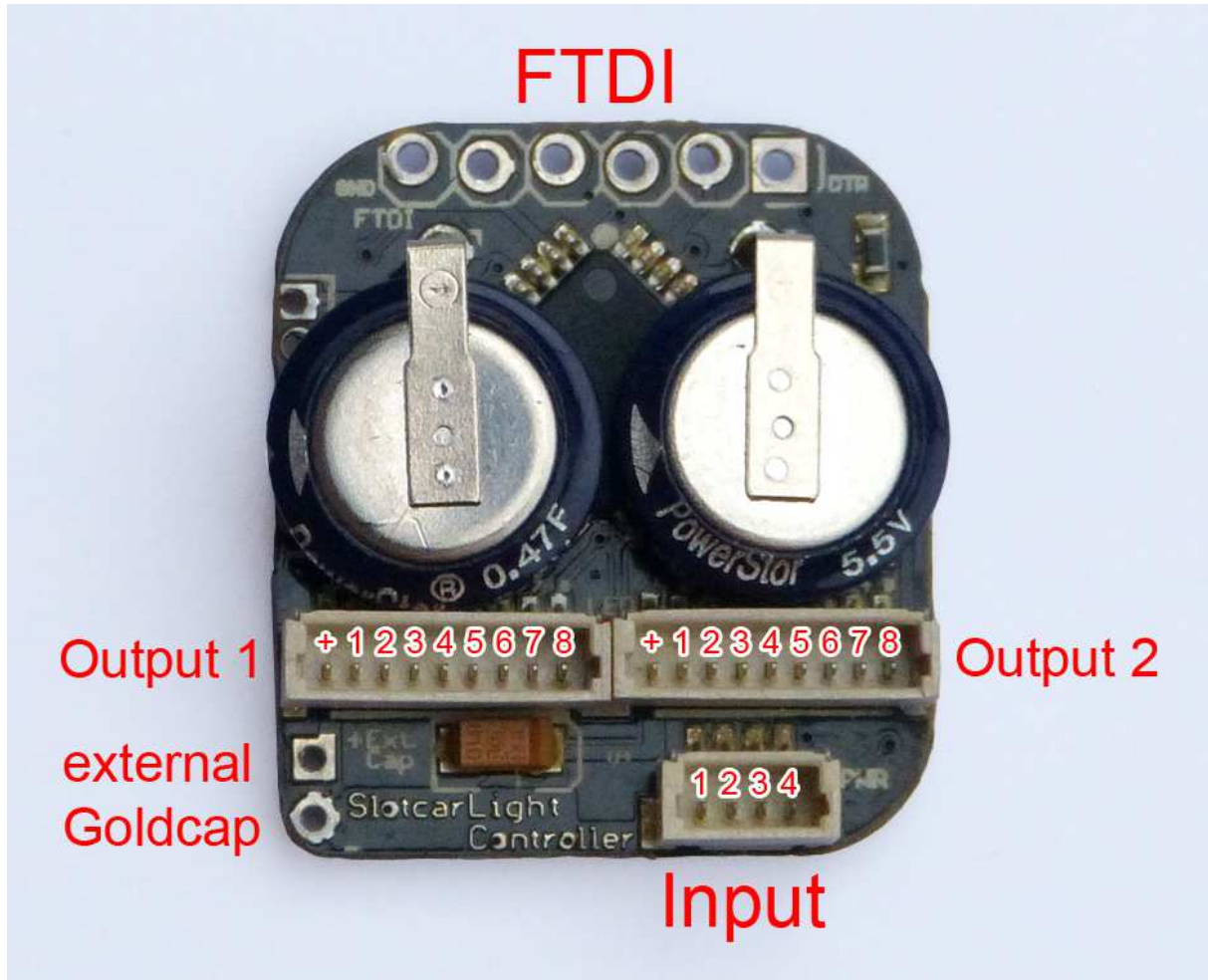


SlotcarLightController Connection Plan

SLC Connection Overview



Input

- 1 input voltage +
- 2 input voltage -
- 3 without function, can be cut off
- 4 without function, can be cut off

