Rajguru Electronics (I) Pvt. Ltd.

EMG Muscle Sensor V3.0 With Cable and Electrodes

The Advance Technologies EMG Muscle Sensor V3.0 With Cable And Electrodes will measure the filtered and rectified electrical activity of a muscle; outputting 0-Vs Volts depending the amount of activity in the selected muscle, where Vs signifies the voltage of the power source. Power supply voltage: min. +-3.5V.

This Muscle Sensor v3 from Advancer Technologies measures, filters, rectifies, and amplifies the electrical activity of a muscle and produces an analogue output signal that can easily be read by a microcontroller, enabling novel, muscle-controlled interfaces for your projects.

FEATURES:

- The diameter of Electrode Pad: 52 mm
- Cable Length: 2 feet
- Weight: 30gm.
- Improved adjustable gain (more rugged)
- Onboard port for our new cables

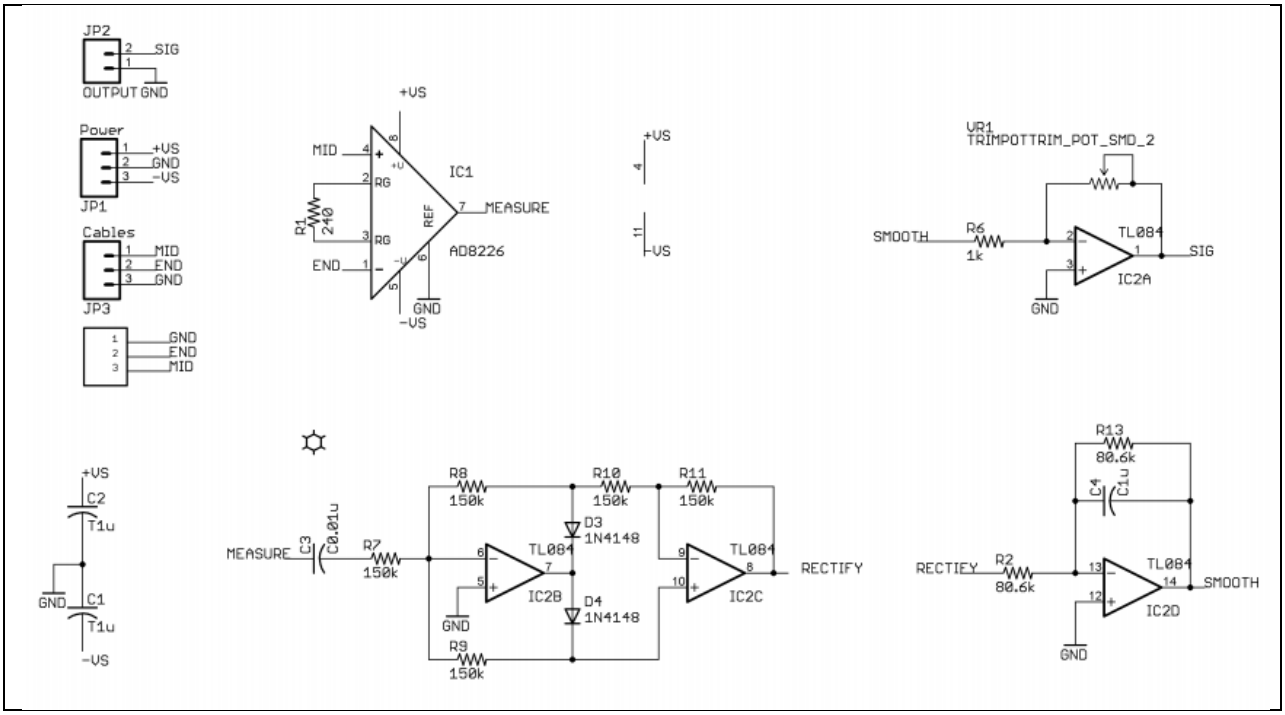
Connects to the board straight out of the box

- The reduced voltage needed (+-3.5V)

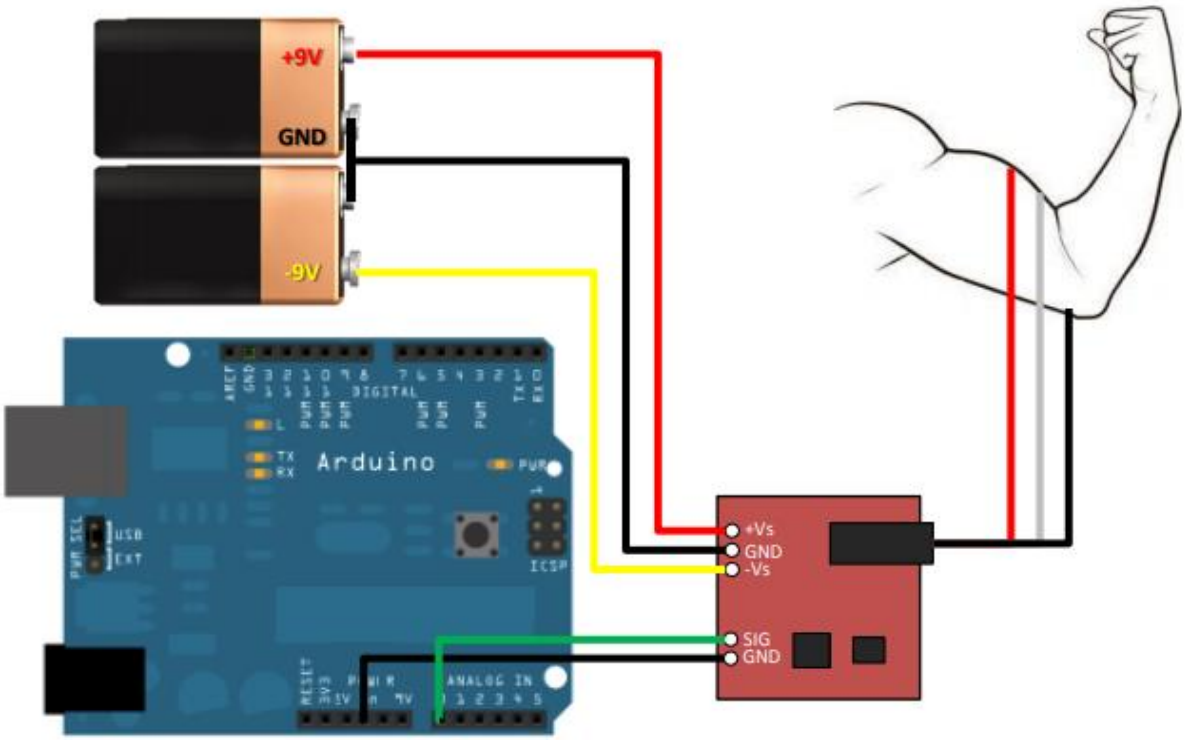
SPECIFICATIONS:

- Operating voltage (v): Â±5
- Audio-style plug: 3.5 mm jack
- Length of connecting cable: 1 m.
- Dimension(LxWxH): 33.5x26x12
- Weight(gm): 40

SCHEMATIC DIAGRAM:



CONNECTION DIAGRAM:



1) Connect the power supply (two 9V batteries)

a. Connect the positive terminal of the first 9V battery to the +Vs pin on your sensor.

b. Connect the negative terminal of the first 9V battery to the positive terminal of the second 9V battery. Then connect to the GND pin on your sensor.

c. Connect the negative terminal of the second 9V battery to the –Vs pin of your sensor.

2) Connect the electrodes

a. After determining which muscle group you want to target (e.g. bicep, forearm, calf), clean the skin thoroughly.

b. Place one electrode in the middle of the muscle body, connect this electrode to the RED Cable's snap connector.

c. Place a second electrode at one end of the muscle body, connect this electrode to the Blue Cable's snap connector.

d. Place a third electrode on a bony or non-muscular part of your body near the targeted muscle, connect this electrode to the Black Cable's snap connector.

