



PI-41701 Low Noise DC Bias Card

Features:

- ± 8 Volt Output
- ± 100 mA Output Current
- Programmable Current Limit
- Low Noise Circuitry
- V/I Sense

Applications:

- Device Characterization
- CMOS Testing
- FPA Testing
- Test Instrumentation
- Test Systems

Introduction:

The Pulse Instruments PI-41701 Low Noise DC Bias Card, along with other stimulus cards, is designed for the modular instrument platform CompactPCI®. This card is a 6U Eurocard size that will plug directly into the CompactPCI® chassis.

As a test or design engineer you must have state-of-the-art tools to test, characterize and verify your complex semiconductor devices and circuit boards. The PI-41701 Low Noise DC Bias Card is one of the high performance, low-cost test instrumentation tools being developed by Pulse Instruments.

Instrument Description:

The PI-41701 is a dual channel bipolar DC Bias supply that can provide an output current up to 100 mA per channel. The output voltage ranges from -8 V to +8 V and features programmable current limits with LED indicators and software interrupt to show/alert the user if the channel is in current limit. This card has special filter circuitry to reduce the output noise for those applications that require a low noise bias output. Additionally there is a 'D' type connector that allows the introduction of laboratory-type supplies to reduce the noise further. To change from using the internal power supplies to external power supplies requires repositioning a jumper. The PI-41701 also has voltage and current sense for remote measurement of the voltage and current levels. This sense circuitry is accessed via banana jacks on the front board flange. The voltage and current can also be sensed with an 8-bit A/D converter and sent over the bus. This A/D sense circuitry is meant for measurements not requiring high precision. The output connectors are SMA.

Specifications:

Output Voltage: -8.188 V to +8.188 V

Resolution: 4 mV

Accuracy: 0.1% of programmed value ± 10 mV

Output Current: ± 100 mA maximum

Current Limit: Three-decade ranges:
Range/Accuracy:

100 mA: 3% of programmed value ± 3 mA

10 mA: 3% of programmed value ± 300 μ A

1 mA: 3% of programmed value ± 30 μ A

Output Resistance: 75 milliohms for IO
< 100 mA

Output Noise:

Internal Power Supplies

1Hz 750 nV/rtHz

10Hz 500 nV/rtHz

100Hz 500 nV/rtHz

1kHz 750 nV/rtHz

10kHz 100 nV/rtHz



Output Noise:	1Hz	700 nV/rtHz
External Analog	10Hz	450 nV/rtHz
Power Supplies (Typical)*	100Hz	400 nV/rtHz
	1kHz	70 nV/rtHz
	10kHz	50 nV/rtHz

*Actual noise is dependent upon the power supply used

Voltage Sense: 0.2% of reading \pm 5 mV

Current Sense: Three decade ranges:
 Range/Accuracy: 100 mA range: 0.3% of reading \pm 200 μ A
 10 mA range: 0.3% of reading \pm 20 μ A
 1 mA range: 0.3% of reading \pm 2 μ A

Limit Indicator: Red LED limits or Disconnect indicator
 Range/Accuracy: Three decade ranges
 100 mA range: 3% of programmed value \pm 7 mA
 10 mA range: 3% of programmed value \pm 700 μ A
 1 mA range: 3% of programmed value \pm 70 μ A

Voltage ADC Sense: 1 V to 8.188 V, Not specified below 1 volt
 Accuracy: 1% \pm 50 mV

Current ADC Sense: Measurement Available - Not Specified

Power Consumption:

<u>Pwr. Supply</u>	<u>Min</u>	<u>Typical</u>	<u>Max.</u>
5.0 V \pm 5%		0.40Amps	
3.3 V \pm 5%		0.50Amps	
12 V \pm 5%		0.45Amps	
-12 V \pm 5%		0.40Amps	

Mechanical:

- Size 6U Eurocard
- Dimensions 6.30" x 9.18" (160.00mm x 233.35mm)
- One card slot

Ordering Information:

Contact Pulse Instruments Sales at (310) 515-5330 or by email at sales@pulseinstruments.com

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