

PX292

DMX/4-20mA
interface

MANUAL



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

1. GENERAL DESCRIPTION

PX292 is used for DMX512 signal processing to analog 4 - 20 mA control. The device is manufactured in the casing for installation in electric panels on DIN T35.

In addition to simple DMX signal decoding PX292 allows you to programme unit reaction to loss of DMX signal.

Individually programmable parameters allow you to define independent for each channel, DMX address in the range 1-512. For example, multiple channels can be arbitrarily assigned to a single address.

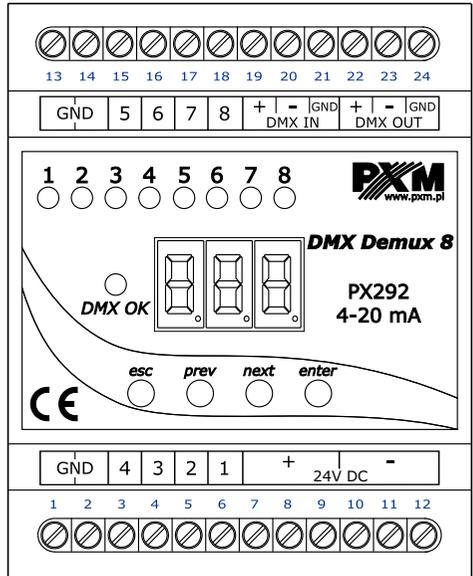
2. SAFETY CONDITIONS

PX292 is powered with safe voltage 12-24 V; however, during its installation and use the following rules must be strictly observed:

1. Installation of equipment, in particular, power connection should be made by a licensed person, in accordance with this manual.
2. The device may only be connected to 12-24 V DC current (stabilized voltage) with current-carrying capacity compatible with technical data.
3. All the conductors should be protected against mechanical and thermal damage.
4. In the event of any conductor damaging, it should be replaced with the one of the same technical specification.
5. Connection of DMX signal should be made with shielded conductor.
6. All repairs and connections of outputs or DMX signal can only be made with power off.
7. PX292 should be strictly protected against contact with water and other liquids.
8. All sudden shocks - particularly dropping - should be avoided.
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. For cleaning use only a damp cloth.

3. DESCRIPTION OF CONNECTORS AND CONTROLS

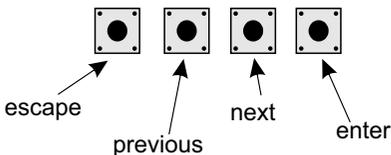
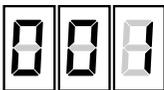
Pin no.	Connection
1	GND (-)
2	GND (-)
13	GND (-)
14	GND (-)
6	OUT 1 (+)
5	OUT 2 (+)
4	OUT 3 (+)
3	OUT 4 (+)
15	OUT 5 (+)
16	OUT 6 (+)
17	OUT 7 (+)
18	OUT 8 (+)
7	DC + power type
8	DC + power type
9	DC + power type
10	DC - power type
11	DC - power type
12	DC - power type
19	DMX IN +
20	DMX IN -
21	DMX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



4. PROGRAMMING THE DEVICE

4.1. Navigating the menu

After you switch on the device, its display shows the program version. During its normal operation, the demultiplexer shows the first channel address on the display. To access the main menu press “enter”, and the display will show the following: **ALL**. Press “previous” or “next” to select the appropriate menu to program (**ALL**, **Ind**, **noS**, **Sth**, **Scr**) and press “enter” to confirm your selection.



- escape** - allows to exit from the currently programmed parameter without saving any changes or to go in the menu to a level above
- previous** - menu scrolls back or decreases the set value
- next** - menu scrolls forward or increases the set value
- enter** - enters to program device and approves the set value

4.2. Programming group parameters

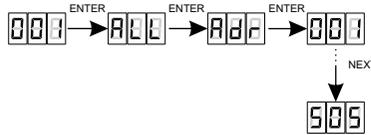
Programming in this menu affects all the channels.

