

PX359

DMX - RS232 Interface

MANUAL



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

1. GENERAL DESCRIPTION

PX359 is a device to convert the DMX steering signal into the appropriate commands sent with the use of RS-232.

The device is equipped with two independent buses RS-232, which various commands can be sent to.

PX359 is programmed with the use of the web interface through the Internet browser without the need to install additional software and controllers.

The device also supports the RDM protocol with which some parameters, for instance, an IP address can be set.

2. SAFETY CONDITIONS

Controller PX359 RS232 - DMX Interface is a device powered with safe voltage 12-24 V; however, during its installation and use

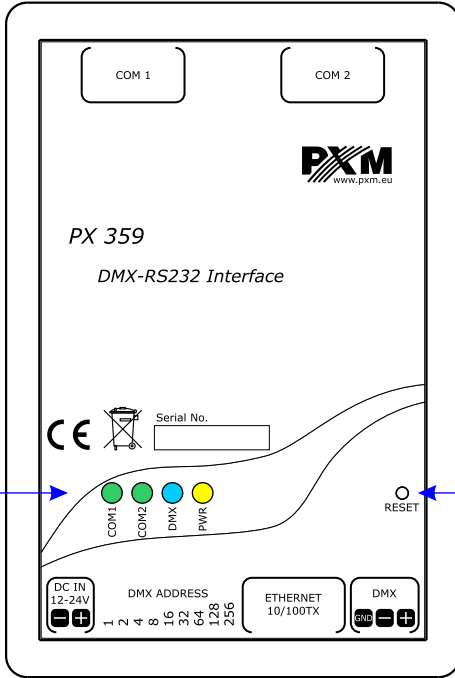
the following rules must be strictly observed:

1. The device can be connected to 12-24 V DC (stabilised voltage) with current-carrying capacity compatible with technical data.
2. All the conductors should be protected against mechanical and thermal damage.
3. In case of damage to a conductor, it should be replaced with a conductor of the same technical parameters.
4. Connection of DMX signal can be made with a shielded conductor only.
5. All repairs, connecting and disconnecting of cables can only be made with cut off power supply.
6. The device 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.

3. DESCRIPTION OF THE DEVICE CONSTRUCTION

PX359 is equipped with one Ethernet port, one DMX512 input, two RS-232 outputs, DIP switch to set a DMX address and signalling diodes.

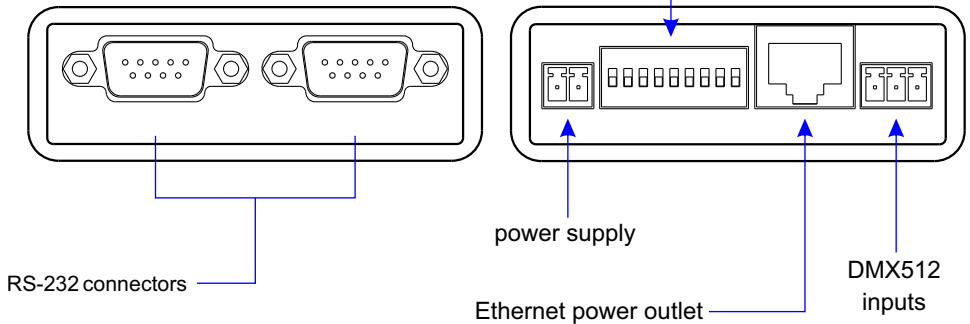
TOP OF THE DEVICE



signalling diodes

physical reset button

TOP OF THE DEVICE



RS-232 connectors

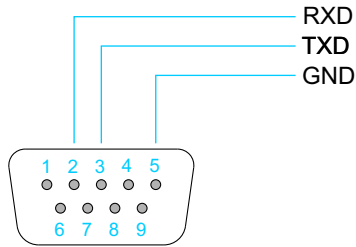
power supply

Ethernet power outlet

DMX address -
DIP switch

DMX512
inputs

Description of the output pins:



4. OPERATION OF THE DEVICE

4.1. Sygnalling of controls

On the housing of the device there are four diodes signalling the condition of the device.

Control	Function
POWER ●	It is permanently on when the device is on
DMX ●	It blinks when the device receives a DMX signal
COM 1 ●	It blinks every time when it sends a command on the first RS-232 line
COM 2 ●	It blinks every time when it sends a command on the second RS-232 line

4.2. Reset button

On the housing of the device there is a button "reset." Pressing it for a short time restarts the device.

Pressing this button for a longer time (over 10 seconds) restores default settings. It will be signalled by lighting all the diodes one after another.

4.3. Dipswitch of the address

The PX359 device has a physical dipswitch button which can be used to set its base DMX address. If the value 0 is set on the physical switch, the device accepts the DMX address saved in memory. Then, it can be edited by a webserver or the RDM protocol.

