PX333

Mini DMX Controller

Manual

PXM®

CONTENTS

The manufacturer reserves the right to change the operation and handling of the controller in order to improve the product.

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1. GENERAL DESCRIPTION

PX333 DMX Mini Controller is a small-sized controller that has been designed for applications requiring dynamic control of decorative lighting.

The device utilizes 8 ON/OFF inputs to communicate with other components of the system (to which such elements as switches, motion sensors, and light sensors may be connected), as well as an auxiliary LAN port. The PX333 incorporates 64 DMX-512 output channels and 3 OC outputs (of the ampacity of 1500 mA each), making it possible to control LED diodes directly.

The operator may choose to plug an access point to the LAN port in order to enable data transfer between the controller, PC computer with Windows operating system, and smartphone with Android platform installed. Drivers for both of the aforementioned devices are provided together with the device.
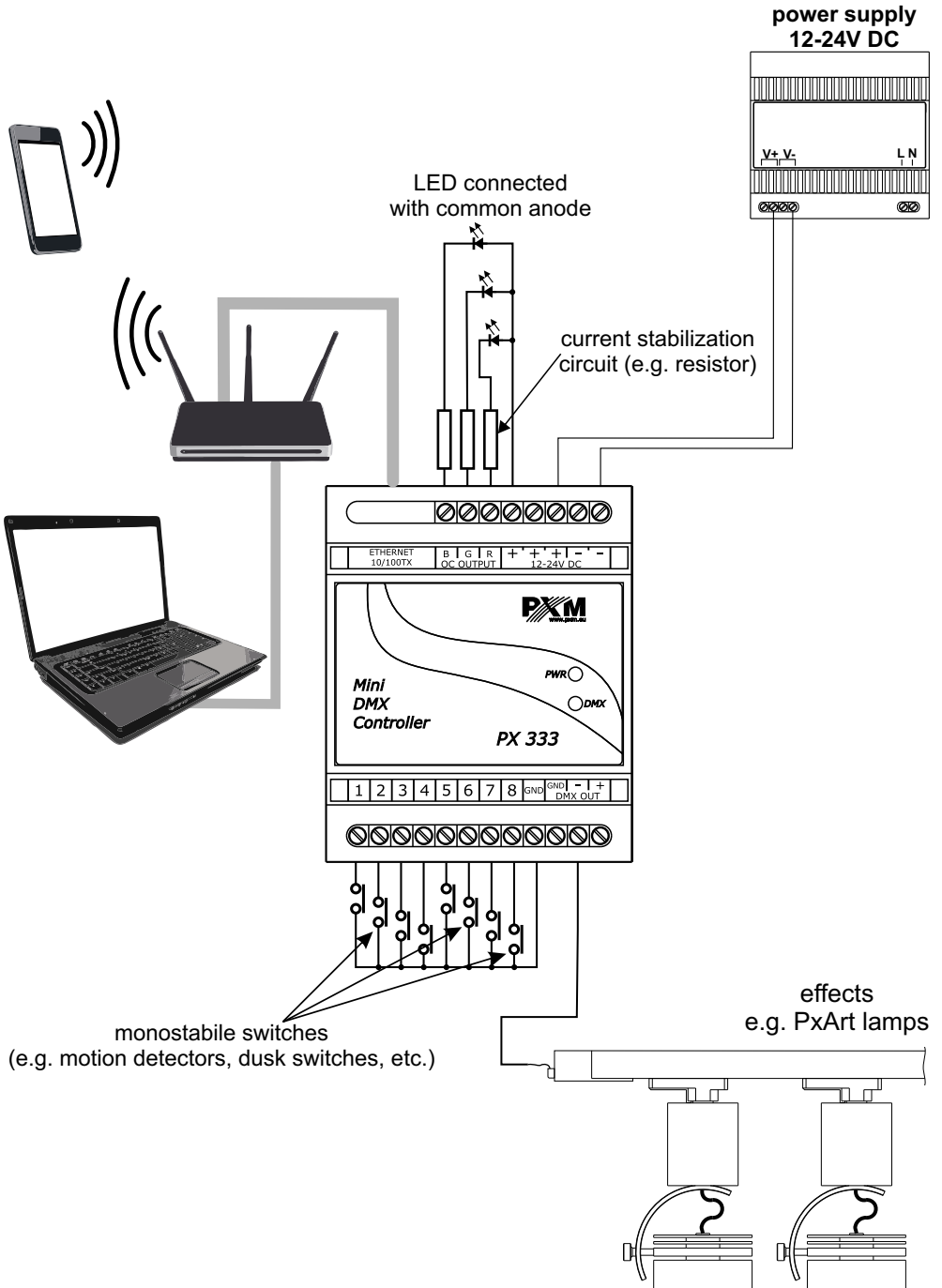
PX333 allows for saving sixteen static scenes and eight dynamic programs for which interval-related parameters may be adjusted separately.

2. SAFETY CONDITIONS

PX333 is a device powered with safe voltage 12-24 V; however, during its installation and use the following rules must be strictly observed:

1. The device can be connected to 12-24 V DC (stabilised voltage) with current-carrying capacity compatible with technical data.

2. All the conductors should be protected against mechanical and thermal damage.

3. In case of damage to a conductor, it should be replaced with a conductor of the same technical parameters.

4. Connection of DMX signal can be made with a shielded conductor only.

5. All repairs, connecting and disconnecting of cables can only be made with cut off power supply.

6. The device 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 cloth only.

3. CONNECTION SCHEME

power supply
12-24V DC

V+ V-   L N

LED connected
with common anode

current stabilization
circuit (e.g. resistor)

ETHERNET
10/100TX

B | G | R
OC OUTPUT

+ + + – –
12-24V DC

PXM
www.pxm.eu

Mini
DMX
Controller

PX 333

PWR

DMX

1 2 3 4 5 6 7 8 GND GND – +
DMX OUT

monostabile switches
(e.g. motion detectors, dusk switches, etc.)

effects
e.g. PxArt lamps

4. DESCRIPTION OF CONTROLLERS OPERATION

PX333 enables the operator to save 16 scenes and 8 programs, 64 steps each. A scene should be understood as a set of static settings for output channels, for which turning on interval, turning off interval, and duration are specified.

A program should be understood as a set of consecutive scenes. For every program, the operator may specify speed and smoothness of transitions between the steps. There is also the option of looping the program. A desired scene or program may be launched by means of a smartphone-dedicated application or by utilizing the programmed controlling inputs. Only a single scene or program may be launched at the time. The activation of a given element automatically deactivates the previous one.

Events are taken advantage of by the controller to program reactions to signals transmitted by controlling inputs. The controller is capable of managing nine basic events: the first of them is the reaction to the launching of the device and the remaining ones make it possible to accurately respond to the signals transmitted by consecutive inputs. The following actions may be ascribed to the events: activate/deactivate/switch scene, activate/stop/deactivate program, activate next/previous element from the scene or program list.

A complete list of scenes and programs may be saved in the memory of the device. The said index may be afterwards utilized to launch chosen scenes or programs in the set order by means of a single control button. The order of the scenes and programs may be random. However, each component may be used only once.

In order to facilitate creating scenes and steps of the program, the device allows for storing data concerning devices ascribed to consecutive DMX channels. The operator may choose between a one-channel monochromatic lamp, a two-channel "dynamic white" lamp, a three-channel RGB lamp, a four-channel RGWB lamp, and a four-channel sound player.

