PX109

RGB Demux

INSTRUCTION
MANUAL

PXM®

CONTENTS

1. GENERAL DESCRIPTION

PX109 RGB Demux is intended for RGB fluorescent lamps control. The module transforms the DMX-512 signal into 0 - 10 V or 1 - 10 V analog control signal.

The controller software allows to set the DMX address, define the module reaction to DMX signal absence or interruption, select the dimming characteristics and control bytes number.

PX109 can be controlled with the DMX signal or operate independently. In the second case the user has four fully programmable scenes and two programmable sequences (programs) at disposal. For the programs the brightness and colour of the particular steps, rendering speed and step-to-step fading smoothness can be modified at will.

2. SAFETY CONDITIONS

PX109 RGB Demux is powered directly from standard 230 V grid, what can cause electric shock when safety rules are not observed. Therefore it is necessary to observe the following:

1. The device installation, especially power connection, can be performed by a person holding the appropriate qualifications only.
2. Controller can be connected to socket which has protecting instalation in working order (3 - wire grid) only.
3. All the conductors should be protected against mechanical and thermal damage.
4. In the event of damaging any conductor, it should be replaced with a conductor of the same technical data and attestations.
5. All repairs demanding casing opening should be made with cut off power supply.
6. PX109 should be strictly protected against contact with water and other liquids.
7. All sudden shocks, particularly dropping, should be avoided.
8. Device with damaged (dented) casing should not be connected to the mains.
9. The device cannot be turned on in places with humidity exceeding 90%.
10. The device cannot be used in places with temperature lower than 2°C or higher than 40°C.
11. Cleaning with damp duster only - RGB Demux has to be cut off the power supply.

3. COUPLINGS AND CONTROL ELEMENTS DESCRIPTION
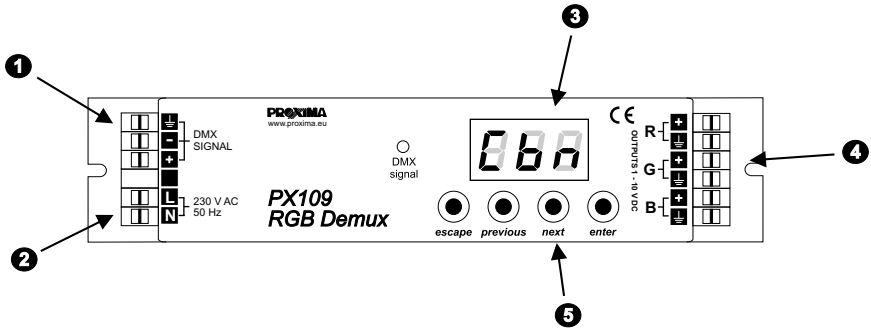
❶ DMX-512 input   ❸ Display

❷ Power supply   ❹ Control outputs

                                             ❺ Programming buttons

4. DISPLAYED MESSAGES MEANING

`001`	device DMX address - basic *menu* entry
`888.`	operation mode
`Adr`	DMX address setting
`noS`	selection of the reaction to DMX signal interruption
`Cbn`	control mode selection (RGB, brightness / colour or monochrome)
`Cur`	control characteristics setting
`dEF`	scenes and programs defining
`On`	turning all the outputs on at 100 %
`OFF`	turning all the outputs off
`77L`	slow outputs dimming
`HLd`	last control value maintaining
`Sc2`	scene no. 2
`Pr1`	program no. 1
`Lin`	linear 0 - 10 V characteristics

|	
FLU	linear 1 - 10 V characteristics
$brі$	scene brightness settings
$cоL$	scene colour settings
$F12$	scene no. 12 (programs defining submenu)
SPd	program rendering speed
$FАd$	step-to-step fading smoothness (programs defining submenu)
$Еnd$	last scene marker (programs defining submenu)

5. SWITCHING THE CONTROLLER ON

After the controller is connected to the mains, the DMX address will be displayed. By pressing the *escape* key you can launch the test of the display and the DMX signal LED indicator. By pressing the *enter* key you can enter the controller's main menu, where you may set the DMX addres, controller reaction to DMX signal absence or interruption, number of control bytes, dimming characteristics and define the scenes or programs. After approximately one minute from the last operation made, the dot will show on the display, what shows that the RGB Demux operates with the parameters set.
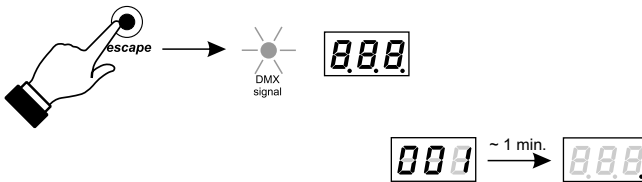
6. MODULE PROGRAMMING

You can enter the programming mode by pressing the *enter* key. The **Adr** inscription - DMX address setting - will be displayed. By pressing the *next* or *previous* key you can select the other programmable parameters. The *enter* key allows to enter the next submenu, to select a parameter and to confirm the changes made, the *escape* key discards the changes and returns to the previous menu level. The *next* and *previous* keys increase or decrease the parameters' values or scroll the menu forwards or backwards.

6.1. DMX ADDRESS SETTING

The device maintains 512 DMX channels. In the monochrome control mode the range of channels to set is between 1 and 512, in the brightness / colour control mode between 1 and 511 and in the RGB mode between 1 and 510.

To set the DMX address:

1. In the main menu select the *Adr* position and press the *enter* key.

2. With the *next* or *previous* key set the required DMX address.

3. Confirm your selection by pressing the *enter* key.
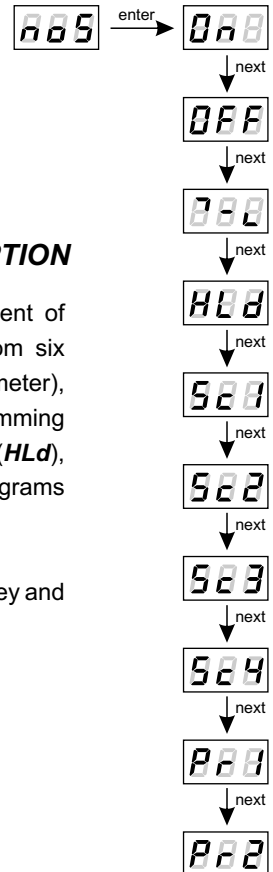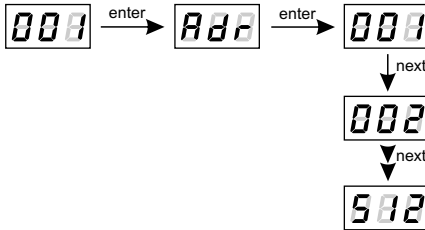
6.2. DEVICE REACTION TO DMX SIGNAL INTERRUPTION

PX109 software allows to define the controller reaction in the event of disappearance of the external control signal. You can choose from six different possibilities: turning all the outputs on at 100% (*On* parameter), turning all the outputs off (*OFF*), slow (20 seconds approximately) dimming of all the outputs ([dIF]), maintaining the last controlled parameters (*HLd*), launching one of four scenes (*Sc1*, *Sc2*, *Sc3*, *Sc4*) or one of two programs (*Pr1*, *Pr2*).

To define a reaction to DMX signal disappearance:

1. In the main menu select the *dEF* position with the *next* or *previous* key and press *enter*.

2. With the *next* or *previous* key select a required reaction.

3. Confirm your selection by pressing *enter*.

6.3. CONTROL BYTES NUMBER SELECTION

The device software allows to define the control mode, you may choose from three possibilities: 1-, 2- or 3-byte control. First of these allows to control the monochrome lamps and takes up one DMX channel. The 2-byte control mode takes up two channels, first of these controls the brightness (in a range from 0 - the lamp is dimmed, to 100 - full brightness) and the second selects the colour (0 - violet; 16 - red; 33 - yellow; 49 - green; 66 - cyan; 82, 83 - blue; 99, 100 - white; other values - transitional colours). The third mode controls the brightness of all the three RGB channels separately.

