

4-Channel Single-Ended Charge Amplifier Signal Conditioning Module with Programmable Digital Filtering and Acceleration, Velocity and Displacement Outputs



Applications

- Flight Test Instrumentation
- Factory Automation and Process Control
- Piezo-electric Accelerometers, Transducers, Microphones, ...
- Research Measurements and Experiments

Features

- 4-channels per module
- Charge amplifier front end, suitable for use with single-ended piezo-electric accelerometers
- Available output data signals per channel:
 - Acceleration
 - Velocity (digitally integrated acceleration data)
 - Displacement (digitally integrated velocity data)
- >1,000 M Ω input impedance (power on)
- Simultaneous sampling capability
- Programmable digital FIR or IIR presample filtering
 - Software selected FIR filters; 120, 90, 60 and 40 taps
 - 120 tap FIR filter provides comparable response to 12-pole Butterworth Filter
 - Software selected IIR filters; 6-pole and 8-pole Butterworth, 6-pole Bessel and 6-pole Chebyshev
 - Automatic adaptive filter based on format sample rate or on software-selected -3dB frequency (6-pole Butterworth characteristic only)
 - Filter characteristic selectable on per channel basis
 - Analog anti-aliasing filter with 8.7 KHz frequency cutoff and 5-pole Butterworth response
- Programmable channel gains and offset:
 - >10,000 gain settings from $\pm 11,000$ to ± 138 pC full scale
- $\pm 0.5\%$ system accuracy
- Compatible with WDAU-20xx operating to 20 Mbps.
- Microsoft Windows application software included

Description

The MCAS-104D-3 is a 4-channel single-ended Piezo-electric accelerometer signal conditioning module for use in TTC's MEDAU-20xx, MCDAU-20xx or MWDAU-20xxX series products. Each input channel provides a charge amplifier for interfacing with a single-ended Piezo-electric accelerometer. The module then provides software programmable gain, programmable offset and programmable, DSP based, presample filtering per channel. The filter is set automatically based on the channel sample rate programmed through TTCWare. Alternatively, a filter with a user-specified -3dB frequency that falls within limits calculated by TTCware, may be selected. The conditioned analog signal is digitized at up to 16-bit resolution for transmission in the system PCM output format. In addition to providing digitized accelerometer data to the system PCM output format, the MCAS-104D-3 performs a digital integration on this data, which provides relative velocity data. The velocity data is itself integrated, providing displacement data. As with the acceleration data, velocity and displacement data are made available to the PCM output format at 16-bit resolution.

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MCAS-104D-3 Datasheet

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CAIS
Compatible



Management
System
AS9100C
ISO 9001:2008

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