copenhagen atomics

# Light Controller V1.1

Controls LED strips with different colors.
This enable to system to signal status/alerts

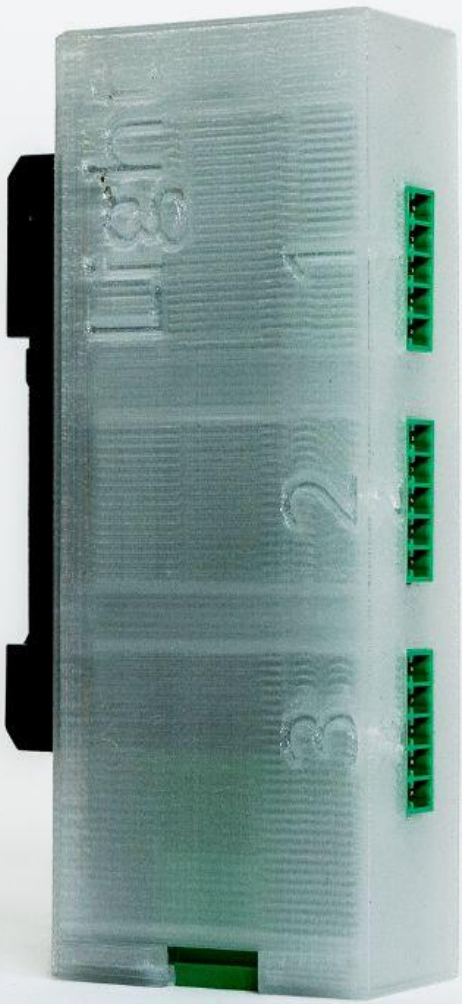

Photo showing version 1.1

# Introduction

## Usage

The light controller box is used to control LED strips to show system status or alerts. The box can drive three LED strips with up to 24V and 3 Amps each. Or 72 watt per LED strip.

The board has adequate channels for RGB + separate white. PWM enables blinking and colour phasing.

Compatible strip:
https://www.digikey.dk/en/products/detail/american-bright-optoelectronics-corporation/AB-FD0240 8-19712-8A1-12S/21267047

See commands on Page 5 for info on how to set the different colors using RGB HEX codes.

## Data communication

Data communication happens over USB with the serial communication protocol (COM-port, /dev/ttyXX).

Baud rate 115200,  with 8 data bits, no parity, and 1 stop bit. (8N1)

After you connect to the box it will output one line of text to the terminal every 0.1 second (10 Hz).

The content of this line is specified on the next page.

You can also send commands to the box. Just type in a command, then the box will turn channels on and off accordingly.

This video gives an introduction to serial data and commands: https://youtu.be/-64MM8h5SdI

# Introduction

## Integration with TurboCtrl

TurboCtrl AutoConfig will detect the box and insert each channel in IO.conf as a Light value.
This light value is a hex #FFFFFF (RGB) value and if you set 6xF then it will turn on the white LEDs. The same light value in the vector also set the color on the report card on the plots system list page and it can be used to set the color of the traffic light color lambs.

This video gives an introduction to autoconfig: https://youtu.be/MhT1DqOuWLE

This video gives an introduction to TurboCtrl programming: https://youtu.be/MhT1DqOuWLE

TurboCtrl.ai supports many sensor and actuator types:
Temperatures, pressure, humidity, oxygen and other gasses, gas and liquid flow sensors, DC ports, AC ports, VFDs, current, voltage, oven controllers, light controllers, motors, audio, video, scales, position, liquid level, density, viscosity, integration with Festo and other pneumatics systems. And much more

## Buy connectors

This box uses KANGNEX WJ15EDGK-3.81-5P connectors for output and Phoenix 1718481 for DC input.

You can buy the connectors here:
Input:
https://www.digikey.dk/en/products/detail/phoenix-contact/1718481/2527227

Output:
https://lcsc.com/product-detail/Pluggable-System-Terminal-Block_Ningbo-Kangnex-Elec-WJ15EDGK-3-81-5P_C3804.html

The box comes with a USB-C to USB-C cable included and standard DIN rail mounting.

i For more information, please contact sales@copenhagenatomics.com

# Specs

## Serial terminal output (baud: 115200)

| Output | p1 color | p2 color | p3 color |
|---|---|---|---|
| Unit | [6 digit HEX] | [6 digit HEX] | [6 digit HEX] |

## Commands

| Command | <Arguments> | Description |
|---|---|---|
| p<1-3> <HEX> | Port nr., 6 digit HEX. | Change color on specific channel. |
| Status | - | Verbose output of the current board status. |
| Serial | - | Verbose output of serial number and calibration. |

## Specification

| Parameter | Condition | Value | Unit(s) |
|---|---|---|---|
| Supply voltage* | nom. | 24 | V |
| Single colour load (5m strip) | max. est. | 1 | A |
| Total box load (3x5m strip) ** | max. est. | 9 | A |
| USB power | max. | 0.48 | W |
| USB current | max. | 93 | mA |

* Should match LED strip voltage, usually 24V, but could be 12 V in some cases.
** Each port can at max run 3 colours at a time, as white is only used for FFFFFF.

# Product photos

# Contact
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