5. NETWORK CONNECTION

To enable the option making it possible to manage the device by means of a smartphone or a PC, the controller must be connected to a network. The IP address of the product is static. Its default settings are as follows:

IP:	192.168.0.50
Subnet mask:	255.255.255.0
Gateway:	192.168.0.1

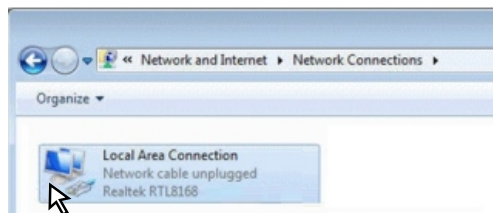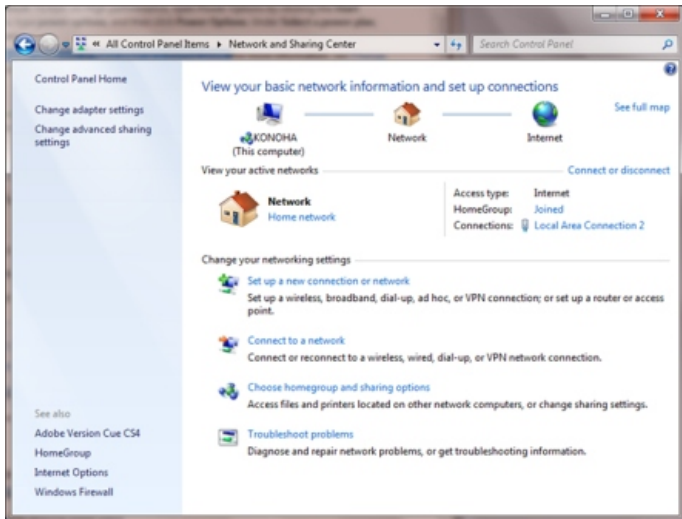The easiest possible way to communicate with the controller is to connect it (using straight through ethernet cable - purchase on client side) to an access point and manage it via Wi-Fi. Network settings of the access point are as follows:

IP:	192.168.0.1
Subnet mask:	255.255.255.0

After the proper configuration and connection of the controller to the network, it should be visible on the list of devices supported by the access point.

For a direct connection to a PC, use a crossover cable attached with the device. The computer and the controller have to be on the same subnet. In case of problems with direct connection to the device, You might need to manually change the network card settings on your computer.

To change your settings in Windows 7, go to the **Windows Start > Control Panel > Network and Sharing Center > Change adapter settings > Local Area Connection > Properties > Internet Protocol Version 4 (TCP / IP) > Properties**. Using Windows 7, you have to go through the following screens:

Internet Protocol Version 4 (TCP/IPv4) Properties

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

○ Obtain an IP address automatically
● Use the following IP address:

IP address: 192 . 168 . 0 . 4
Subnet mask: 255 . 255 . 255 . 0
Default gateway: 192 . 168 . 0 . 1

○ Obtain DNS server address automatically
● Use the following DNS server addresses:

Preferred DNS server: . . .
Alternate DNS server: . . .

☑ Validate settings upon exit

Advanced...

OK   Cancel

Similarly follow for other versions of Windows.

If you need to connect to the local network PX333, in which there is no possibility to change the IP address settings, you must first connect the controller to the computer and change the default settings of the network address (according to your local network).

6. SOFTWARE INSTALLATION – WINDOWS OS

The software making it possible to manage the controller may be installed on computers with Windows XP or newer version installed. The whole process is fast and based on the execution of a few undemanding steps. The operator is required to launch the installation wizard, which is provided with the controller, but may also be downoaded from the
\ http://pxm.pl/index.php?id=163 website. The first step is to choose the language of installation.
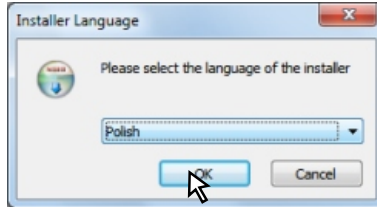
Afterwards, the operator will be asked to familiarize himself with and accept the license agreement. In order to be able to install the software, the terms and conditions must be accepted. Otherwise, the process will be canceled.
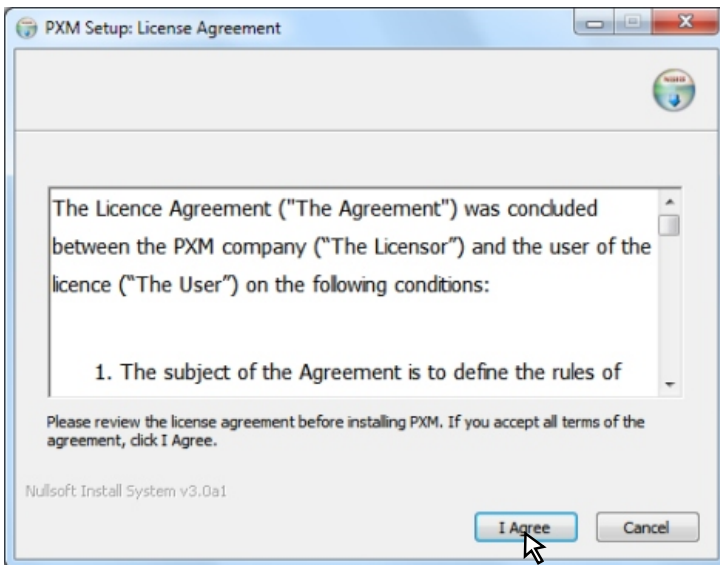
In the next step, the components of the application that will be installed will be presented to the user. The default settings should be selected and then the user should proceed to the next selection menu.
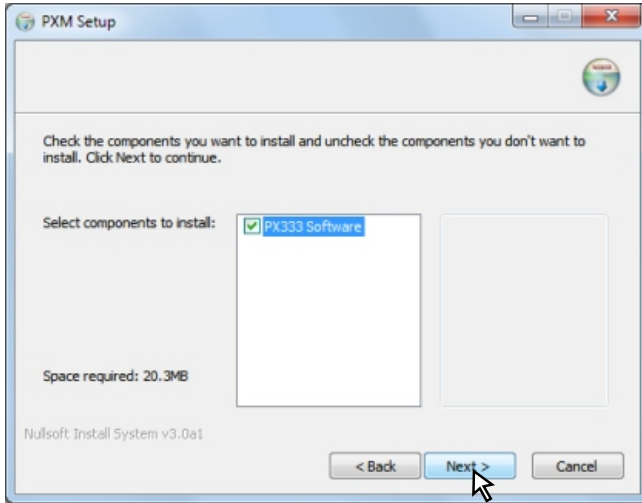
Now, he will be capable of choosing the destination folder of the application. The last pop-up window enables the operator to create a folder in the Start Menu, in which the shortcut to the software will be located.

In the next step, the components of the application that will be installed will be presented to the user. The default settings should be selected and then the user should proceed to the next selection menu. Now, he will be capable of choosing the destination folder of the application. The last pop-up window enables the operator to create a folder in the Start Menu, in which the shortcut to the software will be located. The installation will be launched after clicking the "Install" button.
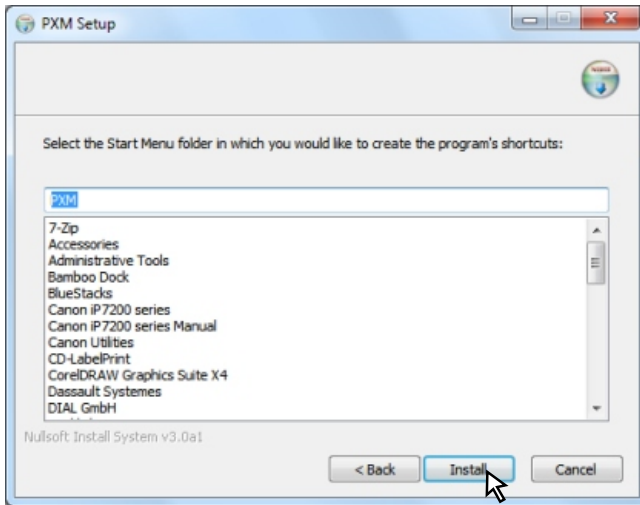
Afterwards, the "Finish" button should be pressed in order to quit the wizard. The installed program will be from now on accessible from the destination folder created during the installation process.
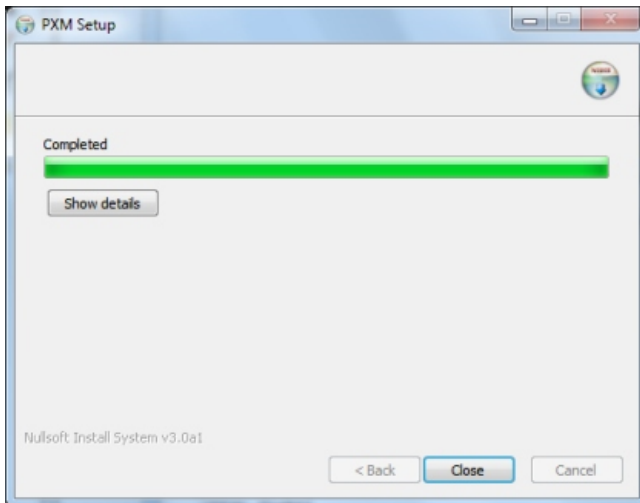
7. PC-BASED CONTROLLER CONFIGURATION

Application launching

After starting the application, the greeting window with the following options will be displayed:

- create a new configuration file,

- open an existing configuration file,

- load a configuration file from the controller.

Choosing the first available option results in proceeding to the main screen. If the second option has been selected, the file selection window will appear. If the operator has decided to export a configuration file, the controller login pop-up window will appear on the screen. Changes made in the configuration file are not transferred to the device in an automatic manner.

7.1. Application window

Application window comprises a menu bar, a left side bar, and a right main bar. The left bar is additionally subdivided into three main bookmarks:

scenes – contains the list of 16 available scenes

programs – contains the index of 8 available programs and steps the given program includes

settings – incorporates available controller option categories

Depending on the element chosen from the left bar, the content visible in the right bar changes as well.
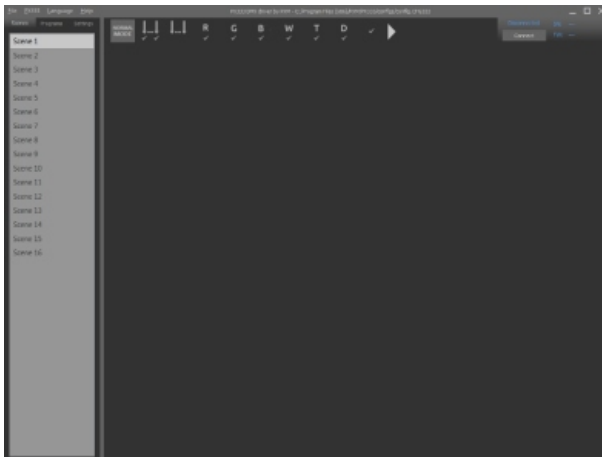
7.2. Menu

Application menu consists of four main categories:

File

New – opens a new, empty configuration file

Open – opens a configuration file that has been saved on the drive

Save – saves the current configuration file

Save as… – saves the current configuration file under a desired name

Exit – quits the application

Px333

Connect – connects the application with the device

Disconnect – disconnects the application from the device

Get configuration – imports the configuration file from the controller to the application

Send configuration – sends the configuration file from the application to the controller

Reset

Language – changes the language of the application

Polish

English

German

French

Help

About – shows software data

Contact – provides contact details of the producer

Manual – opens the user's manual

7.3. Connection

In the upper right corner, there is a window showing the connection status. It also features the Connect/Disconnect option, making it possible for the user to start or end the communication between the software and the device. When the application is connected to the controller, in the said window the serial number and firmware version of the device will be displayed.

After selecting the "Connect" button, the controller login window will appear. In the window, the drop-down list with all the controllers available in the network is also accessible. In order to log in to the control panel of a given device, an access code must be provided. For the application to remember the provided code, the "Remember password" box has to be ticked.

By means of the login window, the operator may also change network settings, the tag that will be visible while searching for the device, as well as the brief description of the latter.

7.4. Configuration

Changes made in the configuration file are not transferred to the device in an automatic manner. To transfer the created configuration file to the device, the user has to use the menu and choose the PX333->Send configuration option. After doing so, the file that has been saved in the memory of the device will be overwritten.

In order to import the configuration file that is already stored in the memory of the device, the user has to choose the PX333->Get configuration option from the menu. After doing so, the file visible in the window of the program will be overwritten.

The configuration file may also be stored in the memory of the computer. To do so, choose the File-> Save or Save as… option from the menu.

Moreover, the operator may also load a configuration file stored on the hard drive by clicking the File-> Open option.

7.5. Settings

There are the following categories in this menu:

7.5.1. DMX channels

This option makes it possible to assign chosen devices to the DMX output channels. In the right panel, the index of 64 DMX channels, as well as the buttons enabling to choose the desired elements of the system are visible. The user may choose:

- a one-channel monochromatic lamp
- a two-channel "dynamic white" lamp
- a three-channel RGB lamp
- a four-channel RGWB lamp
- a four-channel sound player

On the toolbar, there are also auxiliary buttons facilitating the quick assignment of devices to channels. For each of the devices, two button types are accessible:

Button allowing the user to automatically assign the maximum number of devices to all the DMX channels (including used ones as well) – choosing this option will remove the already added devices from the table,

Button allowing the user to add the maximum number of devices of a given type to free channels only. Aside from the options described above, there is also the button deleting all the devices from the table.

To add a given device to the selected channel, the name of the said component of the system must be clicked and then dragged over the name of the channel in the table. An individual DMX output channel may be used by a single device only. If it is already in use, then the next device will not be added.
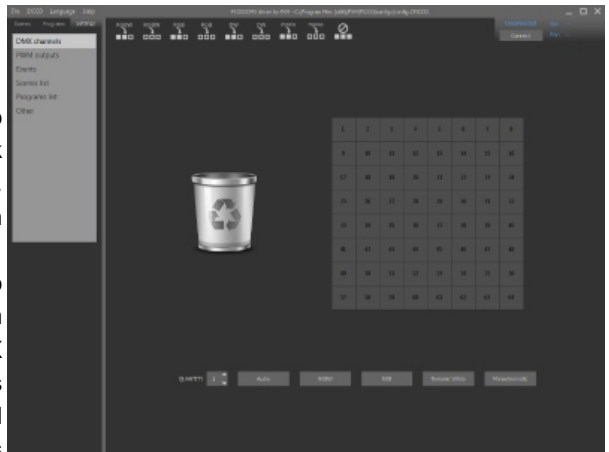
To add more than one device of a given type, the number of components to be added should be changed in the "quantity" field and afterwards – the name of the device has to be dragged over the name of the channel in the table. Devices will be added one by one, starting from the number of the selected channel.

