

# ELECTROMYOGRAPHY (EMG) SENSOR DATASHEET

## GENERAL DESCRIPTION

Electromyography (EMG) is a technique to capture and analyze the electrical activity of motor neurons, connected to skeletal muscles, by using electrodes. To measure the electrical activity of a muscle group, 2 electrodes (separated by approx. 2in distance) are placed on the surface of the skin near the muscle group. A third electrode (referred to as a reference electrode) is placed on the surface of the skin close to the bone, e.g., elbow. The sensor measures the difference in potential between two electrodes w.r.t. the reference electrode. This signal is amplified and filtered at multiple stages before it is sent to the DCP block.

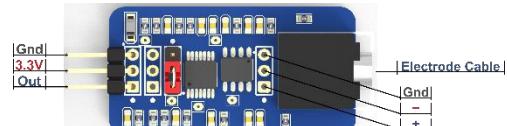


Figure 1: WallySci EMG Sensor

## SPECIFICATIONS

- 3 lead electrode cable operation
- Supply Voltage: 2.7V-5V
- Gain: 1920
- Range:  $\pm 0.8\text{mV}$  (with 3.3V)
- Bandwidth: 50Hz - 2500Hz
- CMRR: 90dB
- Input impedance: 0.8GOhm
- Raw and Integrated data output
- 3.5mm electrode cable jack

## APPLICATIONS

- Biomedical and IoT projects
- Human-Computer Interaction
- Robotics & Cybernetics
- Muscle health and fatigue measurement
- Fitness tracker
- Physiology studies
- Biofeedback

## FEATURES

- Voltage differential measurement
- Raw as well as integrated output
- High signal to noise ratio
- Generic connectors
- Plug-and-play

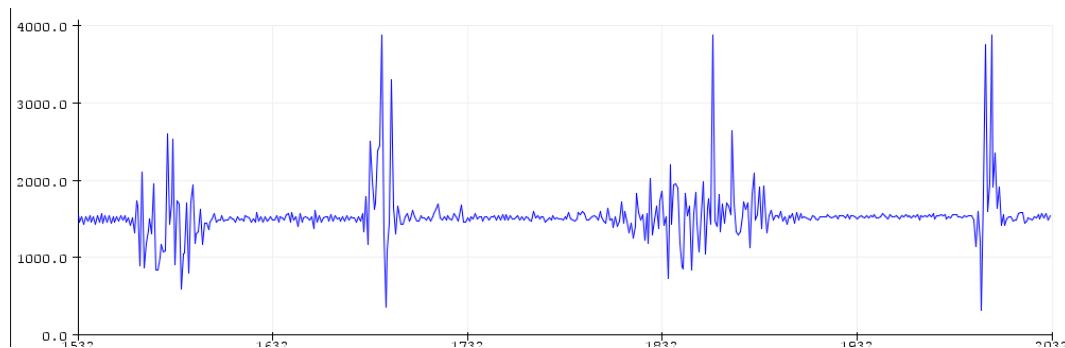


Figure 2: Sample data acquired with WallySci DCPU on forearm

**Disclaimer:** This information is provided "as is," and we make no express or implied warranties whatsoever with respect to functionality, operability, use, fitness for a particular purpose, or infringement of rights. We expressly disclaim any liability whatsoever for any direct, indirect, consequential, incidental or special damages, including, without limitation, lost revenues, lost profits, losses resulting from business interruption or loss of data, regardless of the form of action or legal theory under which the liability may be asserted, even if advised of the possibility of such damages.