

PX300

CT Sensor

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

Sensor CT sensor is used to measure the color temperature in the range from 2500K to 6000K and the brightness.

The measured value can then use the DMX-512 or RS-485 to send to other devices. It allows you to obtain changes in color temperature of white lamps that are the receivers on the line DMX-512.

The product is intended for installations equipped with light and temperature controlled indoor working clarity that require lighting parameters change depending on the light conditions, e.g. prevailing outside the building.

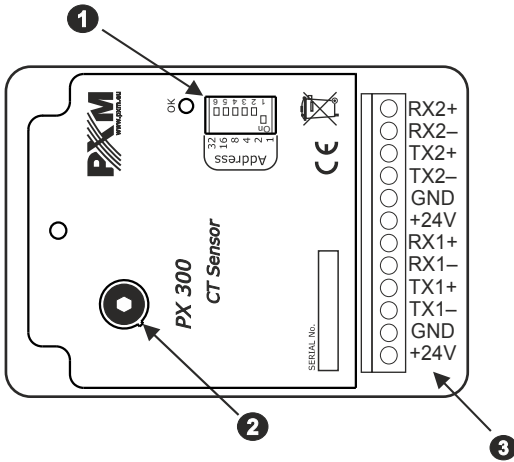
2 Safety conditions

PX300 is a device powered with safe voltage 24V DC; however, during its installation and use the following rules must be strictly observed:

1. The device may only be connected to 24V DC 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. Connection of DMX signal can be made with a shielded conductor only.

- 5. All repairs and connections of outputs or DMX signal can only be made with cut off power supply.
- 6. All sudden shocks, particularly dropping, should be avoided.
- 7. The device should be installed in a place ensuring adequate lighting conditions and at the same time providing protection against obstructing the light source.
- 8. Clean with damp duster only without using detergents.

3 Connectors and control elements



- 1. DIP-switch
- 2. CCT sensor
- 3. Connectors for connecting power and communicating with other devices

Description of connectors and their application:

Name	Description
RX2+	<i>MASTER</i> mode: RS-485 input – receiving measurements from PX300 operating in <i>SLAVE</i> mode
RX2-	
TX2+	<i>unused</i>
TX2-	
GND	power supply
+24V	
RX1+	<i>unused</i>
RX1-	
TX1+	In <i>MASTER</i> mode: DMX-512 output In <i>SLAVE</i> mode: RS-485 output for data transmission to the PX300 operating in <i>MASTER</i> mode In bootloader mode: communication with <i>PX300_configurator</i> PC application (configuration and firmware upgrade)
TX1-	
GND	
+24V	duplicated +24V connector shorted with second +24V power supply

4 Starting the device

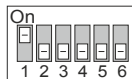
After connecting the power supply and the DMX-512 signal output, the sensor works autonomously without interruption sending the measured data about the current lighting. The sensor sends data starting from the first DMX-512 channel to the sixth. The table on the next page shows these channels with their assigned functions.

DMX channel	The function for which the channel is responsible
1	Color (DMX value is responsible for the value read by the sensor, for DMX it can be e.g. 50)
2	Inverted color (the DMX value corresponds to the inverse color value read by the sensor, according to the example above, the expressed DMX value will be $255 - 50$)
3	Brightness (brightness value read by the sensor)
4	Inverse brightness (brightness value read by the sensor and inverted in the DMX value)
5	Determining if the sensor is working properly under current light condition, value 255 – yes, value 0 – no
6	Value negation above

5 MASTER / SLAVE function

The PX300 has been equipped with the *MASTER / SLAVE* function.

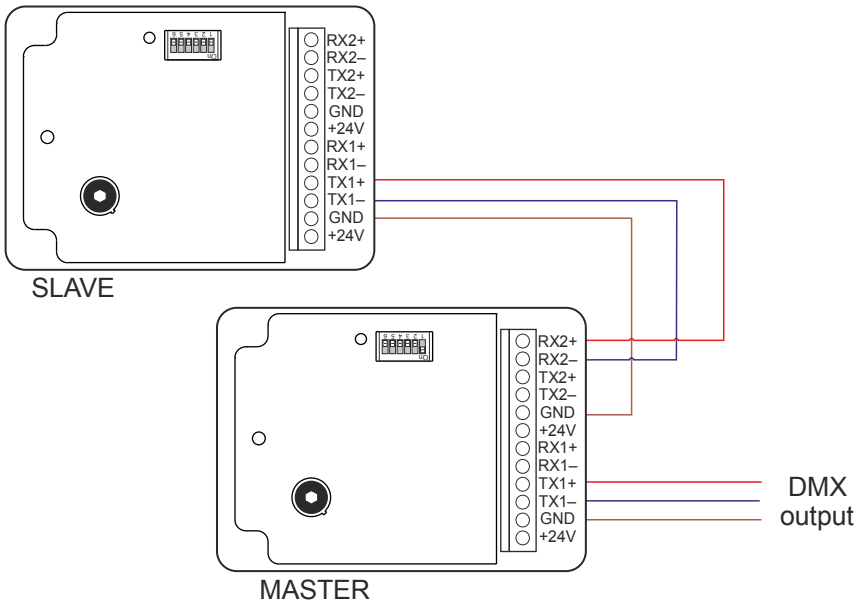
In *MASTER* mode, the device works as transmitting DMX signal to receivers, e.g. to LED lamps. The DIP switch is responsible for enabling the *MASTER* function. To active it, set any switch to the *On* position. The figure below shows the active function.



