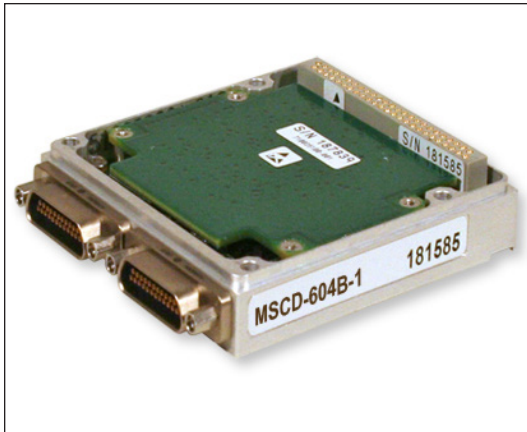




4-Channel Signal Conditioning Module - Auto-Balancing, Voltage Excitation, Programmable Digital Filtering, & Simultaneous Sampling



Applications

- Flight test instrumentation
- Factory automation and process control
- Accelerometers, Strain gages, load cells, pressure transducers
- Research measurements and experiments

Description

The MSCD-604B-1 is a 4-channel signal conditioning module for use in TTC's miniature, stackable data acquisition products. The module is intended for applications that require significant signal conditioning flexibility and simultaneous sampling capability. The MSCD-604B-1 is compatible with ICP type accelerometers as well as numerous bridge and potentiometer input configurations. It provides AC and DC input coupling, constant current and constant voltage excitation, programmable presample filtering, calibration, auto-balance, and user programmable gain and offset. Numerous configurations of FIR or IIR digital presample filtering may be software selected.

Features

- 4 Channels per module
- Compatible with TTC's miniature, stackable data acquisition products
- Programmable Auto-Balance function (per-channel basis)
- Simultaneous Sampling capability
- Divided Simultaneous sampling capability (Thinning)
- Programmable Digital FIR or IIR presample filtering
 - Multiple Finite-Impulse-Response (FIR) filters, 120, 90, 60, and 40 taps
 - 120 tap FIR filter response comparable to 12-pole Butterworth filter
 - Multiple Infinite-Impulse-Response (IIR) filters, 6 and 8-Pole Butterworth, 6-Pole Bessel and 6-Pole Chebyshev responses available
 - Automatic adaptive filter -3dB frequency based on format sample rate or direct selection of filter -3dB frequency (6-pole Butterworth filters only)
 - 5-pole analog anti-aliasing filter eliminates possibility of signal aliasing
- Programmable gain and offset >10,000 settings from 1 to 2000
- Bridge or potentiometer inputs
- Automatic parasitic offset correction on power up and ZCAL
- Programmable voltage excitation
- Constant Current excitation
- Programmable AC or DC input coupling
- Zero-CAL and voltage substitution calibration
- 5 MΩ input impedance (power on); 2 MΩ (powered off)
- ± 0.25% system accuracy (auto-zero or auto-balance enabled)
- ± 0.5% system accuracy (auto-zero and auto-balance disabled)
- ±35VDC overvoltage protection
- Programmed with included Windows Based software

Description (continued)

Each digital filter is phase locked to the channel format sample rate to maintain time correlation between the input signal and the PCM output. The filter can be set for 3, 4, 5, 6, 8 or 10 times oversampling (the filter -3dB point will be automatically set to the format sampling rate divided by the oversampling value). 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. The auto-balance function on the MSCD-604B-1 card allows the user to remove DC offsets resulting from transducer imbalances, parasitic offset voltages and other offset sources that may be present at the amplifier inputs. An imbalance of up to ±20 mV on a 350Ω bridge powered from 5 VDC or ±40 mV on a 350Ω bridge powered from 10 VDC, may be corrected. The auto-balance correction persists through power cycling.

Revision 01/10/2017

MSCD-604B-1 Datasheet

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Specifications subject to change without notice.

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CAIS
Compatible



Management
System
AS9100C
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15 Terry Drive, Newtown, PA 18940

phone: 267.352.2020 fax: 267.352.2021 Sales@ttcdas.com

www.ttcdas.com