

Integrated Stimulus Generators

Output current	$\pm 1.5 \text{ mA @ } \pm 16 \text{ V}$ compliance voltage
Output voltage	$\pm 10 \text{ V @ } \pm 20 \text{ mA}$ max. compliance current
Number of stimulation patterns	2 independent stimulation patterns
Stimulation pattern	Almost arbitrary patterns
Resolution	16 bit
Time resolution	20 μs

Integrated Heating Element

Temperature sensor type	Pt 100 (with four wire connection, compatible with TCX)
Accuracy	$\pm 0.1 \text{ }^\circ\text{C}$

Signal Collector Unit (MCS-SCU)

Dimensions (W x D x H)	up to 2 MCS-SCUs can be connected to 1 MCS-IFB 250 mm x 83 mm x 25 mm
Weight	300 g

Front Panel

4 Inputs for headstages (HS1 to HS 4)	Lemo connector, EPG.0B.307.HLN
1 Connector with 4 analog outputs for LED driver	Lemo connector, EPG.0B.304.HLN
Voltage output of each analog output	0 - 5 V

Rear Panel

1 64-Channel Analog output	68-pin MCS standard connector, MCS high grade cable
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Side Panel

Signal Collector Unit to Interface Board connector	External power over serial ATA (eSATAp)
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MCS-IFB 3.0 Multiboot Interface Board

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.00.250 NTN

4 Digital outputs Lemo connector, EPL.00.250 NTN

2 Auxiliary channels (not in use) Lemo connector, EPL.00.250 NTN

Rear panel

1 16 bit Digital In / Out 68-pin MCS standard connector

1 8-Channel Analog IN 10-pin connector (2,54 mm grid), dual row standard IDC

2 Analog Inputs, Channel 1 and Channel 2 Lemo connector, EPL.00.250 NTN

1 Digital Signal Processor DSP connector 20-pin JTAG connector (1.27 / 2,54 mm grid)
Not in use! Not in use!

Signal input range for analog channels ± 1250 mV

Gain for analog channels 2

2 USB 3.0 super speed ports USB 3.0 super speed cable (type A - Micro B)

Power Supply MPU 30, scope of delivery, PWR DC 0.65 x 2.75 mm

Ground Common jack 4 mm, banana plug

1 Audio Output Stereo jack 3.5 mm

Side panel

2 Interface board to headstage connectors eSATAp, powered eSATA cable

Power supply unit (MPU 30)

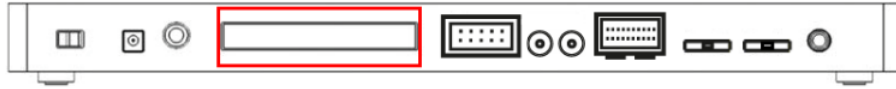
Input voltage	90 – 264 VAC @ 47 – 63 Hz
Output voltage	11 – 13 V
Max. Power	30 W
Mark of conformity	CE, TÜV, cUL
European standards	EN60601

Software

Operating system	Microsoft Windows ® 10, 8.1, 32 or 64 bit, English and German version supported
Multi Channel Experimenter	Version 2.6.0 and higher
Multi Channel Analyzer	Version 2.6.0 and higher
Multi Channel DataManager	Version 1.9.7 and higher HDF5 (Matlab, Python), NEX (NeuroExplorer), CED (Spike2), ASCII

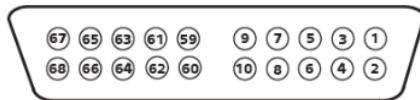
8.2 Pin Layout

8.2.1 MCS-IFB 3.0 Multiboot Interface Board



MEA2100-Mini Interface Board: Digital IN / OUT Connector

68-Pin MCS Standard Connector



Pin 1	GND
Pin 2	GND
Pin 3 - 10	Digital output channels bit 0 - 7
Pin 11 - 14	GND
Pin 15 - 22	Digital output channels bit 8 - 15
Pin 23 - 26	GND
Pin 27 - 34	Digital input channels bit 0 - 7
Pin 35 - 38	GND
Pin 39 - 46	Digital input channels bit 8 - 15
Pin 47 - 48	GND
Pin 49 - 63	Internal use (do not connect)
Pin 64 - 66	GND
Pin 67	Positive supply voltage output +3.3 V
Pin 68	GND

Digital IN / OUT, separate available via Lemo Connectors

Separate Digital IN Lemo Connectors

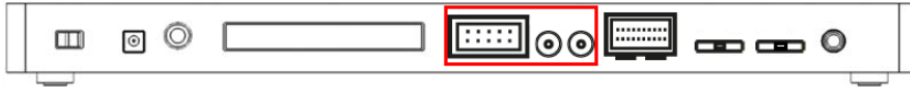
Digital In 1	Bit 0 of the 16 bit digital input channels (Pin 27)
Digital IN 2	Bit 1 of the 16 bit digital input channels (Pin 28)
Digital IN 3	Bit 2 of the 16 bit digital input channels (Pin 29)
Digital IN 4	Bit 3 of the 16 bit digital input channels (Pin 30)

Separate Digital OUT Lemo Connectors

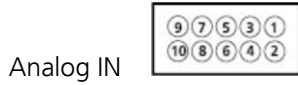
Digital OUT 1	Bit 0 of the 16 bit digital output channels (Pin 3)
Digital OUT 2	Bit 1 of the 16 bit digital output channels (Pin 4)
Digital OUT 3	Bit 2 of the 16 bit digital output channels (Pin 5)
Digital OUT 4	Bit 3 of the 16 bit digital output channels (Pin 6)

MCS-IFB 3.0 Multiboot Interface Board: 10-Pin Connector for Analog IN

10-Pin Connector for Analog IN and Ground



10-Pin Analog Connector



Pin 1	GND
Pin 2	GND
Pin 3	Analog channel 1
Pin 4	Analog channel 2
Pin 5	Analog channel 3
Pin 6	Analog channel 4
Pin 7	Analog channel 5
Pin 8	Analog channel 6
Pin 9	Analog channel 7
Pin 10	Analog channel 8

MEA2100-Mini Interface Board: Lemo Connectors for Analog IN

Two of the eight analog channels are additionally separate available via Lemo Connectors

Analog IN 1, Channel 1, Pin 3

Analog IN 2, Channel 2, Pin 4

The gain factor for amplification of all analog channels is 2.

9 Contact Information

Local retailer

Please see the list of official MCS distributors on the [MCS web site](#).

User forum

The [Multi Channel Systems User Forum](#) provides the opportunity for you to exchange your experience or thoughts with other users worldwide.

Mailing list

If you have subscribed to the [Newsletter](#), you will be automatically informed about new software releases, upcoming events, and other news on the product line. You can subscribe to the list on the MCS web site.

www.multichannelsystems.com