

MWA (Micro Wire Array) Design Document (384)

Ref Doc (Office Use): MWA11-

Cat # (Office Use): 384-

General Specifications

Material: (Check one)

- Platinum Iridium (H-ML coating)**
- Stainless Steel (Teflon Coating)**

Wire Diameter: (Check one)

- 50 Micron (Typical)**
- 25 Micron**

Number of recording wires (4-64): _____

Tip Exposure Method: Wire Cutoff

Impedance range for each wire:

25 micron Pt/Ir - 0.4 to 0.8 MΩ
50 micron Pt/Ir - 0.2 to 0.4 MΩ

25 micron SS - 0.6 to 0.9 MΩ
50 micron SS - 0.4 to 0.6 MΩ

Include a Reference Wire? (Check one)

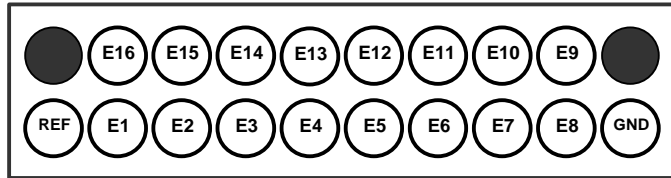
- Yes (Typical) - Same material as recording wire with 2 mm exposed**
- No**

Include a Ground connection? (Check one)

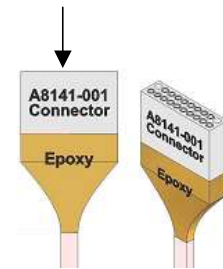
- Yes - 20mm wire which will extend out from the connector.**
 - Silver (Typical)**
 - Stainless Steel**
- Yes - Same material as Electrode with no insulation**
- No**

Connector/s:

- Standard - 18-pin Male Omnetics connector (A8141-001).**
Recording Channel Pinout for each connector is as follows:
(Top View of the array)



Top View Looking
this way



Notes:

1. For more than 16chan arrays, the scheme would be the same for each 16 channels, so E1-E16 will be replaced with E17-E32, E33-E48, and E49-E64.
2. The Ground wire will extend from the connector, out of the epoxy. Silver Ground wire should not be inserted into the brain, as it is toxic. It should rather be connected to a screw on the skull.

- Other**
Connector: _____
Recording Channel Pinout: (Insert drawing here)

Physical Measurements

Epoxy Length (E) below connector: (Check one)

- 5mm (Typical)
- Other. Specify _____

Length of wire covered with Carbo Wax (C): (Check one)

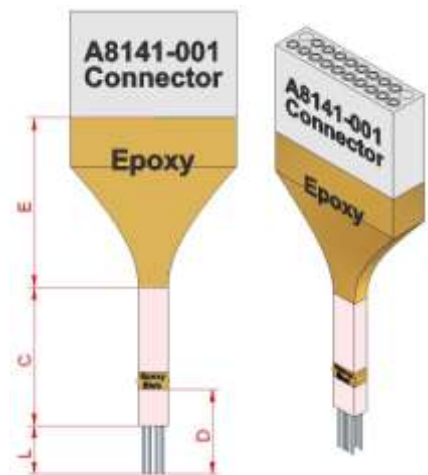
- 5mm (Typical)
- Other. Specify _____ (Up to 23mm)

Length of wire beyond Carbo Wax (L): (Check one)

- 2mm (Typical)
- Other. Specify _____ (Up to 10mm)

Include an Epoxy Blob? (Check one)

