

Model SB-1 EKG Blanker

Respiratory muscle cardiac artifact reduction



The SB-1 EKG Blanker is a unique instrument for reducing the cardiac artifact in respiratory muscle recordings, especially the diaphragm EMG. Its many advanced features make it easy to set up and operate.

The instrument accepts an amplified EMG signal as its input and, optionally, an amplified EKG signal. Outputs include a standardized-amplitude version of the input signal (**AMP OUT**), a processed and full-wave rectified signal (**OUT**), and a **SYNC OUT** logic signal corresponding to the EKG R-wave.

The artifact reduction technique employs a time delay circuit whereby the signal is digitized and delayed out of real time by a short period (approximately 50mS). The internal software triggers from the embedded artifact in the real-time

signal (or from the external EKG input), and predictively processes the delayed signal.

Setting up the instrument is straightforward. In **AUTO SETUP** mode, the signal gains are automatically standardized, and the blanking process optimized. The various blanking parameters can also be manually set if desired. Heart rate and respiratory rate are computed and displayed on the LCD. An audible EKG beep can be turned on or off as desired.

The rectified output of the SB-1 is generally fed to a Moving Averager, which produces a smoothed envelope around the EMG activity. Although designed for human diaphragm EMG processing, the wide measurement range of the SB-1 makes it suitable for use with other muscles and a variety of experimental animals.

SPECIFICATIONS

Input range (EMG or EKG)	±10V P-P
Heart rate measurement range	10 - 300 bpm
Respiratory rate measurement range	4 - 100 breath/min
Measurement resolution (HR or RR)	±1 bpm
AMP OUT range (bipolar)	±1.5V P-P (nominal)
OUT range (full-wave rectified)	0 - 1.5V P-P (nominal)
DELAY TIME range	50 - 150mS
BLANK TIME range	50 - 150mS
SYNC OUT	TTL positive
Input / output connectors	BNC jack
Power requirements	+5V @ 100mA
Dimensions	9.3W x 2.5H x 8.0D inches (23.6 x 6.4 x 20.3 cm)

ORDERING INFORMATION

Part No.	Model	Description	Applications
15-10000	SB-1	EKG Blanker, with power adapter	EKG artifact suppression for resp. muscle recording
09-03010	BMA-400	Four-channel Bioamplifier	EMG or other biopotential recording
10-02020	ISO-Z	Isolation amplifier head-stage	Safe human subject recording with BMA-400
08-08000	MA-821/RSP	Four-channel Moving Averager	Multiple Time-Constant Moving Average for EMG

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