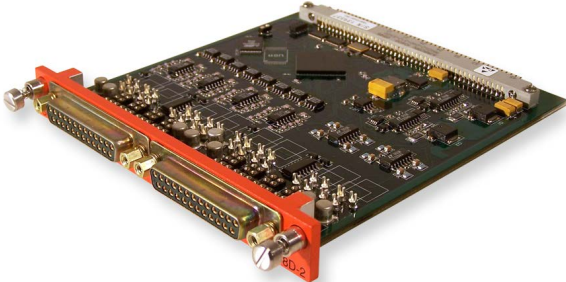


SCD-608D-4

8-Channel Signal Conditioning Card - Voltage Excitation, Bridge Completion, Programmable Digital Filtering & Simultaneous Sampling

**CURTISS-
WRIGHT**

CURTISSWRIGHTDS.COM



Key Features

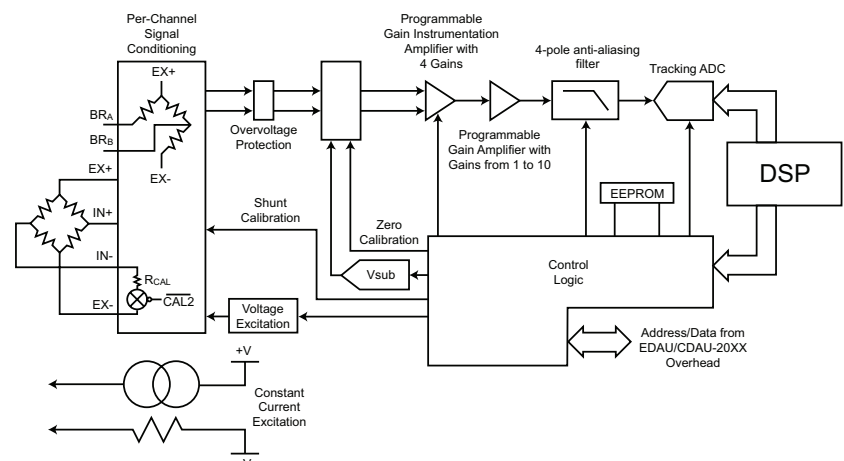
- 8 channels per card
- Simultaneous sampling capability
- Programmable digital FIR or IIR presample filtering
- Software selected FIR filters: 120, 90, 60 and 40 taps
 - + 120 tap FIR filter provides comparable response to 12-pole Butterworth filter
 - + Software selected IIR filters: 6-pole and 8-pole 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
- Programmable voltage excitation
- Constant current excitation
- Programmable AC or DC input coupling
- Programmable gain and offset
 - + >10,000 settings from 1 to 2,000
- Zero, RCAL and voltage substitution calibration
- >1,000 Megohms input impedance (power on)
- $\pm 0.5\%$ system accuracy
- Automatic parasitic offset correction on power-up and ZCAL. This feature can be disabled.
- $\pm 35_{VDC}$ overvoltage protection
- Compatible with WDAU-20XX operating to 20Mbps
- Microsoft Windows application software included

Overview

The SCD-608D-4 is an 8-channel plug-in signal conditioning card for use in Curtiss-Wright's EDAU-20XX, CDAU-220XX and WDAU-20XX products. The card is intended for applications that require significant signal conditioning flexibility and simultaneous sampling capability. The card provides AC and DC input coupling, constant current and constant voltage excitation, numerous bridge and potentiometer input configurations, programmable presample filtering, calibration, and user programmable gain and offset. FIR or IIR digital presample filtering may be selected. 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.

Applications

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



SCD-608D-4 block diagram
(1 of 8 channels)

Specifications

General

- Supply current: +15V @ 75 mA; -15V @ 55 mA; +5V @ 240 mA; +12V @ 55 mA
- Power consumption: 3.8 Watts max (exclusive of excitation)
- Temperature:
 - + Operating Temperature: -40°F to +185°F (-40°C to +85°C) (box ambient temp)
 - + Storage Temperature: -67°F to +212°F (-55°C to +100°C)

Dimensions and Mechanical

- Compatibility: Operates in any EDAU/CDAU/WDAU-20XX series equipment
- Weight: 5.7 oz (162 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
- Card gains: From 1 to 2,000. 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: 56KHz to 112KHz
- Digital filter cutoff: Software programmable from 2 Hz to 5600 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@9.2KHz
- Voltage excitation: +10 Volts or +5 Volts, programmable on a 4-channel basis
- Excitation current output: 160 mA, (40 mA per channel)
- Excitation accuracy: $\pm 0.3\%$ max
- Shunt excitation: 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: Via on card hardware jumpers
- Current excitation: Constant current per channel. 4.15 mA standard.
- Current excitation compliance voltage: 22 VDC (isolated ground sensor required)
- Sample restrictions: 28 KSPS per channel max
- Overvoltage protection: ± 35 Volts max (power on or off, DC coupled input); ± 50 Volts max (power on or off, AC coupled input)
- Common mode voltage: ± 5 Volts max (DC coupled input); ± 35 Volts max (AC coupled input)

Ordering Information

Contact [Curtiss-Wright](https://www.curtisswright.com) for ordering information.