PX173

Merger DMX

User manual

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

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1 Description

Merger DMX – rail DMX signal adder.

DMX-512 is a protocol that defines the serial transmission of control data for 512 channels. Many drivers can not produce full range of 512 addresses and send data for a smaller number of channels. In the case of installations where few such type of drivers work together, there is sometimes a need to add output of individual devices and send them via a single DMX circuit.

Merger DMX is a device that allows to add together the DMX signals – get data from several inputs, set them in correct order and send to single 512-channel output.

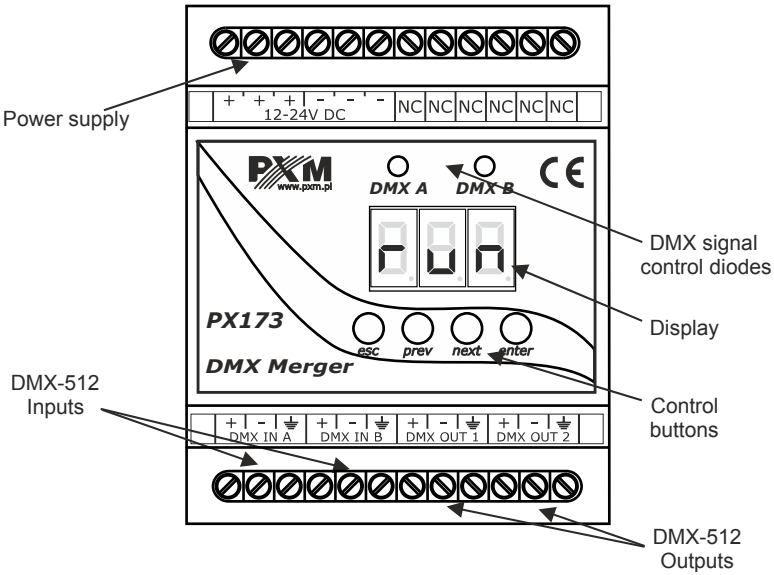
The PX173 is an adder of two 512-channels inputs. The installation of the device is limited to connecting the power supply and connecting the DMX control cables. Facilitation of DMX operation and control are DMX signal presence controls in individual paths (“A” and “B”) and a specially built control system with display of operating mode, enabling full control of receivers connected to the output path. Remember to properly connect the receiver in the DMX path – the receivers must be connected in series to from a chain, it is necessary to connect the terminator at the output of the last receiver.

2 Safety conditions

PX173 is powered with safe voltage 12 – 24V DC; however, during its installation and use the following rules must be strictly observed:

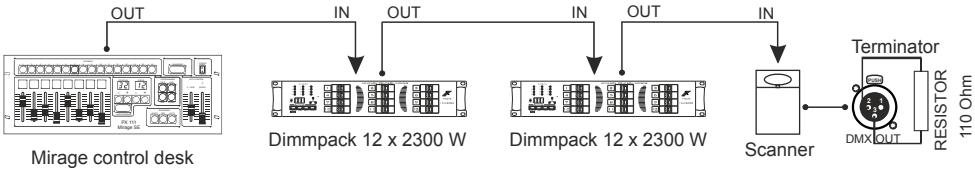
1. The device may only be connected to 12 – 24V DC current with current-carrying capacity compatible with technical data.
2. All the conductors should be protected against mechanical and thermal damage.
3. In the event of damaging any conductor, it should be replaced with a conductor of the same technical 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. PX173 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 – Merger should be cut off from power supply.

