PX227

DMX/0-10V

Interface 8ch

User manual

Table of Contents

1   Description

Demultiplexer DMX-512 signal on 0 – 10V.

The PX227 is designed to process the DMX512 signal to control the eight analog 0 – 10V outputs with accuracy ±3%. The device is manufactured in a housing designed for installation in electrical switchgear DIN rail T35.

In addition to simple decoding DMX signal the PX227 allows to select the characteristics of control and program unit reacts to loss of DMX signal.

Individually programmable parameters allow to define independent for each channel DMX address from range 1 – 512. What is more it is possible to arbitrarily assign multiple channels to a single address.

2   Safety conditions

PX227 is a device powered by low voltage equal to 12 – 24V DC; however, please observe the following safety rules during its installation and use:

1. The device mat 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. Only use a shielded cable for connecting the DMX signal.

5. All repairs and connection of outputs or DMX signal can only be made with cut off power supply.
6. PX227 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 – when the power is off.

3 Connectors and control elements

Pin no.	Connection
1	GND (-)
2	GND (-)
13	GND (-)
14	GND (-)
6	OUT 1 (+)
5	OUT 2 (+)
4	OUT 3 (+)
3	OUT 4 (+)
15	OUT 5 (+)
16	OUT 6 (+)
17	OUT 7 (+)
18	OUT 8 (+)
7	DC + power type
8	DC + power type
9	DC + power type
10	DC - power type
11	DC - power type
12	DC - power type
19	DMX IN +
20	DMX IN -
21	DMX IN GND
22	DMX OUT +
23	DMX OUT -
24	DMX OUT GND
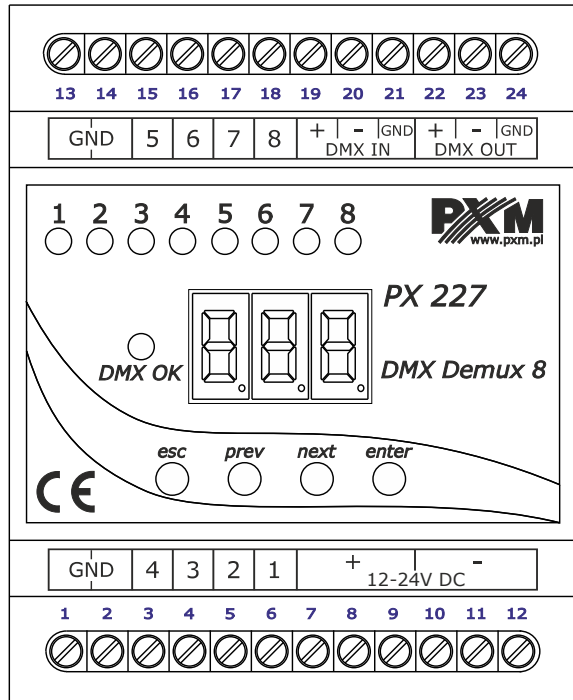
4 DMX signal connection

PX227 must be connected to DMX line in series. This means that **DMX IN** terminals in the device must be provided with the driving cable, and then from **DMX OUT** connector the driving cable must be provided to other DMX receivers. If PX227 is the last device in DMX line, **DMX+** and **DMX-** resistor of 120 Ohm between pins 22 and 23.
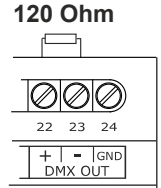
5 Programming

After switching on, the display shows the version of the program. During the normal operation of demultiplexer, the display shows only one dot. Press *enter* to go the main menu, the display shows **ALL**. Press *prev* or *next* to select the programming menu (**ALL**, **Ind**, **noS**) and press *enter* to confirm.
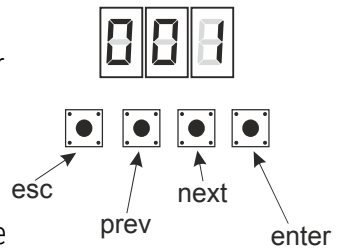
Navigating the menus:

esc – exits the currently programmed parameter without saving changes or takes you to a higher menu level

prev – takes to a lower menu lever or reduces the set values

next – takes to a higher menu level or increase the set values

enter – takes to device programming function and confirms the set values

6 Programming of group parameters

Programming in this menu is common to all channels.

