

Model 7000

DC to 1MHz

Low Noise Differential Preamplifier

- **Noise (RTI):** $7\text{nV}/\sqrt{\text{Hz}}$
- **Gain Settings:** x1, x10, x100 and x1000
- **Amplitude Flatness:** $\pm 0.3\text{dB}$
- **Output:** $\pm 10\text{V}$ Peak
- **Selectable Bandwidth:**
100Hz, 3kHz, 30kHz,
100kHz and 1MHz (LP Off)
- **CMRR:** $>100\text{dB}$ at 1kHz
- **Optional RMS-to-DC Output**



DESCRIPTION

The Krohn-Hite Model 7000 Differential Preamplifier provides a low noise high gain amplification to 1MHz with an AC output derived from a very low noise FET instrumentation amplifier and an optional DC (RMS-to-DC converted) output. The Model 7000 has fixed gain settings of x1 (0dB), x10 (20dB), x100 (40dB) and x1000 (60dB) over a selectable bandwidths of 100Hz, 1kHz (HP), 3kHz, 30kHz, 100kHz and 1MHz (LP Off). Noise referred to input is $7\text{nV}/\sqrt{\text{Hz}}$ and common mode rejection is $>100\text{dB}$ at 1kHz.

The Model 7000 also provides momentary pushbutton switches that control coupling, bandwidth, gain and channel on/off selections. BNC connectors are provided for single-ended and differential input, ac output, and RMS-to-DC output (optional) connections.

The Model 7000 is very useful for troubleshooting sources of noise, amplifiers, power supplies and various other electronic circuits. The Model 7000 is an excellent tool as a preamp for amplifying low level input signals to oscilloscopes or other devices.

SPECIFICATIONS

INPUT

Configurations: Single-ended and differential.

Coupling: AC (0.16Hz) and DC, switch selectable.

Impedance: 1M ohm shunted by 40pF. Each input may be independently enabled or grounded.

Maximum Input Voltage: 10V peak with gain set to x1.

Max Safe Voltage: Any continuous voltage between $\pm 30\text{V}$.

Gains: 2 pushbutton momentary switches, x1 (0dB), x10 (20dB), x100 (40dB), x1000 (60dB).

Accuracy: $\pm 0.3\text{dB}$.

Stability: 200ppm/ $^{\circ}\text{C}$.

Bias: 15pA typical, 50pA max.

CMMR

FREQ	GAIN = 1	GAIN = 10 to 1k
50Hz	>90dB	>105dB
10kHz	>75dB	>90dB
50kHz	>60dB	>75dB

FILTERS

Filtering: Frequency limited by a switch selectable 12dB/octave filter, with -3dB points of 1kHz, high-pass and 100Hz, 3kHz, 30kHz, 100kHz, low-pass. LP OFF position to turn off low-pass filtering, bandwidth is 1MHz.

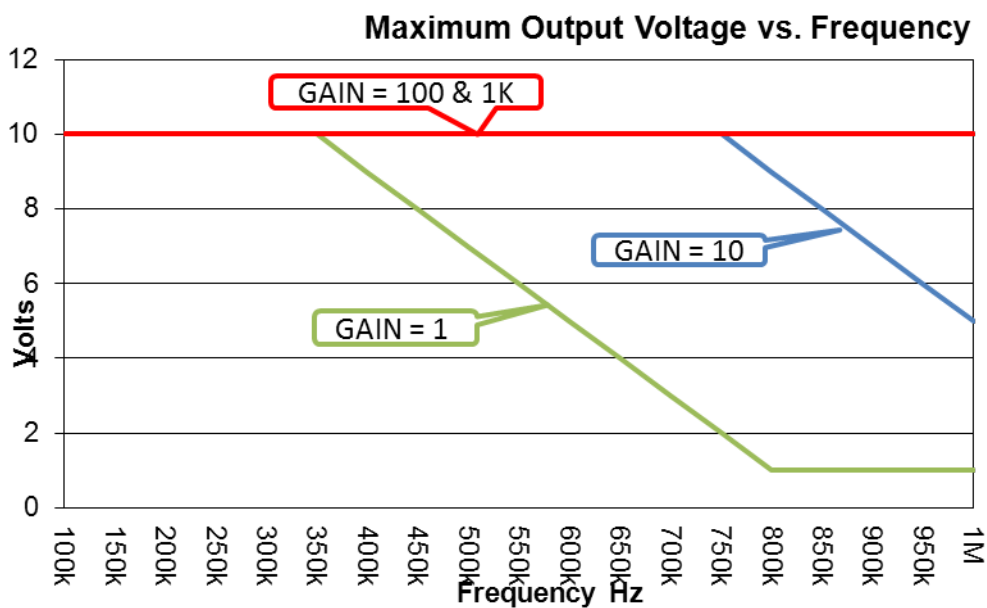
Wideband Noise (RMS - 2MHz Bandwidth Detector)

GAIN	FILTER OFF (μ V)	100kHz FILTER (μ V)
1	120	90
10	14	9
100	10	3.2
1k	10	3.2

Noise Density (x1k gain setting, all filters off): 7nV/ $\sqrt{\text{Hz}}$ typical.

OUTPUT

Maximum Output Voltage: 10V peak.



Impedance: 50 ohms, single-ended.

Distortion: 0.005% (-85dB) at 1kHz.

Offset Voltage: Adjustable to zero, front panel.

GENERAL

Protection: Input overload protection with automatic recovery.

Isolation to Chassis: $\pm 200\text{Vdc}$.

Operating Temperature: 0°C to +45°C.

Storage Temperature: -25°C to +70°C.

FRONT PANEL

Momentary switches for Coupling, Bandwidth, Input On/Off, and Gain. BNC connectors for + Input, - Input, AC Output and optional RMS-to-DC Output.

REAR PANEL

Switch selectable line switch for 115V/230V ac operation, 3-terminal AC line receptacle.

Power Requirements: Switch selectable, 105-130, 210-260 volts, single phase, 50-60Hz, 11 watts.

Dimensions: 3.5" (9cm) high, 9" (23cm) wide, 8.5" (21.7cm) deep.

Weight: Net weight 5 lbs (2.3kg), gross weight 7 lbs (3.2kg).

OPTIONS

RMS to DC Output: The RMS-TO-DC Output terminal provides a true RMS DC voltage representation of the OUTPUT signal. Range is 0V to 10V.

Frequency Response:

Amplitude (rms)	1% Error Bandwidth	2% Error Bandwidth	10% Error Bandwidth
7V	100kHz		1MHz
2V		200kHz	1MHz
1V		200kHz	1MHz
100mV	100kHz		400kHz
10mV	10kHz		40kHz

ACCESSORIES

Rack Mount Kit: Part No. RK-39 permits the installation of the Model 7000 into a standard, 19" rack spacing.

CAB-025: Cable, BNC, 3ft, Low Noise

Extended 1 Year Warranty: Part No. EW7000.

Specifications subject to change without notice.