

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
 ± 12 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
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.