



Specifications

Model 510-3 Charge Converter

Part Number: 10-100-1503

Specification Revision: 1

Revision Date: July 22, 2009

A. Overview:

The Model 510-3 is a charge converter used to convert the pico-Coulomb (pC) charge signal from single-ended piezoelectric accelerometers into a voltage signal. It converts the acceleration signal and outputs an AC voltage signal proportional to the instantaneous measured acceleration. This unit is not suitable for use with a differential output accelerometer.

B. Electrical Connections:

Connector 1:

Type: Standard BNC Female
Mating Connector: BNC Male
Center Pin: Input Signal
Outer Shell: GND

Connector 2:

Type: 4-pin MS Connector # MS3112E8-4P
Mating Connector: MS3116F8-4S
Pin A: -Voltage supply (-9 to -15V)
Pin B: GND
Pin C: +Voltage supply (+9 to +15V)
Pin D: Signal

C. Power Requirements

+/- 9 V standard supply voltage input on connector 2. In typical applications the +/-9V power is provided from the ACES Analyzer.

D. Signal Processing

High Pass Filter: 10Hz

Low Pass Filter: None

Charge Converter Gain: 6 mV/pC

Therefore use of a 3pC/g sensor would result in a 18mV/g output signal.

Integration: No

E. Temperature Range

-40 to 85 °C

F. Accuracy

Calibrated to +/-2%

The calibration procedure adjusts the transfer function /sensitivity function of the 510-3 charge converter to 6 mV/pC to within the manufacturer's tolerance of $\pm 2\%$.

ACES Systems confirms that all calibrated units have been inspected and calibrated to the same accuracy parameters as used during correlation testing of the engines by Pratt & Whitney Canada.

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