To select the control bytes number:

1. In the main menu with the *next* or *previous* key select the **Cbn** option and press *enter*.

2. With the *next* or *previous* key set the required value.

3. Confirm your selection by pressing *enter*.
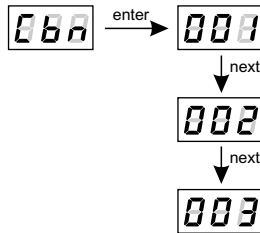
6.4. CONTROL CHARACTERISTICS SELECTION

The RGB Demux allows to choose one of two different dimming characteristics, linear 0 - 10 V and linear 1 - 10 V.

To set the required characteristics:

1. In the main menu with the *next* or *previous* key select the **Cur** option and press *enter*.

2. With the *next* or *previous* key select the linear 0 - 10 V (**Lin** option) or linear 1 - 10 V (**FLU** option) characteristics.

3. Confirm your selection by pressing *enter*.
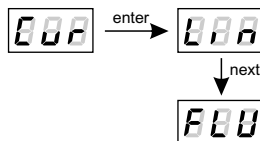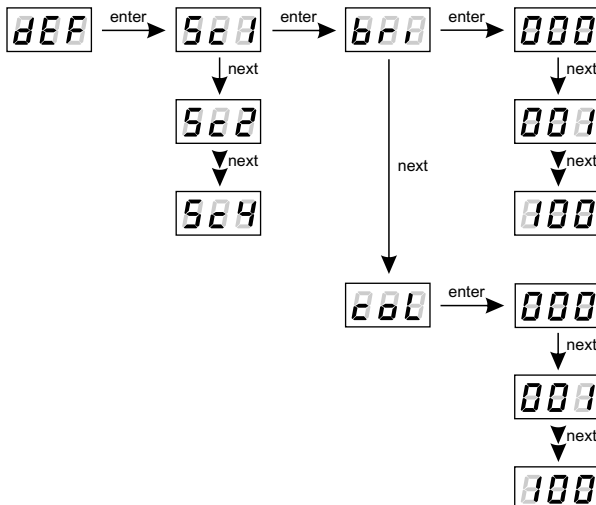
6.5. SCENES AND PROGRAMS DEFINING

In the *dEF* menu you can entirely program the scenes and define the programs. You have four scenes at disposal, where you can adjust brightness and colour and two programs, consisting of up to twelve scenes each. In the programs you can adjust the brightness and colour of each scene - step of the program, step display time and step-to-step fading smoothness. Moreover, you can set the *End* marker, that will define which scene is going to be the last one in the program (when you do not need to create a program consisting of all twelve scenes).

6.5.1. Scenes programming

The controller software allows to define up to four scenes, for each of these you can adjust brightness and colour. The adjustment mode is identical to 2-byte control mode (refer to chapter 6.3 of the present manual), that means you control the brightness (*bri*) and colour (*coL*) separately, both values are adjusted in a range from 0 to 100.

To define a scene:

1. In the main menu with the *next* or *previous* key select the *dEF* parameter and press *enter*.
2. With the *next* or *previous* key select one of four scenes (*Sc1*, *Sc2*, *Sc3*, *Sc4*) and press *enter*. The *bri* (brightness) parameter will be displayed.
3. With the *enter* key select the parameter and then, with the *next* or *previous* key, set the required brightness.
4. Confirm your settings by pressing *enter*. The *bri* inscription will be displayed again.
5. With the *next* or *previous* key set the *coL* (colour) parameter and press *enter*.
6. With the *next* or *previous* key adjust the colour of the edited scene.
7. Confirm your settings by pressing *enter*. The *coL* parameter will be displayed again.
8. With the *escape* key return to the previous menu and, with the *next* or *previous* key, select the next scene you want to define.
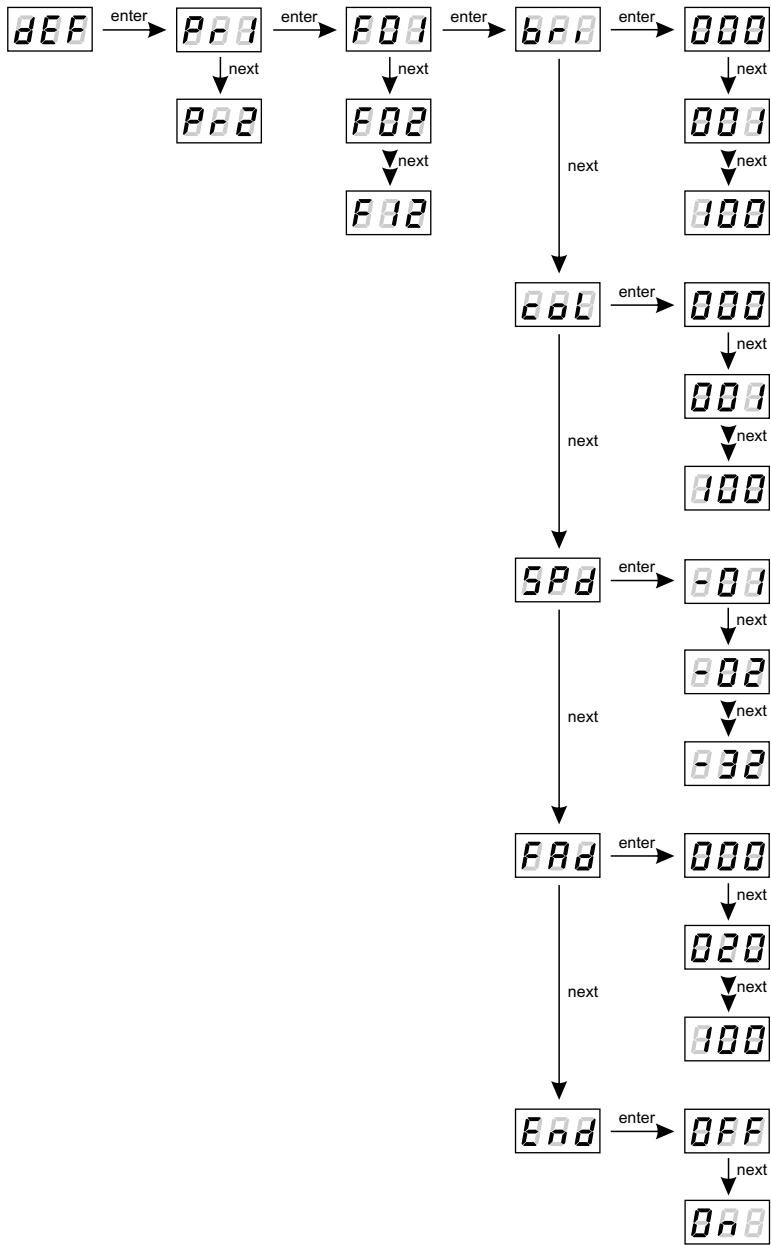
6.5.2. Programs defining

Apart from four scenes PX109 has the ability to define two programs, that means sequences of scenes, consisting of twelve steps maximum each. Within each step you can adjust its brightness and colour, decide of its length (duration time), step-to-step fading smoothness and set the marker defining the last step in the sequence, if the sequence is going to consist of less than twelve steps. Adjusting the brightness and colour is performed similarly as in scenes programming (refer to chapter 6.5.1 of the present manual). The display time length (*SPd*) encloses in a range from 0.1 second (*032* value) to 90 seconds (*001* value). The speed is represented by a blinkling horizontal line on the first display position. The smoothness of step-to-step change (*FAd*) can be selected in a range from 0 (instant change) to 100 (totally smooth change).