SLAVE mode allows to connect two sensors with each other. In this mode, a second sensor must be connected, connected to the main one, averaging the measurements and sending the calculated value to external devices. The following figure shows the DIP switch set in the SLAVE mode.



The following figure shows the connection of two devices in MASTER / SLAVE mode:

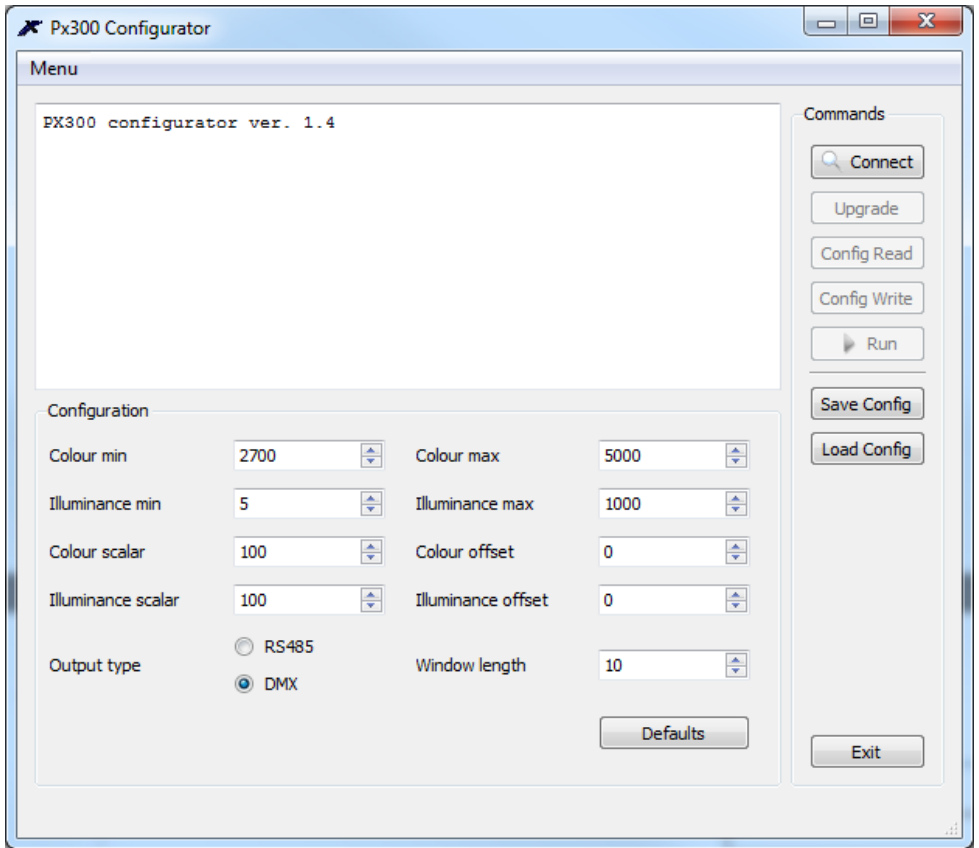


6 Sensor configuration

If it is necessary to change the parameters of the sensor settings, it is possible. PXM has prepared software for communication between the PX300 and a PC with Windows®. This software is supplied with the device on a CD and is available for download from the manufacturer's website (pxm.pl).

The procedure of connecting the device to the computer and uploading the update:

- connect the device on a USB-RS485 cable to the connectors *TX1+* (red wire), *TX1-* (blue wire), *GND* (black wire)
- run the *PX300_config* program
- choose the right cable
- click *Connect*
- reset the PX300 (turn the power off and on)
- choose whether to update *Yes / No*. If *Yes*, select the **.upg* file and press *OK*. Wait for completion. Select whether to start the device in the normal operation mode *Yes / No*.