After you select **ALL** in the main menu, press “enter” to confirm your selection and then, using the “next” or “previous” buttons select the parameters that you want to set:

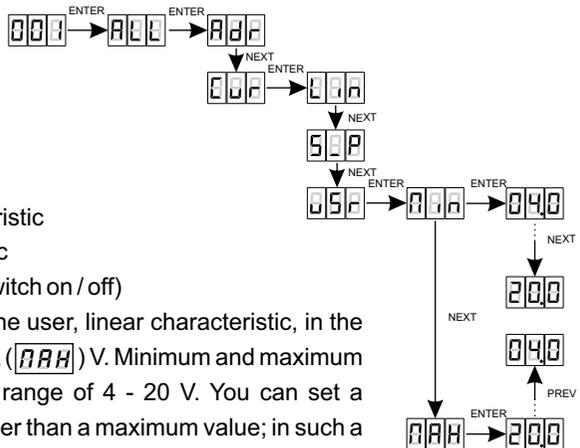
- Adr** - DMX address of the device
- Cur** - channel dimming characteristic

If you program an address or a characteristic, the previous individual settings for each channel will be cancelled.

The PX292 menu allows the user to set a DMX address in the 1 - 505 range.



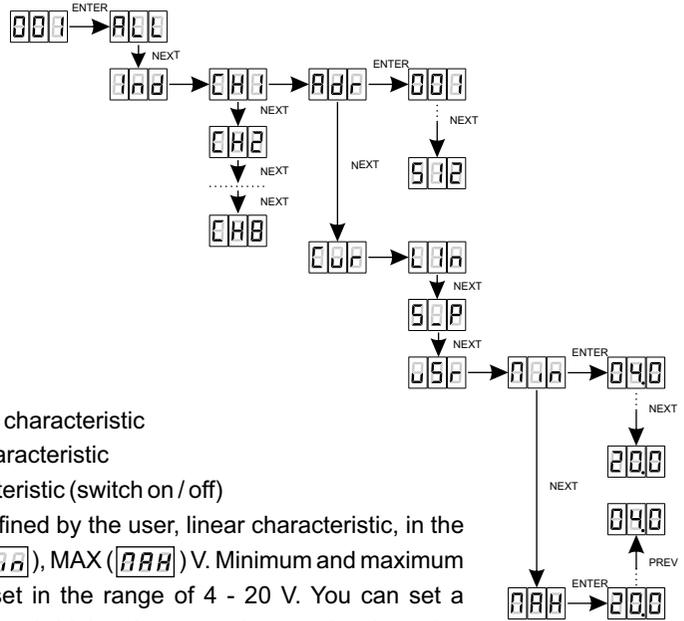
You can also set an output characteristic for all the channels at the same time:



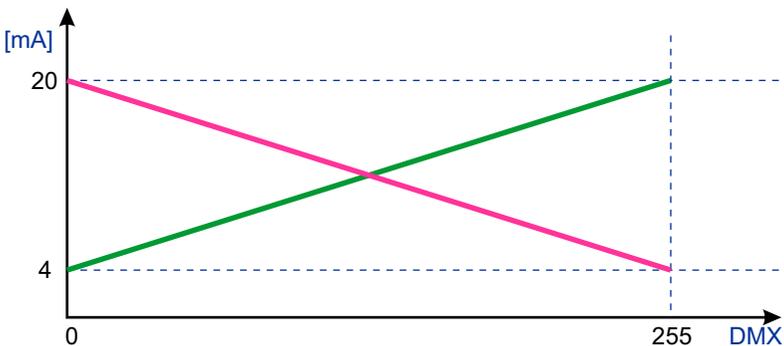
- Cur** - channel dimming characteristic
- LIn** - 4...20 V linear characteristic
- S_P** - switching characteristic (switch on / off)
- uSr** - characteristic defined by the user, linear characteristic, in the range of Min (**000**), MAX (**040**) V. Minimum and maximum values can be set in the range of 4 - 20 V. You can set a minimum value that is higher than a maximum value; in such a case the output value will be inversely proportional to the input value.

4.3. Programming individual parameters

The PX292 device features an individual settings option. This allows you to assign any DMX address to each of the eight output channels. In order to do this, you need to select the **Adr** function. You can choose addresses from the value range of 1 - 512. You can also set an output characteristic for individual channels:

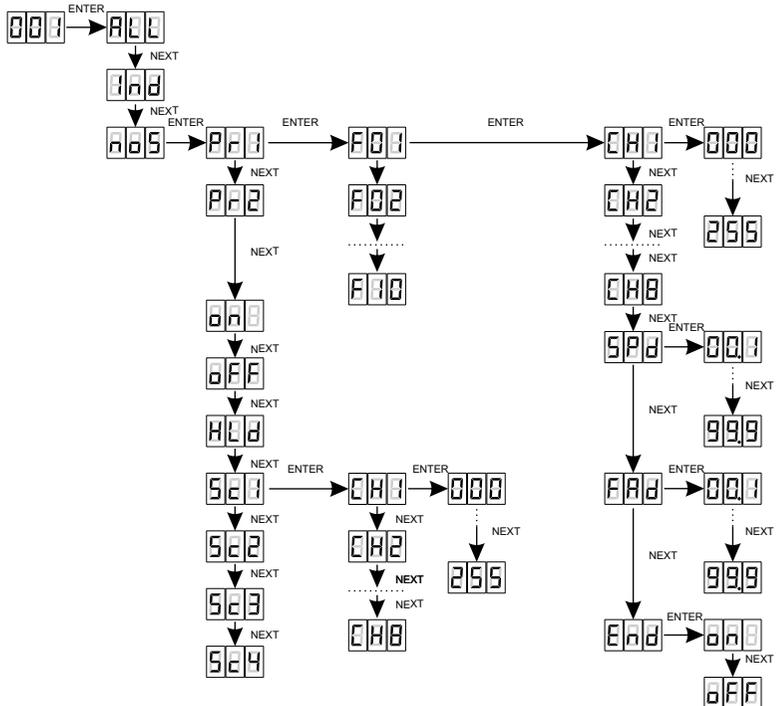


- Cur** - channel dimming characteristic
- Lln** - 4...20 V linear characteristic
- S_P** - switching characteristic (switch on / off)
- uSr** - characteristic defined by the user, linear characteristic, in the range of Min (\overline{aaa}), MAX (\overline{AAH}) V. Minimum and maximum values can be set in the range of 4 - 20 V. You can set a minimum value that is higher than a maximum value; in such a case the output value will be inversely proportional to the input value.



4.4. Response to DMX signal loss

You can use this function to protect the system against DMX signal loss and to obtain a specific status at the outputs. When the function is enabled, and DMX signal loss occurs, the module will independently execute the function selected. If the DMX signal is restored, the function being executed will be interrupted and the module will again be controlled by the DMX signal.



Pr1 - Pr2 - you can program 2 programs, each with ten steps (**F01 - F10**). For each of the programs you can set playback speed **SPd** (values in the range of 0.1 – 99.9 seconds) as well as step fading smoothness in the **FAd** program (values in the range of 0, i.e. abrupt step-like change, to 100, i.e. completely smooth transition). If the step being edited is to be the last step in the program, you need to access the **End** function. If you select **on**, that will be the last step in the program and will be followed by step one.

on - switching on all the outputs at 100% for which **SPd** is specified – switch-on time at 100% (0.1 – 99.9 s)

oFF - complete switching off of all the outputs

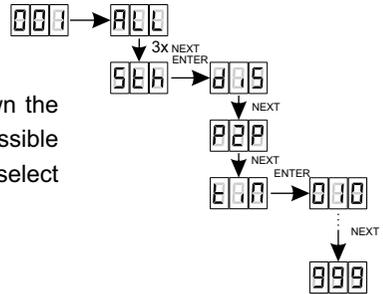
Hld - holding the last DMX value at the output if the DMX signal is lost

Sc1 - Sc4 - programming DMX values for four scenes. In respect of each scene you can set values in eight channels (**CH1 – CH8**)

4.5. Smoothing feature

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.

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".



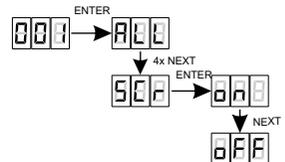
The selection of **P2P** function allows linear transition between successive DMX values.

Time smoothing - time **E00** allows you 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 "previous" and "next" buttons.

4.6. Screensaver

The device is equipped with a feature that allows for turning off the backlight. The **ScR** option activated turns off the display after a minute of inactivity (do not use the keys). The device continues its operation without interfering with other parameters. Press any key to restore the backlight.

- on** - screen saver activation
- oFF** - screen saver deactivation



4.7. Default settings, memory error

If you have any difficulty accessing the device menu, e.g. it is not possible to enter a particular menu level or it is necessary to restore the device to its default settings, follow the instructions below.

