Endevco

Model 4999
16 Channel low-pass filter signal conditioner

Features

- 16-channel 7 position 4 or 6-pole selectable low-pass cutoff frequencies.
- Constant current supply/amplifier for Isotron®/IEPE compatible accelerometers, voltage sensors and remote charge convertors.
- Individual channel ground isolation
- Available 4 or 6-pole plug-in filter modules with desired cutoff frequencies available at time of order
- Ultra-low noise
- Gain of 1 or 10, front panel selectable
- Front panel selectable external calibration test signal input
- BNC inputs and outputs
- "Energy Efficient" ‹ 0.5 VA/channel

Description

The Endevco® model 4999 low-pass filter signal conditioner is a low-noise, 16-channel signal conditioner for use with integral electronic piezoelectric, voltage transducers and Remote Charge Convertors (RCC). Each channel provides a constant current supply and a selectable X1 or X10 gain setting. The unique feature of this unit is individual channel ground isolation (eliminates ground loops of various types of sensors) and very low-noise.

On the front panel, each channel is provided with a gain selector switch, cutoff frequency switch, LED indicator for cutoff frequency selected and input isolation/ grounding switch.

Front and rear panel test input connectors for injecting an external calibration signal selectable for each channel.

Rear panel BNC Isotron®/IEPE, voltage inputs and outputs.

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Specifications

Inputs

Type	Single-ended, BNC IEPE constant current two-wire system or voltage
Voltage input resistance	100kΩ (typ)
IEPE excitation current	4 mA (typ), 3.95 mA (min)
IEPE compliance voltage	24 VDC @ no load (typ), 20.5 VDC @ 3.90 mA (typ)
Filter type	Low-pass Butterworth (Sallen-Key)
Input isolation	500 V peak-to-peak max per channel (signal ground to power ground) 1kV peak-to-peak max per channel to channel (signal ground to signal ground)
IEPE input low frequency cutoff	0.16 Hz (typ)
Gain	1 or 10 ± 1% (front panel selectable)
Poles	4 or 6 (6-pole optional)
Corner frequencies	400 Hz, 800 Hz, 1.6 kHz, 3.2 kHz, 6.4 kHz, 12.8 kHz, 25.6 kHz (± 2% front panel selectable) (Other corner frequencies available via plug-in card selection at time of order)

Outputs

Type	Single-ended BNC one side connected to circuit ground
Output voltage	± 10 volts peak-to-peak @ 20 kHz (max)
Output load	10kΩ (min)

Transfer characteristics

Broadband noise (4-pole)	
(1 to 20 kHz)	< 15-30 µVrms (typical)
Broadband noise (6-pole)	
(1 to 20 kHz)	< 15-30 µVrms (typical)
Spectral noise density (µV/root Hz)	
4-Pole	
1 Hz	0.2 µV/root Hz (typical)
10 Hz	0.1 µV/root Hz (typical)
100 Hz	0.1 µV/root Hz (typical)
1 kHz	0.05 µV/root Hz (typical)
10 kHz	0.03 µV/root Hz (typical)
6-Pole	
1 Hz	0.2 µV/root Hz (typical)
10 Hz	0.1 µV/root Hz (typical)
100 Hz	0.1 µV/root Hz (typical)
1 kHz	0.06 µV/root Hz (typical)
10 kHz	0.035 µV/root Hz (typical)

Environmental characteristics

Temperature	
Operating	25°C ± 5°C
Storage	0° to 50°C
Power	
Line voltage	107–120 VAC or 220–240 VAC, 50/60 Hz (factory installed)
Current	10 VA (typical)

Physical

Dimensions	19" rack mounting 2U size, 3.46" h x 19.0" w x 9.00" d (87.8 mm x 482.6 mm x 228.6 mm)
Weight	9 lbs. (approx) lbs (4.08 kg)
Front panel features	
Frequency corner indicator	LED indicator for each corner frequency selected
Gain 1 or 10 selection	LED indicator for gain selected
Input isolation	Switch selectable
Calibration signal test input	LED indicator, front or rear panel BNC
Rear panel features	
Input connectors	BNC
Output connectors	BNC
Test connectors	BNC

Calibration

External calibration signal front and rear panel BNC inputs, front panel selectable mode

Accessories

Instruction manual	IM4999
Power cord	EW599
Plug-in frequency cutoff modules	Contact the factory for available frequency cutoff modules

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Continued product improvement necessitates that Endevco reserve the right to modify these specifications without notice. Endevco maintains a program of constant surveillance over all products to ensure a high level of reliability. This program includes attention to reliability factors during product design, the support of stringent Quality Control requirements, and compulsory corrective action procedures. These measures, together with conservative specifications have made the name Endevco synonymous with reliability.

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