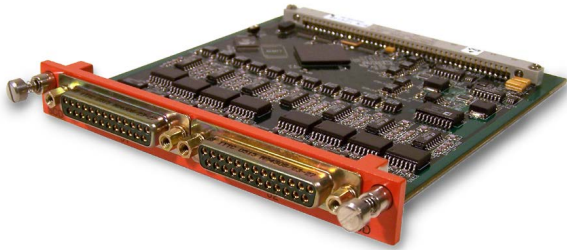


SCD-116D-3

16-Channel Signal Conditioning Card - Voltage Excitation, Programmable Digital Filtering, & Simultaneous Sampling

**CURTISS-
WRIGHT**

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Key Features

- 16 channels per card
- Simultaneous sampling capability
- Programmable digital FIR or IIR presample filtering
 - + Multiple Finite-Impulse-Response (FIR) filters
 - + Software selection of 120, 90, 60 and 40 tap FIR filters
 - + 120 tap FIR filter provides comparable response to 12-pole Butterworth filter
 - + Stop band attenuation of 85dB
 - + Multiple Infinite-Impulse-Response (IIR) filters
 - + Software selection of 6-pole and 8-pole Butterworth
- 6-pole Bessel and 6-pole Chebyshev filters
 - + Analog anti-aliasing filter
 - + Automatic adaptive filter based on format sample rate or on software-selected -3dB frequency (6 pole Butterworth characteristic only)
- 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)
- $\pm 0.25\%$ system accuracy (auto cal enabled)
- $\pm 0.5\%$ 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.

Overview

The SCD-116D-3 is a 16-channel plug-in signal conditioning card for use in Curtiss-Wright's EDAU-20XX and CDAU-20XX products. The card is intended for applications that require high channel density and significant signal conditioning flexibility and/or simultaneous sampling capability. The card provides constant voltage excitation, 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 Curtiss-WrightWare may be selected. The conditioned analog signal is digitized at up to 16-bit resolution for transmission in the system PCM output format.

Key Features Continued

- $\pm 35_{VDC}$ overvoltage protection
- Microsoft Windows application software included

Applications

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

Specifications

General

- Supply current: +15V @ 150 mA; -15V @ 120 mA; +5V @ 220 mA; +12V @ 100 mA
- Power consumption: 6.4 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

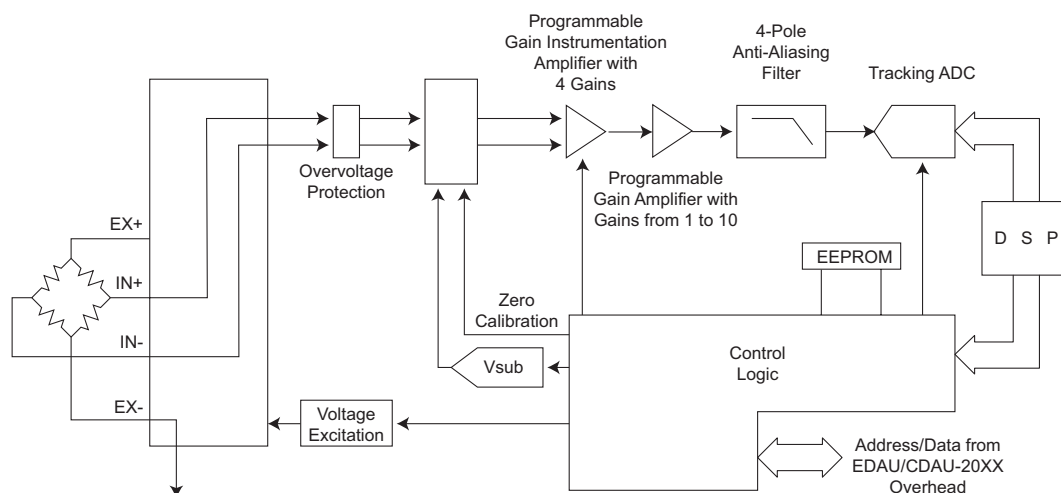
- Compatibility: Operates in any EDAU/CDAU-20XX Series equipment
- Weight: 5.8 oz (164 grams)
- Connectors (2): Cannon™ DBM25SD
- Mating connectors (2): Cannon™ DBMA25P
- Backshells (2 optional): Cannon™ DC24659 - Various other styles available.

Electrical

- Input impedance: 1 gigohm (power on); 1 megohm (power off)
- Channels per card: 16
- Card 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
- 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
- Excitation: +10 Volts or +5 Volts, programmable on a 4-channel basis
- Excitation accuracy: $\pm 0.3\%$ max
- Sample restrictions: 14.0 KSPS per channel max
- Overvoltage: ± 35 Volts max

Ordering Information

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



SCD-116D-3 block diagram