After selecting **ALL** from the main menu, confirm selection by pressing *enter*, then with *next* or *prev* select the parameters to be set:

Adr – DMX address of the device

Cur – feature of channel dimming

The next step is to confirm selection by pressing *enter*. The address or feature programmed in this way will delete the previous individual settings of the channels.

6.1 Setting of DMX address

PX227 menu allows to set DMX address of the device in the range from 1 to 505.

In order to set DMX address:

1. Set the **Adr** function
2. By using *next* or *prev* set the selected DMX address. In order to accept the setting, press *enter*.
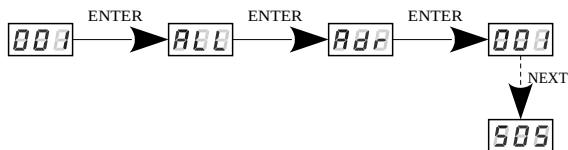
6.2 Feature of output channels

To adjust the feature for all channels set:

1. From the start menu, go to the group settings menu *ALL*
2. Press *enter* again in order to change the settings for all channels
3. Use *next* to select *Cur*, this will allow to change the characteristic of channel dimming
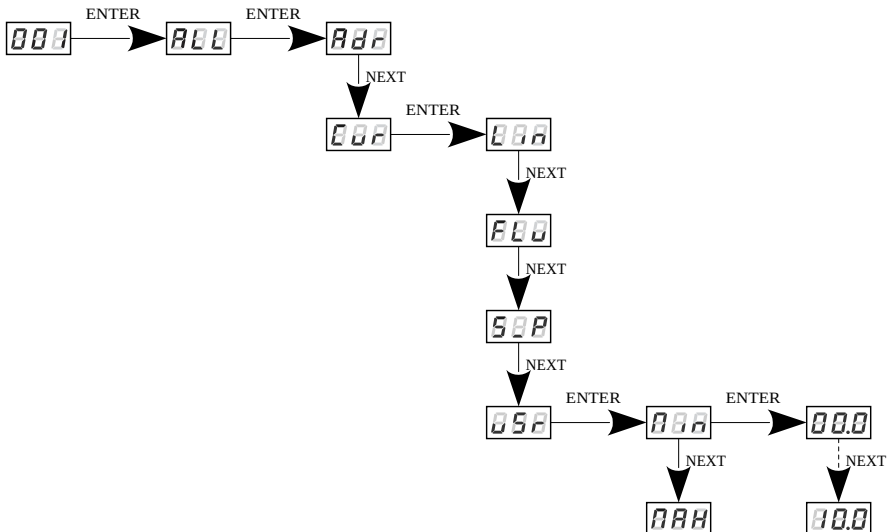
Lin – linear characteristics 0 – 10V

FLu – linear characteristics 1 – 10V

S_P – switched characteristics (on / off)

uSr – characteristics defined by the user, linear in the range of Min to Max.

Maximum and minimum values can be set in the range from 0 to 10V.

7   Programming of individual parameters

PX227 device has the option of individual settings. It allows to assign each of the eight output channel with any DMX address. It is possible after selecting *Adr*. DMX address can be selected within a range from 1 to 512.

