PX113

DMX Merger

INSTRUCTION
MANUAL

PXM®

CONTENTS

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

PXM s.c.
ul. Przemysłowa 12
30-701 Kraków
POLAND

tel.: (+48 12) 626 46 92
fax: (+48 12) 626 46 94
E-mail: info@pxm.pl
Internet: www.pxm.pl

1. GENERAL DESCRIPTION

The DMX-512 standard is a protocol that defines the serial control data transmission for 512 channels. Many of the produced controllers does not use the full packet of 512 addresses and sends out the data for a lesser number of channels. In some installations, where a few of such controllers operate, there is a need to "sum up" the outputs of the particular devices and send them out through the single DMX route.
DMX Merger is a device that allows to add up the DMX signals - receive the data from a few inputs, arrange them in a proper order and send them into a single 512-channels output.
PX113 DMX Merger is an adder of two 512-channels inputs. The device installation is confined to power supply connection and pinning the DMX control cables (with the standard 3-pin XLR-3 plugs and sockets). The facilities of the DMX installation control and maintenance are the LED indicators of the DMX signal presence in the particular input routes ("A" and "B") and the built-in special control system with the operation mode display, that allows to control entirely the receivers in the DMX route. The receivers must be connected in series forming the chain, on the output of the last device the terminator (110 Ohm resistor) must be installed.

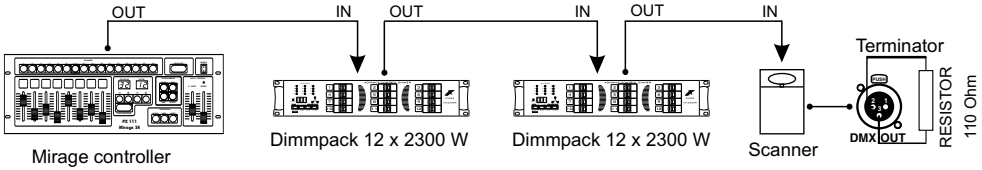
2. SAFETY CONDITIONS

PX113 DMX Merger 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:

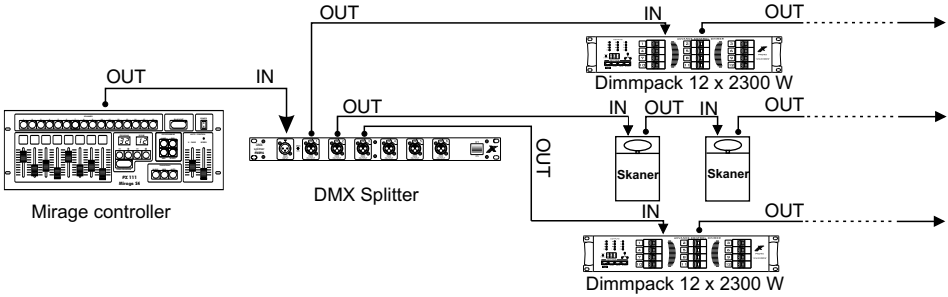
1. Merger installation must be performed according to the description in the present manual.
2. Merger can be connected to socket which has protecting instalation in working order only (3 - wire grid).
3. All the conductors should be protected against mechanical and thermal damage.
4. In the event of 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. Merger should be strictly protected against contact with water and other liquids.
7. All sudden shocks, particularly dropping, should be avoided.
8. Device with damaged (cracked) 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 - merger has to be cut off the power supply.

3. RULES OF CREATING A DMX INSTALLATION

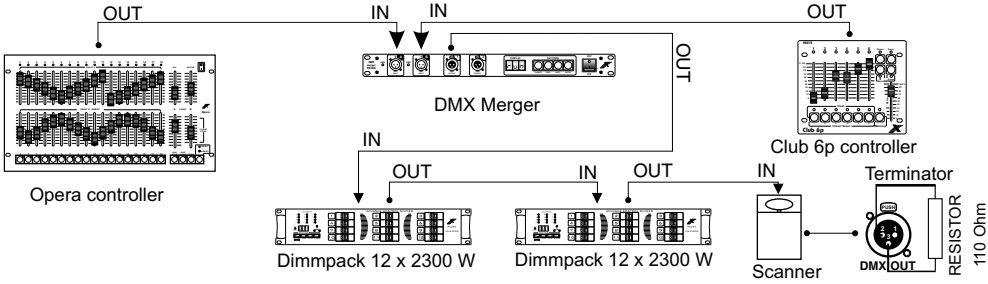
DMX-512 is a typical installation in series. That is why all the receiving devices (effects) are always equipped with two sockets for DMX connection: one input socket ("IN") and one output socket ("OUT"). The signal from the controller gets to the first device and then, from its output, to the second, 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 splitted (eg. to save on the cables). In such case you need to apply a device called DMX Splitter.

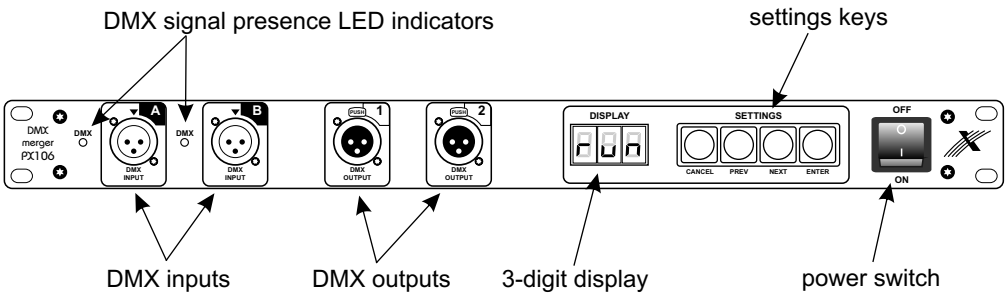


Sometimes you are faced with the opposite situation: two DMX signals going out from different controllers through the independent lines need to be summed up and sent further through one, common line. The typical example is the theatre, where the main console is used for lighting control during the performance. 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 popularises the wide range of possibilities of defining the dependances between inputs. For the precise description see the further part of the manual.

