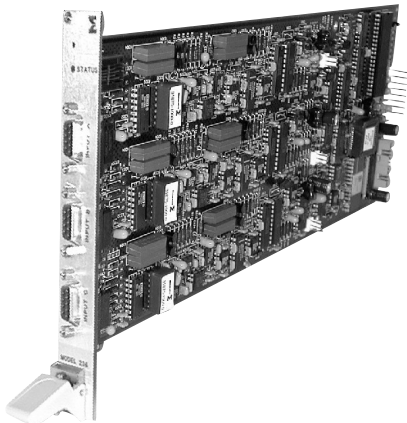




Model 436 Three channel DC differential rack mounted amplifier

Features

- Auto-zero
- Gain 0 to 1,000
- Three-channel DC differential voltage amplifier
- Programmable excitation voltage
- DC to 200 KHz bandwidth (-3dB corner)
- User selectable low pass 4-Pole Butterworth filter corner
- Computer-controlled via ethernet or RS-232



Description

The Endevo model 436 DC differential voltage amplifier is a three-channel signal conditioner designed for use with quarter to full bridge piezoresistive accelerometers, pressure transducers, strain gages and the Endevo Microtron® ethernet variable capacitance accelerometers. The card provides one output per channel proportional to the input voltage.

The output can be amplified with a programmable gain of 0 to 1,000. The selectable low pass 4-pole, Butterworth filter plug-in module is available in 1, 2, 4, 6 and 8 steps from 10 Hz to 80 KHz. The low pass filter can be enabled or bypassed. (The default filter corner is 10 KHz) Endevo model 31875-XXXX.) Each channel provides computer selectable excitation voltage levels of 5, 10, or 15 VDC. (Other voltage levels are optional.) The model 436 three-channel card is designed to be used with the Endevo rack model 4990, 19" rack. The model 4990 rack is remotely controlled via ethernet or RS-232 interface and holds from one to 16 cards of the 4XX series amplifiers in any combination.

The 4XX series amplifier card family: model 428 dual-channel PE/Isotron amplifier with isolation; model 433 - three-channel PE/Isotron, non-isolated amplifier card; model 436 - three-channel non-isolated bridge amplifier card, and model 482- eight-channel smart-modal™ amplifier card.

Model 436

Three channel DC differential rack mounted amplifier

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SPECIFICATIONS

ELECTRICAL CHARACTERISTICS: OUTPUTS

AC/DC VOLTAGE OUTPUT	Single-ended short circuit protected
OUTPUT IMPEDANCE	0.2 Ohm maximum
MINIMUM LINEAR OUTPUT	10 Vpk minimum
MINIMUM CURRENT OUTPUT	10 mA (10V into a 1 KOhm load)
OUTPUT DC BIAS (OFFSET)	Less than 10 mVDC (After auto-zero)
OUTPUT DC BIAS STABILITY WITH TEMPERATURE	$\pm 5 \mu\text{V}/^\circ\text{C}$ RTI or $\pm 0.1 \mu\text{V}/^\circ\text{RTO}$
OUTPUT DC BIAS STABILITY WITH TIME	± 20 microvolt RTI or ± 5 mvolt RTO, whichever is greater, for 24 hours, after 1 hour warm-up.
EXCITATION VOLTAGE AMPLITUDE	0 VDC, 5 VDC, 10 VDC or 15 VDC (Software selected; one valid voltage selection for all three channels.)
EXCITATION VOLTAGE ACCURACY	$\pm 1\%$ or 50 mVDC, whichever is greater
CURRENT	30 mA maximum, short circuit protected
NOISE AND RIPPLE	1 mVRMS maximum, 10 Hz to 50 KHz, with a 1 K Ohm load.

TRANSFER CHARACTERISTICS

GAIN RANGE	Programmable 0 to 1000
RESOLUTION	0.0025, $0 \leq \text{gain} < 10$
0.025, $10 \leq \text{gain} < 100$	
0.25, $100 \leq \text{gain} < 1000$	
ACCURACY	$\pm 0.5\%$, of full scale maximum. DC to 1 KHz, filter disabled.
LINEARITY	$\pm 0.1\%$ of full scale, best fit straight line at 1 KHz.
STABILITY	$\pm 0.2\%$ of full scale, 0°C to 50°C .

BROADBAND FREQUENCY RESPONSE, REF TO 1 KHZ

MAGNITUDE FREQUENCY RESPONSE	$\pm 5\%$, DC to 50 KHz, reference to 1 KHz.
LOW PASS FILTER CHARACTERISTICS	Filter is computer selected, the corner frequency may be changed by replacing the internal header module (see Data Sheet 31875 for available corner frequencies). The corner frequency installed will be displayed in software.
FILTER TYPE	4- Pole Butterworth
CORNER FREQUENCY (-3dB)	10 KHz $\pm 12\%$ (default)
MAGNITUDE % ERROR AT CORNER FREQUENCY	$\pm 22\%$ Maximum
ROLL-OFF	-24 dB per octave
MAGNITUDE FREQUENCY RESPONSE	Data Sheet 31875
PHASE FREQUENCY RESPONSE	Data Sheet 31875
NOISE	20 microVRMS RTI plus 1 mVRMS RTO, DC to 50 KHz, with a 1 KOhm source resistance. The card in monitoring state and the internal 10 KHz, 4-pole Butterworth Low-Pass filter enabled.
CROSSTALK BETWEEN CHANNELS	> 80 dB RTI minimum. Crosstalk specification valid for the following conditions: <ol style="list-style-type: none"> 1. Inject signal into one channel, gain set to 1. 2. Other channels set as follows: Input shunted with 1000 OHM Resistor. Gain set to 1000.

POWER REQUIREMENTS

VOLTAGE	± 15 VDC and 24 VDC (Provided by Rack Model 4990)
POWER DISSIPATION	11 Watts typical
ISOLATION	
CHANNEL TO CHANNEL SIGNAL GROUNDS	No isolation between channels.
OUTPUT SIGNAL GROUND TO CASE GROUND	No isolation.

PHYSICAL CHARACTERISTICS

SIZE	Fits into the Model 4990 Rack.
WEIGHT	11.2 oz (320 g)
TEMPERATURE	
OPERATING	32 to 122° F (0 to 50 ° C)
STORAGE	-40 TO 185° F (-40 TO 85° C)
HUMIDITY	0 % to 90 % non-condensing
FRONT PANEL CONNECTORS	
SIGNAL INPUT (each channel)	9-pin DB 9 Male Connector (ITT Cannon P/N DEMM9PD) <ul style="list-style-type: none"> Pin 1: P+ Sense Pin 2: -15 VDC-Jumper Selected Pin 3: Shunt Cal (RSH) Pin 4: S- Pin 5: S+ Pin 6: P-Sense Pin 7: P+ Excitation Voltage Pin 8: P- Excitation Voltage Pin 9: Shield

ACCESSORIES

IM436
31875-1000
OPTIONS
31875-XXXX Filter Header Module Options

NOTES

1. This is an advance, preliminary data sheet. All specifications

are subject to change without notification.
2. Maintain high levels of precision and accuracy using Endeveco's factory calibration services. Call Endeveco's inside sales force at 800-982-6732 for recommended intervals, pricing and turn-around time for these services as well as for quotations on our standard products.

Continued product improvement necessitates that Endeveco reserve the right to modify these specifications without notice. Endeveco 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 Endeveco synonymous with reliability.

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