3 Connectors and control elements

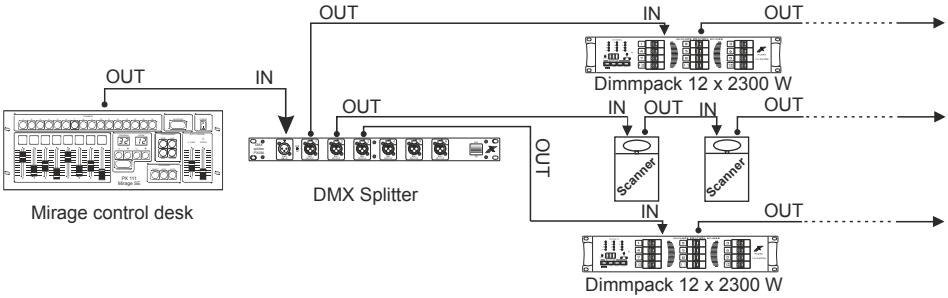


4 Rules of creating DMX installation

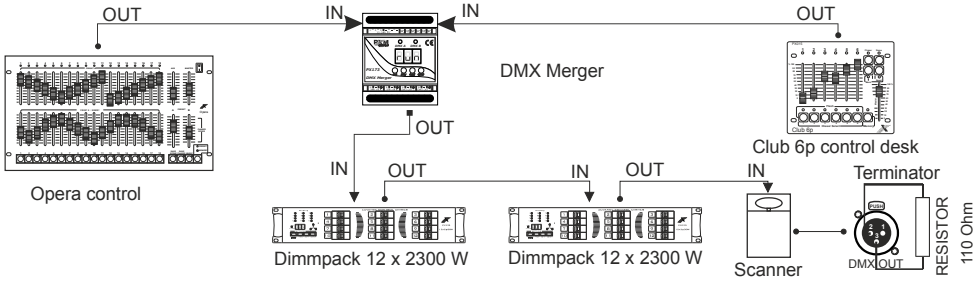
DMX-512 is a typical installation in series. That is why all the receiving devices (effects) are always equipped with two sockets for DMX connection: one input socket ("*IN*") and one output socket ("*OUT*"). The signal from the controller gets to the first device and then, from its output, to the second, etc. At the end of a line created in such way the terminator must be installed (see the illustration below).



There are some situations, when the DMX line must be spitted (e.g. to save on the cables). In such case you need to apply a device called DMX Splitter.



Sometimes you are faced with the opposite situation: two DMX signals going out from different controllers through the independent lines need to be summed up and sent further through one, common line. The typical examples is the theater, where the main console is used for lighting control during the performance. During the day this console is off and inaccessible. That is why the second, smaller console can be placed near the scene. Both these consoles control the same lights. In such case the DMX line adder, that is DMX Merger, must be applied.



Apart from two-lines summing, the Merger popularizes the wide range of possibilities of defining the dependence between inputs. For the precise description see the further part of the manual.

5 Programming

The point of Merger programming is to define a number of DMX addresses and the number of data in the input lines, and determining the dependence that occur between them. In a basic operation mode the *run* inscription displayed. To enter the programming mode, press the *enter* key.

5.1 Button features

esc – goes back to the previous MENU level or discards changes made

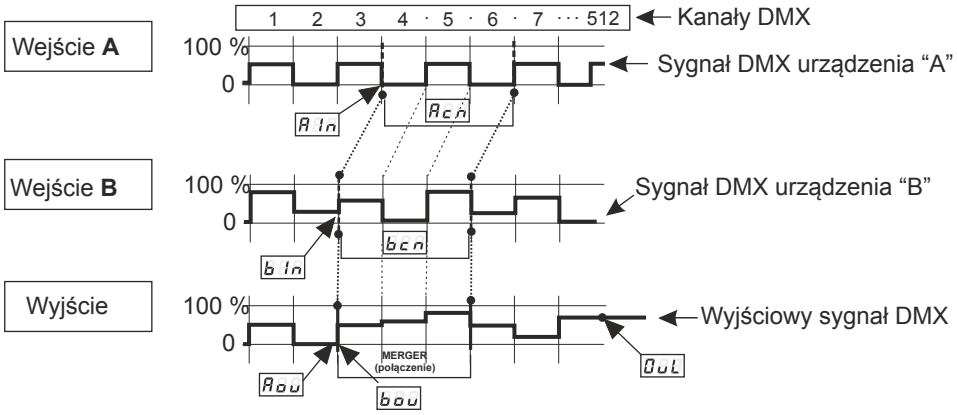
prev – scrolls to the previous features on the same MENU level or decrease the parameter's value

next – scrolls to the next feature on the same MENU level or increases the parameter's value

enter – enters the next MENU level and confirms changes made

5.2 DMX signal connection characteristics

The example of summing up of 3 channels with the comparison feature *HI*.



