

# Differential PE Signal Conditioner

## Model 6634D



### Key features

- PE, Differential PE, IEPE and VELCOIL/RCC inputs
- Acceleration, velocity and displacement outputs
- AC and DC programmable outputs
- 10/100 Ethernet and RS-232 Interface
- Programmable 6-pole HP, LP, BP Filter
- TTL compatible Warning and Alert alarms
- User selectable English or Metric units
- Replacement for Endevco Model 6634C

### Description

The model 6634D vibration amplifier is designed to condition and display vibration data from rotating machinery. The instrument accepts inputs from differential piezoelectric and single-ended piezoelectric sensors, voltage output ICP® sensors, velocity coils, and remote charge convertors. Full scale AC and DC output ranges are programmable in user selected units to represent either acceleration, velocity, or displacement. Programming of the unit is accomplished from the front panel, Ethernet, or RS-232 interface. Up to ten different setups can be stored and recalled from the non-volatile memory. Additional features include a programmable 6-pole HP, LP, BP filter and two TTL compatible latched alarm outputs provided for warning and alert.

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All specifications assume +75°F (+24°C) unless otherwise stated.

## Specifications

### Inputs

Piezoelectric (PE) inputs	Single-ended (SEPE) or differential. Accelerometer sensitivity limited to 1.5 to 150 pC/g
Maximum input charge	33 000 pC
Source resistance	10 MΩ minimum to meet all specifications
Source capacitance	20 nF maximum to meet all specifications
RCC input	VEL-COIL or RCC input. Software selectable
Constant current supply	8.5 mA ±10%
Compliance voltage	24 V maximum, 20 V minimum. Input sensitivity limited to 15 to 150 mV/g.
Velocity coil input	VEL-COIL or RCC input. Software selectable
Input impedance	100 kΩ. Input sensitivity limited to 15 - 1500 mV/IPS
External calibration	EXT-CAL
Input capacitance	1000 pF ±0.5%
Maximum input voltage	10 V pk
Broadband input	From external filter
Input impedance	10 MΩ minimum
External filter gain	1 ±1%
Maximum input voltage	10 V pk
Digital discrete inputs	TTL compatible
/Alm-reset	A low pulse of at least 100 ms resets both alarms, Internal pull-up included
/Sys-cal	A low pulse of at least 100 ms starts calibration, internal pull-up included

### Outputs

Type	All outputs are single-ended and short circuit protected.
Output load	10 kΩ minimum, 3000 pF maximum
Broadband/velocity/displacement	BB-OUT/VEL-OUT/DISP-OUT
Linear voltage range	0 to ±10 V pk minimum
Offset voltage	15 mV DC maximum
Acceleration output	ACCEL-OUT
Linear voltage range	0 to ±10 V pk minimum
Offset voltage	15 mV DC maximum
AC output	AC-OUT
Full scale output voltage	1/5/10V, software selectable
Acceleration	2 to 200 g pk, Full Scale (20 to 2000 m/s <sup>2</sup> pk)
Velocity	1 to 100 ips pk, Full Scale (50 to 2000 mm/s pk)
Displacement	0.5 to 50 mils pk, Full Scale (20 to 1000 μm pk)
Offset voltage	10 mV DC maximum
DC output	DC-OUT
Full scale output voltage	1/5/10V, software selectable
Acceleration	2 to 200 g pk, Full Scale (20 to 2000 m/s <sup>2</sup> pk)
Velocity	1 to 100 ips pk, Full Scale (50 to 2000 mm/s pk)
Displacement	0.5 to 50 mils pk, Full Scale (20 to 1000 μm pk)
Digital discrete output	TTL compatible
Output level	Sink 12 mA maximum at 0.7 V Source 1 mA maximum at 2.4 V

### Transfer characteristics

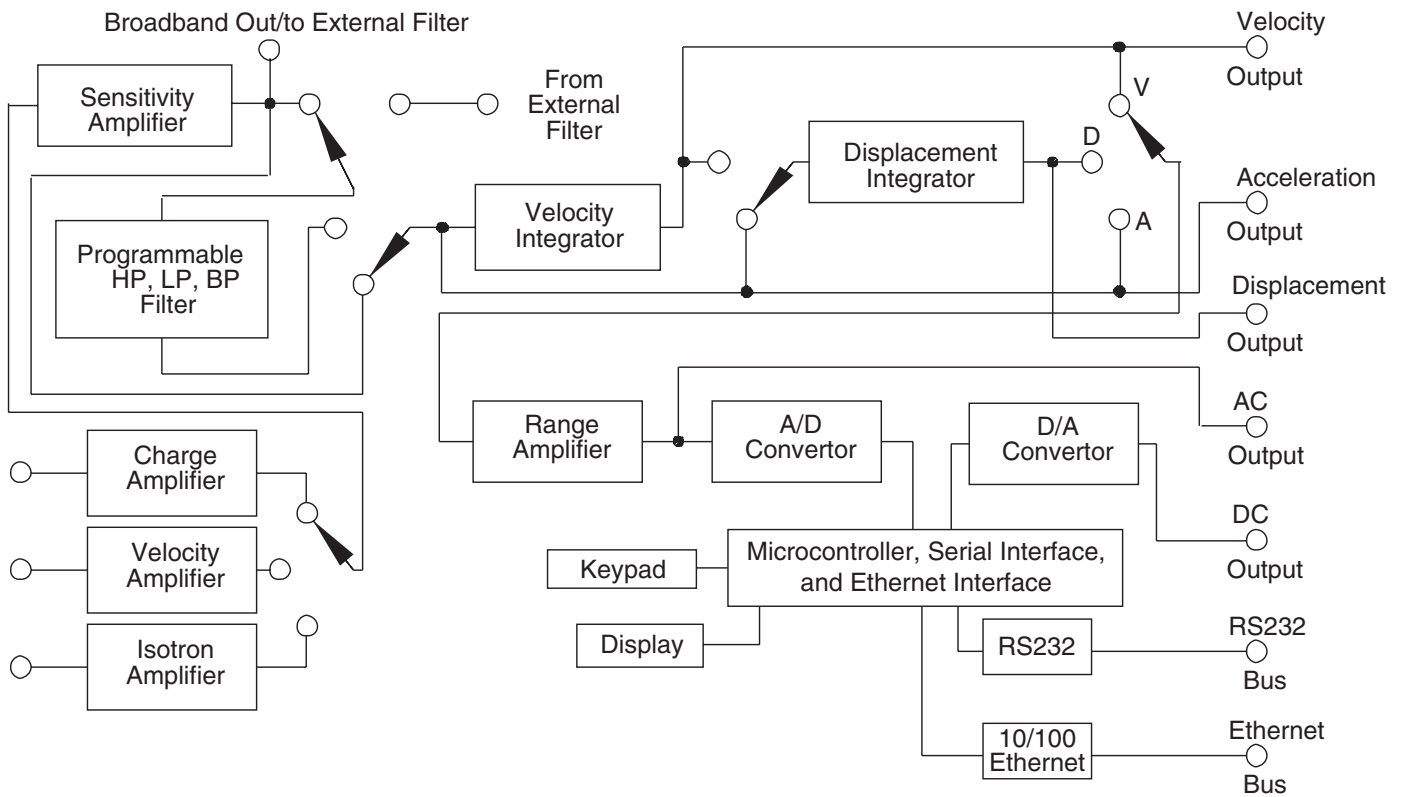
Input sensitivities	English	Metric
PE Input	1.500 to 150.0 pC/g	0.15 - 15.0 pC/m/s <sup>2</sup>
Velocity Coil Input	15.00 to 1500 mV/ips	0.60 - 50 mV/mm/s
RCC Input	15 to 150.0 mV/g	0.15 - 15 mV/m/s
Output sensitivities	English	Metric
BB Output/Accel Input	50 mV pk/g pk	5mV/m/s <sup>2</sup> pk
BB Output/Vel Coil Input	100mVpk/ips pk	3.8609 mV pk/mm/s pk
Acceleration Output	50 mV pk/g pk	5.0 mV pk/m/s <sup>2</sup>
Velocity Output	100 mV pk/ips pk	3.8609 mV pk/mm/s pk
Displacement Output	400 mVpk/mil pk	15.4436 mVpk/μm pk
Typical Frequency Response	The gain at the upper and lower cutoff frequency is 5% lower than the gain at 300 Hz. All measurements are performed with respect to calibration frequency (300Hz) as reference. The frequency response specification is the same for PE, IEPE/RCC, and VEL COIL.	
Output	Lower Cut-off Frequency	Upper Cut-off Frequency
Broad Band	< 2 Hz	> 26 kHz
Acceleration	< 3 Hz	> 26 kHz
AC Oupput	Lower Cut-off Frequency	Upper Cut-off Frequency
Acceleration	< 4 Hz	> 13 kHz