To define a program:

1. In the main menu with the *next* and *previous* key select the *dEF* parameter and press the *enter* key.
2. With the *next* or *previous* key select one of two programs (*Pr1* or *Pr2*) and press *enter*. The *F01* (first scene) inscription will be displayed.
3. With the *next* or *previous* key select the scene you want to edit (*F01* - *F12*) and press *enter*. The *bri* (brightness) parameter will be displayed.
4. With the *enter* key enter the parameter edition and set the required brightness with the *next* or *previous* key. Confirm your settings by pressing *enter*. The *bri* parameter will be displayed.
5. With the *next* or *previous* key select the *coL* (colour) parameter and press *enter*.
6. With the *next* or *previous* key adjust the colour of the edited scene.
7. Confirm your settings by pressing *enter*. The *coL* parameter will be displayed.
8. With the *next* or *previous* key select the *SPd* (speed) parameter and press *enter*.
9. With the *next* or *previous* key set the length of the edited step in a range from 1 to 32 and confirm your selection by pressing *enter*. The *SPd* parameter will be displayed again.
10. With the *next* or *previous* key select the *FAd* (step-to-step fading smoothness) parameter and press *enter*.
11. With the *next* or *previous* key set the required value in a range from 1 to 100, where 0 stands for the instant change and 100 for a totally smooth change, and confirm your settings by pressing *enter*. The *FAd* inscription will be displayed.
12. With the *next* or *previous* key select the *End* (last step in the program) parameter and press *enter*.
13. If you do not want the defined step to be the last one, select the *OFF* parameter with the *next* or *previous* key and confirm your selection by pressing *enter*. If you want this step to be the last one in a sequence, similarly set the *On* parameter.
14. With the *escape* key return to the previous menu and with the *next* or *previous* key select the next scene you want to edit.

ATTENTION: The last step marker *End* is off by default, so you do not need to define the *OFF* value for each step in the sequence.

dEF → enter → Pr1 → enter → F01 → enter → brI → enter → 000
                ↓ next   ↓ next   ↓ next
               Pr2   F02   001
                                ↓ next   ↓ next
                               F12   100

brI → next → CoL → enter → 000
                            ↓ next
                           001
                            ↓ next
                           100

CoL → next → SPd → enter → -01
                            ↓ next
                           -02
                            ↓ next
                           -32

SPd → next → FAd → enter → 000
                            ↓ next
                           020
                            ↓ next
                           100

FAd → next → End → enter → OFF
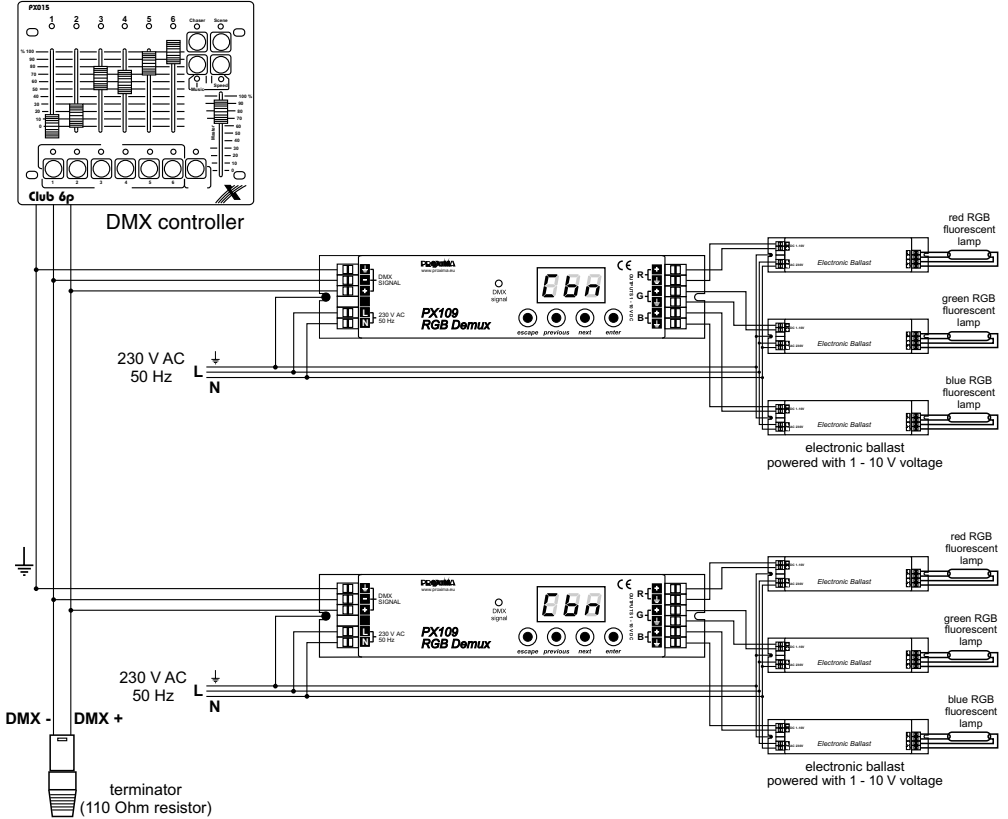   ↓ next
                           OnA

