PX949-IP-TH

Splitter

DMX-RDM IP TH

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

A splitter, a DMX signal distributor, allows for the creation of branches in extensive DMX installations. Connecting a large number of receivers in series can be troublesome, which is why the possibility of creating branches of the DMX track using a splitter was created.

With the PX949-IP-TH you can split the input DMX signal into 4 independent branches. The individual output lines are galvanically separated from both the input and from each other. The splitter can operate in three modes:

- ***filtering*** – incoming RDM packets are discarded and the output DMX signal is completely regenerated with the following parameters:
  - *Break* – 320µs,
  - *MAB* – 30µs,
  - *MBF* – 10µs,
  - *WAIT* – 200µs,
  - the number of sent channels is 24 – 512 depending on the number of input channels – PX949-IP-TH recognizes how many DMX channels are received,
- ***bypass*** – the input signal is exactly the same as the output signal – RDM is not supported,
- ***normal*** – the splitter allows for bidirectional transmission of RDM packets.

The DMX-RDM IP TH splitter is manufactured in an IP65 housing adapted for mounting on standard 35mm DIN rails.

The set includes:

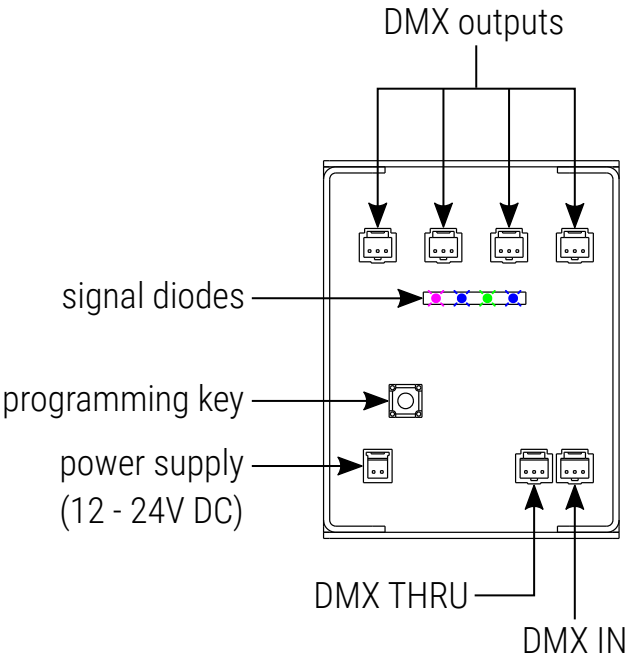
- 1 x power cord with plug,
- 6 x DMX cables with plug.

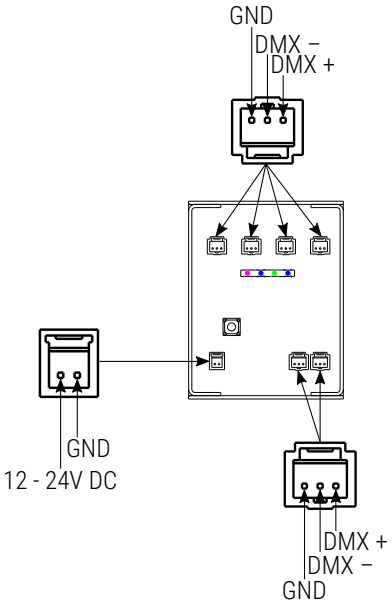
2 Safety conditions

PX949-IP-TH s a device powered with safe voltage up to 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 (stabilized voltage) 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 a shielded cable should be use to connect the DMX signal.
5. All repairs and connections of outputs can only be made with cut off power supply.
6. All sudden shocks, particularly dropping, should be avoided.
7. Do not connect a damaged (cracked) device to the power supply.
8. Use only a slightly damp cloth for cleaning – the device must be completely disconnected from the power supply at this time.

3 Connectors and control elements





4 Connecting the DMX signal

The PX949-IP-TH must be connected to the DMX line in series, without branches on the control cable. This means that a control cable must be run to the ***DMX IN*** connector on the PX949-IP-TH and then from the ***DMX THRU*** connector to the next DMX receivers.