5.3 Designation of displayed messages


Merger basic operation mode


Output 1 programming


Number of the first summed channel of the A input


Number of the summed channels from the A input


Number of channel on the output 1, where the first (selected in ***AIn***) channel is going to get


Number of the first summed channel of the B input


Number of the summed channels from the B input


Number of channel on the output 1, where the first (selected in ***bIn***) channel is going to get


Mode of execution of the dependence between the corresponding channels


After comparison of the inputs value for each channel separately, the greater value is sent to the output


After comparison of the inputs value for each channel separately, the smaller value is sent to the output


After comparison of the inputs value for each channel separately, the subtraction result value is sent to the output


The B input is sent to the output as long, as the DMX transmission is absent on the A input. When the signal appears on the A input, it is sent to the output and the B input is ignored.


The A input is sent to the output as long, as the DMX transmission is absent on the B input. When the signal appears on the B input, it is sent to the output and the A input is ignored.


The B input is sent to the output as long, as the DMX transmission on the A input equals the value of the channel from the B input. When the signal are equal, the signal from the A input it is sent to the output and the B input is ignored.


The A input is sent to the output as long, as the DMX transmission on the B input equals the value of the channel from the A input. When the signal are equal, the signal from the B input it is sent to the output and the A input is ignored.


The A input is sent to the output only. The B input is ignored.


The B input is sent to the output only. The A input is ignored.