Output 1

- + common plus-connection for all LEDs
- 1 Channel 1 – headlights with xenonflash at the start
- 2 Channel 2 – headlight flasher¹
- 3 Channel 3 – taillights (can also be used for interior or headlights without xenon)
- 4 Channel 4 – taillights with integrated brake light²
- 5 Channel 5 – brake light² (can be used in conjunction with Ch. 4 as a third brake l.)
- 6 Channel 6 – flashing light³
- 7 Channel 7 – flashing light³
- 8 without function, can be cut off

Output 2

- + common plus-connection for all LEDs
- 1 Channel 8 – exhaust flames⁴
- 2 Channel 9 – exhaust flames⁴
- 3 Channel 10 – running light⁵
- 4 Channel 11 – running light⁵
- 5 Channel 12 – running light⁵
- 6 Channel 13 – running light⁵
- 7 Channel 14 – running light⁵

- 8 without function, can be cut off

1) The headlight flasher blinks in random intervals, as long as the handcontroller's threshold value stays above 50% for 0 to 500 milliseconds.

2) The brake light comes on, as soon as the handcontroller's threshold value falls below 1%. To improve the visibility of this effect, the brake light stays on for 200 milliseconds, even if the handcontroller's threshold value goes higher than 1%.

3) The standard blinking pattern switches every 30 to 60 seconds for 5 to 10 seconds to a faster blinking pattern. These channels can be used as signal lights or overtaking blinklights for endurance races.

4) The exhaust flames start blinking during the brake phase for 250 to 1250 milliseconds. The delay makes sure that this effect is not seen during any brake phase.

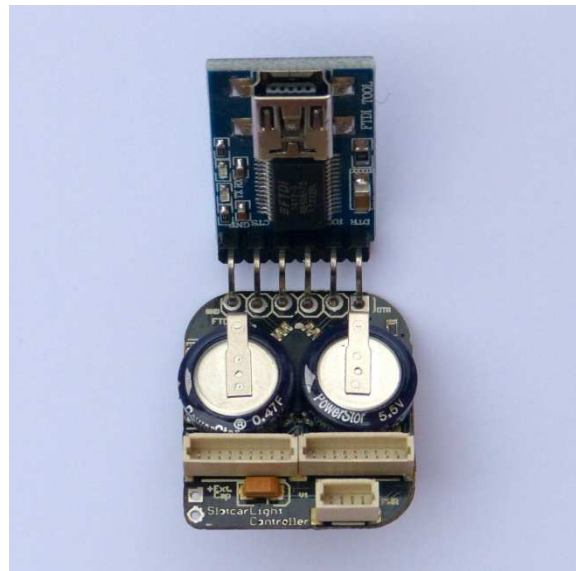
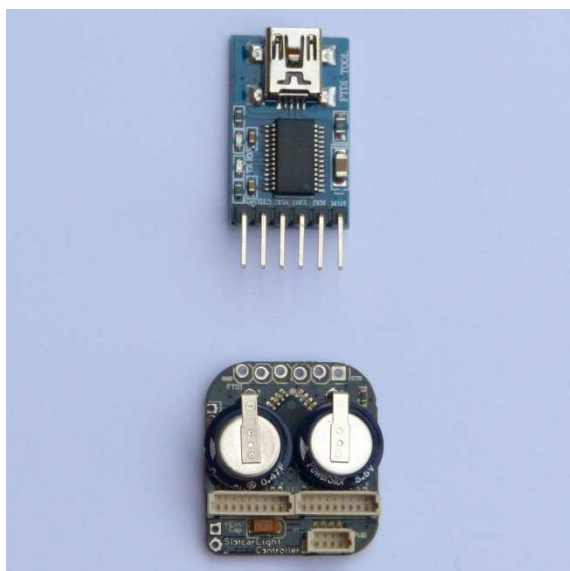
5) The running light bounces in 1000 milliseconds.

External Goldcap

On this soldering point a third goldcap (capacitor) can be connected.

