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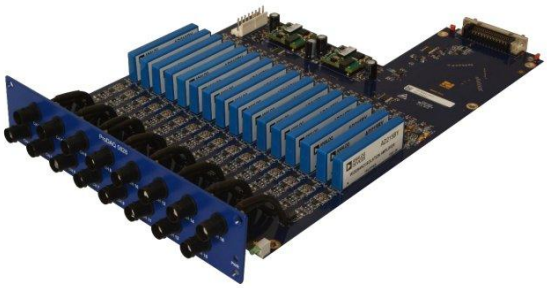
WHEN ACCURACY MATTERS

ProDAQ Signal Conditioning Cards

ProDAQ 5828 Isolation Amplifier Signal Conditioning Card



OVERVIEW

The ProDAQ 5828 Isolation Amplifier Signal Conditioning Card is designed to isolate and amplify wide bandwidth analog signals. It provides 16 channels with complete galvanic isolation and can be used directly with any of Bustec's high-performance ProDAQ 3416 16-channel Sigma-Delta ADC Function Cards.

The ProDAQ 5828 has four input voltage ranges, ±10 V, ±1 V, ±0.1 V and ±0.01 V. For gain 1 the input offset error is typically just ±0.5 mV (±50ppm) with typical gain error of ±0.03% (±300ppm), with both specifications far exceeding similar isolated cards. Isolation Mode Rejection Ratio (IMRR) is typically -120 dB at 50 Hz and -100 dB at 1 kHz for a gain of 1, providing excellent rejection of AC Common Mode signals such as 50 Hz/60 Hz line voltages.

The ProDAQ 5828 has excellent AC specifications, with THD of -75 dBc achievable at 1 kHz. Even at gain 100 the 5828s SNR is typically 64 dB. Channel to channel crosstalk has been measured as typically -96 dB.

The ProDAQ 5828's wide bandwidth of 50 kHz and its typical gain nonlinearity of ±0.005% make it ideal for high speed dynamic signal applications. Gains of 1, 10, 100, and 1000 can be programmed per channel, in addition to the gain options available for the 3416.

The input connection for each channel is via high voltage isolated, touch-safe BNC connectors.

The ProDAQ 5828 card takes up half the space in a ProDAQ 5720 Signal Conditioning Unit. To connect the function cards to the signal conditioning cards, data I/O cables of the ProDAQ 8010-Bx Series are used. They provide shielded twisted pair connections for signals and control.

The ProDAQ 5828 conforms to IEC61010-1 Ed.3.0 and IEC61010-2-030 Ed.1.0. It is designed for Measurement Category II with working voltages up to 350 V_{RMS}.

Features & Benefits

- **5720 Signal Conditioning Unit** ½ wide card with 16 isolated channels
- **350 V_{RMS} Isolation** Channel/Ground and Channel/Channel
- **Gain 1, 10, 100, 1000** programmable per Channel
- **Wide Bandwidth** of 50 kHz
- **High Linearity -** ±0.005% gain nonlinearity typical
- **Excellent DC Accuracy -** ±0.03% gain error typical

ProDAQ 5720 Signal Conditioning Carrier with ProDAQ 5828 installed.

For more information, visit **www.bustec.com**.

Learn more about our products on our website by scanning the code below.

ProDAQ 5828 Isolation Amplifier Signal Conditioning Card

SPECIFICATIONS

General	
Number of channels	16
ADC Function Card	ProDAQ 3416
Signal Conditioning	
Input Coupling	DC
Input ranges	±10 V, ±1 V, ±0.1 V, ±0.01 V
Gain	1, 10, 100, 1000
Gain Error	Gain 1, ±0.03% typical, ±0.05% max.
Offset Error	Gain 1, ±0.5 mV typical, ±1.4 mV max.
Input Bias Current	±25 nA typical
IMRR	Gain 1: -120 dB typ. at 50 Hz, -100 dB typ. at 1 kHz Gain 10: -130 dB typ. at 50 Hz, -120 dB typ. at 1 kHz
Effective Input Noise 20kHz Bandwidth	Gain 1: 140 μV_{RMS} Gain 100: 5 μV_{RMS}
Gain Nonlinearity	±0.005% typical
THD	Gain 1: -75 dBc typical (1 V_{RMS}, @1 kHz) Gain 100: -65 dBc typical (FS, @1 kHz)
SNR	Gain 1: 88 dB typical, 80 dB min. (FS, @1 kHz) Gain 100: 64 dB typical, 62 dB min. (FS, @1 kHz)
SINAD	Gain 1: 65 dB typical, 63 dB min. (FS, @1 kHz) Gain 100: 62 dB typical, 59 dB min. (FS, @1 kHz)
Crosstalk	-96 dB typical (Channel-to-Channel, 1 kHz)
Slew Rate	2 V/µs typical
Full Power Bandwidth	50 kHz
Input Protection	±30 V_{DC}
Safety	
Standards	IEC61010-1 Ed3.0, IEC61010-2-30 Ed1.0
Isolation	350 V_{RMS}, Measurement Category II (Channel-to-Ground and Channel-to-Channel)
Pollution Degree	2
Environmental	
Temperature	0 °C to +50 °C (operational) -40 °C to +70 °C (storage only)
Humidity	10% - 90% (non-condensing)
Maximum Altitude	2000 meters
Miscellaneous	
Input Mating Connector	50Ω Isolated BNC
Output Connector	50-pin high density connector
Dimensions	ProDAQ 5720 Signal Cond. Unit ½ wide card
Weight	< 300 g
Warm-Up Time	> 30 minutes
Power Dissipation	28 W

Ordering Information

- **5828-AA** 16-Ch. Isolation Amplifier Sig. Cond. Card with Gains 1, 10, 100, 100

Related Products

- **3416-AA** 16-ch 24-bit Sigma-Delta ADC Function Card, 1 kS/s max.
- **3416-BA** 16-ch 24-bit Sigma-Delta ADC Function Card, 10 kS/s max.
- **3416-CA** 16-ch 24-bit Sigma-Delta ADC Function Card, 50 kS/s max.
- **8010-Bx** Data-I/O cables

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