

8-Channel Miniature Preampifier MPA8I

8-Channel Miniature Preampifier MPA8I for Use with the ME-System



8-Channel Miniature Preampifier Input Connector

Pin 1	GND (Ground)
Pin 2	Reference input
Pin 3 to 10	Recording channels 1 to 8
Pin 11	GND (Ground)

8-Channel Miniature Preampifier inputs



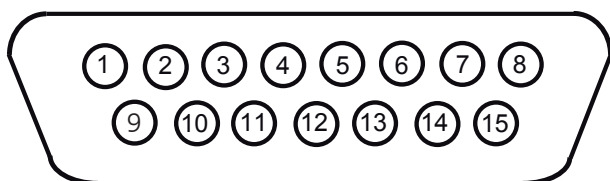
Please note that the black side is considered the top side!

Application

The 8-Channel Miniature Preampifier MPA8I is connected to the microelectrodes for providing the initial tenfold amplification stage. It has additional common ground and reference electrode inputs. The reference electrode is ideally identical to the recording electrodes and placed into a comparable but inactive area or tissue. Background or noise signals that are picked up by both the reference electrode and the recording electrodes are removed.

The metal case provides electrical shielding. Electrode damage is prevented by the very low bias current. The high input impedance ensures stable long-term recordings: Ideally, the input impedance would be infinite. As low voltages are generally recorded, a high current would flow if the input impedance were low. As a result, the amplifier would not be able to deliver the current, and the voltage would break down. The miniature preampifier has a high input impedance to avoid this problem.

8-Channel Miniature Preampifier Output Connector



15-Pin D-Sub Male Connector

Pin 1	GND (Power Ground)
Pin 9	GNDS (Signal Ground)*
Pin 15	Positive supply voltage
Pin 8	Negative supply voltage
Pin 2, 10, 3, 11, 4, 12, 5, 13,	Recording channels 1 to 8
Pin 6, 14, 7	GND (Ground)

* = Connected to the ground of the amplifier. The signal ground is used as the reference for the following filter amplifier.

8-Channel Miniature Preamplifier MPA8I

Technical Specifications

Type

Operating temperature
Storage temperature
Relative humidity

Dimensions (W x D x H)

Length of the cable

Weight

Maximum tensile strength of the cable

Input connector type

Output connector type

Number of input channels
Number of output channels

Supply voltage
Supply current

Gain
Bandwidth

Input voltage

Input impedance

Input noise

Noise density

Output voltage

Output current

Output impedance

MPA8I

0 ° to 50 °C

0 ° to 50 °C

10 % to 85 % non-condensing

ca. 15 mm x 23 mm x 2 mm w/o connector

1.5 m

ca. 1.3 g w/o cable, 21 g with cable and plug

20 N

Single-row precision socket, 100 mil (2.54 mm) grid pattern, for 0.6 ± 0.04 mm round pins

15-pin D-Sub, male

8

8

± 3 V to ± 8 V DC

$< \pm 6$ mA, typically ± 4 mA

10

DC to 50 kHz

± 500 mV (with respect to a supply voltage of 5 V)

$1 \text{ T}\Omega$ @ 1 kHz

typical $1.5 \mu\text{V}_{\text{RMS}}$ (1 Hz to 5 kHz, inputs short-circuited)

$e_n = 15 \text{ nV} / \sqrt{\text{Hz}}$

= supply voltage

maximal 10 mA

0Ω