

HD EMG grids

Instructions for use



92-5000-1064-0-1

REVISION 1.0



2016

Thank you for using the TMSi High Density EMG grids (41-5000-1064-X).

This document describes the instructions for use of the “TMSi High Density EMG grids”.

1. INSTRUCTIONS FOR USE

Intended use: Recording muscle activity on the surface of the skin.

Before using: Disconnect the HD EMG cable from the device. Check if the grids are clean and in good condition and if the electrodes on the grids are not deteriorated.



Do not re-use a HD EMG grid more than 3-5 times, especially if the electrodes show deterioration.

Preparing the subject: Make sure that the skin of the patient or subject is clean. If necessary, shave the skin and scrub the skin with some abrasive skin prepping gel (e.g. Nuprep).



Place a grid only if the skin is intact. Consult a specialist if there is any doubt regarding the condition of the patient/skin.

Preparing the grid: Select the grid and the appropriate “applicator” (Figure 1). Place the grid in the applicator, with the electrodes facing upwards (Figure 2).

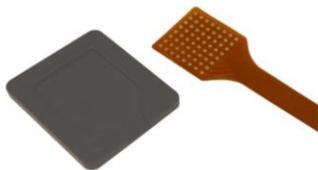


Figure 1



Figure 2

Take a double-sided adhesive and take off one side of the adhesive (Figure 3) and stick the adhesive on the grid using the applicator, to make sure that the holes of the adhesive are aligned with the electrodes (Figure 4).



Figure 3

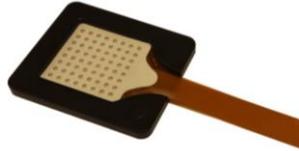


Figure 4

Now put some electrode gel on the sticker (Figure 5) and evenly divide it on all the 64 electrodes (Figure 6). The grids will work with most of the available conductive electrode gels. Make sure that there are no air bubbles present between the gel and electrode surface.



Figure 5



Figure 6

Once the gel is equally divided over the grid, you can take off the second layer of the adhesive (Figure 7). Remove this second layer very carefully. There should be a drop of gel on each individual electrode (Figure 8).



Figure 7



Figure 8

Now you should have 64 drops of gel on the grid, one on each of the 64 electrodes. Please make sure that there are no gel shortcuts between electrodes.

Placing the grid: Carefully take the grid with the gel and place it on the prepared skin. Make sure to prevent any shifting of the grid during placement.

Connecting the grid to the HD EMG cable: Slide the connector of the grid in the Connector Module of the HD EMG cable until you hear or feel a click (Figure 9). To prevent the cable from pulling on the grid, you could try fixating the cable with tape on the body of the patient.



Figure 9: HD EMG cable (95-5005-0008-0)

Connecting HD EMG cable to device: The HD EMG cable can be connected to the unipolar input channels of TMSi devices, using the EBA multiconnector (Figure 10). Two EBA multiconnectors are needed for connecting one HD EMG cable to a TMSi device.



Figure 10: EBA multiconnector (95-5005-0100-X)

The cable of the EBA multiconnector marked “gnd” should not be used as patient ground. Please use a standard snap electrode (95-7173-5015-0) in combination with the TMSi wristband (Figure 11) as patient ground for optimal signal quality. Make sure to make the wristband wet.



Figure 11: Wristbands for patient ground (95-8540-0002-1)



Before cleaning, make sure the grid is disconnected from the HD EMG cable and connector box.

Never use sharp tools or aggressive chemicals for cleaning or disinfecting.

Cleaning: After use, remove the grid gently from the skin and clean the skin immediately before the gel can dry. Carefully peel off the adhesive from the grid and clean the grid afterwards before the gel can dry. Rinse the grid with lukewarm tap water and if necessary use a mild detergent/disinfectant* to clean the grid.

* A 2.67% Incidin Plus disinfectant solution was tested on the grid. However, TMSi does not guarantee that cleaning the grid using the Incidin Plus solution has the desired result in terms of disinfection.

Liability: These instructions are drawn up with most care. In case of incompetent use and/or not following the above instructions, TMSi will not take any liability.

Any deviating/extra regulations and or guidelines imposed by your local country of jurisdiction always prevail over this user guide.

2. AVAILABLE GRID SIZES AND LAYOUT

Currently, TMSi offers two different types of 64-ch. HD EMG grids in an 8x8 configuration. The small HD EMG grid has a surface of 3.6x3.6 cm and an inter-electrode distance of 4.0mm (Figure 12). The large HD EMG grid has a surface of 7.1x7.6 cm and an inter-electrode distance of 8.5mm (Figure 13). Each AgCl-electrode on the grid corresponds to a unipolar input of the TMSi amplifier. These channel numbers can also be found (partly) on the grid. Please note that with the large HD EMG electrode, you have to look at the numbers above the electrode (and not at the numbers inside the 16 dotted circles).

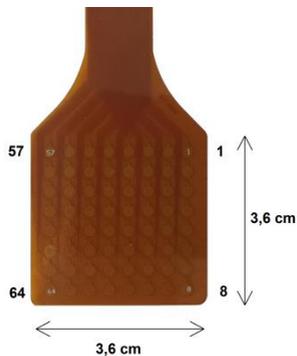


Figure 12: Small HD EMG grid (41-5000-1064-0). Channels 1, 8, 57, and 64 are numbered on the grid.

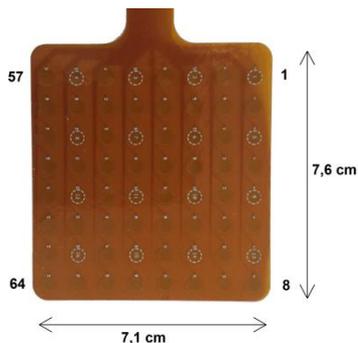


Figure 13: Large HD EMG grid (41-5000-1064-1). Channels 1-64 are all numbered on the grid, above each electrode.

If anything remains unclear, please contact us:

TMSi (www.tmsi.com)

Zutphenstraat 57

7575 EJ Oldenzaal

The Netherlands

@ support@tmsi.com

 +31-541-534603