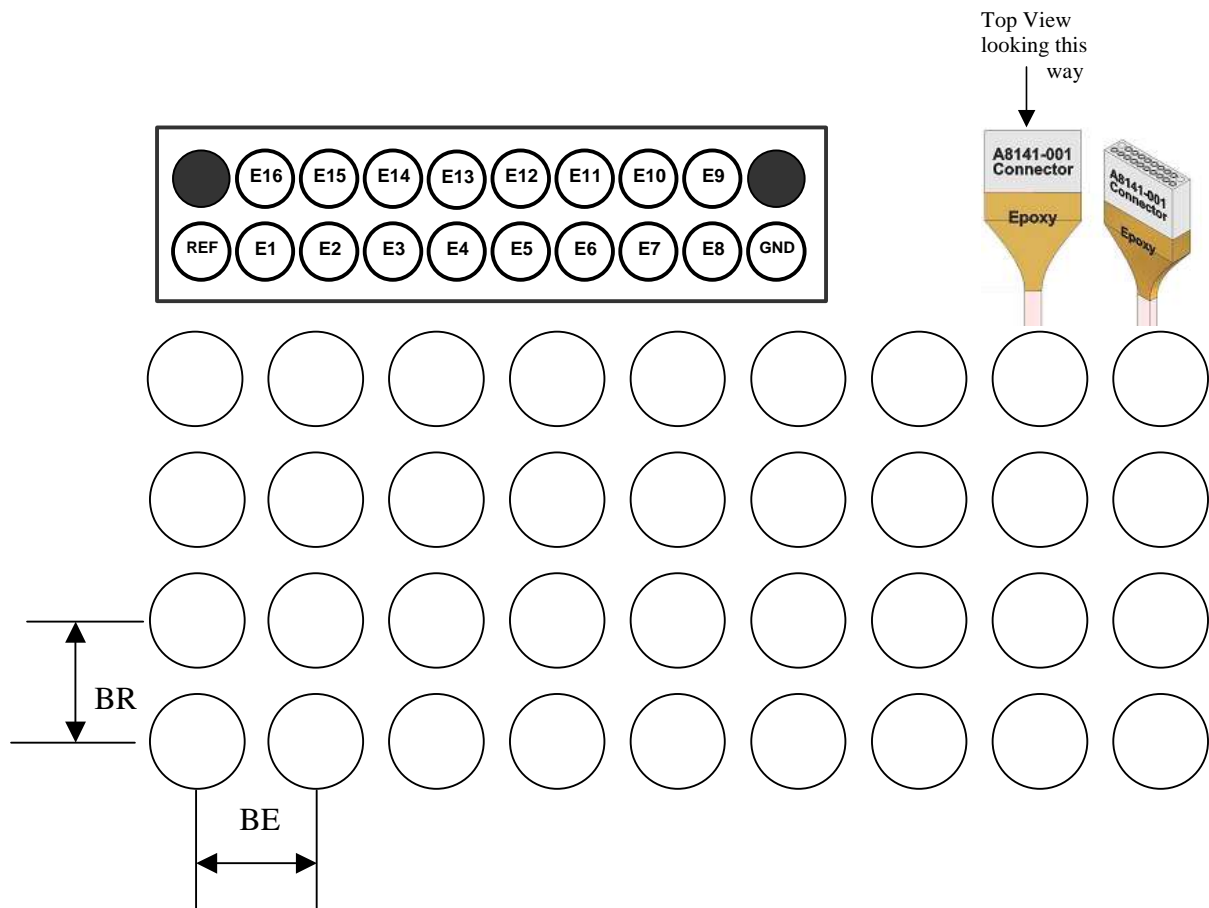
- No (Typical)
- Yes- Specify Distance from Wire Tip (D): _____ mm



Array Layout and Channel connections

Looking from the top through the connector, fill out how you would like the electrodes, including the reference and ground electrodes to be laid out using E1-En, and Ref. Supply a separate document if necessary. If an electrode, versus a silver wire, is used for ground, please also place it on the layout.

Note: Please try to have as little as possible cross over wires or electrodes at the connector side, for example keep the Ref on the left side, and with E1 and E16 on the left side of the layout. See example below.



Distance between Electrodes (BE): (Check one)

- 0.25 mm (Typical)
- 0.5 mm
- 0.75 mm
- 1.0 mm

Distance between Rows (BR): (Check one)

- 0.5 mm (Typical)
- 0.25 mm

Array Layout and Channel connections Example

Below is an example of a 16-channel layout assignment:

