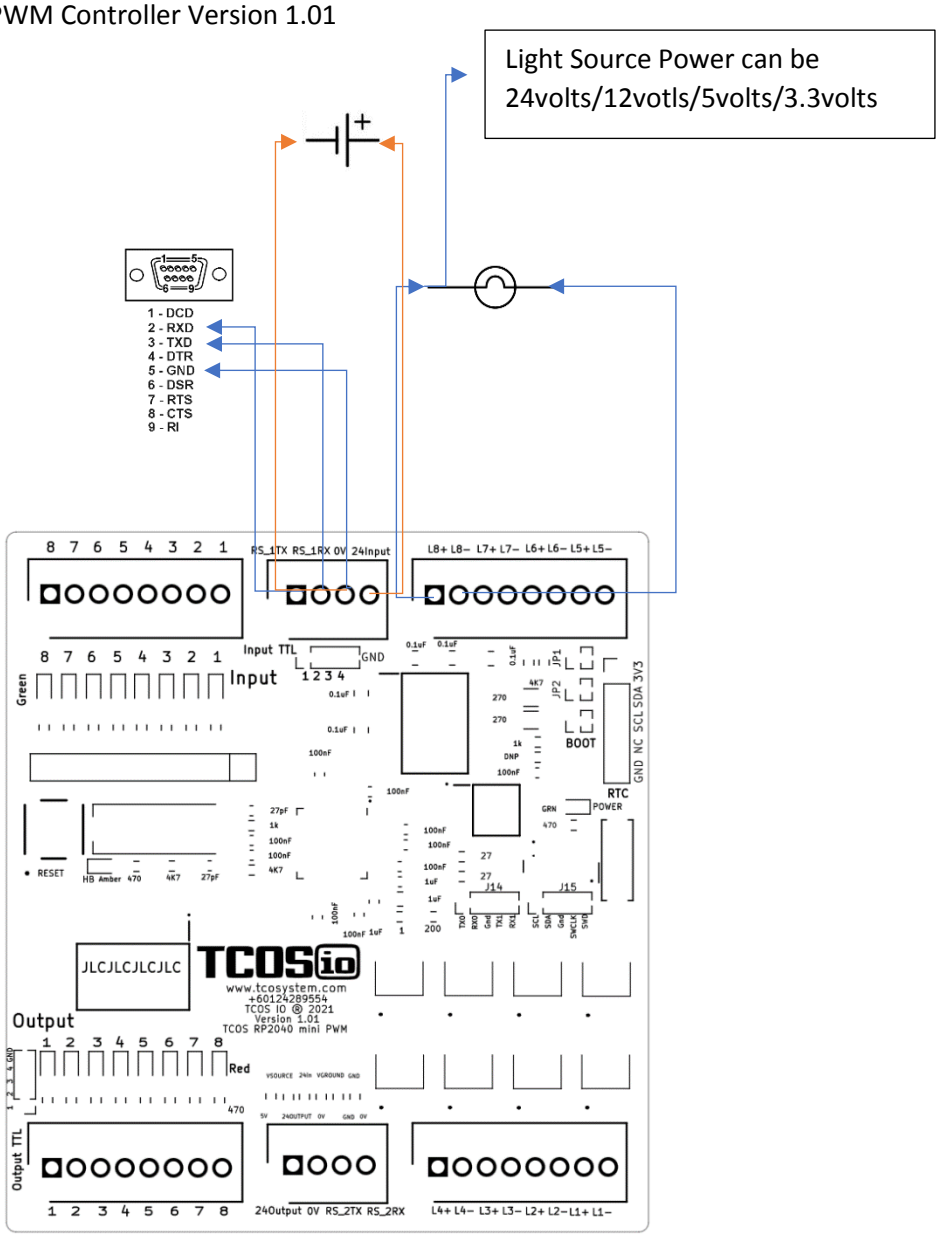
TCOS RP2040 mini PWM Controller Version 1.01

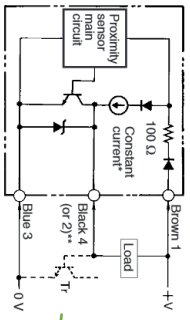


Connection to RS232 and Light Source

1. Connect RS1_TX to DB9 Female Pin 2, Rxd
2. Connect RS_RX to DB9 Female Pin 3, Txd
3. Connect 0v to DB9 Female Pin5, Ground
4. Connect 24 Input to Power Supply 24 volt, if using 24 volt logic for input trigger
5. Connect 0v to Power Supply Ground
6. L+ Connect to the Light source Positive side and also to the 24v/12v/5v/3.3v power source
7. L- Connect to the Light source Negative side.
8. Power Source ground must connect to 0v

