

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



Applications

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

Features

- 16 channels per card
- Compatible with EDAU, CDAU, WDAU, and NDAU-20xx series Systems
- Programmable Auto-Balance function (per-channel basis)
- Simultaneous sampling capability
- 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
 - Stop band attenuation >80dB
 - Automatic adaptive filter -3dB frequency based on format sample rate or direct selection of filter -3dB frequency (6-pole Butterworth filters only)
 - 4-pole analog anti-aliasing filter eliminates possibility of signal aliasing
- Programmable voltage excitation, +5 or +10 volts, $\pm 0.3\%$ accuracy
- Programmable gain and offset, >10,000 gain settings from 1 to 2000
- Auto-zero offset correction on power up and ZCAL
- Zero and voltage substitution calibration
- 5 M Ω input impedance (power on); 2 M Ω (power off)
- $\pm 0.25\%$ system accuracy (auto-zero or auto-balance enabled)
- $\pm 0.5\%$ system accuracy (auto-zero and auto-balance disabled)
- $\pm 35\text{VDC}$ overvoltage protection
- Programmed with Included Windows Based Software

Description

The SCD-116B-1 is a 16-channel plug-in signal conditioning card for use in TTC's EDAU, CDAU, WDAU, and NDAU-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, auto-balance, and user programmable gain and offset. Multiple FIR or IIR digital presample filtering choices may be selected on a per channel basis. Digital sampling of each channel is phase locked to the channel format sample rate to maintain time correlation between the input signal and the PCM output. The Each channel 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 SCD-116B-1 card allows the user to remove DC offsets resulting from bridge transducer imbalances, parasitic offset voltages and other offset sources that may be present at the amplifier inputs. A precision current is injected into the leg of the transducer that is connected to the channel's positive (non-inverting) input pin that is capable of balancing the channel to zero volts, $\pm 0.2\%$ of full scale range. An imbalance of up to ± 20 mV on a 350 Ω bridge powered from 5 VDC or ± 40 mV on a 350 Ω bridge powered from +10 VDC, may be corrected. The auto-balance correction persists through power cycling.

Revision 10/04/2016

SCD-116B Datasheet

©2016 Teletronics - A Curtiss-Wright Company
 Specifications subject to change without notice.

Approved for Public Release 17-S-0098



CAIS
Compatible



Management
System
AS9100C
ISO 9001:2008

Teletronics - A Curtiss-Wright Company

15 Terry Drive, Newtown, PA 18940

phone: 267.352.2020 fax: 267.352.2021 Sales@ttcdas.com

www.ttcdas.com