ME2100-µPA32
32-Channel Micro Preamplifier
for Use with ME2100-System

Pin Layout of the 32-Channel Micro Preamplifier

Please note that the side with no screws is considered to be the top side of the ME2100-µPA32. The figure shows the pin layout viewed from the front, with the case screws down.

ME2100-µPA32 Headstage Input Connector

- Pin 1, 35, 36: GND (Ground)
- Pin 2: Reference input
- Pin 3 to 34: Recording channels 1 to 32
- 4 Guide posts

32-Channel Micro Preamplifier Inputs

A/D converter + Lemo connector to MCS-SCU

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 32 electrode inputs ME2100-µPA32 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-µPA32 is equipped with an Omnetics socket for NeuroNexus probes CM32, F32, HP32. When using two ME2100-µPA32 you can connect the NeuroNexus probes H64 and HC64. 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.
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Technical Specifications

**Type**
- Operating temperature: 0 °C to 50 °C
- Storage temperature: 0 °C to 50 °C
- Relative humidity: 10 % to 85 % non-condensing
- Dimensions (W x D x H): 24 mm x 25 mm x 3 mm
- Length of the cable: Optional: 3 m, 5 m or 10 m
- Weight w/o cable: 2 g
- Maximum tensile strength of the cable: 20 N

**Input connector type**
- Omnetics NSD series, female with 4 guide posts
  - A79023-001, NSD-36-DD-GS

**Mating connector types**
- Omnetics NPD series, male with 4 guide posts, for example:
  - Through-Hole: A79022-001 (NPD-36-DD-GS)
  - Horizontal Surface Mount: A79024-001 (NPD-36-AA-GS)
  - Vertical Surface Mount: A79026-001 (NPD-36-VV-GS)
  - With cable (18.0” 34 AWG lead-wire): A79028-001 (NPD-36-WD-18.0-C-GS)

**Output connector to MCS-SCU**
- Lemo connector with additional A/D converter

**Integrated Amplifier**
- Number of analog recording channels: 32
- Data resolution: 24 bit
- Bandwidth: Software controlled
  - Sampling frequency per channel: up to 50 kHz
- Input voltage range: ± 250 mV
- Input impedance: 1 GΩ @ 1 kHz
- Input capacitance: 13 pF
- Input noise: typical 0.7 μV<sub>rms</sub> (1 Hz to 5 kHz, inputs shortened)