

## ME2100- $\mu$ PA16 16-Channel Micro Preamplifier for Use with ME2100-System

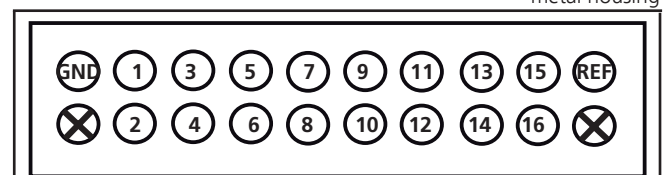
### Pin Layout of the 16-Channel Micro Preamplifier

#### ME2100- $\mu$ PA16 Headstage Input Connector

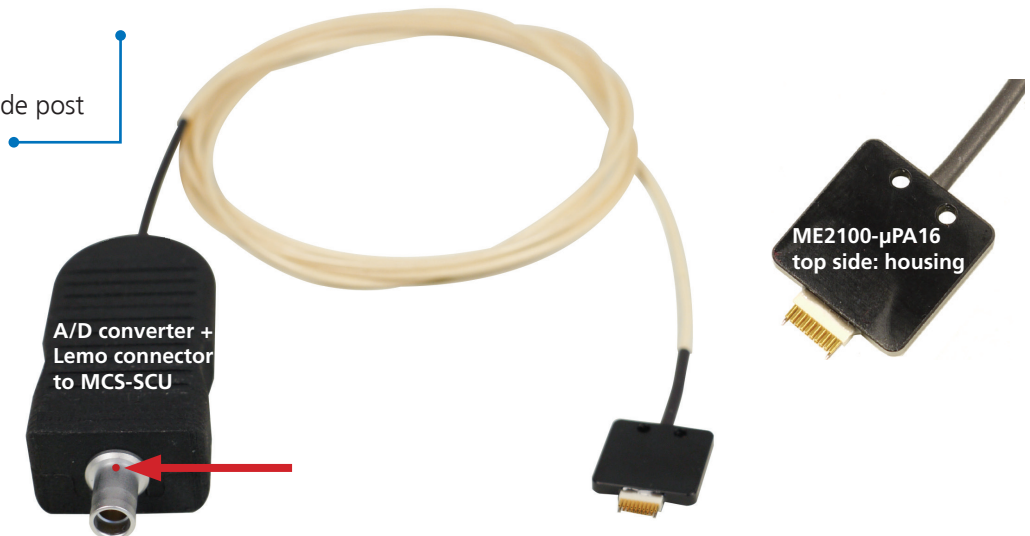
Omnetics: A79039-001 (NSD-18-DD-GS)

Ground (GND)	⊗ Guide post
Pin 1	Pin 2
Pin 3	Pin 4
Pin 5	Pin 6
Pin 7	Pin 8
Pin 9	Pin 10
Pin 11	Pin 12
Pin 13	Pin 14
Pin 15	Pin 16
Reference input /REF	⊗ Guide post

#### 16-Channel Micro Preamplifier Inputs



Please note that the side with the metal housing is considered to be the top side of the ME2100- $\mu$ PA16. The figure shows the pin layout viewed from the front, with the housing up.



Connect the headstage via the provided Lemo connector to the signal collector unit MCS-SCU. The red dot on the connector must face upwards. Do not mistake the headstage inputs (HS1 to HS4) with the Opto Stim input.

#### Application

Use the headstage of the ME2100-System for anesthetized or head fixed animals. The micro preamplifier with 16 electrode inputs ME2100- $\mu$ PA16 is connected to the microelectrode probes for providing the initial tenfold amplification stage. Signal integrity is safeguarded and noise pick up is significantly reduced by this preamplifier compared to the use of signal buffers with gain 1. The ME2100- $\mu$ PA16 is equipped with an Omnetics socket for NeuroNexus probes CM16, F16, C16. It has an additional common ground and a reference electrode input. The reference electrode is ideally identical to the recording electrodes and placed into a comparable but inactive area or tissue. Background or noise signals that are picked up by both the reference electrode and the recording electrodes are removed. The very high input impedance ensures stable long-term recordings.

July 2021

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### Technical Specifications

#### Type

Operating temperature  
Storage temperature  
Relative humidity

Dimensions (W x D x H)  
Length of the cable  
Weight w/o cable  
Maximum tensile strength of the cable

Input connector type

Mating connector types

Output connector to MCS-SCU

#### ME2100- $\mu$ PA16

0 ° to 50 °C  
0 ° to 50 °C  
10 % to 85 % non-condensing

21 mm x 17 mm x 1.5 mm  
Optional: 3 m, 5 m or 10 m  
1.5 g  
20 N

Omnetics NSD series, female with 2 guide posts:  
A79039-001, NSD-18-DD-GS

Omnetics NPD series, male with 2 guide posts, for example:  
- Through-Hole: A79038-001 (NPD-18-DD-GS)  
- Horizontal Surface Mount: A79040-001 (NPD-18-AA-GS)  
- Vertical Surface Mount: A79042-001 (NPD-18-VV-GS)  
- With cable (18.0" 34 AWG lead-wire):  
A79044-001 (NPD-18-WD-18.0-C-GS)

Lemo connector with additional A/D converter

#### Integrated Amplifier

Number of analog recording channels  
Data resolution

16  
24 bit

Bandwidth  
Sampling frequency per channel

Software controlled  
up to 50 kHz

Input voltage range

$\pm$  250 mV

Input impedance

1 G $\Omega$  @ 1 kHz

Input capacitance  
Input noise

13 pF  
typical 0.7  $\mu$ V<sub>RMS</sub> (1 Hz to 3.5 kHz, inputs connected to ground)