The added devices may be moved within the table. In order to delete a given device, it has to be dragged to the trash can icon or clicked with the right mouse button.

7.5.2. PWM outputs

In this tab, you can assign 3 PWM outputs at a specific DMX address (from 1 to 64). In addition, each output can be switched off individually by checking the box next to each address individual outputs.
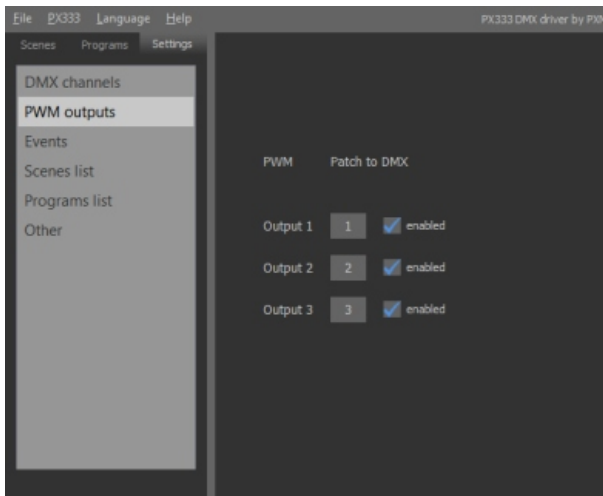
7.5.3. Events

By means of this submenu, actions may be assigned to nine available events. The first event is the launch of the controller and the remaining eight are the signals on the consecutive controlling inputs. For each event, the element and the action to be performed may be assigned.

The possible settings are listed below:

element		action
none		
scene	1-16	ON OFF TOGGLE
program	1-8	ON OFF PAUSE
scene list		NEXT PREVIOUS
program list		NEXT PREVIOUS

Each controlling input may be additionally set as CLOSED, OPEN, or INACTIVE.

At the top, on the tool bar, there are options making it easier for the user to set the desired values quickly:

- Set the value of all inputs to OPEN
- Set the value of all inputs to INACTIVE
- Assign scenes 1-8 to the inputs
- Assign scenes 9-16 to the inputs
- Assign programs 1-8 to the inputs
- Set the "ON" action for all the scenes
- Set the "OFF" action for all the scenes
- Set the "TOGGLE" action for all the scenes
- Set the "play" for all the programs
- Set the "stop" for all the programs
- Set the "pause" for all the programs
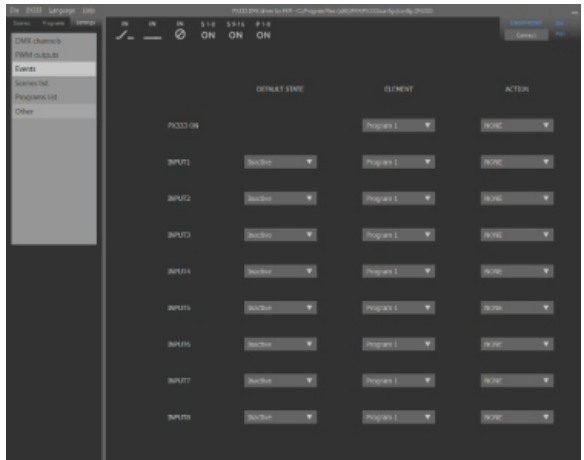
7.5.4. List of scenes

By means of this tab, the list of scenes that will be activated by the events may be created. Each scene may be put on the list only once. Scenes may be added in a random order.

There are two main lists visible on the screen: the list of available scenes and the list of chosen ones. The second list is empty by default. In order to add a desired scene to it, the said component has to be dragged to the index. Below the index of available scenes, there is a toolbar incorporating the following options:

- move selected
- move all

Below the index of chosen scenes, there is a toolbar incorporating the following options:

- move the selected scene higher
- move the selected scene lower
- delete the selected scene from the list
- sort the list ascending
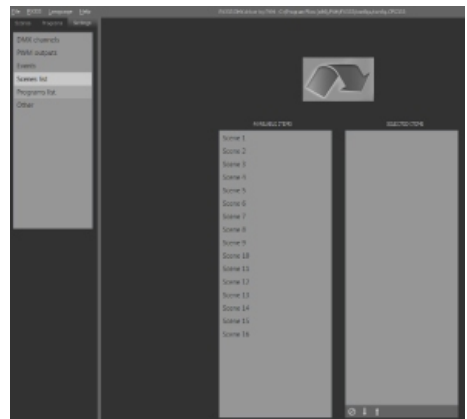- sort the list descending
- clear the list

7.5.5. List of programs

By means of this tab, the list of programs that will be activated by the events may be created. Each program may be put on the list only once. Programs may be added in a random order.

There are two main lists visible on the screen: the list of available programs and the list of chosen ones. The second list is empty by default. In order to add a desired program to it, the said component has to be dragged to the index. Below the index of available programs, there is a toolbar incorporating the following options:

> - Move selected
> - Move all

Below the index of chosen programs, there is a toolbar incorporating the following options:

- Move the selected program higher
- Move the selected program lower
- Delete the selected program from the list
- Sort the list ascending
- Sort the list descending
- Clear the list
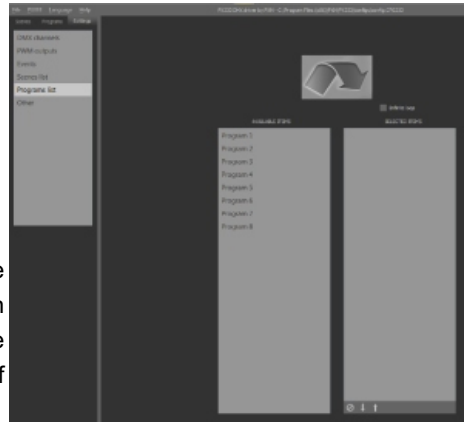
Each program from the list will be launched once only (even if the "loop" option has been selected in the settings). However, there is the option above the list, making it possible to loop the entire index of programs.

7.5.6. Other

In this tab, there are some additional settings of the controller. The changes can only be done with PX333 connected with the program.

The Miscellaneous

This parameter allows for setting the mode of operation of the output channels. The controller work in "Normal" mode, but there is "Linear" option also available.

In the normal mode, while switching the scenes, the value set for each channel is gradually lowered to the minimal value in a set interval, as well as gradually increased while launching a new scene. Therefore, the "dimming" effect while switching between some scenes may be observed.

In the linear mode, the values set for each channel change in a linear manner from the value set for the scene to be deactivated to the value set for the scene to be activated.

The option below allows the user to return to default settings.

> Note! Using this option will delete user's setting from the program's memory.

Change password

This option allows to change password to access the PX333. By default the is no password set.

The old password must be provided (if it is default please leave the box empty) and then followed by the new one typed in twice. The changes can be confirmed by selecting the "Change" button or discarded by means of the "Clear" option.

Change description
This option allows to change the description that the PX333 uses (by default it is „PX333"). The new description might use only standard ACII signes and is limitated to 64.
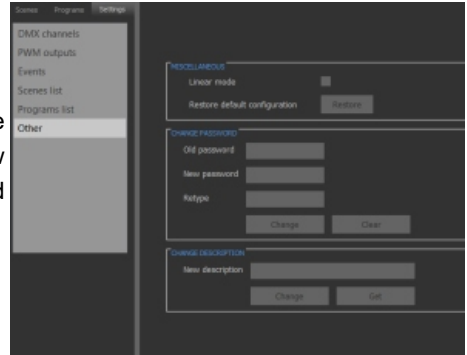
7.6. Scene editing

In the "scenes" tab, there are 16 scenes available. In order to edit one of them, it has to be selected from the list.

