

EMG System

- High-quality electronics with custom made amplifiers allow surface electromyography measurements with a high degree of accuracy and minimal environmental and physiological noise presence.
- Electrodes for a multiple-use support routine clinical diagnostics and scientific research.
- Multi-channel models can acquire from up to 16 muscles simultaneously.



Product Description

Electromyography (EMG) is a technique for evaluating and recording the electrical activity produced by skeletal muscles. An electromyograph detects the electrical potential generated by muscle cells when these cells are electrically or neurologically activated. The signals can be analyzed to detect medical abnormalities, activation level, or recruitment order or to analyze the biomechanics of human or animal movement. EMG system is intended for surface electromyography recordings. The system can be used independently or in conjunction with other systems.

Basic Components of the Product

Provided by the manufacturer:

- Input Box
- 4/8/16 surface EMG electrodes
- Ground electrode
- 2 USB cables
- Double-sided adhesive labels for electrode attachments

List of Requirements

- Personal Computer:
- Windows 7 (Home, Professional, Ultimate)
- 2 GHz processor
- 2 GB RAM
- 1 GB available on the hard disk
- Video resolution 1280x760 pix
- CD-ROM or DVD-ROM
- 3 USB ports

Note: The manufacturer usually provides a personal computer. If the client wants to provide their own personal computer, it needs to have the above-mentioned minimal requirements to run official software.

Technical Specifications

Input Box

Weight

Total weight of the Input Box is 1.1 kg.

Environmental conditions

Input Box should be stored in a dry space with a temperature range between 10 and 35 °C.

Dimensions

The external dimensions of Input Box are 241 X 90 x 241 mm.



Figure: Front and rear plate of the EMG Input Box (8 channels box is shown above).

EMG System

Inputs and outputs

EMG 1 – EMG 4/8/16: EMG electrode inputs.
GND: Ground electrode input.
EMG Out: Output from the EMG Input Box to the Central Acquisition Unit.
PC USB 1: USB input from personal computer.
PC USB 2: USB input from personal computer.

Other technical Characteristics

| Part | Description |
|--|---------------------|
| Low Bias Current | ±4 pA |
| Low Input Offset Voltage | ±0.2 mV RTI |
| Low Input Offset Drift | ±2 μV / C° RTI |
| High CMR | 100 dB (min) |
| Gain | from 400 up to 3500 |
| Single Power Supply | 3.35.0 V |
| Low Power Consumption | ~ 2 mA @ 5 V |
| Controllable AC/DC Input Filter and Reference | / |
| Common Mode Shield Driver | / |
| Right Leg Output Driver | / |

Electrodes

Weight

Total weight of one electrode is 100 gr.

Environmental conditions

Electrodes should be stored in a dry space with a temperature range between 10 and 35 $^\circ\text{C}.$

Dimensions

Main electrode dimensions are shown on a figure below. Cable Length: 2 m Cable Diameter: 2.5 mm





Figure: EMG electrode dimensions.

Components

| Part | Description |
|------|------------------------------|
| 1 | Surface EMG Electrodes |
| 2 | Input Box |
| 3 | Ground electrode |
| 4 | USB cabels |
| 5 | Double-sided adhesive labels |



