

Model 133 PE and Isotron® signal conditioner

Features

- Three-channel PE/Isotron® signal conditioner
- 100 kHz bandwidth (-3dB Corner)
- Built-in 4-pole Butterworth high-pass filter with optional corner frequencies
- Gain range 0 to 1000
- RS-232 serial interface
- 12 VDC power option
- Meets filter requirements of J211 and ISO 6487*
- M1 option for velocity output & metric units

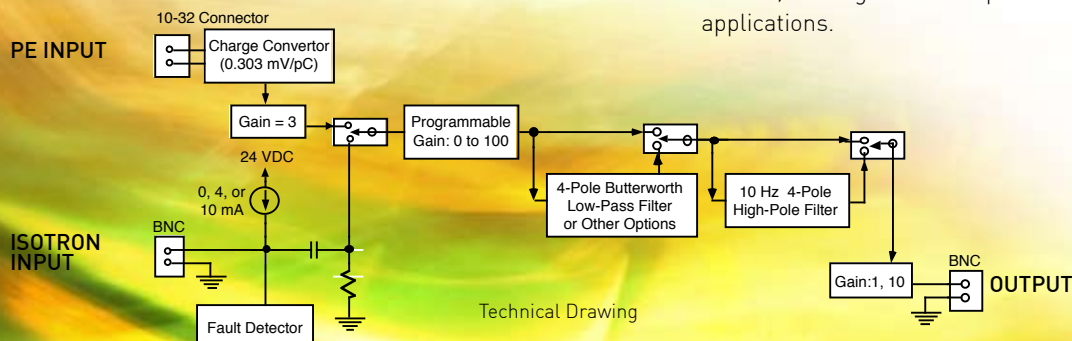


Description

The ENDEVCO® Model 133 is a three-channel, Piezoelectric and Isotron signal conditioner that is manually or computer programmable. Manual control is accomplished at the front panel by means of a "Select Channel" push-button, three (3) "Channel LEDs", one "Select Function" push-button, seven "Function LEDs", a four character LED display, showing the state of each function/channel, and four "Edit" push-buttons to change the entries in the LED display. There are three LEDs used as fault status indicators for open/short at the ISOTRON inputs. Computer control is accomplished using the standard RS-232 port and optional Application Software.

There are two modes of operation, Normal and Programming/Setup. Both modes of operation utilize the front panel LED Display. In the Normal Mode, there are two states, Monitoring and Non-Monitoring. In the Monitoring State the LED display indicates the RMS value ($\pm 10\%$) of the signal present at the output of the selected channel. The Non-Monitoring State turns off the LED display for lower noise applications and to minimize power consumption. In the Programming Mode, the unit is ready for manual programming of existing channel setups. The unit will automatically return to the Normal Mode of operation after 20 seconds of inactivity of the front panel or after pressing the "Select Function" pushbutton while the "Monitoring State" function LED is flashing.

The rear panel contains an RJ-11 connector for the RS-232 serial communications port, an input power connector, and on a per-channel basis, a BNC output connector, a 10-32 input connector for the PE input, and a BNC connector for the Isotron input. Three Model 133 units may be installed in a 19-inch rack mount adapter. The standard unit is powered by 90-264 VAC, 50/60 Hz. The -1 option is powered by 9 to 18 VDC, making it ideal for portable use in automobile test applications.



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Endevco

SPECIFICATIONS

INPUTS

PIEZOELECTRIC	Single-ended with one side connected to signal ground
MAXIMUM CHARGE INPUT	≤ 30 000 pC
SOURCE RESISTANCE	> 10 Meg Ohms
SOURCE CAPACITANCE	< 30 000 pF

ISOTRON	Single-ended with low side connected to signal ground
CONSTANT EXCITATION CURRENT	Off, 4 mA or 10 mA, one range is valid for all 3 channels selectable through front panel or RS-232
ACCURACY	± 15%
COMPLIANCE VOLTAGE	< 22 VDC
MAXIMUM INPUT VOLTAGE	< 22 Volts (AC + DC Components)
INPUT IMPEDANCE	100 MOhms and 33 000 pF