On the right panel, there are sliders corresponding to the consecutive DMX output channels. Channels relate to selected devices, in accordance with the DMX channel list ("Setting" -> "DMX channels"). Each device has a separate window above the sliders, in which the color hue selected by moving the sliders, as well as the name of the device and numbers of channels it has been ascribed to, can be checked. Below each slider, there is the checkbox, allowing the user to select the channel, as well as a text field in which the value set by means of the slider is additionally provided.

Below the sliders, there is the time settings tab. By means of the said tab, the time of activation, duration, and deactivation of the scene may be set. All of them may range from 00h00m00.0s to 23h59m59.9s. However, there is no possibility to set them all to 0 simultaneously. Additionally, the duration may be set to "infinite", but then the deactivation settings will be inactive.

Next to the time settings tab, there is the toolbar making it possible for the user to set the options for a given device. The available options depend on the type of the chosen device:

- a one-channel monochromatic lamp – brightness adjustment slider
- a two-channel "dynamic white" lamp – brightness and color temperature adjustment sliders
- a three-channel RGB lamp – color adjustment wheel and brightness adjustment slider
- a four-channel RGBW lamp – color adjustment wheel, whiteness and brightness adjustment sliders
- a four-channel sound player – operation mode box, track number selection box, three control sliders, volume slider.

Devices may be controlled in two ways:
- directly, by changing the position of the sliders (except from audio devices)
- collectively, by selecting desired devices and managing their settings from the control panel.
The selected device will change its color to a brighter one. Only the devices belonging to the same type may be selected at once. In order to select more than one component, the user has to select them one by one while holding the Ctrl key. To select all the devices of a given type, the first of them and the next – the last one has to be selected while holding the Shift key at the same time. The setting of a given channel value in the control panel will be applied to all the devices selected. It is also possible to change values of separate sliders by means of the checkbox located below it. Moreover, changing the value on one of the selected sliders will result in setting the same value on all the remaining ones. Selecting a device is equivalent to selecting all the sliders ascribed to it. On the toolbar, there are buttons facilitating the setting of the values of the sliders:

- select all channels
- unselect all channels
- select all red channels
- select all green channels
- select all blue channels
- select all white channels
- select all color temperature channels
- select all brightness channels
- select every … channel
- select all the devices with the same characteristics as the selected one
- copy the color of the selected device
- paste the color to the selected device
- set all sliders to 100%
- set all sliders 0%
- light all RGB and RGBW lamps red
- light all RGB and RGBW lamps green
- light all RGB and RGBW lamps blue
- copy the whole scene
- paste the whole scene
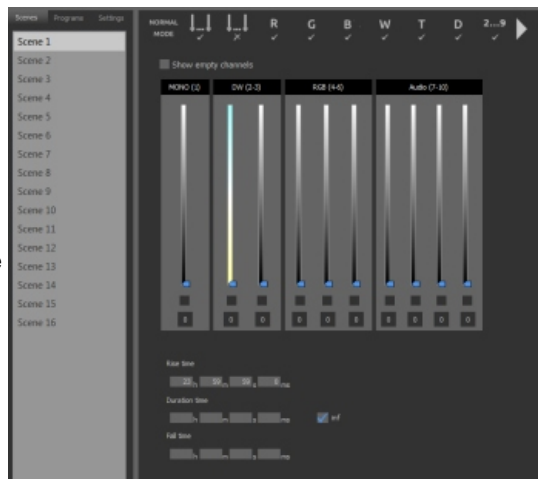

Additionally, there is the normal/live mode switching button on the toolbar. The live mode allows the user to see the preview of the scene in real time, without the necessity to upload the changed settings to the controller. Below, the "show empty channels" option is located. While selected, the channels for which no devices have been selected will be also presented to the operator.

7.7. Programs editing

In the Programs tab, in the left panel, eight main programs are accessible. Below the program list, there is the list of steps for the selected one. By default, all the programs are empty. At the bottom, there is also the toolbar with the following options:

- add a new step at the end of the list
- delete the selected step
- clear the list of steps
- duplicate the selected step
- move the selected step down
- move the selected step up
- create chaser out of the selected step

The "create a chaser..." option enables the user to automatically create a desired number of steps, on the basis of the pattern created for the selected step, by moving it to the left or to the right. Such an option makes it possible to create such effects as the "running point effect" much easier.
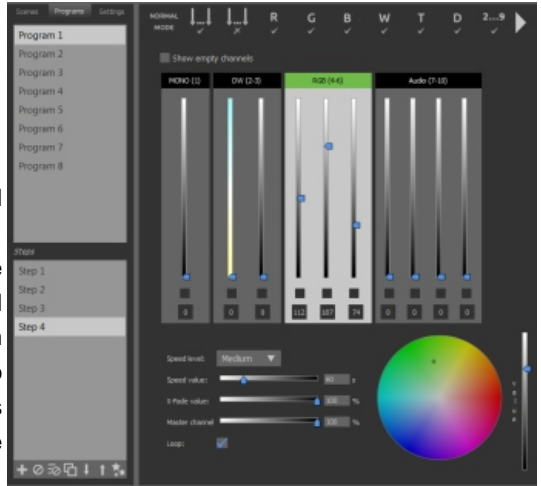
The step selected from the list will be visible on the right panel. Step designing follows the same procedure as scene designing.

Below the sliders, there are program parameters. The first of them defines the speed of program playing. The available options are as follows:

- fast – step duration between 0.1s and 25s
- medium – step duration between 1s and 4m
- slow – step duration between 10s and 41m

A bit lower, there is the pace slider, the range of adjustment of which depends on the type of the selected program. Thanks to the said modifier, the duration of each step may be adjusted.

The next slider is used to set the smoothness of shifts between steps. 0% means jumping from one step to another, while 100% translates into slow, gradual switching to the next slide.

By means of the slider below, the operator may decrease the brightness of the program, from the value set for the consecutive steps to 0.

The last slider makes it possible to loop the program.

8. SOFTWARE INSTALLATION – ANDROID OS

The application may be installed on Android OS 2.3.3 or newer.
In order to install the software, the user has to upload the installer to the memory of the phone and then utilize the file manager to open it. The functions of the device that will be taken advantage of by the program will be displayed on the screen. To start the procedure, the "Install" option should be chosen. After the completion of the process, the application will be accessible from the menu.

For more information on how to how to proceed with the installation of the application on your Android phone, you will find in the article http://www.androidpit.com/android-for-beginners-what-is-an-apk-file .

9. SMARTPHONE-BASED CONTROLLER CONFIGURATION

9.1. Software launching

After the application launching, the greeting screen will appear. It contains the following:

- Network (Wi-Fi) connection box,
- Controller connection box,
- "Log in", or "offline" button,
- "About" button.

In the "network connection" field, the name of the Wi-Fi network to which the phone is connected will be visible. If the phone works in an offline mode, the "No Wi-Fi connection" notification will be displayed. By clicking the notification, the user may choose one of the available wireless connections. The network to which the controller is also connected should be chosen.

In the "Device" field, the controller with which the program currently communicates will be visible. If the controller works in an offline mode or there is a network error, the "No Wi-Fi connection" notification will be displayed. By clicking the notification, the user may choose one of the available wireless connections. Under the list, there is the "Search" button, which will make it possible to browse the network connections in search for available devices.

