



DAM Series Amplifiers

A Family of Very Low Noise Battery-Operated Amplifiers



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

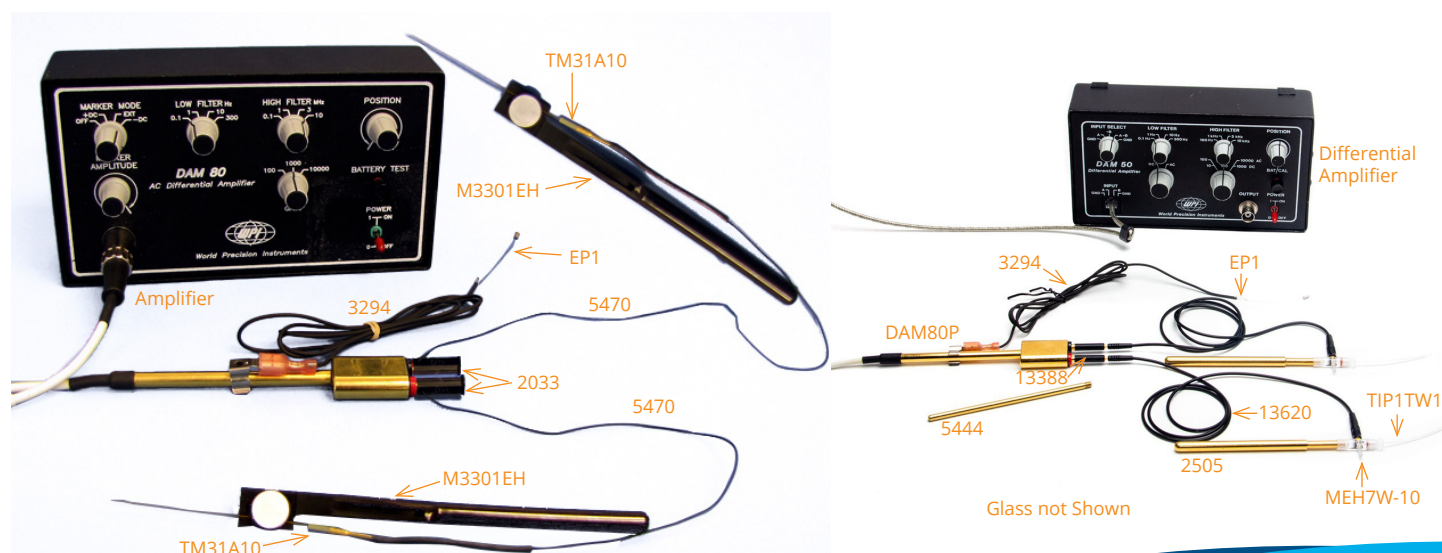
2035 Mini-banana plug solderable current (two)

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)

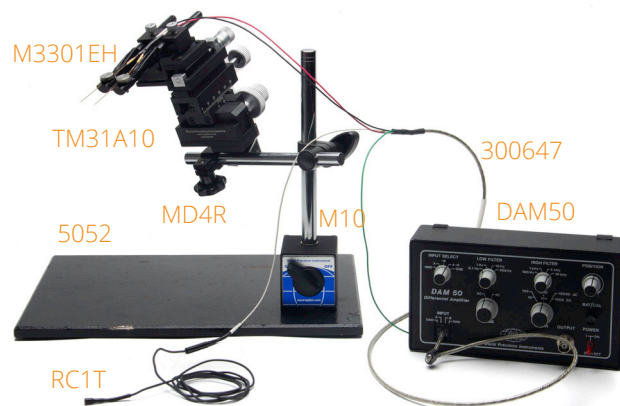
Application Examples



Features

	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) 9V Alkaline Batteries	(2) 9V Alkaline Batteries

*See optional accessories for additional alternatives



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.....	$10^{12} \Omega$, 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 μ V RMS (2 μ V p-p) 0.1-100 Hz
AC MODE NOISE.....	2.6 μ V RMS (10 μ V p-p) 1 Hz-10 kHz
DC MODE NOISE (DAM50).....	7.5 μ V RMS (30 μ V 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 μ A, variable
EXTERNAL COMMAND.....	Input Voltage ± 10 V commands
AC OR DC CURRENT WAVEFORM.....	± 50 μ A max. amplitude @ 200 K Ω
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)