

## 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  
± 1200 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: ± 500 mV  
± 250 mV with MEA2100-HS256

Bandwidth  
Sampling frequency per channel  
Input impedance

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

#### Integrated Stimulus Generator

Output current  
Output voltage  
Stimulation pattern

± 1.5 mA @ ± 16 V compliance voltage  
± 10 V @ ± 20 mA max. compliance current  
MC\_Rack: rectangle (biphasic, monophasic, pulse trains)  
Multi Channel Experimenter: almost arbitrary patterns

Number of stimulation channels

3 independent stimulation patterns per 60 channels  
2 independent stimulation patterns with MEA2100-HS256

Resolution  
Time resolution

16 bit  
20 μs

#### 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
- ± 2500 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

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- 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.

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