



DAM Series Amplifiers

A family of very low noise battery-operated amplifiers



DAM80—
With low-noise headstage **DAM80P** for very high impedance amplification utilizing glass or metal electrodes.

WPI's DAM series amplifiers are well known as a standard of the industry for extracellular potential amplification. These battery powered bio-amplifiers are designed with a compact chassis profile that enables the user to locate the unit closer to the preparation and thereby minimize long lead lengths which contribute to noise. Each amplifier is equipped with selectable high and low filters, and a position control to offset galvanic potentials which

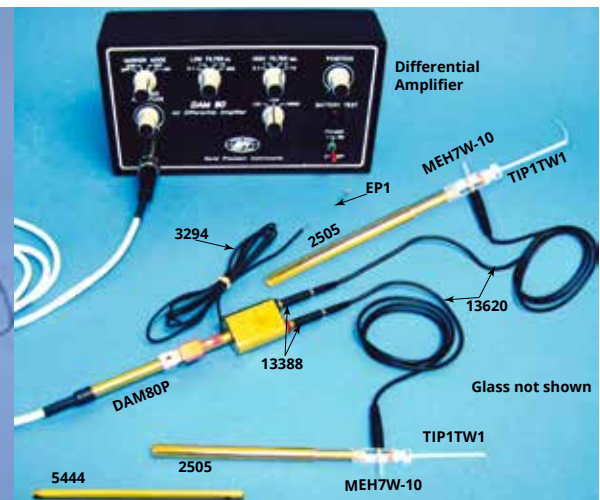
may develop during recording. A choice of models offer additional features that are useful for applications such as gated or manual current generation for histological marking, iontophoresis, or cell stimulation.

DAM80, an AC amplifier only, features a very low noise headstage probe which can be mounted in micromanipulators for up-close cortical recording, for extracellular recording from high impedance glass or metal microelectrodes. Also provides a gated current for tissue marking. Microelectrode holder **MEH3SB** is recommended.

Included with the **DAM80** is a Startup Kit containing the following accessories needed for basic metal electrode electrophysiology research:

- CBL102** Cable, BNC-to-3.5mm plug, 6 ft (2m) (two)
- 5469** Adapter, mini-banana to 0.031 skt. (two)
- 13388** Adapter, mini-banana to 2mm skt. (two)
- 3294** Cable, ground clip to wire, 3 ft
- 2033** Mini-banana plug, black
- 2034** Mini-banana plug, red
- 2035** Mini-banana plug solderable current (two)
- EP1** Ag/AgCl pellet (70 mm wire) 1mm diam x 2.5 mm long
- M3301EH** Electrode Holder, 14cm (two)
- 5470** 0.031-inch jack on 12-inch wire (package of 4)

Application Examples

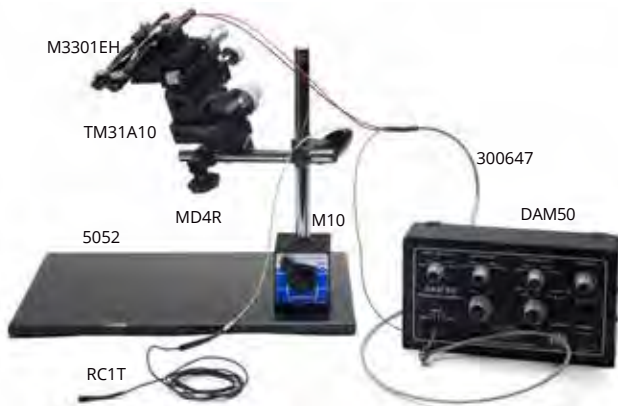


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DAM50—Basic Amplifier (optional #5447 electrode adapter not included)



DAM series amplifiers can be used as standalone units on any tabletop, or use optional clamp-mounting hardware (#3485) to locate them conveniently within the work area. A variety of hook up accessories are available to configure your application.

A new shielded cable is included to configure your metal electrode application.

DAM SERIES SPECIFICATIONS

INPUT IMPEDANCE	10 ¹² Ω, common mode and differential
INPUT LEAKAGE CURRENT	50 pA (typical)
MAX. DC DIFFERENTIAL SIGNAL	± 2.5 V (DAM 50)
GAIN	AC: 100x, 1000x, 10000x DC: 10x, 100x, 1000x (DAM50)
COMMON MODE REJECTION RATIO	100 dB @ 50/60 Hz
INPUT CAPACITANCE	20 pF
AC MODE NOISE	0.4 μV RMS (2 μV p-p) 0.1-100 Hz
AC MODE NOISE	2.6 μV RMS (10 μV p-p) 1 Hz-10 kHz
DC MODE NOISE (DAM50)	7.5 μV RMS (30 μV p-p) 3-10 kHz
BANDWIDTH FILTER SETTINGS	
AC Mode	Low frequency, 0.1, 1, 10, 300 Hz
AC Mode (DAM80)	High frequency, 0.1, 1, 3, 10 kHz
DC Mode (DAM50)	High frequency, 0.1, 1, 3, 10 kHz
OUTPUT CONNECTORS	BNC on DAM50; 3.5 mm MiniPhone connector on DAM80
OUTPUT VOLTAGE SWING	±8 V
OUTPUT IMPEDANCE	470 Ω
BATTERY TEST	Audible tone
CALIBRATOR SIGNAL	10 Hz square wave
POSITION	Approximately 250 mV
CURRENT SOURCE	
DAM80: DC Generator	0 to ±50 μA, variable
EXTERNAL COMMAND	Input Voltage ±10 V commands
AC OR DC CURRENT WAVEFORM	±50 μA max. amplitude @ 200 KΩ
BATTERIES	2 x 9V alkaline (included)
DIMENSIONS	
DAM50	8 x 4 x 1.75 in. (20.3 x 10.2 x 4.4 cm)
DAM80	7 x 4 x 1.75 in. (17.8 x 10.2 x 4.4 cm)
SHIPPING WEIGHT	3.5 lb (1.6 kg)

FEATURE

	DAM50	DAM80
Input Mode	AC/DC	AC
Input configuration	differential/single ended	differential
Gain Range	100-10K (AC), 10-1K (DC)	100-10K (AC)
High / Low Filters	yes	yes
Offset position control	yes	yes
Current Generator	No	Yes
Remote Active headstage	No	Yes
Output connection	BNC	3.5 mm mini phone
Standard input connection*	unterminated wire	mini banana
Power supply	(2) nine volt alkaline batteries	(2) nine volt alkaline batteries

*See optional accessories for additional alternatives



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