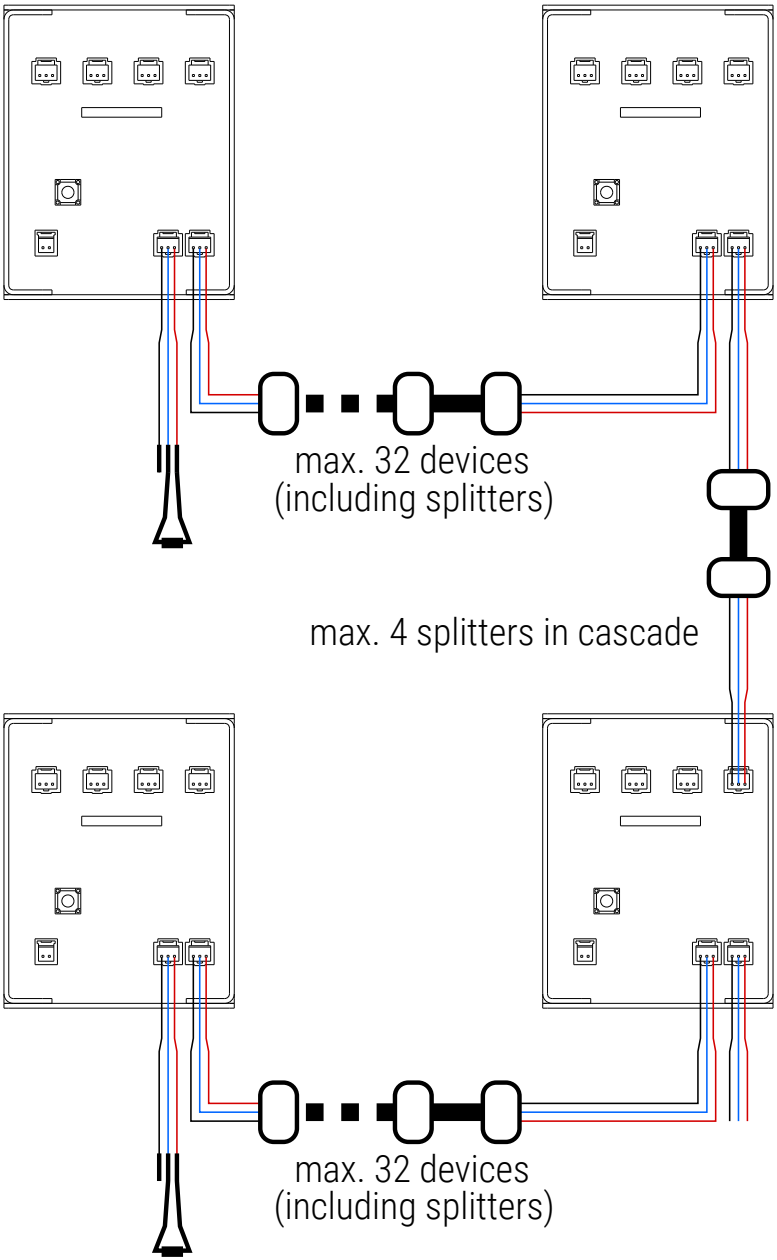
If the PX949-IP-TH is the last device in the DMX line (there is no receiver connected to the ***DMX THRU*** output), a terminator – a 120 Ohm resistor – should be soldered to the red and blue wires in the ***DMX THRU***.

NOTE! The terminator and GND wire (black) should be protected from moisture, for example with heat shrink tubing.

Each of the four splitter outputs is treated as the start of a new DMX line. A maximum of 32 devices can be connected with a DMX line length of up to 300 meters. In the last device, a terminator must be connected on each DMX output line.

A plug should be connected to the unused DMX output connector and the wires should be protected from moisture, e.g. with heat shrink tubing.

NOTE! A maximum of 4 splitters can be connected in a cascade (the diagram is on the next page).


max. 32 devices
(including splitters)
max. 4 splitters in cascade
max. 32 devices
(including splitters)

5 Indicator lights

There are diodes on the device housing that indicate the operating status of the device.

Action	Function
all diodes flash every ~3s	the device does not receive the DMX signal
all diodes flash every ~1s	the device receives a DMX signal
Meaning of diode colors	
green	bypass
blue	mode with RDM support (normal splitter operation mode)
magenta	filtering

NOTE! The description of operating modes can be found in section 6. Output operating mode.

