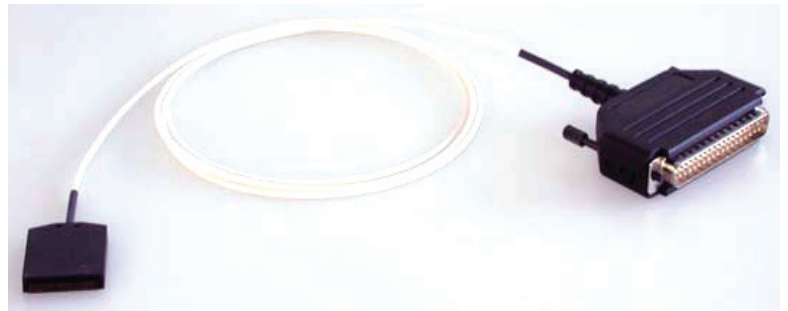


32-Channel Miniature Preampifier MPA32I

32-Channel Miniature Preampifier MPA32I for Use with the ME-System

32-Channel Miniature Preampifier Input Connector

Pin 1	GND (Ground)
Pin 2	Reference input
Pin 3 to 34	Recording channels 1 to 32
Pin 35	Reference input
Pin 36	GND (Ground)



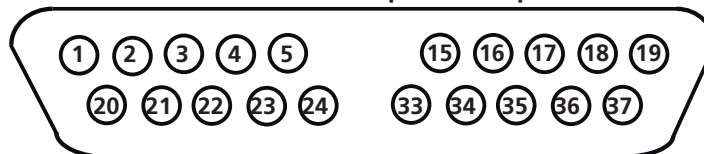
Please note that the side with no screws is considered to be the top side of the MPA32I! The figure shows the pin layout viewed from the front, with the case screws down.

Application

The MPA32I is optimized for the use with flexible microelectrode arrays EcoFlexMEA36 or EcoFlexMEA24 from Multi Channel Systems MCS GmbH. For connecting FlexMEAs (FlexMEA36 or FlexMEA72) or NeuroNexus probes special adapters are available, for example, ADPT-FM-32, ADPT-FM-72, ADPT-NN-32 or ADPT-NN-64.

The 32-channel Miniature Preampifier MPA32I 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.

32-Channel Miniature Preampifier Output Connector



37-Pin D-Sub Male Connector

Pin 1 and Pin 18	GND (Power Ground)	Pin 20	GNDS (Signal Ground)*
Pin 37	Positive supply voltage	Pin 19	Negative supply voltage
Pin	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17		
Recording channels	1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31		
Pin	21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36		
Recording channels	2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32		

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

32-Channel Miniature Preamplifier MPA32I

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 capacitance

Input noise

Noise density

Output voltage
Output current
Output impedance

MPA32I

0 ° to 50 °C

0 ° to 50 °C

10 % to 85 % non-condensing

27 mm x 36 mm x 5 mm w/o connector

1.5 m

ca. 7 g w/o cable, 56 g with cable and plug

20 N

Dual-row precision socket, 50 mil (1.27 mm) grid pattern,
for 0.35 ± 0.45 mm round pins

37-pin D-Sub, male

32

32

± 3 V to ± 8 V DC

< ± 14 mA, typically ± 9 mA

10

DC to 50 kHz

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

1 TΩ @ 1 kHz

10 pF

typical 1.5 μV_{RMS} (1 Hz to 5 kHz, inputs short-circuited)

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

= supply voltage

maximal 10 mA

0 Ω