When the desired controller has been chosen, the "Login" option will appear on the bottom bar. By clicking it, the operator will be able to proceed to the login window, where he will be asked to provide the access code to the controller. Below, there are "show password" and "remember password" options. Ticking the first of them will result in showing the typed in password in the access code field. If the second option has been chosen, during the next logging in procedure, the application will automatically retrieve the provided password from the memory and skip the login window. After typing in the password, the "OK" button should be pressed, as it will result in proceeding to the main window of the application.

Only one smartphone may be connected to a given controller at a time. Therefore, if there is a user currently logged in to the device, the login procedure will fail and there will be a proper notification displayed. After 5 minutes of inactivity of the initial user, the login option will be unlocked again. In such an event, the user logging in from a different device will be allowed to configure the controller and the initial user will be signed out. If there is no such attempt, the initial user will be still logged in.

If no controller has been chosen, then the "Offline" button will be available instead of the "Login" one. By choosing the said option, the user may take advantage of the application without connecting to the device. It should be taken into account that while utilizing the application in such a manner, the created configuration file has to be saved in the memory of the phone.
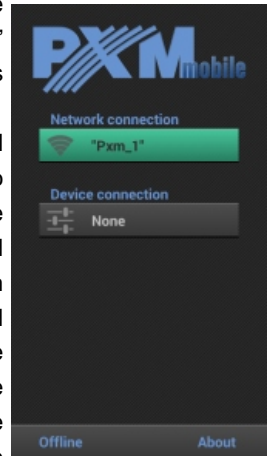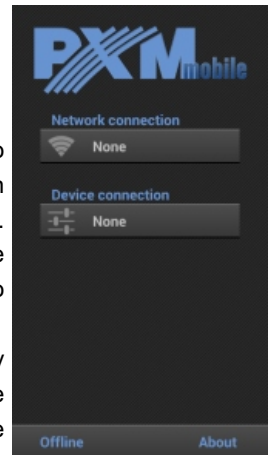
9.2. Main window

The main window is available in both controlling and editing modes. In both cases, it incorporates the following:

- Upper bar showing mode info and making it possible for the user to either log out or go back to the greeting screen,
- 16 scene buttons
- 8 program buttons
- Lower button, allowing the user to proceed to settings, change the operation mode, and show device info.
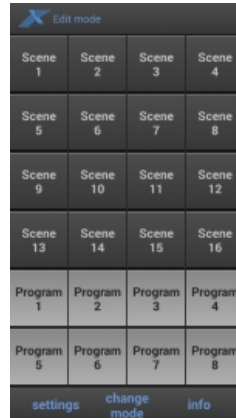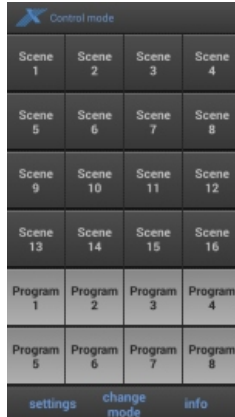
9.3. Controller settings

The settings screen includes the following buttons:

9.3.1. DMX channels

After clicking this button, the operator will have the opportunity to connect devices to the DMX output channels.

On the screen, the list of 64 DMX channels will be displayed. In order to assign a desired device to a given channel, the name of the latter should be clicked and held for a few seconds. Afterwards, the device selection window will be displayed. The following may be chosen:

- none (no device)
- a monochromatic lamp (one-channel)
- a "dynamic white" lamp (two-channel)
- a RGB lamp (three-channel)
- a RGWB lamp (four-channel)
- a Audio player (four-channel)

Choosing one of the positions will result in adding the selected device to the list of channels on a desired position. If the slot has been already taken, the said component will not be added. Only one device can be ascribed to a given channel. In order to remove a particular component from the list, one of the channels it has been ascribed to should be clicked and then held for a short period of time. Afterwards, the list will appear on which the operator should choose the "none".
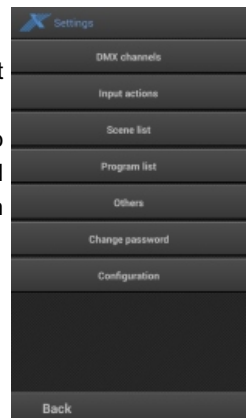
Devices are added to the list with their default names, but the name of each and every component can be changed manually. To do so, the operator has to touch the menu icon located in the upper right corner and choose the "Edit names" from the drop down list that will appear. Then, the application will enter the name editing mode in which prolonged holding of the name of a given device activates the name change algorithm. The provided new name cannot be longer than 5 characters.

After finishing the procedure, the aforementioned menu icon should be clicked again and then the editing mode box should be unselected.

Devices of the same type always have the same color.

To quickly clear the whole list of channels, the user should click the menu icon and choose the "Clear" option.

The changes made in settings can be confirmed by clicking the "OK" button located on the bottom tab. To abandon the changes and revert to the previous settings, the "Cancel" option should be chosen.
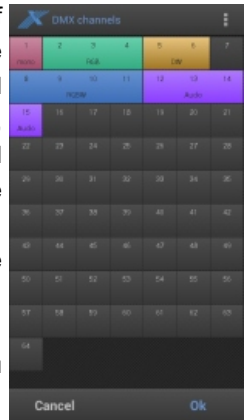
9.3.2. Input actions

By means of this tab, actions may be assigned to 9 available events. The first event is the launch of the controller and the remaining eight are the signals on the consecutive controlling inputs. For each event, the element and the action to be performed may be assigned. The available settings are:

element		action
none		
scene	1-16	ON OFF TOGGLE
program	1-8	ON OFF PAUSE
scene list		NEXT PREVIOUS
program list		NEXT PREVIOUS

Each controlling input may be additionally set as CLOSED, OPEN, or INACTIVE.

The changes made in settings can be confirmed by clicking the "OK" button located on the bottom tab. To abandon the changes and revert to the previous settings, the "Cancel" option should be chosen.
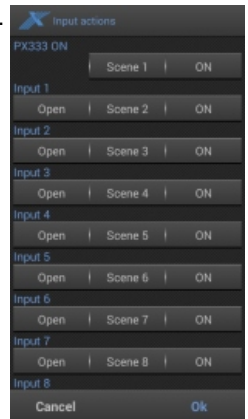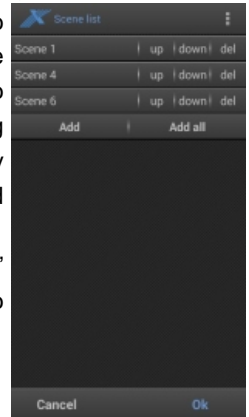
9.3.3. Scene list

By using this tab, the user can create the list of scenes to be connected with events. Each of the scenes may be added to the list only once, but the order of individual scenes may be random. By default, the list is empty. On the screen, two main buttons will be visible – "Add" and "Add all". Clicking the "Add" option results in showing all the available scenes (if a given scene has been

added, it will not be visible). Selecting a given item translates directly into adding it to the index of scenes. Next to each of the scenes added to the list, there are "up", "down", and "delete" buttons, which may be used to change the position of the item on the list or delete it completely. Clicking the "Add all" button adds all the available scenes to the list. To quickly clear the whole list of scenes, the user should click the menu icon and choose the "Clear" option.

The changes made in settings can be confirmed by clicking the "OK" button located on the bottom tab. To abandon the changes and revert to the previous settings, the "Cancel" option should be chosen.