OUTPUTS

AC VOLTAGE	Single ended with one side connected to output signal ground. Signal proportional to input.
MAXIMUM LINEAR OUTPUT	10 Vpk minimum
DISPLAY NON-LINEARITY	Inherent error 1% of full scale reading 10 V = 1% 1 V = 10% 100 mV = 100%
MAXIMUM CURRENT OUTPUT	10 mA (10 V into a 1 kOhm load)
DC OFFSET	15 mV maximum
PROTECTION	Short circuit protected

TRANSFER CHARACTERISTICS

GAIN	Programmable from 0 to 1000
RANGE	0.0025, Eu 0 ≤ gain ≤ 10
RESOLUTION	0.025, Eu 10 ≤ gain ≤ 100 0.25, Eu 100 < gain ≤ 1000
ACCURACY	± 0.5% at 1 kHz after calibration, filters disabled, gain > 1
LINEARITY	0.1% of full scale, best fit straight line at 1 kHz reference
NOISE	Noise specification valid for the following conditions: (a) Unit in Non-Monitoring state (b) Internal standard 10 kHz 4-pole Butterworth lowpass filter enabled
PIEZOELECTRIC	0.02 pC-RMS plus 0.006 pC-RMS per 1000 pF of source capacitance referred to input (RTI), plus 1 mVRMS referred to output (RTO).
ISOTRON	20 μVRMS referred to input (RTI), plus 400 μVRMS referred to output (RTO). Input shunted with a 249 Ohm (4 mA excitation) or 100 Ohms load (10 mA excitation).
BROADBAND FREQUENCY RESPONSE	±5%, 0.1 Hz to 50 kHz, referenced to 1 kHz; -3dB at 100 kHz typical
FILTER CHARACTERISTICS	
HIGH PASS FILTER TYPE	4-Pole Butterworth
CORNER FREQUENCY (-3 DB)	10 Hz ± 5 %
CORNER FREQUENCY (-3 DB)	10 kHz ± 12 % (other corners available by changing internal module 31875: 10 Hz to 80 kHz in 1, 2, 4, 6, 8 steps)
CROSSTALK BETWEEN CHANNELS	80 dB RTI minimum
M1 VELOCITY	Gain=10mV/m/s per pc/g Accuracy of ±5% Low corner frequency 10Hz 5%

POWER REQUIREMENTS

VOLTAGE	Standard unit: 90-264 VAC 50 to 60 Hz; -1 Option: 9-18 VDC
POWER DISSIPATION	9 Watts typical
ISOLATION	No isolation channel to channel or signal ground to case ground

PHYSICAL CHARACTERISTICS

DIMENSIONS	5.57" X 2.52" X 12"
WEIGHT	4 lbs typical
CASE MATERIAL	Black Aluminum Cover, Medium Grey Plastic Bezel

INCLUDED ACCESSORIES

IM133	INSTRUCTION MANUAL	EJ807	SERIAL DB9F /RJ-11 ADAPTOR
EW599	POWER CORD	EJ822	MODULAR SPLITTER ADAPTER, 1 (6X4) MALE TO 3 (6X4) FEMALE
31875-1000	10 KHZ 4-POLE BUTTERWORTH LOWPASS FILTER MODULE	133-1	9-18 VDC INPUT POWER OPTION
EP400	DC POWER PLUG (133-1 MODEL ONLY)	31875-XXXX	LOW PASS FILTER MODULES (SEE 31875 DATA SHEET)
		31979	RACK MOUNTING KIT
OPTIONAL ACCESSORIES		EJ21	10-32 MICRODOT TO BNC ADAPTER
35933	APPLICATION SOFTWARE	133M1	METRIC AND VELOCITY OUTPUT
EJ847	RJ11 (6X4) STRAIGHT WIRED INLINE COUPLER	EHM1413	DESKTOP DC POWER SUPPLY
EW1077	RJ114 CONDUCTOR MODULAR FLAT CABLE, STRAIGHT WIRED, 2 FEET LONG	EHM1409	AUTOMOTIVE POWER PLUG
		EHM1471	BLANK PANEL
EW1027	RJ114 CONDUCTOR MODULAR FLAT CABLE, STRAIGHT WIRED, 7 FEET LONG		

* Contact factory for J211 and ISO 6487 filter options.

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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