# PX300

# CT Sensor

# MANUAL

**PXM**®

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

Ver. 1.0

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

# 1. GENERAL DESCRIPTION

PX300 CT Sensor is a device that measures light intensity and color temperature in range of 2500K to 6000K. Output values are transmitted by DMX512 protocol. This enables dynamic control of multi-White lamps depending on the outdoor ambient light color temperature.

# 2. SAFETY CONDITIONS

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

1. The device may only be connected to 24 V 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 mounted in a place that provides adequate lighting conditions.
8. Clean with damp duster only.

# 3. SENSOR ELEMENTS DESCRIPTION
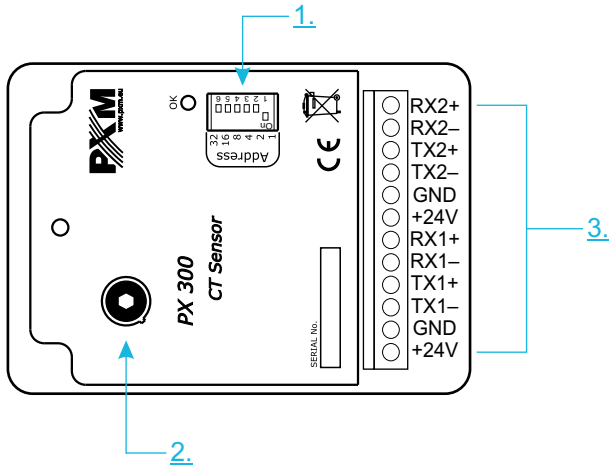


1. Options dipswitch
2. CT sensor
3. Power supply and communication connectors

Description of connectors and their application:

| Name | Description |
|------|-------------|
| **RX2+** | In MASTER mode: RS485 input for receiving data from the slave PX300 |
| **RX2-** | |
| **TX2+** | *unused* |
| **TX2-** | |
| **GDN** | Power supply input |
| **+24V** | |
| **RX1+** | *unused* |
| **RX1-** | |
| **TX1+** | In MASTER mode: DMX output<br>In SLAVE mode: RS485 output for data transmission to the master PX300<br>In BOOTLOADER mode: communication with PX300_config PC application (configuration and firmware upgrade) |
| **TX1-** | |
| **GND** | |
| **+24V** | 24V bypass |

# 4. STARTING THE DEVICE

After powering up PX300 it starts to measure light parameters. In MASTER mode PX300 starts to generate DMX512 signal. It the first 6 channels to transmit data. The meaning and purpose of each value is described below:

| DMX channel | Channel function |
|:---:|:---:|
| 1 | Color temperature value (X) |
| 2 | Inverted Color temperature value (255-X) |
| 3 | Intensity value (Y) |
| 4 | Inverted Intensity value (255-Y) |
| 5 | Status value:<br>• **255**: intensity is sufficient for a correct color measure<br>• **0**: intensity is not sufficient for a correct color measure |
| 6 | Inverted Status value:<br>• **255**: intensity is not sufficient for a correct color measure<br>• **0**: intensity is sufficient for a correct color measure |

# 5. MASTER/SLAVE FUNCTION

In **MASTER** mode PX300 generates DMX512 signal containing measure data which can be used to control lamps directly or as an input to an advanced DMX controllers.



In **SLAVE** mode PX300 generates an RS485 signal that can be transmitted to another PX300. Master device receives data and sends average values by DMX512.
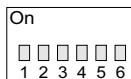


**MASTER/SLAVE** mode selection is done by the onboard dipswitch. Setting up any of the switches selects MASTER mode.

A drawing below shows the connections of the MASTER and SLAVE:

The following scheme shows the connection of two PX300 mode MASTER / SLAVE:



SLAVE

MASTER

DMX output
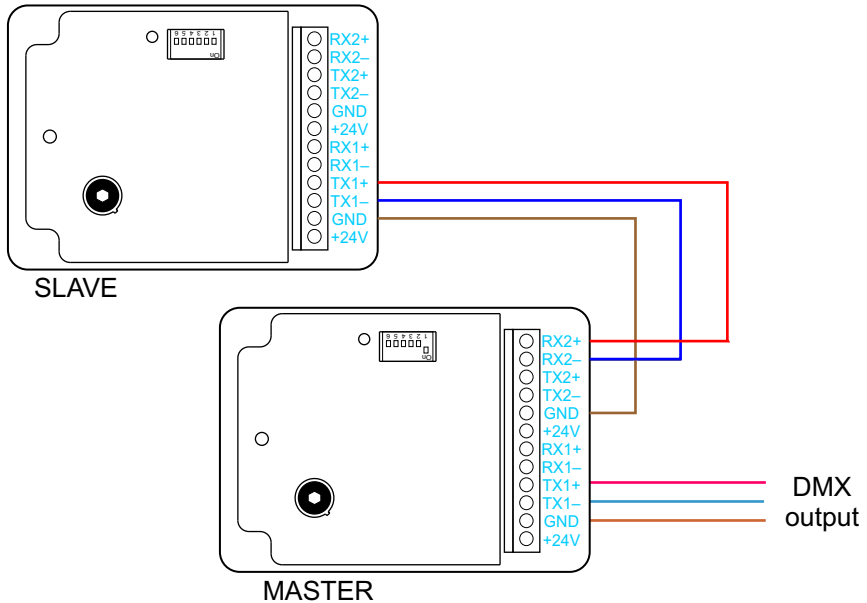
# 6. SENSOR CONFIGURATION

PX300 converts measured data of light color and intensity to DMX values according to its settings. Those can be viewed and changed using PX300_config PC application. It requires USB_RS485 cable.

Configuration procedure:
- → connect PX300 to the PC using USB_RS485 cable:
  - • TX1+ red cable pin
  - • TX1- blue cable pin
  - • GND black cable pin
- → run PX300_config application
- → click Connect and select USB_RS485 cable
- → power up Px300
- → the device should be detected
- → to upgrade device firmware click 'Yes', select '*.upg' file and confirm
- → to configure the device click 'No'. Now you can use application functions.
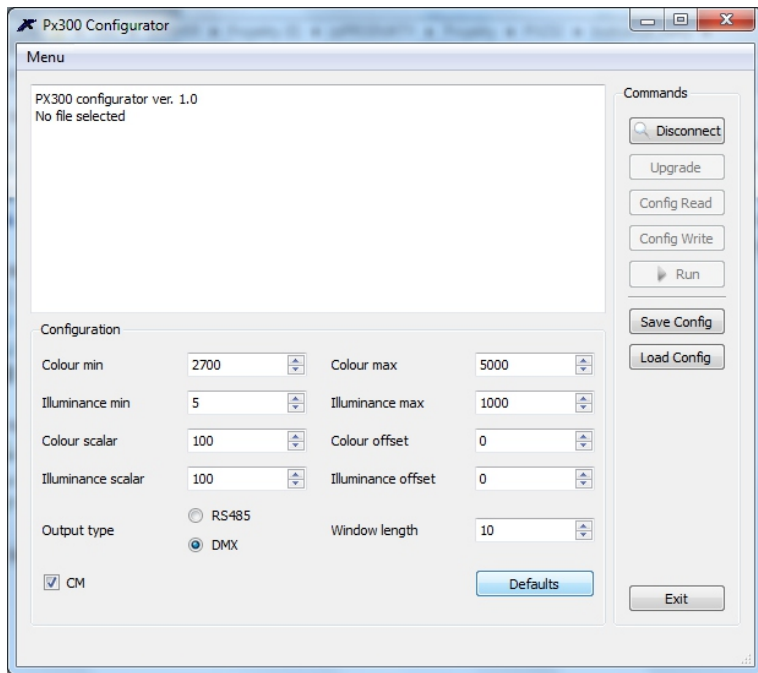
[**Upgrade**] – upgrading PX300 firmware