7. CONNECTIONS SCHEME

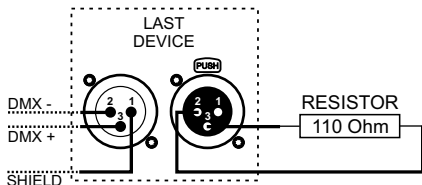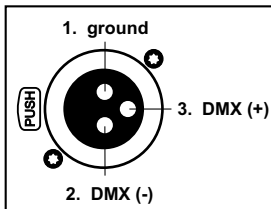All the connections must be made with the wires of appropriate gauge.

The proper connection reduces the risk of controller damage and improves its reliability as well.

For the DMX signal connection use the shielded cable only.

At the end of the DMX chain the terminator (110 Ohm resistor) must be installed.


8. DMX SIGNAL CONNECTION

1. To connect the devices application of the microphone cable is strictly recommended (two strands in a shield).
2. The devices have to be connected in series.
3. To split the DMX line it is necessary to use the DMX SPLITTER (PX094).
4. In case of the great number of devices or long distances use the DMX REPEATER (PX097). It is an amplifier of the DMX signal.
5. In the last device a terminator must be installed. It is a 110 Ohm resistor.

9. DIMENSIONS
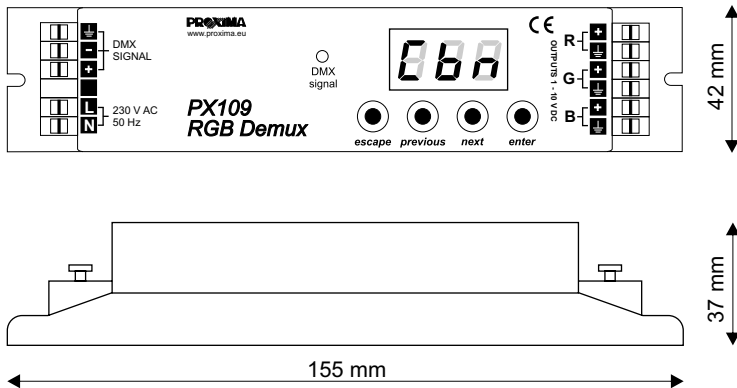
10. TECHNICAL SPECIFICATION

- DMX channels   512
- power supply   230 V AC
- power consumption   2 VA max.
- output channels number   3 (R, G, B)
- outputs load capacity   10 mA / channel max.
- programmable scenes   4
- programmable sequences   2
- output sockets   quick connectors

- dimensions:
    - width   42 mm
    - heigth   37 mm
    - length   155 mm

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 73/23/EWG and 89/336/EWG

Name of producer: PXM s.c.

Address of producer: ul. Przemysłowa 12
30-701 Kraków

declares that the product:

Name of product: **RGB Demux**

Type: **PX109**

answers the following product specifications:

LVD: **PN-EN 60065**

EMC: **PN-EN 55103-1**
           PN-EN 55103-2

Additional informations: DMX-512 signal connection must be shielded and the shielding must be connected to pin 1 XLR plug.

PXM S.C.
Danuta i Marek Żupnik
30-701 Kraków, ul. Przemysłowa 12
NIP 677-002-54-53

Kraków, 01.06.2006

Marek Żupnik M.Sc.