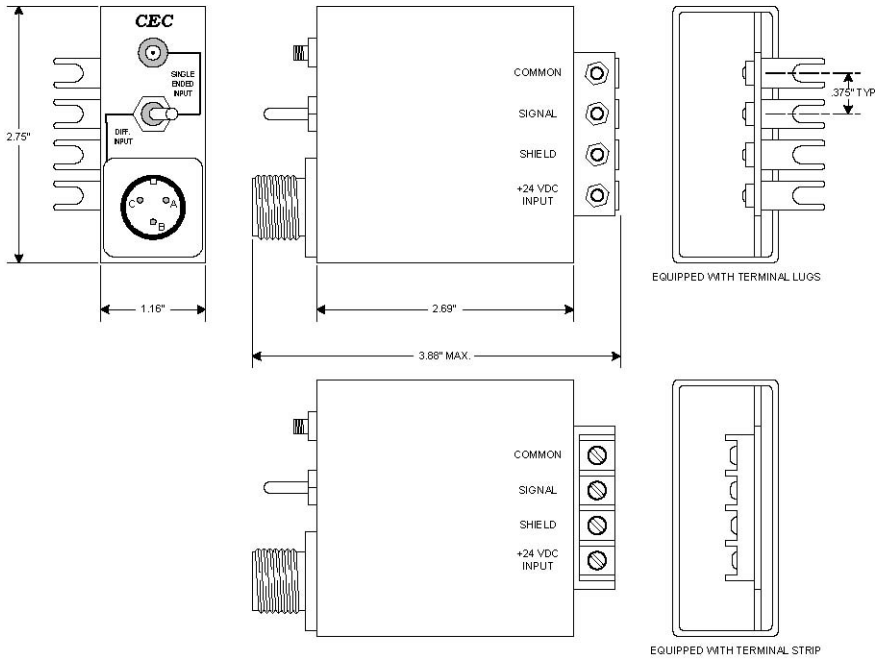
CEC Type 1-310
Charge Amplifiers

DESCRIPTION

This specification describes a charge amplifier for use with the CEC 4000 vibration monitoring system. The charge amplifier is switch selectable to operate either with single-ended or differential accelerometers. There is also a velocity output capability provided within the unit; however, to stay compatible for mounting on the rear terminal strip of the CEC 4000, only one or the other output can be accommodated.

PHYSICAL SPECIFICATIONS



1-310-XXXX Dimensional Outline Drawing

STANDARD OPERATING FEATURES AND CHARACTERISTICS

Power 24 VDC regulated at 100 mA
Charge Conversion Gain
Acceleration Output: Gain equals 1 ±1% (i.e., 1 pcmb input equals 1 mV output)
Velocity Output: Gain equals 1 at 61.5 Hz ±2% (i.e., 1 g peak equals 1 ips peak)
Frequency Response ±5%, 5 Hz to 15 kHz, -8% at 20 kHz
Fixed Filter Roll-Off -42 dB / octave

Maximum Load Output
Cable Capacitance 10,000 pf maximum for full-scale signal at 20 kHz
Resistive 10 K ohms
Full Scale Output 15 V Pk-Pk

Effects of Input Leakage on Frequency Response
Single Ended: Down 20% at 10 Hz with 100 K across input
Differential Input: Down 40% at 10 Hz with 100 K across input
Down 15% at 10 Hz, either side to ground
NOTE: No instability in charge amplifier at any leakage condition, including circuits on the input.

Output Short Circuit Momentary shorts on the output will not damage unit. Recovery time is less than 2 seconds.
Reverse Current Reverse current protection provided on the power input.
Operating Temperature Range -40°F to +132°F
Error Due To Temperature ±1% over the operating temperature range

Type 1-310 Selection Guide

Note: Individual specifications may differ from the Standard

Part Number	Channels	Input Type	Output Units	Transfer Characteristic	Frequency Range	Connection Type	Power
1-310-0001	One	Switch Select Single Ended or Differential	Acceleration	Gain = 1 ±1% 1 mV / pC	5 Hz to 15 kHz	Terminal Lugs	24 VDC @ 100 mA max.
1-310-0002	One	Single Ended	Acceleration	Gain = 1 ±1% 1 mV / pC	5 Hz to 15 kHz	Terminal Lugs	24 VDC @ 100 mA max.
1-310-0003	One	Differential	Acceleration	Gain = 1 ±1% 1 mV / pC	5 Hz to 15 kHz	Terminal Lugs	24 VDC @ 100 mA max.
1-310-0101	One	Switch Select Single Ended or Differential	Velocity	Gain = 1 @ 61.5 Hz ±2% 1 g peak = 1 ips Peak	5 Hz to 15 kHz	Terminal Lugs	24 VDC @ 100 mA max.
1-310-0102	One	Single Ended	Velocity	Gain = 1 @ 61.5 Hz ±2% 1 g peak = 1 ips Peak	5 Hz to 15 kHz	Terminal Lugs	24 VDC @ 100 mA max.
1-310-0103	One	Differential	Velocity	Gain = 1 @ 61.5 Hz ±2% 1 g peak = 1 ips Peak	5 Hz to 15 kHz	Terminal Lugs	24 VDC @ 100 mA max.
1-310-0109	One	Differential	Velocity	Gain = 1 @ 61.5 Hz ±2% 1 g peak = 1 ips Peak	50 Hz to 15 kHz	Terminal Strip	24 VDC @ 100 mA max.
1-310-0111	Two	Switch Select Single Ended or Differential	Acceleration and Velocity	Gain = 1 ±1%, 1pC in = 1mV out Gain = 1 @ 122.9Hz, .5g pk = 1 ips pk	50 Hz to 15 kHz	See Dimensional Outline Drawing 615684-40-0000	28 VDC @ 250 mA max
1-310-0112	One	Differential	Acceleration	Gain = 1 ±1% 1 mV / pC	70 Hz to 15 kHz	Terminal Strip	24 VDC @ 100 mA max.
1-310-0116	Two	Differential 20 pC / g peak	Velocity	1 V RMS = 5 ips Avg.	50 Hz to 2 kHz	Power = MS3102R-10SL-4P Input = MS3102A-10SL-3P Output = MS3102R-10S-3S	28 VDC @ 250 mA max
1-310-0119	One	Differential	Acceleration	Gain = 1 ±1% 1 mV / pC	50 Hz to 1 kHz	Terminal Lugs	24 VDC @ 100 mA max.
1-310-0120	Two	Differential 20 pC / g peak	Velocity	1 V RMS = 2 ips Avg.	50 Hz to 1 kHz	Power = MS3102R-10SL-4P Input = MS3102A-10SL-3P Output = MS3102R-10S-3S	28 VDC @ 250 mA max