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Transfer characteristics (continued)		
Residual Noise		
PE Input		
Acceleration Output	1.2 mV rms maximum with 10 M $\Omega$ and 20 nF of source impedance	
	0.8 mV rms maximum with input open	
Velocity Output	1.4 mV rms maximum with 10 M $\Omega$ and 20 nF of source impedance	
	0.8 mV rms maximum with input open.	
Displacement Output	18 mV rms maximum with 10 M $\Omega$ and 20 nF of source impedance	
	10 mV rms maximum with input open	
Velocity Coil Input		
Velocity Coil Output	0.8 mV rms maximum	
Displacement Output	1.1 mV rms maximum	
RCC Input		
Acceleration Output	1.0 mV rms with 250 $\Omega$ input shunt	
Velocity Output	1.0 mV rms with 250 $\Omega$ input shunt.	
Displacement Output	Less than 6.0 mV rms maximum with 250 $\Omega$ input shunt	
Alarm		
Alarm Level	Programmable from 1.0% to 100% of full scale. 100% disables the alarm. Alarm levels are compared with DC output representation of peak AC Output	
Alarm Accuracy	1% of DC Output.	
Alarm Trigger Time	3 $\pm$ 0.5 seconds	
Overload	Overload is activated if output exceeds 100% of full scale for more than 3 seconds	
Programmable filter		
Low pass range	50 Hz - 10 KHz	
High pass range	5 Hz - 500 Hz	
Environmental characteristics		
Temperature range	Operating 40°F to 125°F (5°C to 52°C) Storage -40°F to 185°F (-40°C to 85°C)	
Humidity	95% R.H.	
Power		
Voltages	12 - 16 VDC	
Current	520 mA typical	
Physical characteristics		
Dimensions	5.0 x 2.78 x 13 in (12.7 x 7.1 x 33 cm)	
Weight	1.9 lbs (0.9 kg)	
Connectors	Piezoelectric input	Differential BNC Single-ended BNC
	RCC input/velocity coil	Differential BNC
	External cal	Single-ended BNC
	Discrete inputs	25 pin "D"
	Power	DC barrel jack 5.5 x 2.1 mm (center positive)
	10/100 Ethernet	RJ45 jack
	RS-232	DB-9 (female)

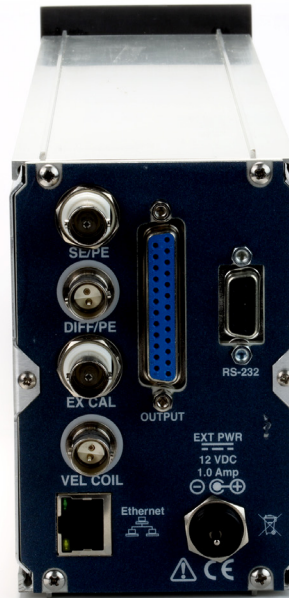
Accessories		
Options	Description	
100-17355-60	Universal 12 VDC Power Supply	Included
EDVEP316	Twinaxial BNC connector (2 each)	Included
EDVEJ1167-U	25 pin "D" connector (1 each)	Included
070A02	10-32 jack to BNC plug	Included
017AXX	Power Cord	Included
78484	Instruction Manual	Download from website
79318	Programmers Manual	Download from website
4948A	19" rack (1 per 6 each 6634D)	Optional

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## Notes

1. Maintain high levels of precision and accuracy using Endeveco's factory calibration services. Call Endeveco's inside sales force at 866-ENDEVCO for recommended intervals, pricing and turn-around time for these services as well as for quotations on our standard products.



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