9.3.4. Program list

By using this tab, the user can create the list of programs to be connected with events. Each of the programs may be added to the list only once, but the order of individual elements may be random. By default, the list is empty. On the screen, two main buttons will be visible – "Add" and "Add all". Clicking the "Add" option results in showing all the available programs (if a given program has

been added, it will not be visible). Selecting a given item translates directly into adding it to the index of programs. Next to each of the programs added to the list, there are "up", "down", and "delete" buttons, which may be used to change the position of the item on the list or delete it completely. Clicking the "Add all" button adds all the available programs to the list. To quickly clear the whole list of scenes, the user should click the menu icon and choose the "Clear" option.

Each program from the list will be launched once only (even if the "loop" option has been selected in the settings). However, there is the option above the list, making it possible to loop the entire index of programs.

The changes made in settings can be confirmed by clicking the "OK" button located on the bottom tab. To abandon the changes and revert to the previous settings, the "Cancel" option should be chosen.
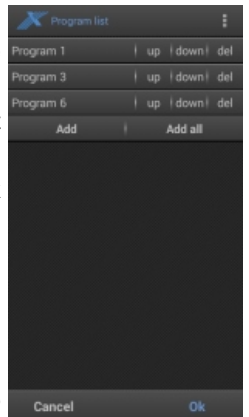
9.3.5. Others

The PX333 controller incorporates three PWM outputs. By means of the options in this bookmark, they may be ascribed to the chosen DMX channels. In such a case, the values set for the said channels will be also set for the outputs. By default, the PWM outputs are inactive.

The next parameter allows for setting the mode of operation of the output channels. "Normal" and "Linear" options are available.

In the normal mode, while switching the scenes, the value set for each channel is gradually lowered to the minimal value in a set interval, as well as gradually increased while launching a new scene. Therefore, the "dimming" effect while switching between some scenes may be observed.

In the linear mode, the values set for each channel change in a linear manner from the value set for the scene to be deactivated to the value set for the scene to be activated.
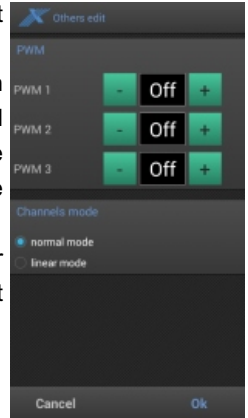
9.3.6. Change password

This tab makes it possible to change the access code to the controller. The old password must be provided and then followed by the new one typed in twice. The changes can be confirmed by touching the "OK" button or discarded by means of the "Cancel" option.
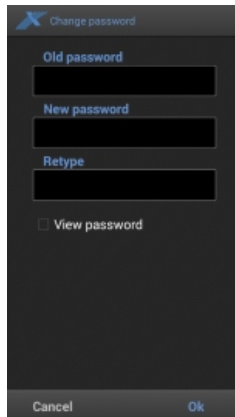
9.4. Configuration

All the settings, scenes, and programs are saved in the controller. In the last tab, there are three main buttons designed for controller configuration management:

- "Load configuration from a file" – allows to load the configuration saved in the memory of the phone and then to load it to the memory of the controller. NOTE: after completing this action, the current configuration of the controller will be overwritten.
- "Save configuration to a file" – enables the user to save the current configuration to a file which will then be stored in the memory of the phone.
- "Restore default configuration" – restores the default settings of the controller. NOTE: after completing this action, the current configuration of the controller will be overwritten.
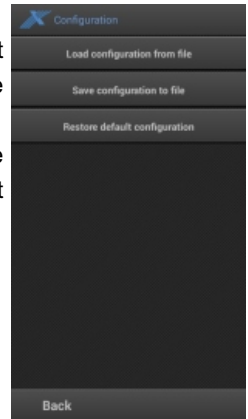
9.5. Control mode

While in the control mode, the operator can launch chosen scenes and programs while at the same time being able to preview the effects in real time. Additionally, after launching a program, the user may control its speed, smoothness, brightness, as well as stop or resume it.

At a given time, only one element may be launched on the controller (a scene or a program). Currently activated element will be highlighted green.

By clicking the scene which is not activated, the user launches it and at the same time deactivates the previous element (if it has been launched). Clicking the scene which is currently activated will result in deactivating it completely.

Single click on the program which is not already active will result in its launching. The single clicking of the element which is currently activated will result in deactivating it completely. Clicking the button of the given program and holding it for a longer period of time allows the user to view the program parameters window.
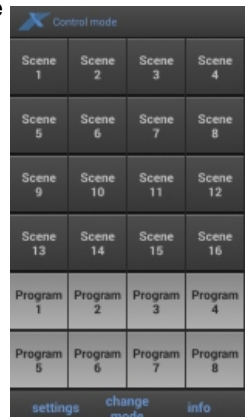
9.6. Editing mode

Switching to the editing mode allows the user to create scenes and programs, as well as to change their parameters. Do active this mode You need to touch the name of „Control mode".

 The main window in this mode is equivalent to the one in the control mode, but clicking the given element (scene or program) results in proceeding to the edition screen.

9.7. Scene editing

Edition screen is available in two modes: slider mode and device mode. The first of them is set as the default one.

On the screen, there are 64 sliders corresponding to the consecutive output channels. Sliders relate to selected devices, in accordance with the DMX channel list (Settings -> DMX channels). Above each device, there is a color preview window. The name of the component can be set there as well. Audio devices cannot be managed in the slider mode. If some of the channels remain empty, the user may choose to select the "hide the empty channels" option in the menu for improved transparency. After doing so, only the channels to which devices have been ascribed will be displayed.

On-screen sliders are by default locked in order to prevent accidental changes of their values while sliding the screen up or down. To unlock the modifiers, the user has to click their preview window or click and hold the name of the desired device. After unlocking the given slider, its value may be adjusted. Below the slider, there is the numerical value representing its settings. By clicking and holding the text field for a longer period of time, the user can activate it and then type in the numerical value by himself. The color of the sliders is presented in real time in the preview window.
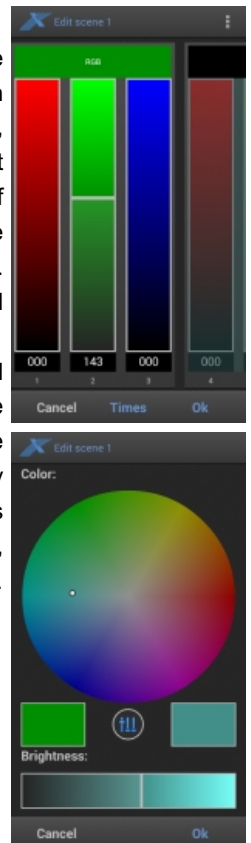
Clicking and holding the preview window result in displaying a context menu with the following options:

- copy – copy the settings for all the sliders ascribed to the given device to the clipboard
- paste – (this option is only visible when the settings of a device of the same type have been copied) pastes the copied slider values
- copy for all the devices of this type – copies slider values of a given device to all the devices of the given type (selecting this option will overwrite all the previous settings)
- set color (RGB and RGBW) – displays an auxiliary window with a color adjustment wheel
- audio management (AUDIO) – opens the audio management window
- set to 0% – turns off the channels of the device
- set to 100% – sets the maximum value for all the channels of the device.
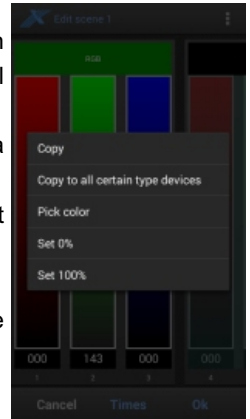
There is also a menu icon in the upper right corner. After pressing it, the auxiliary options can be accessed:

- "hide empty channels" – if the option is chosen, only the channels to which devices have been ascribed will be visible
- "device mode" – switches to the device mode
- "copy from the scene" – shows the list of all the available scenes; choosing one of them results in copying the values of all the channels
- "copy from the program" – allows the user to copy the channel values from the chosen step of the program
- "select channels" – makes it possible for the operator to select all the channels of a given type; if the value of one of the channels is modified, it will also be adjusted for all other channels of the given type;
- "set all to 100%" – sets the maximum value for all the channels (including audio and empty channels)
- "set all to 0%" – set the 0 value for all the channels.