FTDI

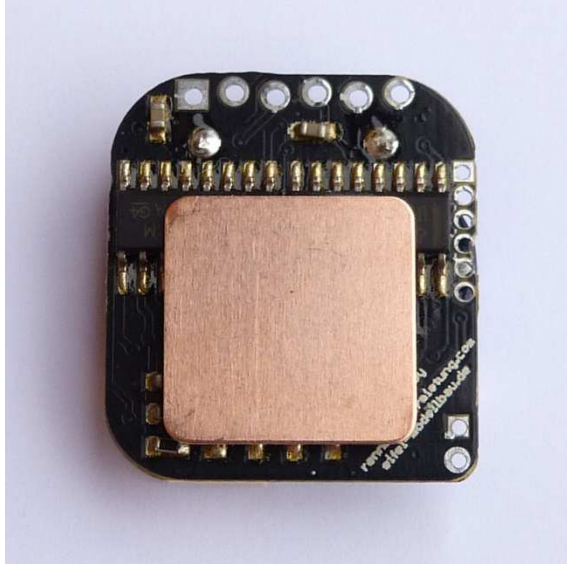
Here a USB-FTDI adapter can be connected. The pins from left to right are: GND, CTS, VCC, TX, RX and DTR.



To reprogram the SLC with the SLC Manager the USB-FTDI adapter has to be connected as seen in the pictures. After choosing the COM-Port in the SLC Manager, the upload can be started with the upload button.

Connecting LEDs

Each LED needs a series resistor to be connected to the SLC. Each SLC channel supplies a voltage of 5 Volts.



Without a cooler the SLC will work up to the following loads as a function of the input voltage:

6 Volts – 400 mA, 12 Volts – 150 mA,
18 Volts – 100 mA *.

Please note that without any connected LEDs the SLC has a power consumption of about 20 mA.

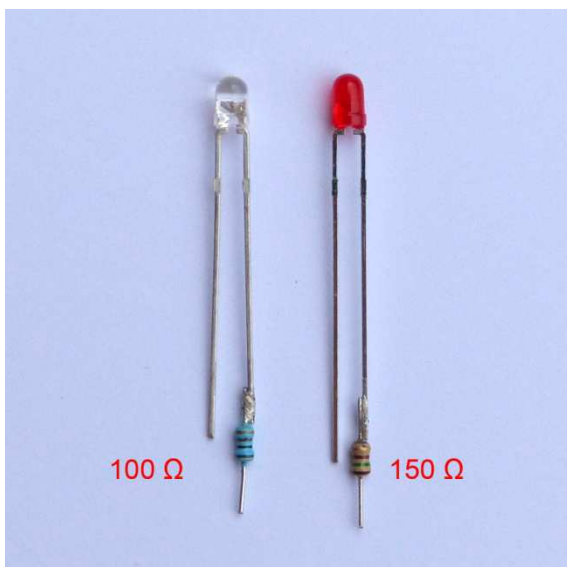
Upon delivery the default profile with 18 built-in LEDs has a power consumption between 80 and 120 mA.

For track voltages above 12 Volts we recommend assembling the attached cooler which can be glued to the bottom side of the SLC (see picture).

* These values were determined on a workbench with continuous current. A change of voltage (e.g. when switching between driving and braking), cooling through airstream or glueing the SLC to a metal chassis will raise these values. Also, by dimming the LEDs the power consumption can be reduced.

White and blue LEDs need an operating voltage of about 3 Volts, so the voltage has to be reduced by 2 Volts with a series resistor, while a current of 20 mA (or 0,02 A) can pass. Calculating with Ohm´s law (resistance = voltage / current) we get a resistance value of 100 Ω (Ohm).

Red, yellow and green LEDs need an operation voltage of about 2 Volts, so the voltage has to be reduced by 3 Volts. The resistor value has to be 150 Ω for one LED. If no resistor with the exact value is available, a resistor of the next higher value can be used instead.



The pluspin of the output connector has to be connected to the anode (the long leg) of each LED. The channels 1 to 14 depending on their function have to be connected to the cathode (the short leg) of the LED, each with a fitting resistor.

Technical Data

Size: 26 x 23 x 8 mm

Weight (without connector): 4,65 g

Processor: Atmel ATmega 328P, 8 MHz, 2 KByte RAM, 32 KByte Flash

Current supply: 2 Goldcaps with 0,47 Farad each

Input voltage: 6 to 20 Volts

Switch over cathode (this is important for multicolor LEDs, they need a common anode (+))

3 connectors for flexible mounting in the auto body or chassis

SLC and USB-FTDI adapter conform to RoHS standards and are not a toy.

www.slotcarlight.com - Struve Biel GbR - Hoefflerhofer Strasse 38 - 53819 Neunkirchen

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