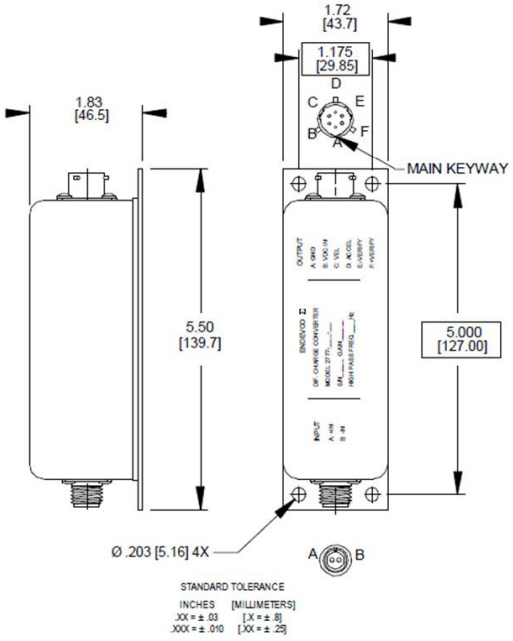
Endevco®

Differential remote charge converter

Model 2777A

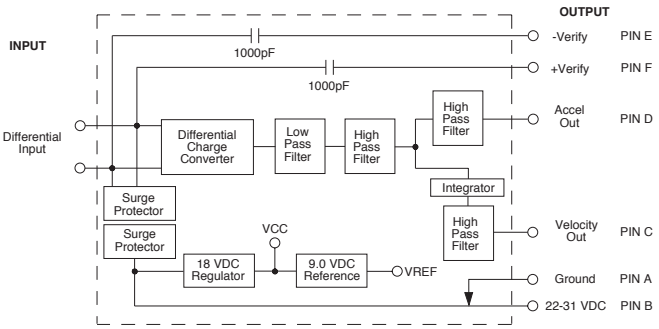


Key features

- Acceleration and velocity outputs
- 4-wire output device
- Low noise
- Frequency response (10 Hz - 10 kHz)
- Two optional gains

Model 2777A-XX-YY Differential Remote Charge Convertor (DRCC) is a low noise ruggedized device designed for use with differential piezoelectric transducers. This device converts the transducer's high impedance charge input to a low impedance voltage output. The acceleration output is also integrated to produce an AC voltage proportional to velocity output.

The low impedance output from the DRCC provides less susceptibility to noise in the cabling from the DRCC to the main signal conditioning instrument, and it also makes the system's noise level insensitive to the capacitance of the cable connecting the DRCC to the main conditioner. This is a low noise device with a frequency response of 10 Hz to 10 kHz. The DRCC operates over the temperature range of 5°F to 185°F (-15°C to 85°C).



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Specifications

Inputs	
Differential PE input	
Input connection	Differential with shield connected to case
Input source resistance	50 KΩ minimum
Input source capacitance	30 000 pF, maximum
Maximum input charge	37 500 pC pk
Outputs	
Acceleration and velocity	(Output is single ended)
Output impedance	50 Ω maximum
Capacitance load	30 000 pF maximum
DC output bias (DC offset)	9.0 Vdc ±1.5 Vdc over the temp range 5°F to 185°F (-15°C to 85°C)
Linear output voltage	10 Vpk-pk minimum
Limited output voltage	15 Vpk-pk with 22 Vdc minimum compliance voltage
Ouput current	15 mA maximum
Linearity	±1% of reading from the best straight line
Residual noise (RTO)	-02-YYY: 1.0 mV RMS maximum, -10-YYY: 5mV RMS maximum referred to output
Transfer characteristics	
Gain (Cs = 1000 pf)	-02-YYY:2 mV/EU per pC/g,-10-YYY:10mV/EU per pC/g (for acceleration: EU=g) (for velocity: EU=IPS)
Gain error	±3.0% at 100 Hz for Cs< 1000 pF (at 25°C)
Gain stability with temperature	Less than ±1%
Frequency response	Flat within the lower and upper cutoff frequencies
Lower cutoff frequency (Reference frequency 100Hz)	Acceleration: High-pass-roll-off -36 dB/octave at f < 2.27 Hz Velocity: High-pass roll-off -42 dB/octave at f < 2.27 Hz -5% corner frequency YYY = 10/15/20/25/150 Hz ±10% -3 dB Corner frequency = 5.73/8.59/11.5/14.3/86 Hz ±10%
Upper cutoff frequency (Reference frequency 100 Hz)	Low-pass roll-off -12 dB/octave -5% corner = 10 kHz ±5%, -3dB corner = 17.5 kHz ±10%
Power requirements	
DC voltage requirements	22 Vdc to 31 Vdc
DC current requirement	15 mA
Warm up time	10 sec
Physical characteristics	
Dimensions	1.72" h x 1.67" w x 5.5" d (46.5 mm x 42.4 mm x 139.77mm)
Weight	8.0 oz maximum
Case material	Aluminum
Finish	Black powder coat, fine texture using Cardinal P141-BK03 or equiv
Environmental characteristics	
Operating temperature	5°F to 185°F (-15°C to 85°C)
Short term operating temperature	-10°F to 185°F (-23.3°C to 85°C)
Storage temperature	-76°F to 257°F (-60°C to 125°C)
Humidity	The unit will withstand 95% relative humidity
Vibration	7 g-pk from 55 Hz to 2 kHz
Shock	100 g-pk with 3.6 ms haver-sine pulse
Radiation	10^5 Rads (integrated Gamma)
Reliability (MTBF)	30 000 hours or greater

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Accessories

Product	Description	2777A
EJ1191	Mating connector, input connector, Bendix 2 pin straight plug, PC06A-8-2P [SR]	Included
EJ1190	Mating connector, output connector, Bendix 6 pin socket plug, PT06A-10-6S [SR]	Included

Ordering information

	Gain accel. out	Gain vel. out
2777A-02-YYY	2 mV/pC	2 mV/lPS/pC/g
2777A-10-YYY	10 mV/pC	10 mV/lPS/pC/g

Where YYY is 10, 15, 20, 25 or 150 Hz lower cut-off frequency

Notes:

1. Maintain high levels of precision and accuracy using Endevco's factory calibration services. Call Endevco'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.

Contact

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APPLIES TO CALIFORNIA FACILITY

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. 082119