5. CONFIGURATION OF THE DEVICE

The PX359 device enables to configure network settings, a DMX address, settings of the RS-232 signal and make a list of commands sent from the device.

All the parameters can be configured by the web interface. Some parameters can also be set with the use of the RDM protocol.

5.1. User's interface

To be able to configure the device with the use of the web interface, the up-to-date IP address of the device should be entered in the Internet browser. The computer and the device have to be in one subnet.

**The default IP address of the device is:
192.168.0.50**

PX359 does not support the DHCP protocol.

If there are several PX359 converters pinned to one network, their IP addresses should be changed individually to avoid a conflict.

EXAMPLE:

The network settings of the computer while connecting with the device with a default IP address:

IP: **192.168.0.50**
Mask: **255.255.255.0**

The user's interface divided into bookmarks will be displayed in the browser after the correct connection.

5.2. Summary

In the bookmark **[Summary]** there is the most essential information concerning the device:

- Description
- Serial number
- Version of firmware software
- Bootloader version
- Working time since the last restart
- Label which can be changed

5.3. Network settings

The user can change the following in this bookmark:

- IP address
- Mask
- Gate

The changes will be applied after restarting the device. To restart the device, you should go to the bookmark **[Administration]**.

Here, the MAC address of the device and the detected bandwidth are also visible.

5.4. DMX settings

The PX359 device has a physical dipswitch button which can be used to set its base DMX address. If the value 0 is set on the physical switch, the device accepts the DMX address saved in memory.

[Current DMX Address] of the device is displayed in the bookmark **[DMX settings]**. Below viewing of the **[DMX Hardware switch]** and the window to change the DMX programme address are visible.

EXAMPLE 1:

DMX Hardware switch: 0

Base address: 25

Current DMX Address: 25

EXAMPLE 2:

DMX Hardware switch: 7 *)

Base address: 25

Current DMX Address: 7

Additionally, the required **[Minimal time duration]** a value can be set on the DMX channel to translate it into the RS-232 command.

*)-

5.5. DMX monitoring

Viewing of the received DMX signal is visible in this bookmark.

5.6. RS232 settings

The bookmark enables to set the parameters for both RS-232 buses independently:

- **Baudrate [bps]**

- 1200
- 2400
- 4800
- 9600
- 14400
- 19200
- 28800
- 38400
- 57600
- 115200
- 230400

- **Data bits**

- 8
- 9

- **Parity**

- brak
- even
- odd

- **Stop bits**

- 1
- 2

The parameters have to be in accordance with the settings on the receiving device.

5.7. Commands

In the bookmark [**Commands**] there is a list of all commands defined by a user.

The following can be defined for each command:

- **Name** – a character string enabling a user to identify a given command easily
- **Content** – a character string which will be sent as a command via the RS bus. The value can be given in the form of ASCII characters or hexadecimally. To enter the value in the ASCII editor which does not have its representation, it should be given hexadecimally in the curly brackets. Below, supervisorily, the length of commands in bytes is given. The commands have to be in accordance with the requirements of the receiving device. You should draw your attention to the signs such as the sign of the end of the line.
- **DMX offset** – the relative number of the DMX channel where the value has to appear so that the command could be sent. Offset is added to the base address of the device.

EXAMPLE:

a base address: 5
offset: 3

the command will be sent in reaction to the value on the 8 DMX channel.

- **Minimum and maximum** – the range in which the value should be in the channel so that a command will be sent.
- **Repeat ... what** – if the option is a marked, a command will be sent periodically every given number of milliseconds, as long as a value in the chosen channel is within the range. If the option is not marked, the command will be sent only once while entering the range. In such a case, to send a command once again, you should change a value in the steering channel so that it will go beyond the range, and then reset it in the range.
- **Send to...** – the option allows to choose which bus the given command should be sent to.

5.8. Administration

In the bookmark **[Administration]** there are the following options:

- **Export all settings** – it will export all settings of the device to a file
- **Export commands list** – it will export only a list of commands to a file
- **Import from file** – it will import all settings from a file or only a list of commands (depending on the chosen file). This option will overwrite current settings.
- **Language** – a change of interface language. English or Polish can be chosen.
- **Firmware upgrade** – it updates software of the device. The latest software can always be found on the producer's website www.pxm.pl
- **Reboot device**
 - *Save changes* – it saves all
 - *Discard changes* – it restarts the device without saving changes
 - *Reset to factory defaults* – it restores the default settings of the device

NOTICE: the whole current configuration of the device will be overwritten.