USB-IO-1616-01 - Version 1.02 Digital Input and Output Connection

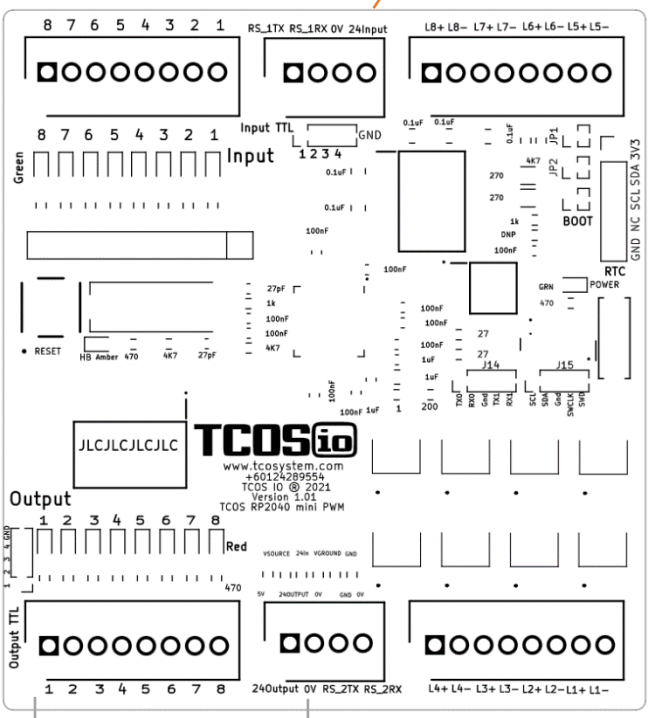
For Standard NPN sensor, example OMRON Sensor, the Brown Color cable to 24 volts, Blue Cable to 0 volts and Black Cable to the Digital Input Signal.



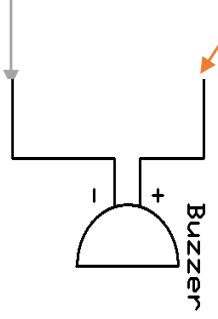
24 Volt Supply for 24 volt logic. Can be customize to 5 volt

8 Digital Input

8 Digital Output



For Output Connection, connect the Buzzer + to 24 volt and the – to the Output Terminal Pin. Up to 350mA



0 Volt/Ground

24 Volt Supply

RP2040 miniPLC PWM 8 Channel and Isolated USB Digital I/O Module

Features

- 8 Channel High Speed PWM Lighting Controller (1MhZ), 16 Bit Control
- 8 Digital Input for direct camera trigger
- 7 Digital Output for General Purpose usage
- High Speed RS232 Interfacing
- MCU Spec
    - Dual-core Arm Cortex-M0+ processor, flexible clock running up to 133 MHz
    - 264KB on-chip SRAM
    - 2 × UART, 2 × SPI controllers, 2 × I2C controllers, 16 × PWM channels
    - 1 × USB 1.1 controller and PHY, with host and device support
    - 8 × Programmable I/O (PIO) state machines for custom peripheral support
    - Supported input power 1.8–5.5V DC
    - Operating temperature -20°C to +85°C
    - Drag-and-drop programming using mass storage over USB
    - Low-power sleep and dormant modes
    - Accurate on-chip clock
    - Temperature sensor
    - Accelerated integer and floating-point libraries on-chip

Command Protocol to control the PWM Controller

Baudrate setting is 115200, 8, N, 1

1. Set Constant Intensity
   Command to send is `@SIXFFFF*`, X is the channel value from 0-5 for initial prototype, future release will be from 0-7, FFFF is the 32 bit hexadecimal value from 0-65535, 16 bit integer, system will reply `@SIX,OK*`

2. Set Strobe Intensity
   Command to send is `@SSXFFFF*`, X is the channel value from 0-5 for initial prototype, future release will be from 0-7, FFFF is the 32 bit hexadecimal value from 0-65535, 16 bit integer, system will reply `@SSX,OK*`. For Input trigger strobe to work, SS command must be set before input is trigger

3. Set Output value
   Command to send is `@SOFF*`, FF is hexadecimal value from 0-255, system will reply `@SO,OK*`. For Input trigger strobe to work, SS command must be set before input is trigger.

4. `@GDX,ON*` or `@GDX,OFF*` will be sent from system when Trigger input is trigger, this string reply can be use to know the state of input