

1/2 Inch Microphone Preamplifier for Outdoor Applications

Model PRM903

Larson
Davis



Typical Applications

- Precision sound measurements with Larson Davis and other microphones meeting IEC61094-4
- Use with prepolarized or externally polarized microphones
- Extended use outdoors

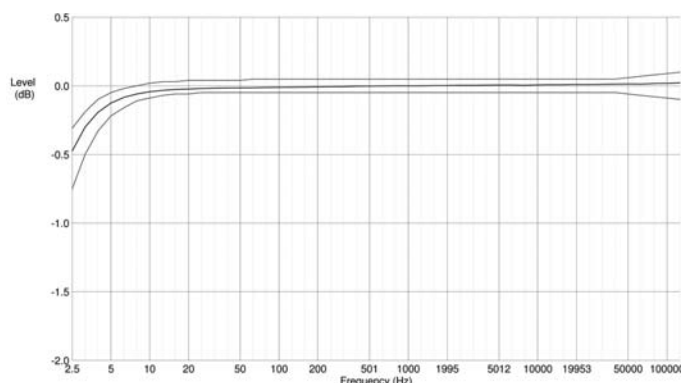


Features

- Low noise
- Stainless steel housing
- Wide frequency bandwidth
- High input impedance
- Low output impedance and high output current for driving long cables
- 7-pin LEMO connector
- Built-in heater

The Larson Davis Model PRM903 is a general-purpose microphone preamplifier. It has a high output current drive capability for driving long cables. The preamplifier operates over wide temperature and humidity ranges. The built-in heater is an important feature for extended use in high humidity environments typical of long-term outdoor noise monitoring projects. The preamplifier can be used with both dual and single voltage power supplies. The very low input capacitance insures that the microphone is not loaded producing a low frequency (-3 dB) limit of < 1.26 Hz.

Typical Frequency Response from Calibration Certificate



Technical Specifications

Model PRM903	
Frequency Response (re:1 kHz)	10 Hz to 126 kHz ± 0.10 dB 3 Hz to 10 Hz (+0.10, -0.5 dB) < 1.26 Hz
-3 dB lower limiting frequency	
Phase Linearity: < $\pm 3^\circ$ > $\pm 3^\circ$, < 10°	20 Hz to 100 kHz 6 Hz to 20 Hz
Attenuation (typical)	0.25 dB
Electronic Noise: A-weight Flat (20 Hz to 20 kHz) (with 18 pF equivalent microphone)	< 3.2 μ V (2.1 μ V typical) < 5.6 μ V (3.7 μ V typical)
Maximum Output Voltage Maximum dB with 50 mV/Pa microphone Maximum dB with 12.5 mV/Pa microphone	14 V _{peak} with 2900/3000+ 143 dB peak 155 dB peak
Temperature Sensitivity (± 0.05 dB)	- 40 °C to + 65 °C (-40 °F to +149 °F)
Humidity Sensitivity (± 0.05 dB)	0 to 95% RH non-condensing
Input Impedance	10 G Ω //0.5 pF
Output Impedance	50 Ω
Dimensions (Diameter x Length)	12.7 mm (0.5 in) x 132 mm (5.2 in)
Connections (Input) (Output)	11.7 mm - 60 UNS (0.4606 - 60 UNS) microphone thread LEMO 7-pin male
Power Requirements	Dual: ± 7 V to ± 18 V Single: 14 V to 36 V current 7 mA typical plus output current
Cable Driving Capability for 10 V _{rms} signal	to 80 kHz with 3 ft (0.9 m) cable to 54 kHz with 100 ft (30 m) cable to 50 kHz with 200 ft (61 m) cable to 38 kHz with 300 ft (91 m) cable to 24 kHz with 500 ft (152 m) cable

Unless otherwise stated, all values are at 23 °C, 50% RH, ± 18 V supply, < 3 m (10 ft) cable and equivalent microphone of 18 pF.

Accessories and Related Products

EXAXXX	Extension Cable 7-pin LEMO male to 7-pin LEMO female (XXX feet long)	ADP067	Preamplifier Holder for 1/2 inch preamplifiers for microphone stands
ADP005	18 pF equivalent 1/2 inch microphone with BNC Connector	CAL200	Class 1 Sound Level Calibrator (94/114 dB @ 1 kHz)
ADP008	1 inch microphone to 1/2 inch preamplifier adaptor	CAL250	Class 1 Sound Level Calibrator (114 dB @ 250 Hz)
ADP040	Microphone Signal Tee	TRP018	Adjustable microphone stand with adjustable boom and 5/8 inch thread
ADP043	1/4 inch microphone to 1/2 inch preamplifier adaptor	2221	Single channel battery powered microphone preamplifier power supply

Suggested Larson Davis Precision Condenser Microphones

Model #	Diameter	Type	Sensitivity@ 250 Hz	Freq. Range, Hz(± 2 dB)
2575 (1)	1 inch	Pressure	45 mV/Pa	2.6 Hz to 8 kHz
2570 (1)	1 inch	Free-field	48 mV/Pa	2.6 Hz to 20 kHz
377B41	1/2 inch	Free-field	44.5 mV/Pa	3.15 Hz to 20 kHz
2540	1/2 inch	Free-field	14.5 mV/Pa	3.15 Hz to 40 kHz
377A60	1/2 inch	Pressure, random	45.2 mV/Pa	2.6 Hz to 10 kHz
2559	1/2 inch	Pressure, random	12.9 mV/Pa	4.0 Hz to 25 kHz
2520 (2)	1/4 inch	Free-field	4 mV/Pa	4.0 Hz to 80 kHz
2530 (2)	1/4 inch	Pressure, random	1.45 mV/Pa	4.0 Hz to 70 kHz

(1) ADP008 adaptor required

(2) ADP043 adaptor required



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Larson Davis provides a complete line of acoustic measurement tools including dosimeters, sound level meters, real time analyzers, preamplifiers, calibrators, and microphones.