4. FRONT PANEL VIEW



4.1. KEYS FUNCTIONS

ENTER - enters the next MENU level and confirms changes made,

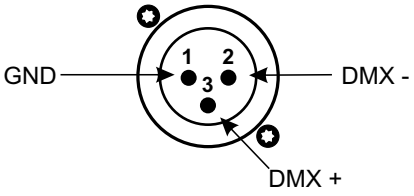
CANCEL - goes back to the previous MENU level or discards changes made,

NEXT - scrolls to the next feature on the same MENU level or increases the parameter's value,

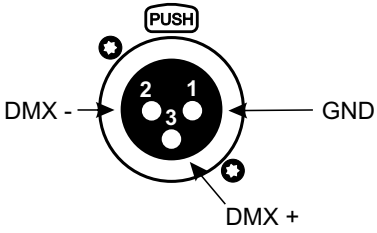
PREV - scrolls to the previous feature on the same MENU level or decreases the parameter's value

5. DMX SIGNAL CONNECTION

DMX input
(XLR-3 plug - frontal view)

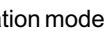


DMX output
(XLR-3 socket - frontal view)



6. PROGRAMMING

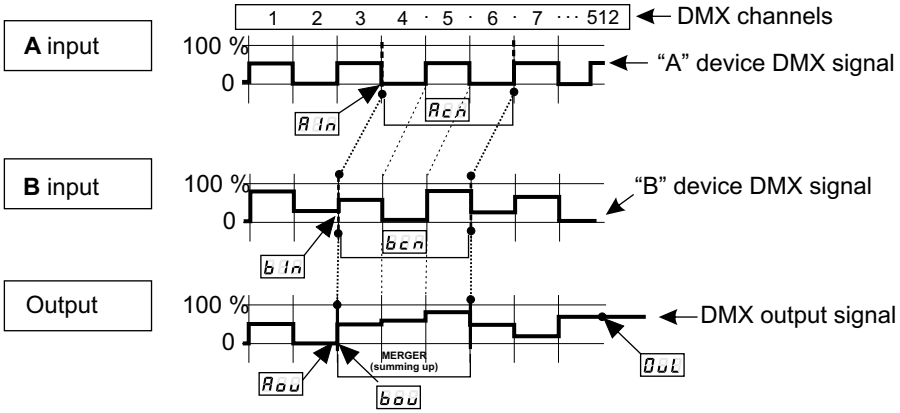
Merger programming consists in defining the DMX addresses and the number of data in the input lines, and determining the dependences that occur between them.

In a basic operation mode the  inscription is displayed.

To enter the programming mode, press the ENTER key.

7. DMX SIGNALS JOINING CHARACTERISTICS

The example of summing up of 3 channels with the comparison feature [HAB]



[run] Merger basic operation mode.

ENTER

[Ou1] Output 1 programming.

ENTER

[A In] Number of the first summed channel of the A input.

NEXT

[Acn] Number of the summed channels from the A input.

NEXT

[Aou] Number of channel on the output 1, where the first (selected in [A In]) channel is going to get.

NEXT

[b In] Number of the first summed channel of the B input.

NEXT

[bcn] Number of the summed channels from the B input.

NEXT

[bou] Number of channel on the output 1, where the first (selected in [b In]) channel is going to get.

NEXT

[Fun] Mode of execution of the dependences between the corresponding channels.

ENTER

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

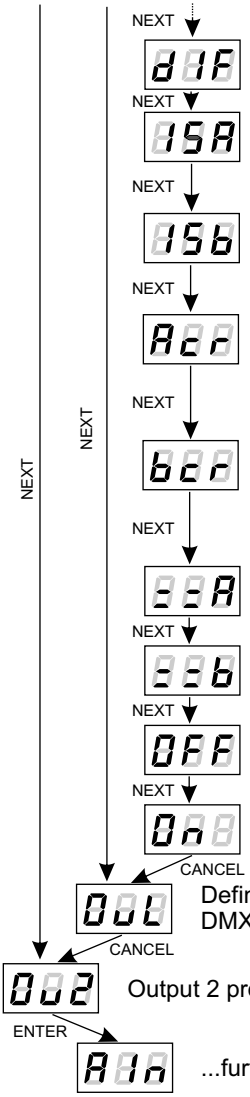
NEXT

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

NEXT

NEXT

NEXT



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

Regardless of both inputs, zero values are sent to 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 fit in the range from 24 to 512.

Output 2 programming.

...further programming mode as in output 1.

8. TECHNICAL SPECIFICATION

- DMX inputs — XLR-3 plugs
- DMX outputs — XLR-3 sockets, optical insulation of the inputs
- power supply — 230 V / 50 Hz, fast fuse in the rear panel
- weight — 2 kg
- dimensions:
  - width — 483 mm (19”)
  - heigth — 44 mm (1U)
  - depth — 120 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: **DMX Merger**

Type: **PX113**

answers the following product specifications:

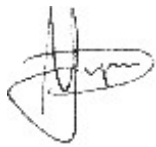
LVD: **PN-EN 60065**

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

Additional informations:

1. All DMX512 inputs and outputs must be shielded and the shielding must be connected to pin 1 XLR plug.
2. A ground strand of the merger power cable must be connected to efficient ground installation.

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.