It is also possible to set the output characteristics for each channel.
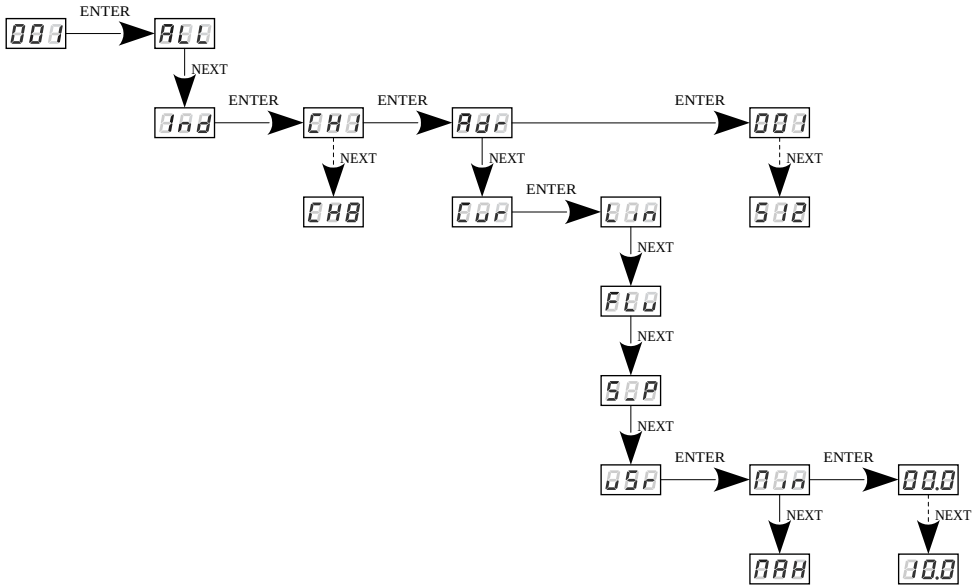
8   Response to the loss of DMX signal

This function is used both to protect the system against the disappearance of DMX signal and to gain a specific state on outputs. After it has been activated, in case of a lack of DMX signal, the module will perform the selected function by itself. The reconnecting of DMX signal will automatically break the performed function, and the module will again be controlled by DMX signal.

In order to start the function, enter *noS* option:

1. From the start menu go to the *noS* and press *enter*
2. Use the *next* or *prev* buttons to select the device behavior for DMX signal loss

The following options are available:

Pr1 – Pr2 – starting program 1 or 2

on – switching all outputs on 100%

oFF – complete switch-off of outputs

HLd – holding the last DMX value

Sc1 – Sc4 – scene 1, 2, 3 or 4

Up to 10 steps can be created in the program (*F01 – F10*), in each step it is possible to define the values of output channels (*CH1 – CH8*) in the range from 0 to 255. Additionally, in each step you can define its duration (*Spd*) in the range of 0,1 – 99,9 seconds. In the step it is also possible to set the transition smoothness (*FAd*) in the range from 0 (step transition) to 100

(completely fluid transition). It is possible to reduce the number of program steps, for this purpose, for this purpose, in step which should be last and after this step followed first step, select the *on* option in the *End* menu.

In each of the four scenes, you can program the values of each of the eight output channels separately in the range from 0 to 255.

9   Smoothing function

The device also has the smoothing option. Smoothing allows for smooth color changes. When this option is enabled, switching between successive DMX values sent to channels is smooth, which prevents abrupt changes in voltage.

In order to start the smoothing function, enter the *Sth* option:

1. From the start menu go to the *Sth* settings and press *enter*
2. Use the *next* or *prev* buttons to select the smoothing function and confirm with the *enter* button
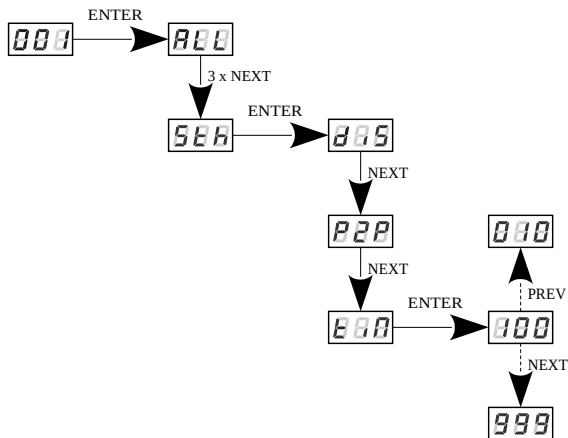
The enabled smoothing function can slightly slow down the device response to the change of DMX signal, so it is possible to switch off this option. In order to switch off smoothing, select *diS* parameter and confirm the selection with *enter*.

The selection of *P2P* function allows linear transition between successive DMX values.

Time smoothing *tiN* allows to set the time of linear transitions between successive DMX values. The minimum value is 10 [ms], and the maximum is 999 [ms]. This can be smoothly changed by selecting the expected value using *prev and next* buttons.

10   Screen blanking

The device has been equipped with the option of switching off backlight of the screen. This is provided by the *SCr* option. By using it, the display is switched off approx 60 seconds of inactivity (button unused). The device still operates without interfering with other parameters. Use any button to restore the backlight.

In order to activate the screen blanking function:

1. From the start menu enter the *SCr* settings and press *enter*
2. With *next* or *prev* change the values to *on* and confirm with *enter*

Similarly, you should follow in order to switch off this function, but then selecting *oFF*.
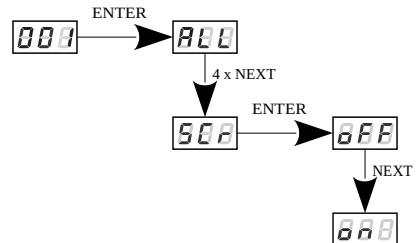
11 Mounting

PX227 is installed on the mounting rail T35 in order to provide stable position and comfortable access to the device.

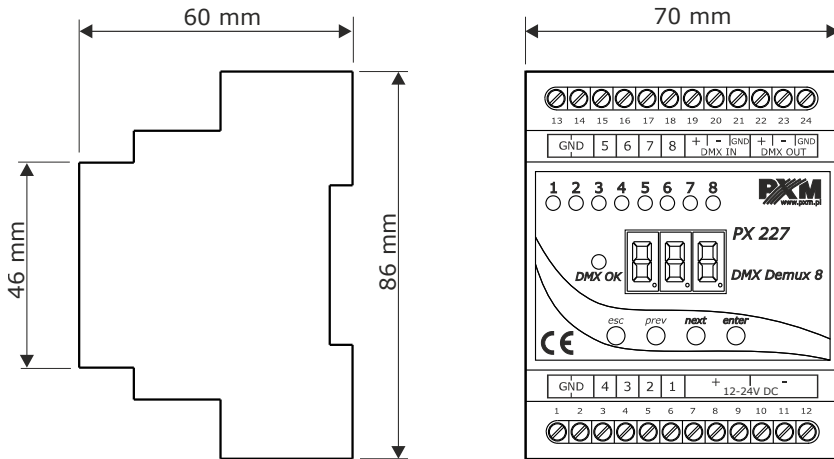Installation on the mounting rail:

1. Set PX227 diagonally to the rail by hooking the two supports on the rear panel of the unit on the upper part of the assembly strip.
2. Pull the latch down using a screwdriver.
3. Attach the device to the rail, still holding a screwdriver in a latch.
4. Release the latch.

12 Menu scheme
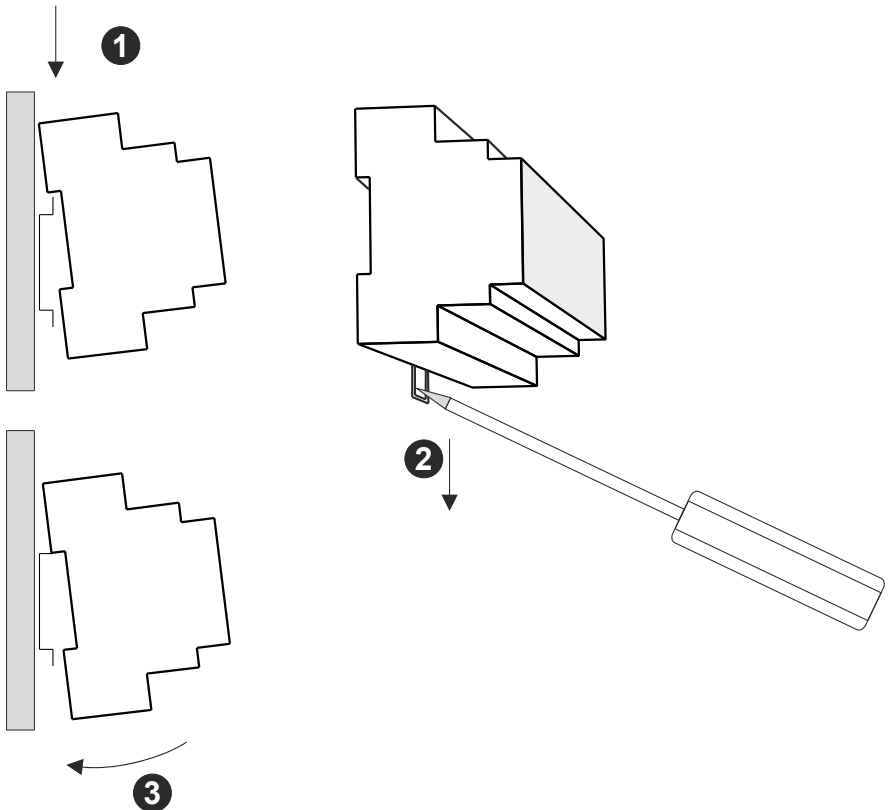
13 Connection scheme
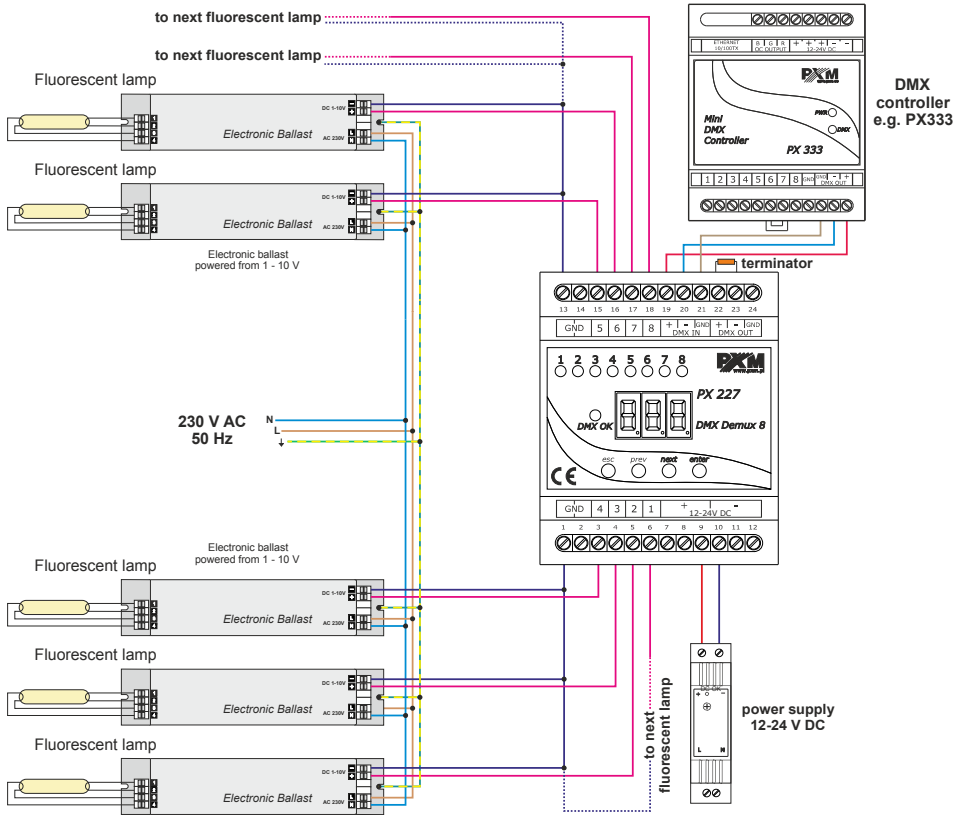
14   Dimensions

15   Technical data

type	PX227
power supply	12 – 24V DC
number of DMX channels	512
number of output channels	8
voltage on outputs	0 – 10V (±3%)
output sockets	screw terminals
current consumption	max. 250mA
outputs load	max. 30mA / channel
weight	0.14kg
dimensions	width: 70mm (4 modules) height: 86mm depth: 60mm

DECLARATION OF CONFORMITY

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

we declare that our product:

Product name: DMX/0-10V Interface 8ch

Product code: PX227

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

PN-EN IEC 63000:2019-01	EN IEC 63000:2018
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.

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