6 Output operating mode

Each output can be individually assigned one of the three modes indicated by the appropriate color of the diodes (5. Indicator lights):

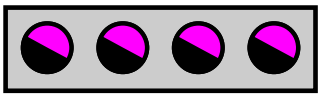
- *bypass* – the DMX signal is refreshed but the output signal is exactly the same as the input signal – RDM is not supported,
- *normal* – the DMX signal is refreshed – only in this mode RDM packets are transmitted bidirectionally,
- *filtering* – incoming RDM packets are discarded and the output DMX signal is completely renewed with the following parameters:
  - *Break* – 320µs,
  - *MAB* – 30µs,
  - *MBF* – 10µs,
  - WAIT – 200µs,
  - number of channels: 24 – 512*,

NOTE! The operating modes can be changed using the button located on the housing. An example of changing the operating mode is on the next page.

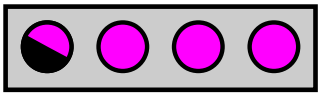
** – depending on the number of input channels – PX949-IP-TH recognizes how many DMX channels are received*

Example of changing the operating mode of output number 3 from *filtering* mode to *bypass* mode:

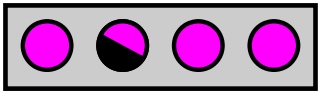
1. The diodes flash every ~1s or every ~3s (depending on whether there is a DMX input signal).



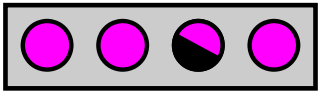
2. Press the button for ~2s.
3. The first LED flashes (or is responsible for the last edited output – in the example let's assume that the first one flashes), the rest light up.



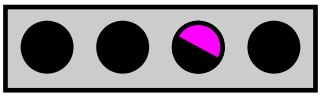
4. Click the button to go to the next output.
5. The second diode flashes, the others light up.



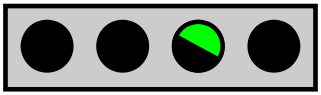
6. Click the button to go to the next output.
7. The third LED flashes, the others light up.



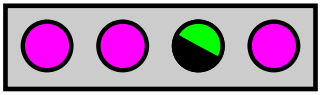
8. Output number 3 is selected.
9. Press and hold the button for ~2s.
10. The third LED flashes, the others go out.



11. Clicking the button changes the mode.



12. After changing the mode, press and hold the button for ~2s.
13. The third LED flashes, the others light up.

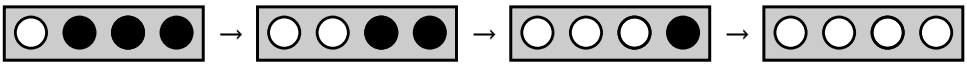


14. At this point you can repeat the steps for the other output by returning to point 6 or leave the device for ~10s – the LEDs will start flashing every ~1s or ~3s (depending on whether there is a DMX input signal).

7 Factory settings

To restore factory settings – *normal* mode on all outputs – press and hold the programming button while powering up until all the diodes light up white. When all the diodes light up white, you can release the button.

