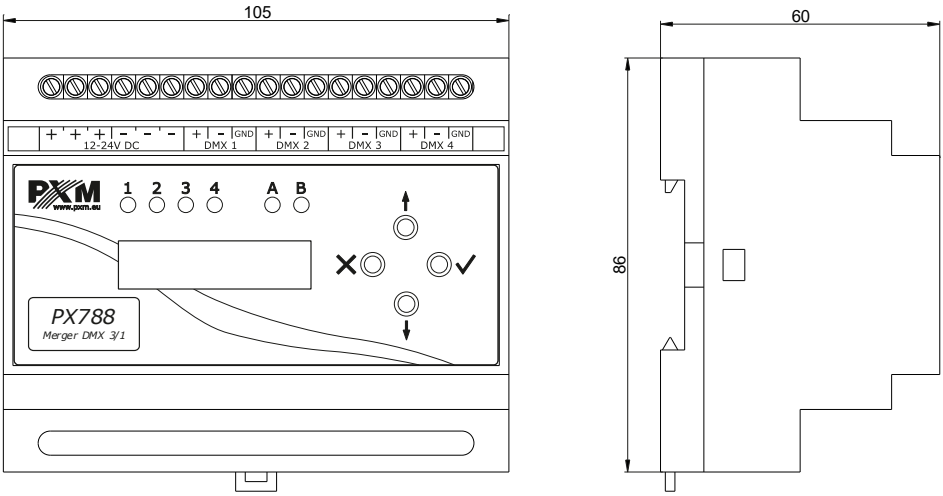


10 Connection scheme



NOTE! DMX 1 and DMX 2 are always signal inputs. DMX 3, depending on the merge mode, can be the output (2/2) or the input (3/1) of the DMX signal. DMX 4 is always the output.

11 Dimensions



12 Technical data

type	PX788
power supply	12 – 24V DC
power consumption	max. 3W
DMX channels	512
DMX IN / OUT	2 / 2 or 3 / 1
programming	2 x 16 LCD display and 4 buttons Web Server
output connectors	screw terminals
weight	0.15kg
dimensions	width: 105mm (6 DIN rail modules) height: 86mm depth: 60mm

Podłęże, 19.08.2020

DECLARATION OF CONFORMITY

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

we declare that our product:

Product name:	Merger DMX 3/1
Product code:	PX788

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

PN-EN IEC 63000:2019-01	EN IEC 63000:2018
PN-EN 62368-1:2015-03	EN 62368-1:2014
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 61000-6-3:2008	EN 61000-6-3:2007

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.

2014/35/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 the making available on the market of electrical equipment designed for use within certain voltage limits

PXM
Marek Żupnik spółka komandytowa
32-003 Podłęże, Podłęże 654
NIP 677-002-54-53



mgr inż. Marek Żupnik.