

HARDWARE DATASHEET

CANOpen addressable LEDs controller

Description

UIO1LED product line is an industrial LEDs controllers module with CAN Fd communication. It contains an effect generator and can manage multiple segments.



Features

- Individual led control
- Multiple segments management
- Effects generator per segment
- Full compatibility with CANOpen protocol, custom profile

Interfaces

- CAN Fd bus up to 8 Mbds

Leds

- Addressable led with 3 or 4 wires (async data or data + clock)
- 5, 12 or 24V led (No power board)
- WS2811, WS2812(B), WS2813 and WS2815 support

MCU

- High performance safety MCU

Reference	Led signals	CAN Fd
UIO1LED	2	1

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Chapter 1

Specifications

1.1 Technical data

Power supply	
Nominal power supply voltage (Vin)	6.5 - 55 V
ESD protection	30 kV
Digital leds outputs	
Voltage	5 V
Output current	max 50 mA
Logic low voltage	0 V
Logic high voltage	5 V
Interfaces	
CAN Fd	max 8 Mbit/s
Isolation	None
Physical	
Operating temperature	0°C...+85°C
Dimensions (L x W)	16 mm x 55 mm

1.2 Connectors

UIO1LED have 2 connectors.

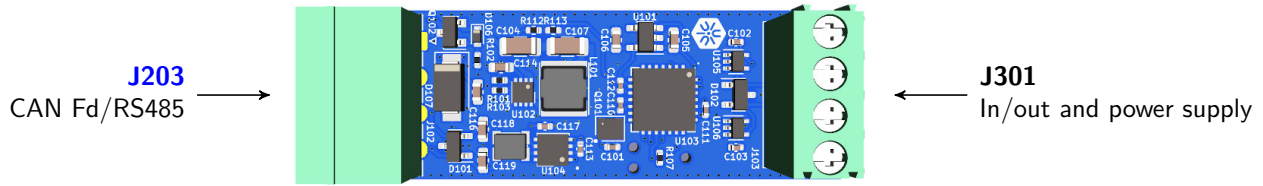


Figure 1.1: UIO1LED connectors

1.3 Electrical

1.3.1 Bus and power supply

A single 4 ways connector have power supply and CAN bus.

CAN Fd bus have 30 kV ElectroStatic Discharge (ESD) protection and high quality filters for noisy environment.

The speed of both buses can be set by software. The board does not include a bus terminator, you need to add one to each side of the bus.

Connector J102, bus and power supply

4 ways connector (J102). Power supply and CAN Fd bus.

UIO1led requires a single 6.5 V to 55 V power supply with reverse polarity protection.

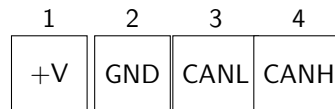
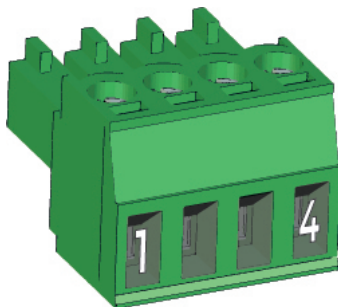


Figure 1.2: J102 pins, 4 pins, CAN Fd bus - power supply

Pins	Name	Description
1	+V	Power in +
2	GND	Ground, power in -
3	CANH	CAN Fd dominant
4	CANL	CAN Fd recessive

Figure 1.3: J102 pins

Recommended connector references

Screw connection :

- Phoenix : MC 1,5/4-ST-3,5

Push-in spring connection :

- Phoenix : FK-MCP 1,5/4-ST-3,5

Connector J103, leds outputs

Power and signals to leds strip.

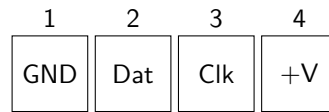
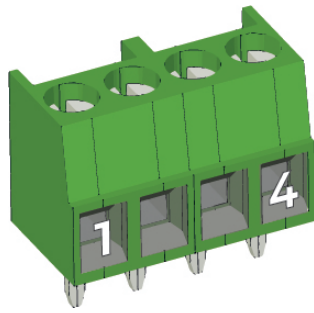


Figure 1.4: J103 pins, 4 pins, leds outputs

Pins	Name	Description
1	GND	Ground, power in -
2	Dat	5V data output
3	Clk	5V clock only for clocked leds
4	+V	Power in +

Figure 1.5: J103 pins

1.4 Drawings

Maximum height : 12.00 mm

Appendix A

Hardware revision history

Version	Date	Change
1.0.1	2021/08/12	Initial public version
1.0.2	2021/09/14	Improved EMC on switching supply Added compatibility with 12V leds

Appendix B

Datasheet revision history

Revision	Date	Change
A	2021/11/15	Initial public revision