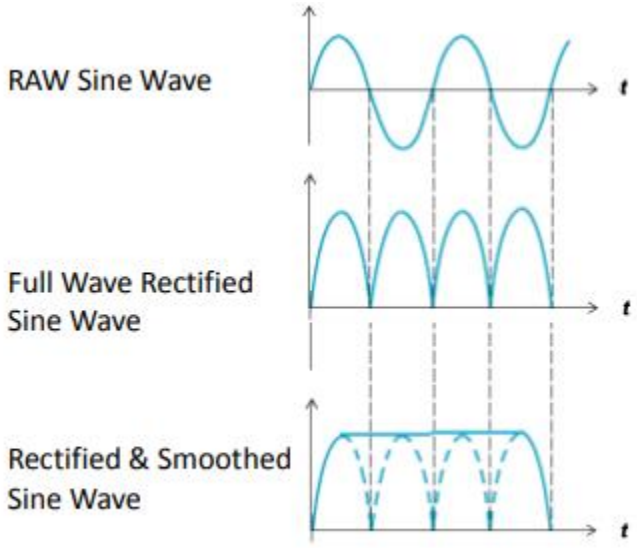
3) Connect to a Microcontroller (e.g. Arduino)

a. Connect the SIG pin of your sensor to an analog pin on the Arduino (e.g. A0)

b. Connect the GND pin of your sensor to a GND pin on the Arduino.

DESCRIPTION:

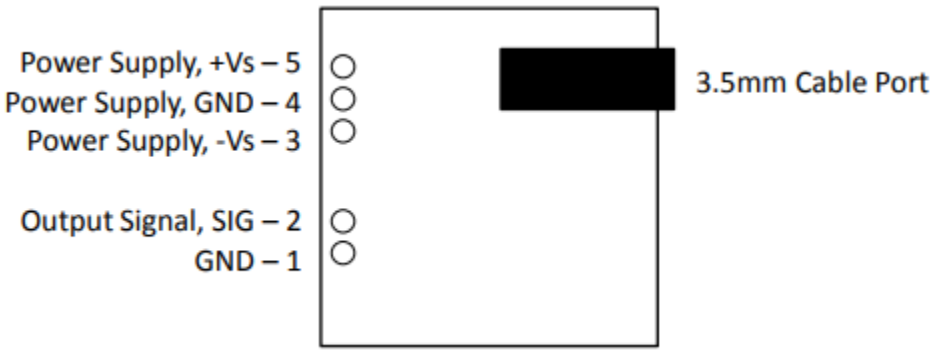
Muscle Sensors are designed to be used directly with a microcontroller. Therefore, our sensors do not output a RAW EMG signal but rather an amplified, rectified, and smoothed signal that will work well with a microcontroller's analog-to-digital converter (ADC). This difference can be illustrated by using a simple sine wave as an example.



WIRING INSTRUCTIONS:

1. To use this sensor, the user must have three electrodes connected to the subject's body.
2. The reference electrode should be placed on an inactive section of the body, such as the bony portion of the elbow, shin or forearm. This electrode should be connected to the black or brown cable.
3. The two other electrodes should be placed along the muscle selected to be measured. The second electrode should be placed along the mid-length of the muscle; this electrode should be connected to the red cable.
4. The last electrode should be placed at the end of the muscle and connected to the blue cable.
5. Finally, connect pin SIG to an analog input pin of your microcontroller and the GND pin to the ground pin on your microcontroller.

PIN LAYOUT:



APPLICATIONS:

- Video games Robots
- Medical Devices
- Wearable/Mobile Electronics
- Powered Exoskeleton suits

PACKAGE INCLUDES:

- 1 x EMG Muscle Sensor V3.0 Module.
- 3 x Electrode Pad.
- 1 x Connecting Cable.