5.9. Default settings

PARAMETER	VALUE
IP	192.168.0.50
Gateway	192.168.0.1
Subnet	255.255.255.0
Device label	PX359
Base DMX address	1
Min. Duration time	2000 milliseconds
COMn Baudrate	115200 bps
COMn Data bits	8
COMn Stop bits	1
COMn Parity	Lack
Interface language	Polish

5.10. RDM

The PX359 supports the DMX-RDM protocol. DMX protocol allows only of a one-way data transmission, while its extension the RDM protocol can transmit information in two directions. This makes possible to simultaneously send and receive information, and hence the possibility of monitoring activities of the compatible devices. Thanks to RDM some available settings of compatible devices may be programmed using this protocol.

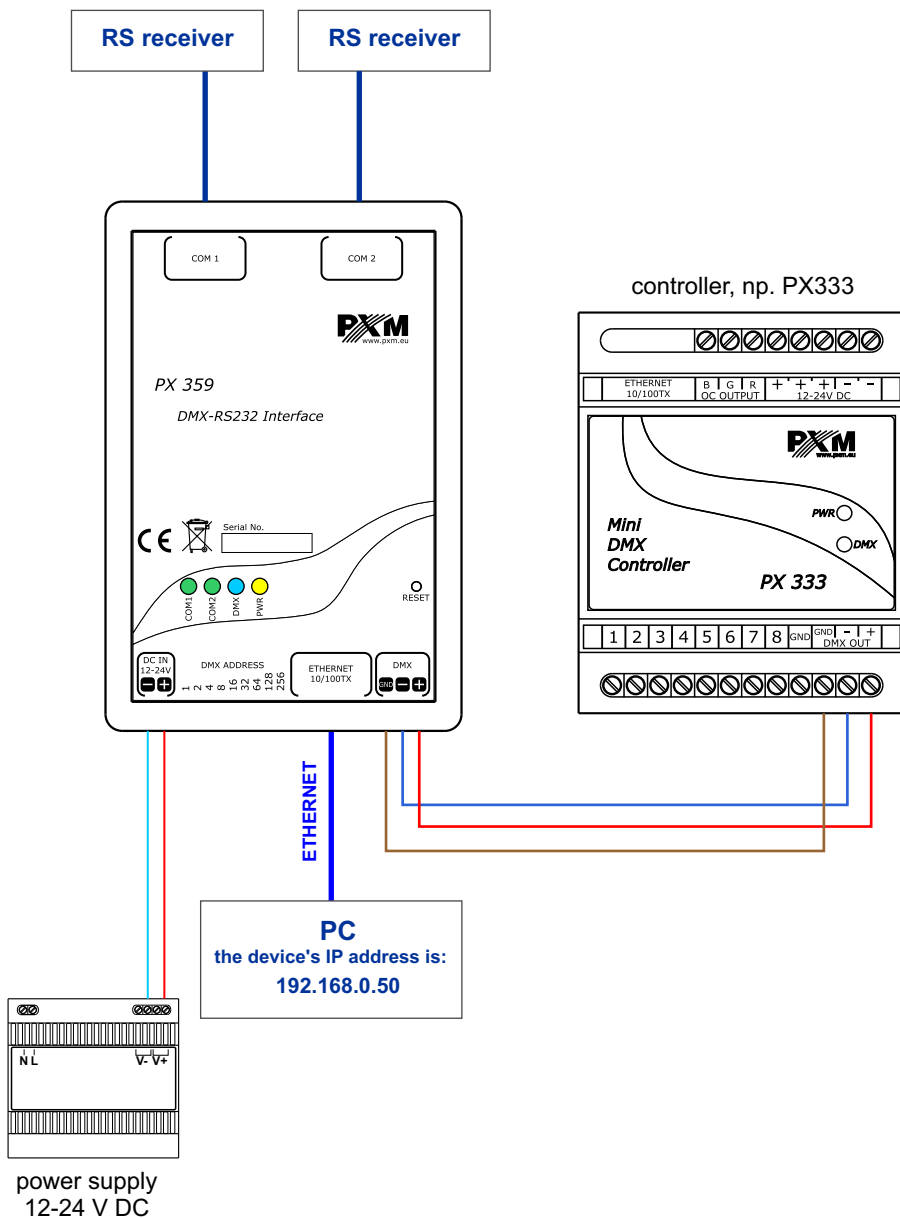
Below is a list of RDM parameters supported by the PX359:

Parameter name	PiD	Description
SUPPORTED_PARAMETERS	0x0050	all supported parameters
PARAMETER_DESCRIPTION	0x0051	description of additional parameters
DEVICE_INFO	0x0060	information concerning the device
SOFTWARE_VERSION_LABEL	0x00C0	firmware version of the device
DMX_START_ADDRESS *	0x00F0	DMX starting address of the device; minimum value: 1, maximum value: 512. According to the RDM standard, for device whose footprint is 0, the value of this parameter may be 65535 and then it is not possible to change the initial address settings for the entire device, but only for sub-devices.
IDENTIFY_DEVICE	0x1000	device identification; Two states are possible: identification is off (0x00 value) and identification is on (0x01 value).
DEVICE_MODEL_DESCRIPTION	0x0080	device description, e.g. name
MANUFACTURER_LABEL	0x0081	manufacturer description, e.g. name
DEVICE_LABEL *	0x0082	additional device description; It is possible to enter an additional device description using up to 32 ASCII characters.
FACTORY_DEFAULTS	0x0090	device default settings
DMX_PERSONALITY	0x00E0	DMX operational mode
DMX_PERSONALITY_DESCRIPTION	0x00E1	description of individual operational modes
SENSOR_DEFINITION	0x0200	information concerning the selected temperature sensor

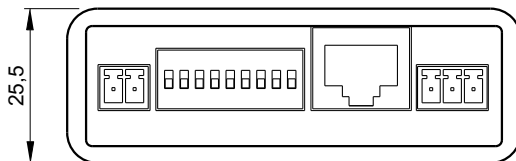
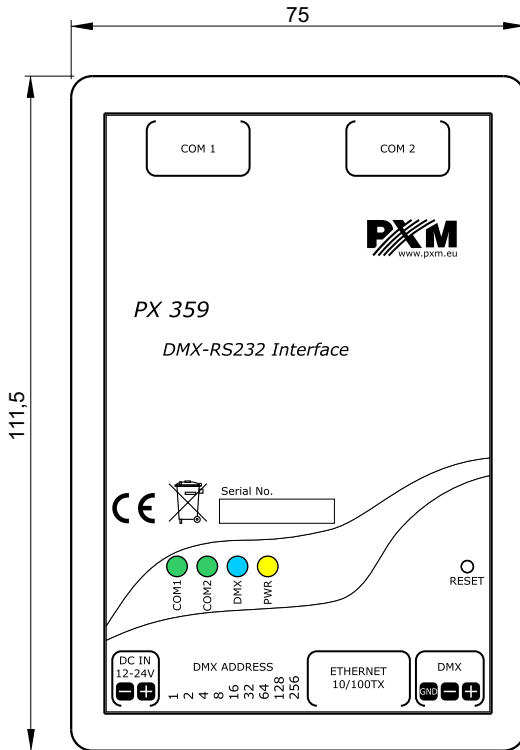
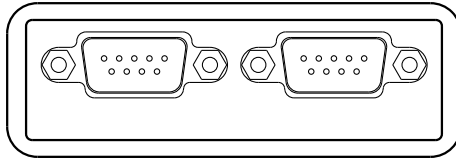
Parameter name	PiD	Description
SENSOR_VALUE	0x0201	information concerning sensors
DEVICE_HOURS	0x0400	information concerning the working time of the device counted in hours
DEVICE_POWER_CYCLES	0x0405	a number of supply cycles which the device registered
RESET_DEVICE *	0x1001	restart of the device; 0x01 – saving a configuration and restarting the device (soft restart), 0xff – an immediate restart without saving the configuration (hard restart)
RDM_EXT_DEVICE_UPTIME	0x8000	it gives time in seconds from starting the device
RDM_EXT_DEVICE_SERIAL	0x8010	it gives a serial number of the device
RDM_EXT_DEVICE_NET_IPV4 *	0x8080	the IP address of the device
RDM_EXT_DEVICE_NET_GATEWAY *	0x8081	a network gate
RDM_EXT_DEVICE_NET_MASK *	0x8082	a subnetwork mask
RDM_EXT_DEVICE_NET_MAC	0x8083	the MAC address of the device
RDM_EXT_DEVICE_HARDSWITCH	0x8084	the DMX address set on the dipswitch switch

* - editable parameter

6. CONNECTION SCHEME



7. DIMENSIONS



8. TECHNICAL DATA

- power supply	12-24 V DC
- power connector	screw connectors
- DMX input	1
- DMX connector	screw connectors
- RS-232 output	2
- RS-232 connectors	D-sub
- LAN connector	1
- DHCP	nie
- RDM	Yes, version 1.0
- supported versions of browsers	Firefox – 57.0.4 Opera – 50.0 Chrome – 49.0 IE – 10+
- weight:	0,12 kg
- dimensions:	
- width	75 mm
- height	25,5 mm
- depth	111,5 mm



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DECLARATION OF CONFORMITY

PXM Marek Żupnik spółka komandytowa
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declares under our sole responsibility that the product:

Name of product: **DMX - RS232 Interface**
Type: **PX359**

compiles with the following standards and harmonized 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 is in conformity with the provisions of the following EC 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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