

BMA-200 Bioamplifier

High-performance portable extracellular amplifier



APPLICATIONS

- Extracellular recording
- EMG, ECG, ENG, EEG, etc.
- Single-unit and multi-unit nerve recordings
- Head-stages available for Hi-Z electrodes

The BMA-200 is a low-noise, portable, battery operated amplifier for EEG, ECG, EMG, and other extracellular applications. The BMA-200 features a wide gain range, sharp cutoff bandpass filters, an AC calibrator, and a built-in audio amplifier and speaker for monitoring the signal. Stimulus delivery to the electrodes is accomplished by a front-panel switch, or via an external logic signal. True DC response is switch-selectable, with a variable DC offset control. Low-power circuitry contributes to long operating time between charges, or the unit can be operated continuously with the included AC adapter. It can be used as a stable DC amplifier, and includes adjustable DC input offset controls.

Positive and negative DC voltages are provided at the input connector for bridge excitation or powering optional head-stage active probes. For human subject recording, the ISO-Z Isolation Amplifier head-stage should

STANDARD FEATURES

- Wide gain range, 10—50,000X
- Very low noise & high input impedance
- Sharp cutoff high and low-pass filters
- DC response with adjustable input offset

be used. Active probes are available for high-impedance microelectrode applications. The BMA-200 is fully compatible with the complete line of cables, electrodes, and other accessories available for the BMA-931 modular amplifier.

The BMA-200's versatility and wealth of features make it equally at home in the laboratory or as a rugged field instrument.



BMA-200 Rear Panel

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SPECIFICATIONS

Input type	7 impedance	Differential instrumentation amp, >10 ⁹ ohms
Wideband noise, RTI		< 7μV P-P
Common Mode Rejection		>95dB
Gain range		10X—50,000X, 12-positions
Coupling		AC or DC, switchable
Input connector		Amphenol 703-91T-3478-009 7 –pin
Input offset adjustment ranges		+2mV, +20mV, +200mV, jumper selectable
Voltages at input jack for external devices		+7.2V, 20mA max current
AC calibrator		1mV P-P square wave, approx. 10Hz
Low-pass filter		100Hz—50kHz, 6-positions
High-pass filter		DC—200Hz, 6-positions
Filter type, slope		Butterworth, flattest response, -12dB/octave
Stim/record input		TTL negative logic, or switch closure
Stimulus inputs (rear panel)		2mm (0.080") pin jacks
Audio amplifier		200mW, built-in mylar speaker
Audio output connector		3.5mm stereo mini-phone jack
Output connector (rear panel)		BNC jack
Operating time between charging		approx. 24 hours
Power radapter/charger		24VDC
Dimensions		6W x 1.75H x 7D inches, 15 x 4.5 x 18 cm

Note 1: Not to be used for human life support applications.

ORDERING INFORMATION

Part No.	Model:	Description:	Applications:
08-03000	BMA-200	AC/DC 1-channel bioamplifier	EEG, ECG, EMG biopotential recording
10-02030	HS-1	High-impedance X1 head-stage	Use with microelectrodes
10-02020	ISO-Z	Isolation amplifier head-stage	Electrically isolated recording
09-03112	ICA-400	Input cable, one channel	Pre-wired cable, 9' with 1.5mm DIN sockets
10-02064	NEE-3	Needle electrode leads, set of 3	Subcutaneous or intramuscular recording
10-02063	E422	Snap-type electrode leads, set of 3	Use with pre-gelled ECG or EMG electrodes
10-02066	D-482	Pre-gelled disk electrodes, pk of 150	Surface recording of ECG, EMG
10-02065	Alligator	Miniature alligator clip leads, set of 3	Simple skin connections, for ECG, etc.

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