

PX091

AC
Dimmer
12 x 1200 W

MANUAL



CONTENTS

1. General description.....	3
2. Safety conditions.....	3
3. Front panel.....	4
4. Output signal interruption diagnosis.....	4
5. Programmable parameters.....	5
5.1. Group parameters.....	5
5.2. Individual parameters.....	6
5.3. Measurement functions.....	6
5.4. Scenes and chasers programming.....	6
6. Access lock.....	6
6.1. Switching the access lock on.....	6
6.2. Switching the access lock off.....	7
7. Menu scheme.....	7
8. Dimmer description.....	8
9. Power cable connection.....	8
9.1. General rules.....	8
9.2. Power cables colours.....	9
9.3 Connections scheme.....	9
10. DMX signal connection.....	9
11. Technical specification.....	10
12. Declaration of conformity.....	11

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

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1. GENERAL DESCRIPTION

PX091 is a professional AC class dimmer 12 x 1200 W powered with 3 phases, 2 phases or 1 phase. The dimmer controls 12 independent channels, 1.2 kW each. Advanced electronics allows to address easily each channel, to choose the control curve, to set output voltage limitation and preheat level and to determine dimmer answer for the interruption of the DMX control signal as well.

Built-in PLL, soft-start, soft-on and even-off systems allow for the reliable work even in the most difficult conditions. Direct zero cross-over with opto-insulated DMX input guarantee high noise resistance. Tricolour LEDs for monitoring each channel and DMX control signal. The device comes in the casing suitable for wall mounting.

2. SAFETY CONDITIONS

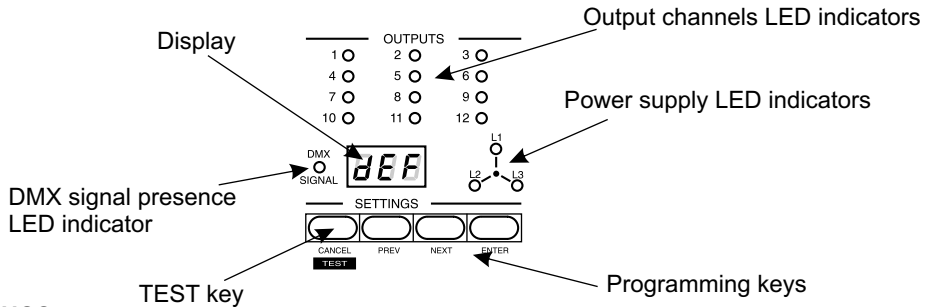
PX091 AC Dimmer is powered directly from standard 230 V grid, what can cause electric shock when safety rules are not observed. Therefore it is necessary to observe the following :

1. Installation, particularly power connection, should be performed by a person holding the appropriate qualifications, according to description in the instruction manual.
2. Dimmer can be connected only to socket which has protecting instalation in working order (3- or 5-wire grid with the separate protective strand).
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.
5. The external devices can be connected to the dimmer with 3-strand 2.5 mm² minimum cross-section area only.
6. Each receiver has to be powered with a separate cable.
7. Power supply input must be protected with an external 3-phase residual circuit breaker with over-current protection of 25A rated current and C-type characteristics.
8. After the installation is completed, check the neutralization efficacy of all powered devices.
9. All repairs demanding casing opening should be made with cut off power supply.
10. The device should be strictly protected against water and other liquids.
11. All sudden shocks, particularly dropping, should be avoided.
12. Device with damaged (cracked) casing should not be connected to the mains.
13. The device cannot be turned on in places with humidity exceeding 90%.
14. The device cannot be used in places with temperature lower than 2°C or higher than 40°C.
15. Clean with damp duster only - dimmer has to be cut off the power supply.

ATTENTION!!!

1. Improper connection of the protective wire (yellow-green strand) can cause electric shock.
2. Improper connection of the neutral wire (blue strand) automatically switches the dimmer off and activates an acoustic alarm.
3. The dimmer can control resistative and inductive circuits (loads) only. The dimmer cannot be used for controlling the electronic transformers, electronic ballasts for fluorescent lamps and other devices that have electronic circuits, unless the producer distinctly states so.

3. FRONT PANEL (CONTROL PANEL)



SETTINGS

There are four buttons for dimmer programming:

- ENTER - starts programming mode and confirms settings
- NEXT - scrolls MENU forwards or increases values set
- PREV - scrolls MENU backwards and decreases values set
- CANCEL - allows to cancel programming (without saving)

DMX OK

Twinkle LED for DMX signal presence.