[**Config Read**] – Read settings from Px300
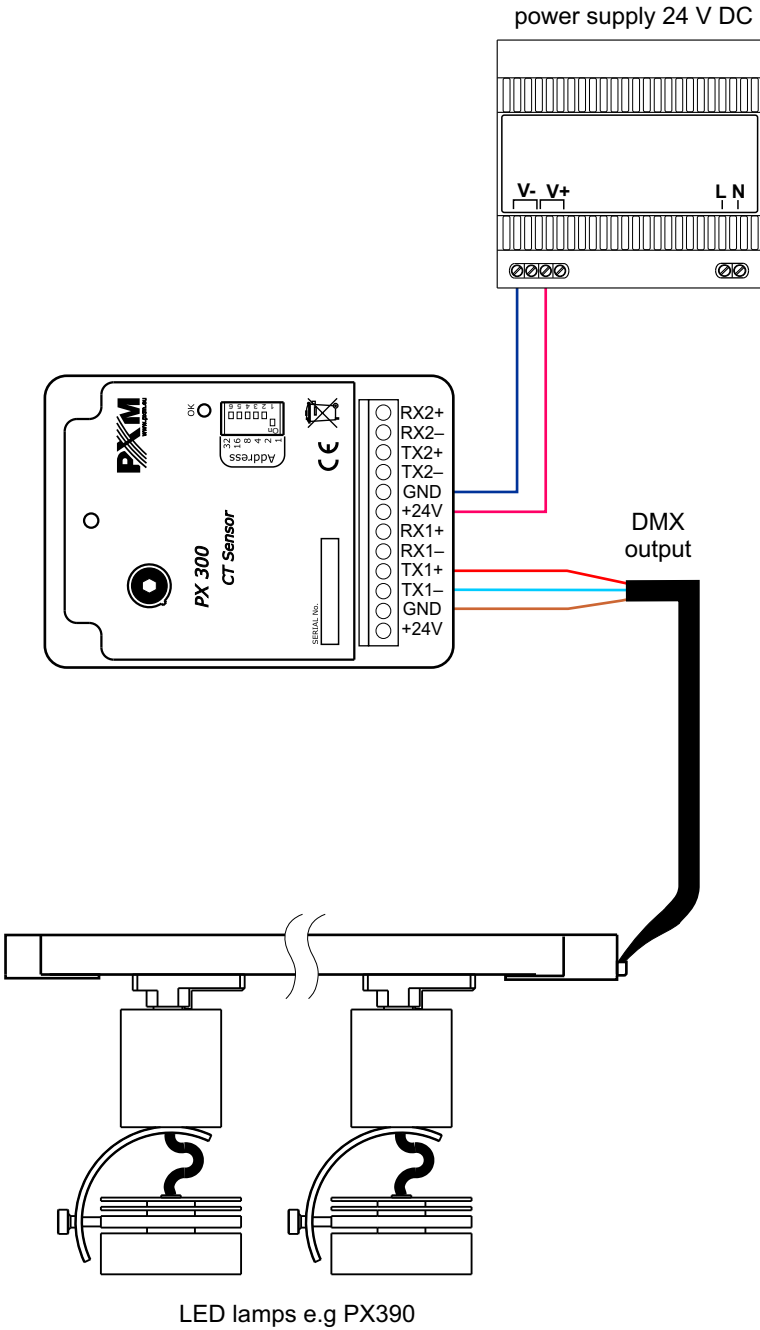[**Config Write**] – Write current settings to Px300

[**Save Config**] – Save current settings to a file
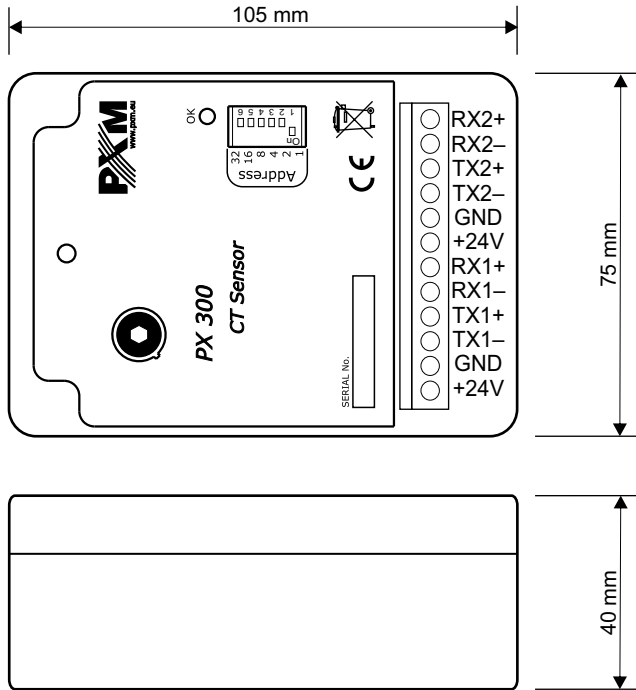[**Load Config**] – Load settings from a file

[**Exit**] – Close application

[**Defaults**] – restores current settings to default values

# 7. CONNECTION SCHEME

power supply 24 V DC



LED lamps e.g PX390

# 8. DIMENSIONS



# 9. TECHNICAL DATA

- power supply:                     24 V DC
- power consumption:                25 mA
- operating range of the sensor:    2500 - 6000 K; 0-10000 lux
- output Connectors:                terminal blocks
- supported protocols:              DMX, RS485
- degree of protection:             IP65
- housing material:                 polycarbonate
- weight:                           0,16 kg
- dimensions:                       width: 105 mm
                                    height: 75 mm
                                    depth: 40 mm

**PXM**

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# DECLARATION OF CONFORMITY

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

*declares under our sole responsibility that the product:*

Name of product:    **CT Sensor**
Type:               **PX 300**

*compiles with the following standards and harmonized standards:*

| | |
|---|---|
| **PN-EN 50581:2013-03,** | **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.

**PXM**
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32-003 Podłęże, Podłęże 654
NIP 677-002-54-53

Podłęże, 15.06.2018                              mgr inż. Marek Żupnik.