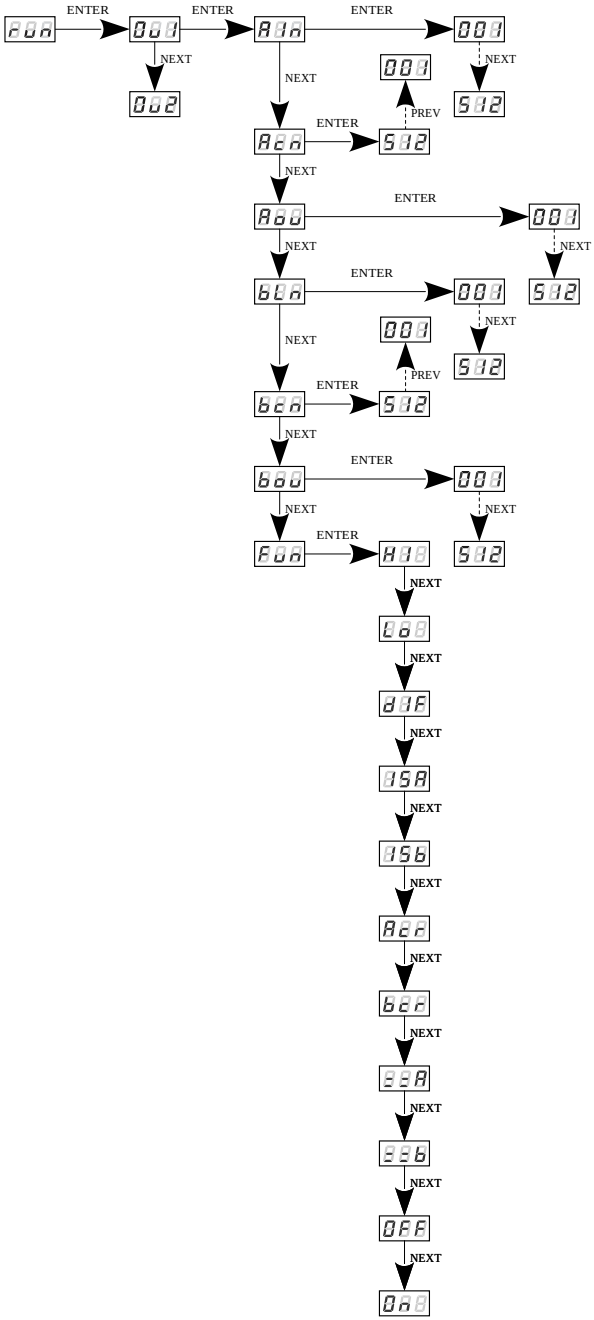

Regardless of both inputs, zero values are sent do the output


Regardless of both inputs, all declared output channels are controlled at 100%

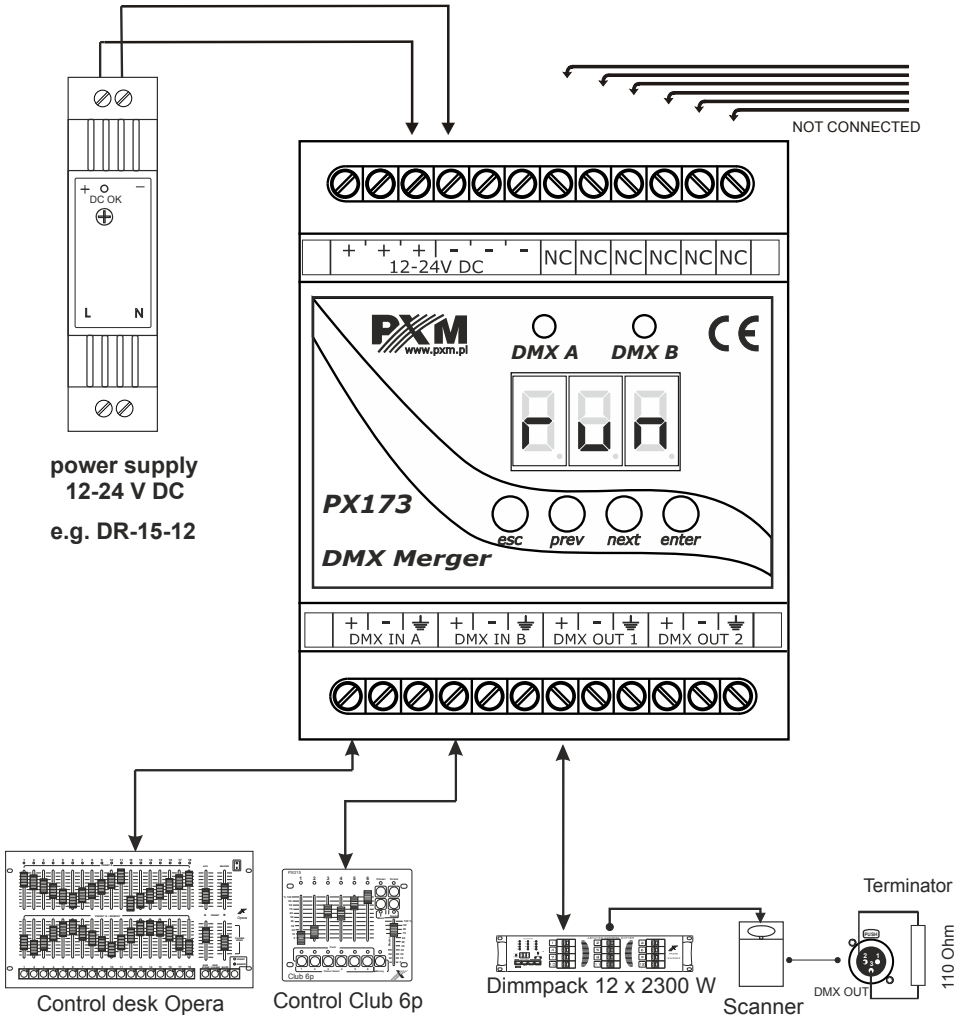

Defines the number of channels sent to the output. According to the DMX standard, this number must fir in the range from 24 to 512.


Output 2 programming

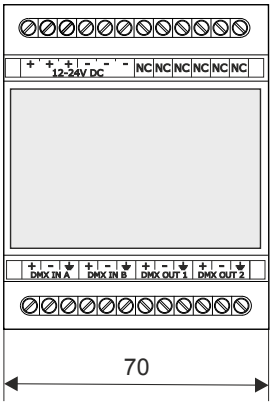
5.4 Menu scheme

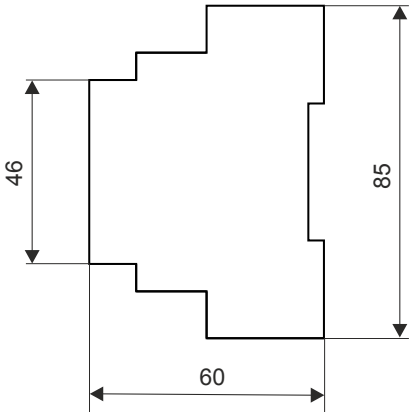


6 Connection scheme



7 Dimensions





8 Technical data

type	PX173
power supply	12 – 24V DC
DMX I / O channels	512 / 512
DMX I / O lines	2 / 2
power consumption	max. 5W
output sockets	screw terminals
weight	0.15kg
dimensions	width: 70mm height: 85mm depth: 60mm

Podłęże, 05.06.2019

DECLARATION OF CONFORMITY

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

we declare that our product:

Product name:	Merger DMX
Product code:	PX173

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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