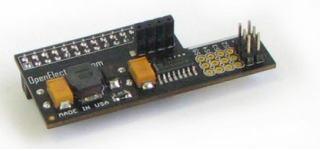


What is PiServoController

PiServoController is an add on board designed for Raspberry Pi to control upto 6 RC servo motors and I2C devices.



Connections and Placement

PiServoController is designed to connect directly over GPIO pins of Raspberry Pi.

Supplying power to your PiServoController

The PiServoController requires 5 Volts 1.2 Amps which it draws from Raspberry Pi. Supply your Raspberry Pi with required power through it's micro-USB connector.

Connecting Servos to your PiServoController

It is recommended to use RC servos which operate within 5 Volts. Attach Servo wires on servo pins. (Connect the wire so the orange wire of your servo is nearest the white line on the PCB).



NOTE

The pins nearest to White line are signal pins, center pins are power and pins farthest from White line are ground.

If you need to operate Servos that require higher than 5 volts, it is possible to supply higher voltage separately to servos through servo power header. (This power is separated from Raspberry Pi to prevent back flow.) Just attach +ve of your battery to power pin of one of the servo header (say S0) and -ve to ground pin.



WARNING

PiServoController is rated for external power supply of 10 volts DC max. Ensure to not exceed this value. While connecting external battery, ensure correct polarity.

PiServoController Highlights

- Signal buffering for servos – Raspberry Pi is protected from accidental power applied to servo signal pins.
- Power stabilization – Raspberry Pi as well as your servos are protected from any momentary spikes or voltage drops in your environment.

Programming for PiServoController

Python Programming Interface

Using a browser, download library file from following repository and unzip it on your Raspberry Pi:

<http://www.openelectrons.com/docs/viewdocs/3>

or download directly on your Raspberry Pi with following command.

```
wget http://openelectrons.com/files/documents/pi-pan.tar.gz
```

Current Characteristics

While not operating any servos, average current consumption of this device is less than 1 mA.

While operating servos, PiServoController will draw at most 450 mA from Raspberry PI power (if your servos demand more power, they will be starve).

Servo Pin Mapping

PiServoController pins are mapped on Raspberry Pi GPI O Pins as follows:

PiServoController Pin ID	Raspberry Pi GPI O Pin Number	ServoBlaster pin reference **
S5	24 (*)	18
S4	23 (*)	16
S3	22	15
S2	18	12
S1	14	7
S0	17	11

** It is recommended to use ServoBlaster software developed by Ricahrd Hirst to control the Servos.

<https://github.com/richardghirst/PiBits>

The pins referenced by ServoBlaster are listed above as they may come in handy if you need.

I2C pins used

If you are using I2C interface from PiServoController board (for Pi-Light or any other i2c device) it uses i2c clock and signal pins as follows:

On Rev 1 board – Pin 0 and Pin 1

On Rev 2 board – Pin 2 and Pin 3

I2C Pin Layout:

The pins on the board are as follows:

Pin with white square paint mark			
Ground	5V	SCL	SDA

Using Pi-Pan with other boards that use GPIO pins

The default board uses pins marked with (*) in table above.

However you can use other pins if necessary.

Find the pins used by the board you are planning to attach, identify the conflicting pins and find two free pins from the table above.

Solder standard pin header on the board and reconfigure 'servod' to start with appropriate parameters.

I2C pins for other devices:

If you need to use i2c clock and signal pins for any other device, you can use them by using a fork or T joint for these pins.

Controller Board Schematic:

