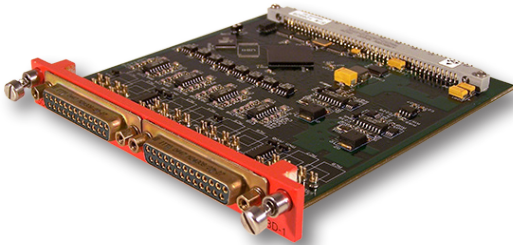


SCD-108D-4

8 Channel Signal Conditioning Card

**CURTISS-
WRIGHT**

CURTISSWRIGHTDS.COM



Key Features

- 8 channels per card
- 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)
 - + Analog anti-aliasing filter
- Bridge or potentiometer inputs
 - + 1/4, 1/2, 3/4 and full configurations
 - + On card completion of up to 3 arms

Applications

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

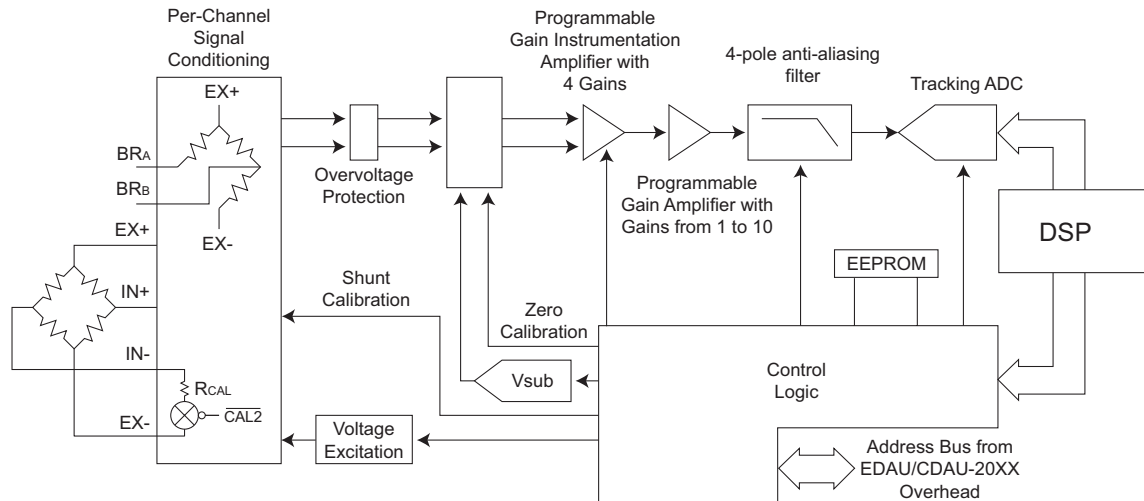
Voltage Excitation, Bridge Completion, Programmable Digital Filtering & Simultaneous Sampling

The SCD-108D-4 is an 8-channel plug-in signal conditioning card for use in Curtiss-Wright's EDAU-20XX, CDAU-20XX and WDAU-20XX products. It is intended for applications requiring significant signal conditioning flexibility and simultaneous sampling capability. The card provides constant voltage excitation on a four channel basis, programmable presample filtering, calibration and user-programmable gain. The user may select between digitally implemented FIR and IIR filters. All filters are 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.

Additional Features

- Programmable voltage excitation
- Programmable gain and offset
 - + > 10,000 settings from 1 to 1,000
- Zero and voltage substitution calibration
- > 1,000 Megohms input impedance (power on)
- ±0.25% system accuracy (auto cal enabled)
- ±0.5% system accuracy (auto cal disabled)
- > 1 Megohm input impedance (power off)
- Automatic parasitic offset correction on power-up and ZCAL. This feature can be disabled.
- ±35VDC overvoltage protection
- Compatible with WDAU-20XX operating to 20Mbps
- Microsoft® Windows® application software included





SCD-108D-4 block diagram (1 of 8 channels)

Specifications

General

- Supply current: +15V @ 75mA; -15V @ 55mA; +5V @ 240mA; +12V @ 55mA
- Power consumption: 3.8W max (exclusive of excitation)
- Operating temperature: -40 to 85°C (box ambient temp)
- Storage temperature: -55 to 100°C

Dimensions and Mechanical

- Compatibility: Operates in any EDAU/CDAU/WDAU-20XX series equipment
- Weight: 5.5 oz (156 grams)
- Connectors (2): Cannon™ DBM25SD
- Mating connectors (2): Cannon™ DBMA25P
- Backshells (2 optional): Cannon™ DC24659 - Various other styles available

Electrical

- Input impedance: 1 gigohm (power on); 1 megohm (power off)
- Channels per card: 8
- Channel gains: From 1 to 1,000. More than 10,000 unique gain settings are provided
- System gain accuracy: $\pm 0.5\%$ max over the operating temp range
- Offset: Up to $\pm 50\%$ RTO offset; programmable by the user in 4,096 steps
- CMRR: > 110dB from DC to 400 Hz with 100 ohm unbalance at max gain
- Crosstalk: < -60dB from DC to 1 kHz

- Channel digitizing rate: 28KHz to 56KHz
- Digital filter cutoff: Software programmable from 1 Hz to 2800 Hz (-3dB)
- Filter characteristic: Software programmable 120, 90, 60 and 40 Tap symmetric FIR or 6 and 8-pole Butterworth, 6-pole Bessel and 6-pole Chebyshev IIR filters
- Anti aliasing filter: 5-pole Butterworth, -3dB@4.7KHz
- Voltage excitation: +10V or +5V, programmable on a 4-channel basis
- Excitation current output: 160mA, (40mA per channel)
- Excitation accuracy: $\pm 0.3\%$ max
- Shunt calibration: User installed resistor per channel (mounted on terminals). Connects between the IN- and excitation return of each channel
- 1-Arm bridge completion: User-Installed resistor per channel (mounted on terminals)
- 2-Arm bridge completion: Factory installed, ratio matched resistor network
- Completion wiring: Completion options are configurable via connector wiring
- Sample restrictions: 14 KSPS per channel max
- Overvoltage protection: $\pm 35V$ max (power on or off, DC coupled input); $\pm 50V$ max (power on or off, AC coupled input)
- Common mode voltage: $\pm 5V$ max

Ordering Information

Contact [Curtiss-Wright](http://Curtiss-Wright.com) for ordering information