Making board for power supply

In this section, instructions of making power supply board for raspberry pi, motor driver and microcontroller will be provided.

Required Hardware:

1. Perf Board/ General Purpose PCB
2. 7805 Voltage Regulator IC
3. Two Capacitor – 10 uf
4. Power Switch
5. Berg Connector
6. Terminal Block
7. Soldering Iron and Soldering Wire
8. Heat Sink

Circuit Diagram:

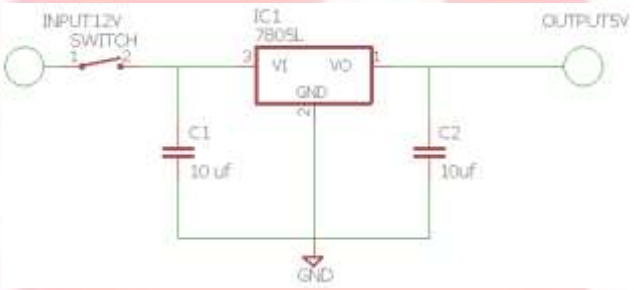

Figure 1.1: Circuit diagram for power supply

Schematic Diagram:

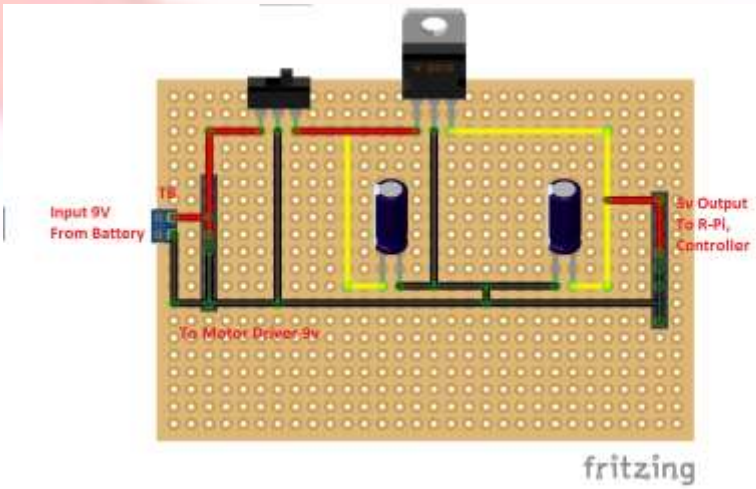

Figure 1.2 Schematic Diagram of power supply

Connection Instructions:

1. First study the circuit diagram as shown in Figure 1.1.

2. Cut the perf board 50x20 mm and break the male berg connector with 6 pins.

3. Place the male berg connector and two resistors in perf board and solder them.

4. Now solder the 6 solder cables to perf board and connect pins according to Figure 1.

After finishing the connection board should look like Figure 3.

Making Board for Motor with Quadrature Encoder

This file contains instructions to make board for connecting motor with quadrature encoder.

Required Hardware:

1. Motor with quadrature encoder

2. Perf Board/General Purpose PCB

3. Male Berg Connector

4. Resistors

5. Soldering Iron and Soldering wire

Circuit Diagram:

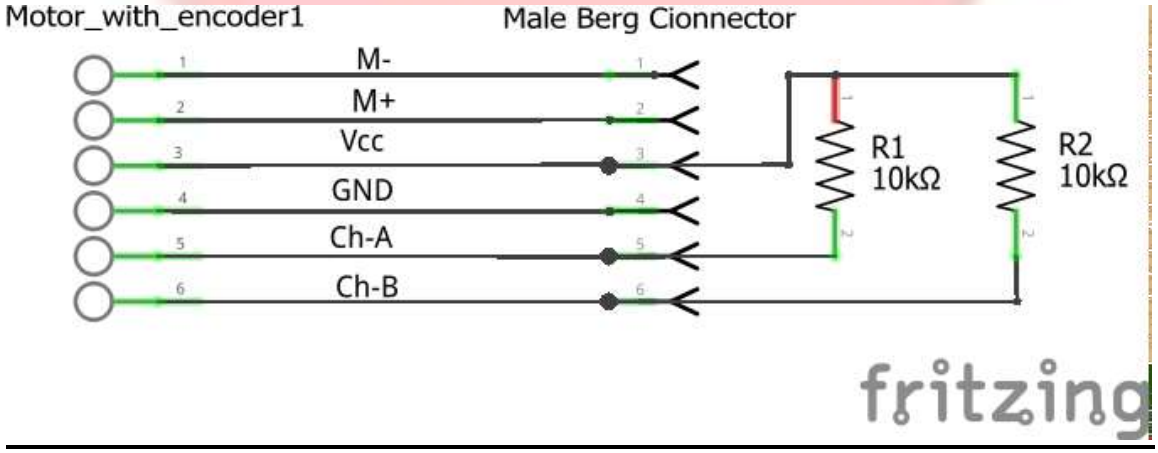

Figure 1: Circuit diagram for board

Note: Motor with quadrature encoder

Motor with quadrature encoder consists of six cables, two are for motor and four are for quadrature encoder sensor. Cable labeled "***M-"*** and ***"M+"*** are connected to motor and other four are connected to quadrature encoder sensor as shown in Figure 2. Motor cables M+ and M- can be connected to 10-15V power supply. But Vcc is to be connected to 5V. Be careful while connecting these pins with power supply, otherwise sensor may get damaged. Output channels of quadrature encoder, ***"Ch-A"*** and ***"Ch-B"***, are open collector outputs. A pull up resistor is connected between ***"Ch-A"*** and ***"Vcc"*** and another between ***"Ch-B"*** and ***"Vcc".***

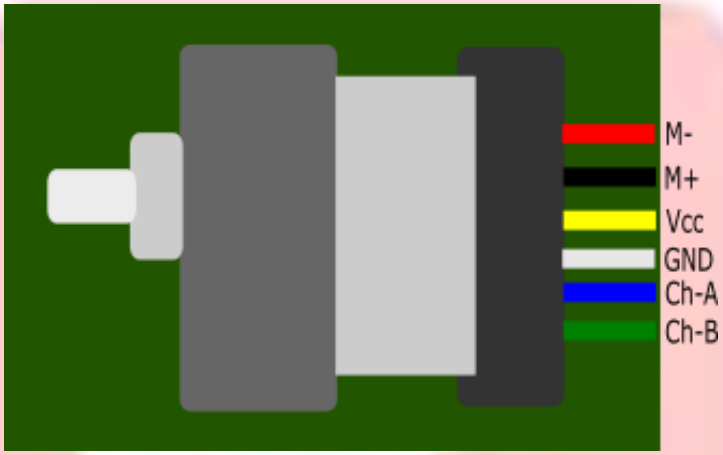

Figure 2: Motor with quadrature encoder

Connection Instructions:

5. First study the circuit diagram as shown in Figure 1.

6. Cut the perf board 50x20 mm and break the male berg connector with 6 pins.

7. Place the male berg connector and two resistors in perf board and solder them.

8. Now solder the 6 solder cables to perf board and connect pins according to Figure 1.

After finishing the connection board should look like Figure 3.

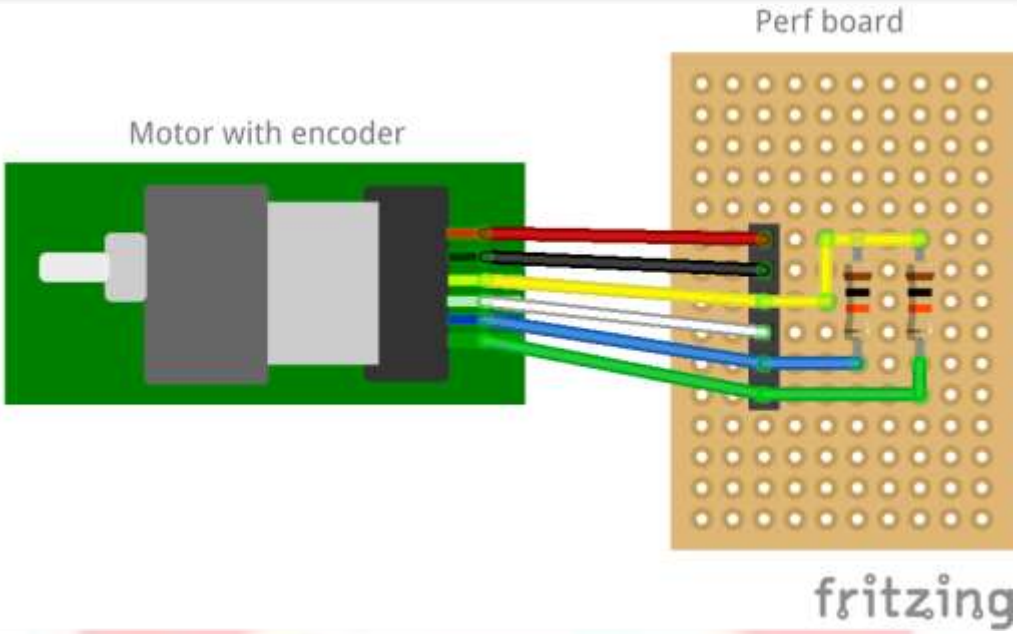

Figure 3: Board for Motor with quadrature encoder