

6-Channel Signal Conditioning Module – Current and Voltage Excitation, Programmable Digital Filtering, & Simultaneous Sampling - for MSSR-2010-SA & MSSR-110C Recorders



Applications

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

Features

- For use in TTC's MSSR-2010-SA and MSSR-110C miniature IRIG 106-Chapter 10 multiplexer/recorder
- 6 channels per module
- 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 sample rate
 - Analog anti-aliasing filter
 - Filter characteristic selectable on per channel basis
- Simultaneous sampling or divided rate simultaneous sampling (thinning) (per-channel basis)
- Constant voltage and fixed constant current excitation
- Programmable gain and offset
- AC and DC input coupling
- ZIN ~5 Meg Ω (power on), >1 Meg Ω (power off)
- $\pm 0.5\%$ system accuracy at most gains
- Automatic parasitic offset correction on power up and ZCAL. This feature can be disabled
- $\pm 35\text{VDC}$ overvoltage protection
- Microsoft Windows application software included

Description

The MSCD-606M is a 6-channel plug-in signal conditioning module for use in TTC's miniature, stackable Chapter 10 recorder. The module is intended for applications that require significant signal conditioning flexibility and/or simultaneous sampling capability. The module provides AC and DC input coupling, constant current and constant voltage excitation, programmable presample digital filtering, calibration, and user programmable gain and offset. FIR or IIR digital presample filtering may be selected on a per channel basis. Each digital filter is phase locked to the channel sample rate to maintain time correlation between the input signal and the data 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 sampling rate divided by the oversampling value). Alternatively, a 6-pole Butterworth filter with software-specified -3dB point may be selected on any channel. The conditioned channel signals are digitized and available at up to 16-bit resolution for recording in the Chapter 10 recorder.

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MSCD-606M Datasheet

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