



# Centre for Consciousness Science



## **Digitimer** Constant Current Stimulator Training Manual

## GENERAL WORKING PROCEDURES FOR EEG LAB

### DIAL **3333** IN CASE OF EMERGENCY

<b>NEAREST FIRE ALARM:</b>	<b>Corridor</b>
<b>NEAREST FIRE EXTINGUISHER:</b>	<b>By Lift</b>
<b>NEAREST EYEWASH BOTTLE:</b>	<b>Bookcase</b>
<b>NEAREST FIRST AID STATION:</b>	<b>By Lift</b>
<b>NEAREST EYE WASH STATION:</b>	<b>By Lift</b>

### WORKING WITH PARTICIPANTS

- *ILLNESS*. If either you or your participant is suspected of being ill, the research booking should be cancelled and, if possible, rescheduled. Please advise participants not to attend if they feel ill prior to the session.
- *FRAGRANCE-FREE*. You should ensure a fragrance-free environment for the comfort of participants since you will be in such close proximity. Avoid using strong scents on the day and of course be aware of personal hygiene!

### WORKING ALONE

- *REDUCING RISK*. If you suspect you are working alone in the building, there are two things you can do to minimize risk:
  - 1) call security (3333) to inform them of your location and how long you expect to be working
  - 2) call an independent party and inform them of your location and how long you expect to be working.
- Either party can then call to check on you during your time in the lab and you should remember to call relevant parties when you are leaving.
- *WEEKENDS*. Give special consideration to these issues at the weekend, when it is more likely that you will be working alone.

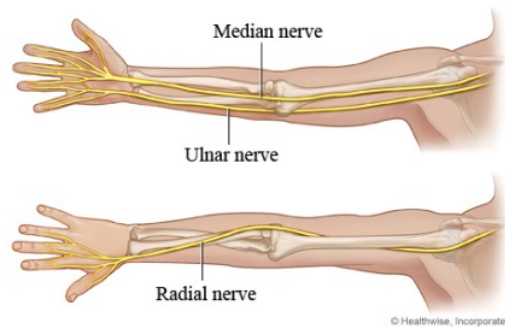
### System Set Up

**Firstly, make sure stimulator is off! The power button is located on the bottom left of the stimulator.**



**Here we describe how to stimulate the medial nerve, however the same procedure of threshold testing should be applied to any stimulation point.**

Place bar electrode along upper part of inner forearm. Application of bar electrode is important. Fill electrode cup with paste (or use solid metal electrodes) – scrape residual paste off so just cups are filled. Then place the bar a little to the outside of inner forearm about 2/3 of the way up. You are trying to put over the path of the medial nerve (see below).



Make sure that the strap fixes the bar firmly but comfortably to the forearm.

Panel settings should be as follows:

- Pulse width set to 100  $\mu$ secs
- mA set to X10
- Vmax at 300
- OUTPUT off (disabled).

**Next set stimulator to low initial setting (about setting 2-4) and plug in the stimulator leads and switch Stimulator on.**

### **Running Threshold Test**

Stimulation can either be triggered manually, via the 'trigger' button on the front of the stimulator or through an output trigger lead (usually parallel port) from a PC to input trigger BNC on back of Stimulator Unit.

First, turn OUTPUT On

Deliver an initial test pulse (using either method)

Trigger light should show on front panel when each shock is delivered

Deliver one stimulus at set level and ask participant if they felt anything

Gradually increase shock level until participant reports that the stimulus is tolerable but uncomfortable (depending on the experiment). If their hair stands on end or they start shaking violently you probably it set to high. Sensible steps initially are 5 or 10 units. Reduce these increments once you are nearing discomfort.

On occasion the position of the bar might need adjusted if satisfactory sensation is not achieved without dramatic muscle contraction.

Then increase above this until slightly painful

Check for habituation by moving down and up around this level until you get a stable 'tolerable but uncomfortable' response from participant. There is always some habituation. Take a note of this 'threshold of discomfort'.

Once this 'threshold' is established, you can use this value throughout the experiment and the shock stimulus will be applied to the forearm on every output trigger flag sent by your task script.

# CONFIRMATION DIGITIMER SOP

NAME: \_\_\_\_\_

I CONFIRM THAT I HAVE READ AND UNDERSTOOD THIS DOCUMENT:

**DIGITIMER TRAINING MANUAL** \_\_\_\_\_

SIGNATURE: \_\_\_\_\_  
\_\_\_\_\_

DATE:

Please email a signed copy of this page to the lab manager: [d.schwartzman@sussex.ac.uk](mailto:d.schwartzman@sussex.ac.uk)