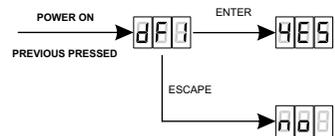
In the first case, if there is no access to the menu level or it is incorrectly displayed, this may indicate an error of saving to the device memory. Then, before the PX292 service is shipped to the service, you must perform a factory reset. If the procedure has been performed and the device still does not operate properly, it must be sent to the manufacturer.

To restore the device to its default settings, press and hold the previous key while switching on the device. One of the messages that will be displayed will say **dFI**, which means successful restoring to default settings (the previous key has to be held down while powering on the device, until the **dFI** message is displayed).

If this message is accepted by pressing „enter”, the default settings will be restored. The user can also exit this menu level without restoring the default settings. In order to do this, press the „esc” key.

Please note that all set parameters of the PX292 device after restoring the default settings will be changed to those shown below:

- DMX address - 1
- no signal operating mode - switched off (**oFF**)
- smoothing - disabled (**diS**)
- screensaver - switched off (**oFF**)



Err message - memory error

The device is equipped with a built-in memory work control function.

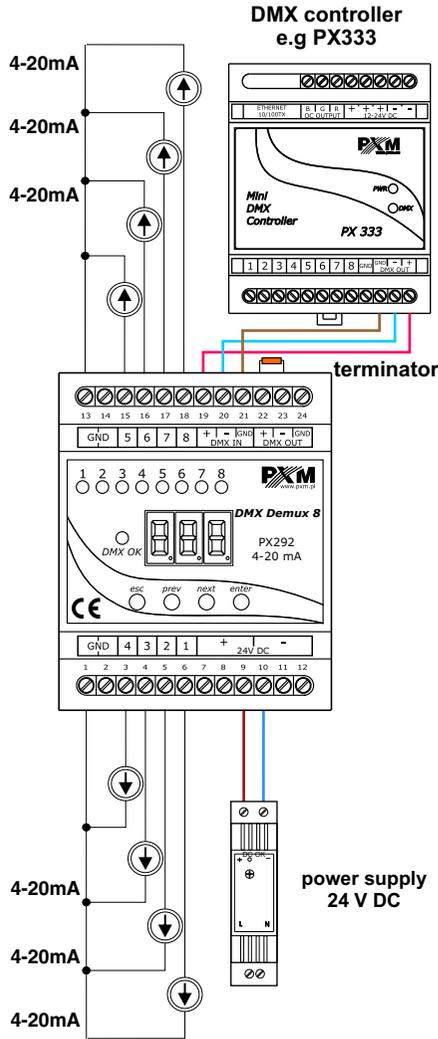
If there are problems with the memory operation on the PX292 display, the **Err** message appears - memory error.

In this situation, select the “enter” key. The device will reload the default configuration and upload it to the memory. If after this operation, the **Err** message remains on the screen, the memory is permanently damaged and the unit must be sent to the service point.

If an **ER1** or **ER2** error occurs, the device will reset itself after 3 seconds. Such a reset indicates that there is a hardware problem with the device. If the problem occurs again, please contact our service desk.

6. CONNECTION SCHEMATIC

Example of connection:

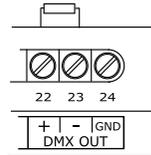


6.1. Podłączenie sygnału dmx

PX292 have to be connected to the DMX line in series. This means that control cable should be connected to the DMX IN terminal, and then from the DMX OUT connector the control cable should go to the other DMX receivers.

If the PX292 is the last device in the DMX line, to the "DMX +" and "DMX -" terminals (between pin 22 and 23) the terminator - 120 Ohm resistor have to be connected.