In the device mode, instead of the sliders there are rectangles representing all the devices ascribed to channels. In each rectangle, there is the name of the device provided, as well as the number of channels ascribed to it. The said figure also serves as the color preview window. By clicking the desired device, the user opens the device management window. The content of the said window differs depending on the type of the device.

For the monochromatic lamp, only a single brightness slider is available. "Dynamic white" lamps may be managed by means of two sliders: color temperature and brightness one. In the case of RGB and RGBW lamps, the color adjustment wheel, brightness slider, as well as the slider mode shifting button are available.

For the audio device, there is the playing mode list, incorporating the following options:

     - single track – the selected track will be played only once

     - looping – the selected track will be looped

     - play in order – starting from the chosen track, all the subsequent tracks will be played once

     - loop all – starting from the chosen track, all the subsequent tracks will be loop

Track number selection field:

- increase or decrease by one, by means of the "next" and "previous" buttons

- faster increase or decrease by touching the edges of the adjustment wheel

Three control buttons:

     - play

     - pause

     - stop

Volume adjustment slider.

Vibrations can be switched off in the menu.

While editing the scene (in any mode), there is the "Time" button accessible from the tab at the bottom. By clicking it, the user may open the time setting window, incorporating three main parameters:

    - Activation time – time required to increase the brightness of the given scene from 0 to the maximum value

    - Duration – duration of the scene

    - Deactivation time – time required to decrease the brightness of the scene to 0 (applies to automatic deactivation only; for manual deactivation, the time is always equal to 3s)

The values on the sliders may be set from 0m0.0s-5m0.0s, but after clicking and holding the field for longer, the pop-up window will appear in which the user will be able to provide the values ranging from 0h0m0.0s to 23h59m59.9s.

The duration of the scene may be set to "infinite". All 3 time values cannot be set to 0s.

9.8. Program creation

Entering the program edition mode results in displaying the window with the preview of all the steps the given program consists of and the "New step" button. By default, the program does not include any steps. The new ones are always added at the end of the list. Each of the steps can be managed by means of four main buttons:

- up – moves the selected step one position up on the list
- down – moves the selected step one position down on the list
- delete – remove the step
- options – displays additional settings:
- copy – copies the selected step to the clipboard
- paste – (option visible only after copying a step beforehand)

pastes the step from the   clipboard

- copy from the scene – copies channel values from a given scene
- set to 0% – sets the value of all channels to 0
- set to 100% – sets the value of all channels to maximum
- create a chaser – (option visible only if devices of the same type have been assigned to the channels) by using the selected step as a template, this option creates a chaser, applying the template to all the devices of the same type.
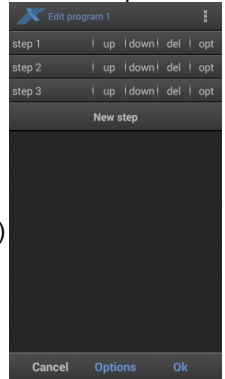
By clicking the name of the step, it is selected and shown on the output channel list. It can be edited by clicking and holding the step for longer. Step edition allows for the same options to be used as in the scene edition mode.

In the upper right corner, there is a menu icon which allows for clearing all the steps from the list quickly.

On the bottom bar, below the step list, there is the "Options" button, allowing the user to check the parameters of the program. The first modifier defines the overall program playing speed. The available options are as follows:

- fast – step display duration between 0.1s and 25s
- medium – step display duration between 1s and 4m
- slow – step display duration between 10s and 41m

The next modifier is used to set the smoothness of shifts between steps. The default value depends on the type of the device selected. 0% means jumping from one step to another, while 100% translates into slow, gradual switching to the next slide. By means of the slider below, the operator may decrease the brightness of the program, from the value set for the consecutive steps to 0. The last slider makes it possible to loop the program.

9.9. Controller info

On the bottom bar visible on the main screen, there is also the "Info" button, allowing the user to display additional pieces of information concerning the controller managed by means of the application. In order to edit the label or description of the device, the operator has to click the menu icon located in the upper right corner on the screen and then – choose the "Edit" option. The pop-up window will be displayed, in which the operator can change the label and description of the controller.

10. TECHNICAL SPECIFICATION

- power supply   12 - 24V DC

- no-load current consumption   70 mA for 12V DC
                                        40 mA for 24V DC

- DMX output channels: 64

- control inputs on / off type: 8

- control outputs: OC

- communication port: LAN

- OC outputs load capacity: 1500mA / channel

- programmable:
        scenes: 16
        programs: 8

- programmable time range
  scenes / steps: 0,1 s - 24 h

- dimensions   Width: 70 mm (4 DIN rail modules)
                                        Height: 86 mm
                                        Depth: 60 mm

11. TECHNICAL DRAWING

PXM
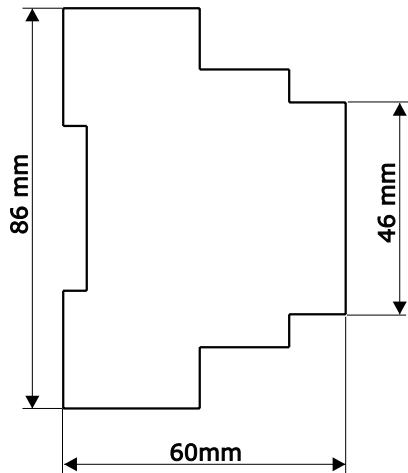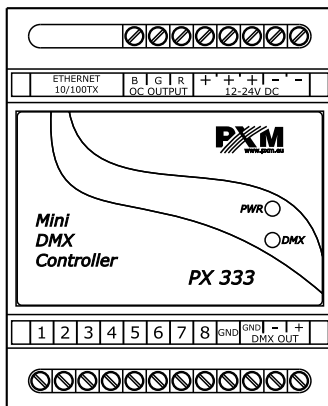
ul. Przemysłowa 12
30-701 Kraków, Poland

tel: +48 12 626 46 92
fax: +48 12 626 46 94

e-mail: info@pxm.pl
http://www.pxm.pl

DECLARATION OF CONFORMITY
according to guide lines 2004/108/EC

Name of producer: PXM Marek Żupnik sp. k.

Manufacturer's address: ul. Przemysłowa 12
                           30-701 Kraków

We declare that our product:

Mini DMX Controller

Product name:

PX333

Product code:

complies with the following standards:

EMC: **PN-EN 55103-1:2012**
                           PN-EN 55103-2:2012
                           PN-EN 61000-4-2:2011
                           PN-EN 61000-6-1:2008
                           PN-EN 61000-6-3:2008

Additional information: The DMX-512 output must be shielded and the
                            shielding must be connected to the ground
                            responding to the DMX connectors.

PXM

Marek Żupnik spółka komandytowa
30-701 Kraków, ul. Przemysłowa 12
NIP 677-002-54-53

Kraków, 02.09.2014

mgr inż. Marek Żupnik (M.Sc. Eng.)