

MEA2100-Lite-System

Technical Specifications

General Characteristics

Operating temperature	10 °C to 50 °C
Storage temperature	0 °C to 50 °C
Relative humidity	10 % to 85 %, non-condensing

Headstage

Dimensions (W x D x H)	250 mm x 151 mm x 25 mm
Weight	1000 g
Type of headstage	MEA2100-HS60 for 60-electrode MEAs

Integrated Amplifier

Number of analog recording channels	60
Data resolution	24 bit (16 bit, if operated with MC_Rack)
Signal input voltage range	MC_Rack: from ± 4.9 mV to ± 500 mV Multi Channel Experimenter: ± 1250 mV
Bandwidth	0.1 Hz to 10 kHz, software controlled
Sampling frequency per channel	up to 32 kHz, MC_Rack software controlled up to 25 kHz, Multi Channel Experimenter controlled
Input impedance	1 G Ω 10 pF

Integrated Stimulus Generator

Output current	± 1.5 mA
Output current compliance voltage	± 16 V
Output voltage	± 12 V
Voltage output compliance current	± 20 mA
Stimulation pattern	MC_Rack: rectangle (biphasic, monophasic, pulse trains) Multi Channel Experimenter: almost arbitrary patterns
Number of stimulation channels	3 independent stimulation patterns
Resolution	16 bit

Integrated Heating Element

Temperature sensor type	Pt 100 (with four wire connection, compatible with TCX)
Accuracy	± 0.1 °C

Interface Board „MCS-IFB 3.0 Multiboot“ and Connectors

Dimensions (W x D x H)	250 mm x 83 mm x 25 mm
Weight	300 g

Front Panel

4 Digital inputs	Lemo connector, EPL 00250 NTN
4 Digital outputs	Lemo connector, EPL 00250 NTN
2 Auxiliary channels (not in use)	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
- Digital signal processor DSP port (not in use)
- 1 USB 3.0 ports
- Power supply
- Ground
- 1 Audio output

Side Panel

- 1 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
- ± 2500 mV
- 2 *
- 20-pin JTAG connector (not in use)
- 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
Axion 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.