120 Ohm

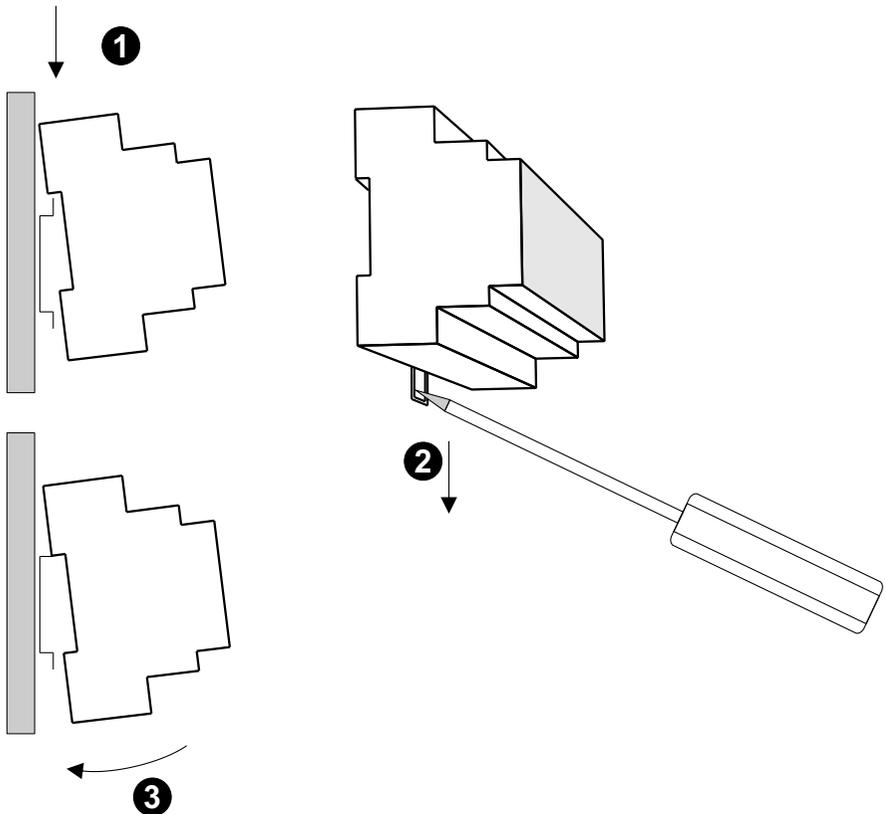


7. INSTALLATION OF THE DEVICE

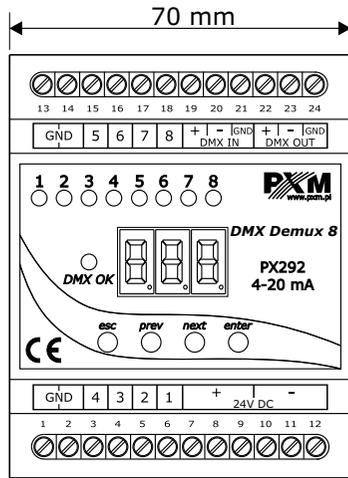
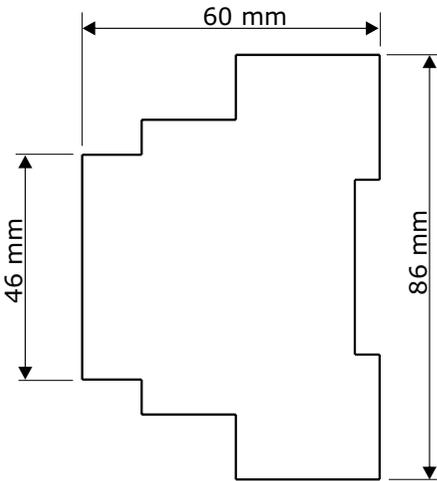
The PX292 device is produced with casing adapted to the mounting onto the T35 rail as it provides a stable location and convenient access to the device.

Installation on mounting rail:

1. Apply the PX292 obliquely to the DIN rail and with two hooks on the back part of the device catch the upper part of the mounting rail.
2. Pull the latch down using a screwdriver or similar tool that allows to pull it down.
3. Attach the device to the DIN rail, still holding a screwdriver in the latch.
4. Release the latch.



8. DIMENSIONS



9. TECHNICAL SPECIFICATIONS

- DMX channels 512
- Power supply 12-24 V DC
- Current consumption max. 230 mA
- Number of output channels 8
- Output load 4-20 mA / channel
- Output connections terminal blocks
- Dimensions:
 - width 70 mm (4 rail modules)
 - height 86 mm
 - depth 60 mm





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DECLARATION OF CONFORMITY

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

we declare that our product:

Product name: **DMX/4-20mA INTERFACE**

Product code: **PX292**

smeets the requirements of the following standards as well as harmonised standards:

PN-EN 50581:2013,	EN 50581:2012
PN-EN 61000-4-2:2011,	EN 61000-4-2:2009
PN-EN 61000-6-1:2008,	EN 61000-6-1:2007
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 on the use of certain hazardous substances in electrical and electronic equipment.

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 and repealing Directive 2004/108/EC.



Marek Żupnik spółka komandytowa
32-003 Podłężę, Podłężę 654
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Podłężę, 28.07.2017

mgr inż. Marek Żupnik.