

MEA2100-System

Technical Specifications

General Characteristics

Operating temperature
Storage temperature
Relative humidity

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

Headstage

Dimensions (W x D x H)
Weight
Type of headstage

250 mm x 151 mm x 25 mm
1000 g
MEA2100-HS32 for 32-electrode MEAs
MEA2100-HS2x32 for two 32-electrode MEAs
MEA2100-HS60 for 60-electrode MEAs
MEA2100-HS2x60 for two 60-electrode MEAs
MEA2100-HS120 for 120-electrode MEAs
MEA2100-HS256 for 256-electrode MEAs

Integrated Amplifier

Number of analog recording channels
Data resolution
Signal input voltage range

32, 60, 120 or 252, depending on the type of the headstage
24 bit (16 bit, if operated with MC_Rack)
MC_Rack: from ± 4.9 mV to ± 500 mV
Multi Channel Experimenter: ± 1250 mV

Bandwidth
Sampling frequency per channel
Input impedance

DC to 10 kHz, software controlled
up to 50 kHz, software controlled
1 G Ω || 10 pF

Integrated Stimulus Generator

Output current
Output current compliance voltage
Output voltage
Voltage output compliance current
Stimulation pattern

± 1.5 mA
 ± 16 V
 ± 10 V
 ± 20 mA
MC_Rack: rectangle (biphasic, monophasic, pulse trains)
Multi Channel Experimenter: almost arbitrary patterns

Number of stimulation channels
Resolution

3 independent stimulation patterns per 60 channels
16 bit

Integrated Heating Element

Temperature sensor type
Accuracy

Pt 100 (with four wire connection, compatible with TCX)
 ± 0.1 °C

Interface Board „MCS-IFB 3.0 Multiboot“ and Connectors

Dimensions (W x D x H)
Weight

250 mm x 83 mm x 25 mm
300 g

Front Panel

4 Digital inputs
4 Digital outputs
2 Auxiliary channels (not in use)

Lemo connector, EPL 00250 NTN
Lemo connector, EPL 00250 NTN
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Rear Panel

- 1 16 Bit Digital In / Out
- 1 8-Channel Analog In
- 2 Analog Inputs
- Signal input range for analog channels
- Gain for analog channels
- 1 Digital signal processor DSP port
- 2 USB 3.0 ports
- Power supply
- Ground
- 1 Audio output

Side Panel

- 2 Interface board to headstage connectors

Power Supply Unit (MPU 30)

- Input voltage
- Output voltage
- Max. power
- Mark of conformity
- European standard

Software

- Operating system
- Microsoft Windows ®
- Data acquisition and analysis software
- Multi Channel Experimenter
- Multi Channel Analyzer
- MC_Rack
- Data export software
- Multi Channel DataManager
- MC_DataTool

- 68-pin MCS standard connector
- 10-pin connector (2.54 mm grid), dual row standard IDC
- Lemo connector, EPL 00250 NTN
- ± 1250 mV
- 2 *
- 20-pin JTAG connector (1.27 / 2.54 mm grid), dual row
- USB 3.0 super speed cable (type A - micro B)
- MPU 30, PWR DC 0.85 x 2.75 mm
- Common jack 4 mm, banana plug
- Stereo jack 3.5 mm

- External power over serial ATA (eSATAp)

- 90 - 264 VAC @ 47 - 63 Hz
- 11 - 13 V
- 30 W
- CE, TÜV, cUL
- EN60601

- Windows 10, 8.1, and Windows 7 (32 or 64 bit), English and German version supported

- Version 1.5.1 and higher
- Version 1.5.1 and higher
- Version 4.1.1 and higher

- Version 1.6.1 and higher, HDF5 (Madlab, Python), NEX (NeuroExplorer), CED (Spike), ASCII
- Version 2.6.3 and higher
- Axon binary file, ASCII, binary file

* Important: In MC_Rack software the scaling of the analog channels is not correct for a factor of 2, because the gain of the analog channels is not considered.