TEST

When the dimmer is not in the programming mode (the display shows DMX address), the test button forces all outputs to light up at 100%, light all the LEDs and all the display segments. It also checks the output lines status (used bulbs).

DISPLAY

During normal operation shows the DMX address of the first channel. In the programming mode shows currently programmed parameter.

L1, L2, L3

Power control LEDs. For the proper work of the dimmer at least L1 LED should be lit up.

OUTPUTS

Dimmer output channels control LEDs.

4. OUTPUT SIGNAL INTERRUPTION DIAGNOSIS

Three-colours LEDs diagnose status and condition of outputs channels. Their brightness is proportional to light intensity at the corresponding channel and the LEDs colours (green, yellow, red) mean in order:

- green - channel is ok (working properly)
- yellow - channel is working with individual settings
- red - channel is working improperly or not working. Possibility of damage of cable or bulb.

The last function (red sign) is visible while button TEST is pressed and held. The LEDs that are ascribed to the damaged channels will turn RED and the others LEDs will light up green.

After the TEST button is released, the dimmer turns back to normal work and all the channels within the damage was diagnosed will be still enabled (applies to software 2.04 version or newer).

5. PROGRAMMABLE PARAMETERS

The dimmer allows to define the following operation parameters:

1. The group parameters - **ALL** menu

Chosen settings are same for all channels. In case of the DMX address, the displayed value is related to the first channel. For all the other channels subsequent address values are assigned.

2. Individual parameters - **IND** menu

Each channel can be programmed individually. It applies also to the DMX address. The same address can be programmed for several channels.

Group parameters have higher priority than individual ones. It means that when the DMX address is programmed in the **ALL** mode, the previous settings for all twelve channels will be cancelled.

3. Scenes and chasers programming - **DEF** menu

This function enables to program:

- settings for all three scenes
- twelve steps settings and the speed and fading of programmable chaser
- speed and fading of the factory-defined chaser

4. Measurement functions - **FUN** menu

This function allows to check the internal dimmer temperature and supply voltage values.

5.1. GROUP PARAMETERS

1. **ADR** - DMX address. It is chosen from the 1 - 501 range (when 501 address is chosen, channel no. 12 has the address 512).

2. **CUR** - control curve choice. There are 8 options to choose from:

LIN - linear,

SWP - switchable,

INV - inverted,

LOG - logarithmic,

EXP - exponential,

NE1...NE3 - for neon lamps control.

3. **REL** - limit. Limiting the output voltage in the range from 50 - 230 V.

4. **PRE** - preheat. Heating up the bulb filaments. Set in the range from 0 - 10 %.

5. **NS** - lack of signal. It determines functioning of the dimmer according to parameters defined in case of DMX signal interruption. There are 9 options to choose from:

ON - turning all outputs on at 100%,

OFF - turning all outputs off,

HLD - the last received value is held,

DEL - slow output switching off (about 20 secs),

SC1...SC3 - programmable scenes,

CF - factory-defined chaser,

CRP - programmable chaser.

5.2. INDIVIDUAL PARAMETERS

1. **AdF** - DMX address. Chosen from the 1 - 512 range.
2. **CdF** - control curve choice. There are 8 options to choose from:
 - Lfn** - linear,
 - SPd** - switchable,
 - Inv** - inverted,
 - LnU** - logarithmic,
 - Exp** - exponential,
 - nE1**...**nE8** - for neon lamps control.
3. **RCL** -limit. Limits the output voltage in the range from 50 - 230 V.

5.3. MEASUREMENT FUNCTIONS

1. **PEd** - internal dimmer temperature.
2. **U1d**, **U2d**, **U3d** - power supply voltage.

5.4. SCENES AND CHASERS PROGRAMMING

1. **Sc1**...**Sc8** - scenes programming
 - C01** ... **C12** - the number of the edited channel
 - 00** ... **100** - channel value described in %.
2. **CFd** - programmable chaser
 - F01** ... **F12** - numbers of the edited scenes
 - C01** ... **C12** - numbers of the edited channel
 - 00** ... **100** - the value of the chosen channel described in %
 - SPd** - chaser speed in the range 1 - 32
 - FAd** - switching on / off the crossfade function.
3. **CFE** - factory-defined chaser
 - SPd** - chaser speed in the range 1 - 32
 - FAd** - switching on / off the crossfade function.

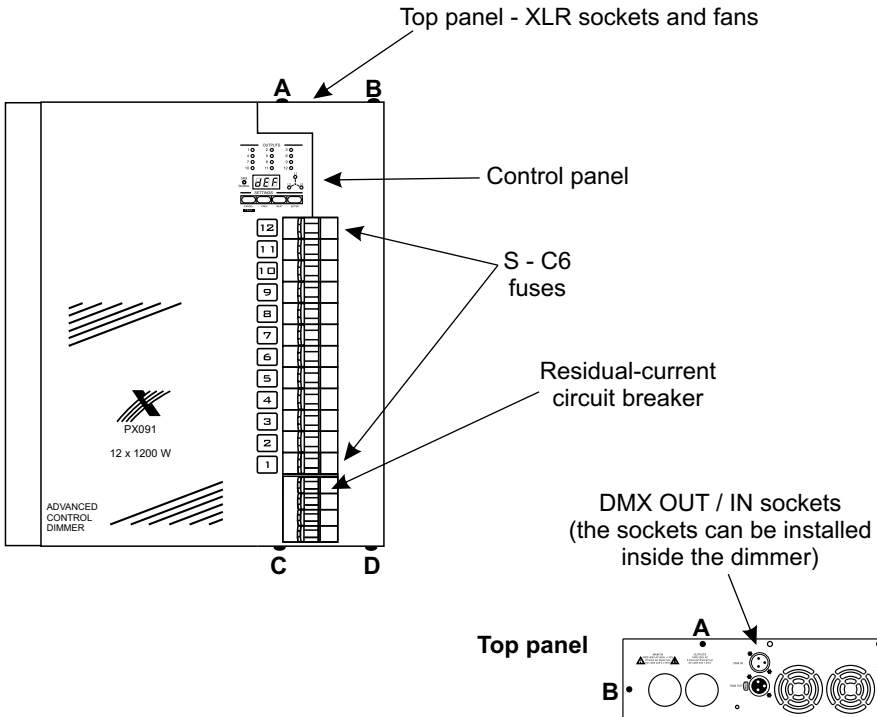
6. ACCESS LOCK

Because of a great number of possibilities when defining the dimmer functions, all introduced changes can be protected with a code (number in a range from 0 - 255). The **dEE** position of the main menu will also be hidden.

6.1. SWITCHING THE ACCESS LOCK ON

1. In the basic position of the display (DMX address of the first channel) push and hold TEST button, push shortly NEXT button and release TEST button - **PRd** will show.
2. Push ENTER button - **En** inscription will show.
3. Push ENTER button again - the last set code will show.
4. Set new code using "PREV" and "NEXT" buttons (or leave the previous one) and confirm changes by pressing the ENTER button.

8. DIMMER DESCRIPTION

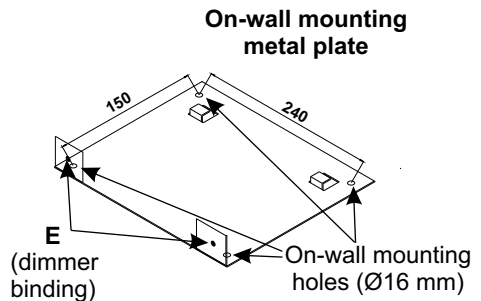


9.1. DIMMER INSTALLATION

To install the dimmer screw down the on-wall mounting metal plate to the wall and screw off the front lid fastened with four screws characterised with letters A, B, C and D on the illustration above. Then hang the dimmer on the metal plate on the wall and fasten it with two screws E (see the illustration below). After that you may screw down the dimmer front panel back.

ATTENTION! It is forbidden to unscrew the dimmer rear panel! It can cause a device serious damage!

ATTENTION! It is strongly recommended to leave not less than 10 cm of free space under and over the dimmer to provide a proper ventilation!



9. POWER CABLE CONNECTION

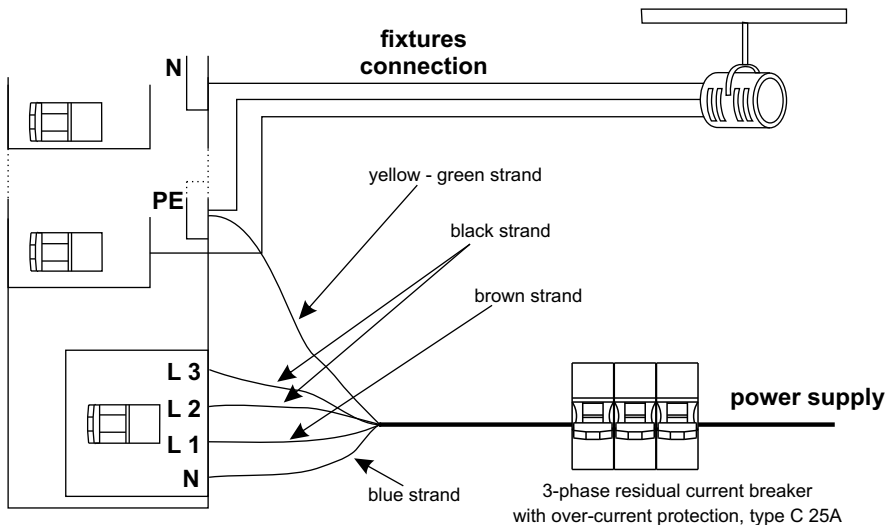
9.1. GENERAL RULES

1. Installation, particularly power connection, should be performed by a person holding the appropriate qualifications, according to description in the instruction manual.
2. The device has to have properly connected the protective cable (yellow - green strand of the power cable).
3. The power circuit, where the PX091 dimmer is connected, must be equipped with the residual-current circuit breaker.
4. The minimal power cable cross-section area is 4 mm².
5. The external devices can be connected to the dimmer with 3-strand 2.5 mm² minimum cross-section area only.
6. Each receiver has to be powered with a separate cable.
7. After the installation is completed, check the neutralization efficacy of all the powered devices.
8. All the cables must be strictly protected against mechanical and thermal damage.

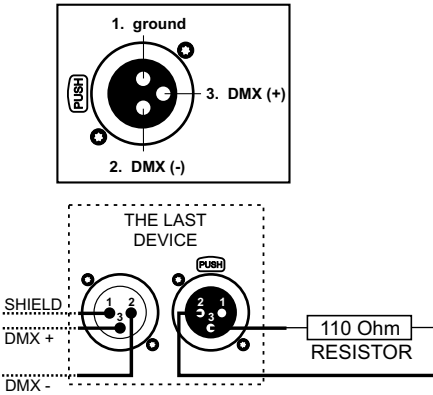
9.2. POWER CABLES COLOURS

brown strand	= phase 1
black strand	= phase 2
black strand	= phase 3
blue strand	= neutral
yellow - green strand	= protective

9.3. CONNECTIONS SCHEME



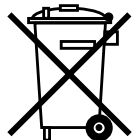
10. DMX SIGNAL CONNECTION



1. To connect devices use of the microphone cable is recommended (two strands in the shield).
2. The devices should 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 should be installed. It is a 110 Ohm resistor.

11. TECHNICAL SPECIFICATION

- DMX channels	1 - 512
- DMX line optical insulation	yes
- circuit break detection	yes
- supertension protection	yes
- fans	electronically controlled
- outputs load capacity	12 x 1200 W continuous load (resistive) 12 x 700 VA continuous load (inductive)
- outputs protection	6 A automatic fuses
- DMX control input	3-pin XLR plug
- DMX control output	3-pin XLR socket
- power supply	3 x 230 V / 40 - 70 Hz
- output socket	cable
- current consumption	3 x 22 A (at full load)
- weight	15 kg
- dimensions:	
- width	400 mm
- height	415 mm
- depth	100 mm





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DECLARATION OF CONFORMITY

according to guide lines 2004/108/EC and 2006/95/EC

Name of producer: **PXM Marek Żupnik Limited Partnership**

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

declares that the product:

Name of product: **AC Dimmer 12 x 1200 W**

Type: **PX091**

answers the following product specifications:

LVD: PN-EN 60065:2004/A2:2011

EMC: PN-EN 55014-1:2012

Additional informations:

1. All DMX512 inputs and outputs must be shielded and the shielding must be connected to pin 1 XLR plug.
2. The dimmer PE terminal must be connected to efficient ground installation equipped with the residual-current circuit breaker.
3. The dimmer can be installed in the closed switching stations only.

Kraków, 15.10.2012


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