1. Press the button (keep pressed).
2. Turn on the power.
3. Wait until all the LEDs light up white.



4. Release the button.

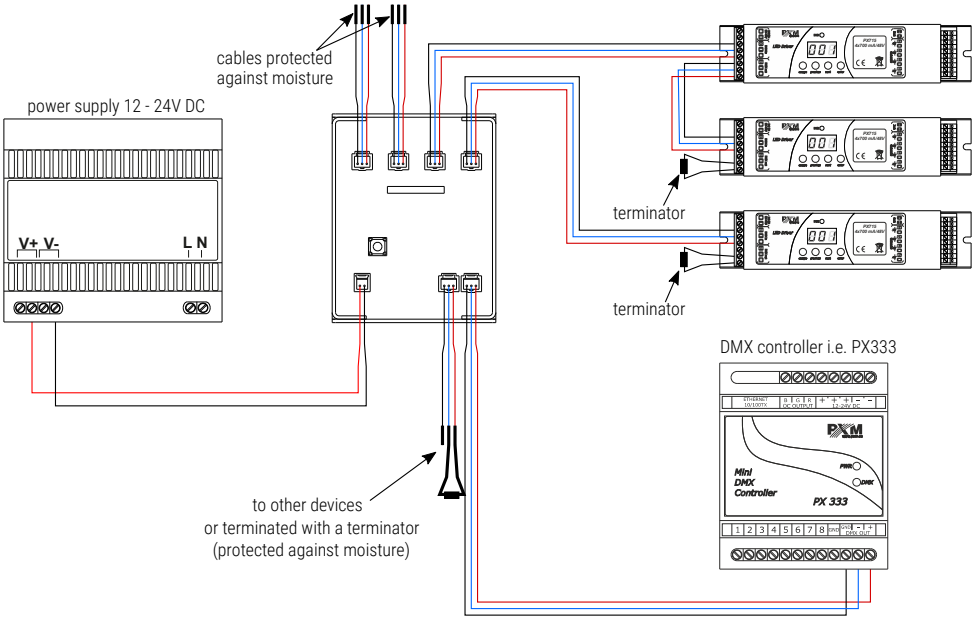
8 Device update

The update is possible using the PX313 USB/RS485 In device – details can be found in the manual for this module.

The device update was also presented in detail on our YouTube channel.

https://www.youtube.com/watch?v=TKBV03szddU

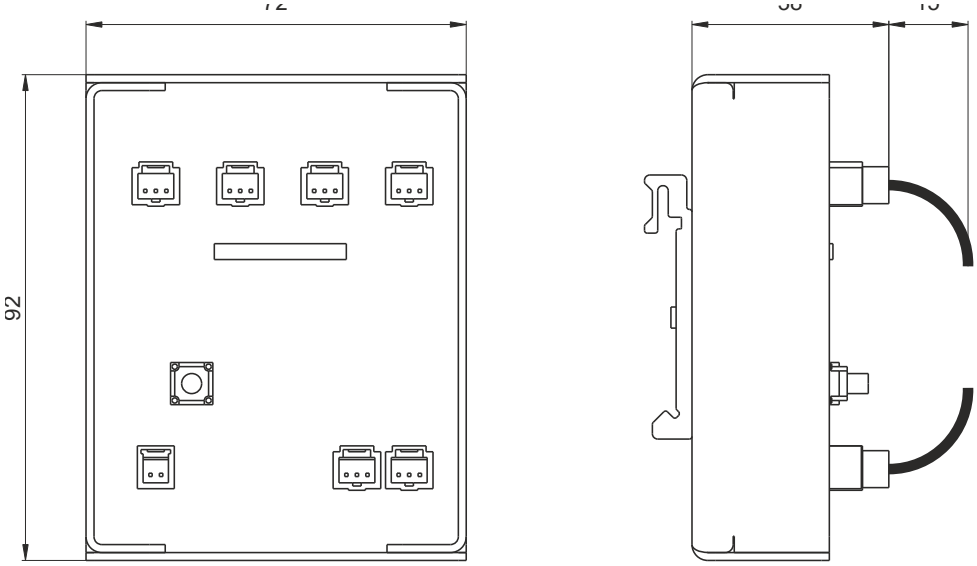
9 Connection scheme



Wires:

- power supply:
  - 12 – 24V DC red
  - GND black
- DMX:
  - DMX + red
  - DMX – blue
  - GND black

10 Dimensions



NOTE! Remember to leave at least 1.5 cm for cables connected to the device using plugs.

11 Technical data

type	PX949-IP-TH
power supply	12 – 24V DC
DMX channels (IN = OUT)	24 – 512
number of DMX inputs	1
number of DMX outputs	4
number of modes	3 (filtering / bypass / normal)
RDM protocol support	yes (in "normal" mode)
optical isolation of DMX lines	yes
insulation breakdown voltage IN/OUT	>1000V
power consumption	max. 5W
tightness class	IP65
weight	0.4kg
dimensions	width: 72mm heigth: 82mm depth: 38mm (+15mm for cable)

Podłęże, 04.02.2025

DECLARATION OF CONFORMITY

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

we declare that our product:

Product name:	Splitter DMX-RDM IP TH
Product code:	PX949-IP-TH

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
PN-EN 60529:2003	EN 60529:1991

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 harmonization of the laws of the Member States relating to electromagnetic compatibility (recast)
Text with EEA relevance.

2014/35/UE DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 February 2014 on the harmonization of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits

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