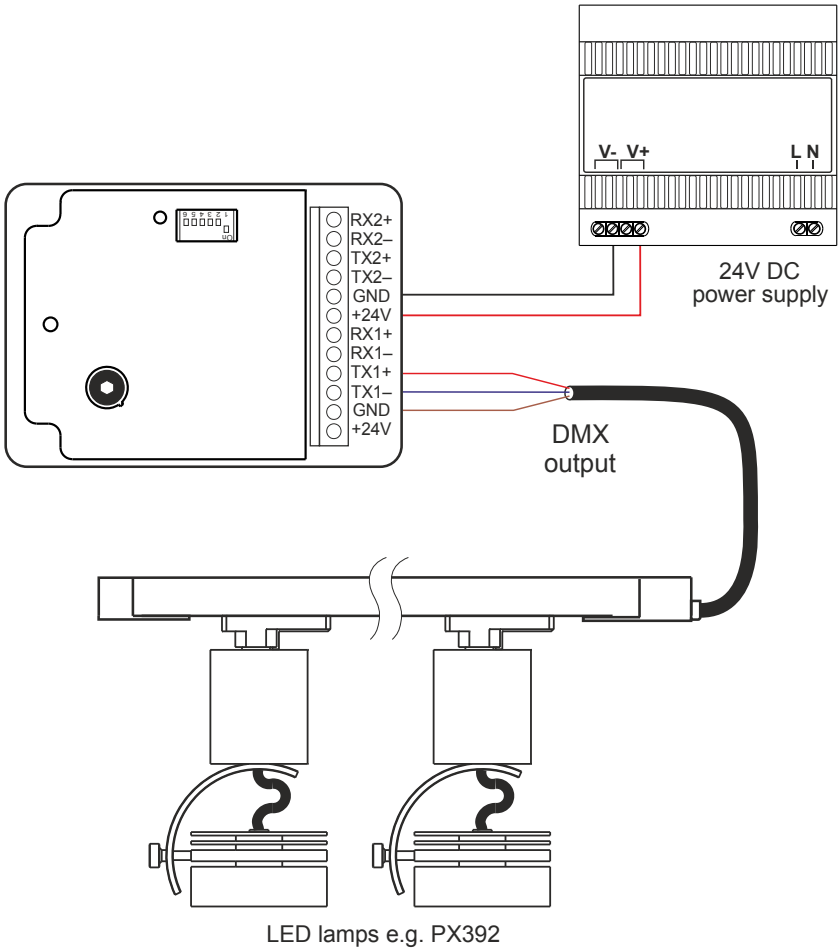
The *Upgrade*, *Config Read*, *Config Write* and *Run* options are available after connecting to the PX300 with the *Connect* function:

- ***Upgrade*** → performs a firmware upgrade (same as after selecting Yes in the *Connect* option)
- ***Config Read*** → enables loading the configuration from the EPROM memory and displaying it in the *Configuration* panel
- ***Config Write*** → save the currently displayed configuration on the panel to the EPROM

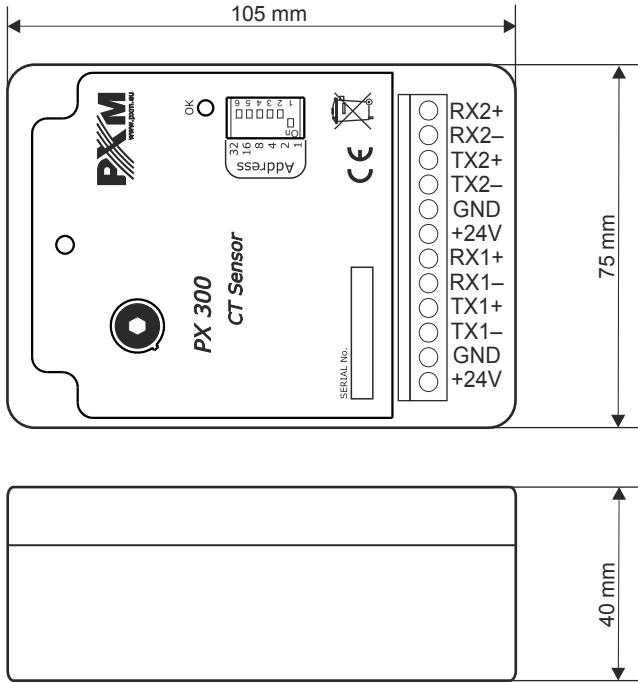
- **Save Config** → save the currently displayed configuration to the indicated file
- **Load Config** → read the configuration from the selected file and display it in the *Configuration* panel
- **Exit** → exits the program
- **Defaults** → loading and displaying the default settings in the panel

NOTE! All changes in the settings can be made from the keyboard or with the mouse, in order to save the settings by the sensor after entering them, select the *Config Write* button.

7 Connection scheme



8 Dimensions



9 Technical data

type	PX300
power supply	24V DC
power consumption	25mA
operating range of the sensor	2500 – 6000K 0 – 10000 lux
output connectors	terminal blocks
supported protocols	DMX, RS-485
degree of protection	IP65
housing material	polycarbonate
weight	0.15kg
dimensions	width: 75mm height: 105mm depth: 40mm

DECLARATION OF CONFORMITY

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

we declare that our product:

Product name: CT Sensor

Product code: PX300

meets the requirements of the following standards, as well as harmonised standards:

PN-EN IEC 63000:2019-01	EN IEC 63000:2018
PN-EN 60529:2003	EN 60529:1991
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.

2014/35/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 the making available on the market of electrical equipment designed for use within certain voltage limits


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