ProDAQ VXI
Data Acquisition Systems

ProDAQ 3202 Programmable Voltage Reference Plug-In

OVERVIEW

The ProDAQ 3202 voltage reference plug-in is used to provide on-the-fly calibration of Bustec's various high accuracy data acquisition products. The ProDAQ 3202 voltage reference plug-in is plugged directly onto the carrier and distributes the reference voltage to the ProDAQ function cards via a differential signal, thus reducing the effect of common-mode noise on the signal output.

The ProDAQ 3202 voltage reference plug-in features a high-precision +10 V voltage source, which is attenuated using high-precision divider circuits in order to generate stable reference voltages from nominally ±9 V to ±4.5 mV. During factory calibration the actual voltage reference value at each setting is measured using an 8.5 digit DMM and stored in on-board EEPROM. The instrument then uses the actual ProDAQ 3202 output voltage during calibration. Because of this it is unnecessary to adjust the ProDAQ 3202 voltages using potentiometers, for example.

The ProDAQ 3202 also includes an on-board temperature sensor which, when combined with the stored factory calibration temperature and the known typical drift rate of the ProDAQ 3202, provides temperature correction of the stored voltage. For example, the ProDAQ 3202 has maximum drift at +9 V of 39 µV/°C. By getting the difference between the current sensor temperature and the calibration sensor temperature an additional temperature adjustment value is added to the factory calibration value in order to provide a more accurate output voltage. Using this method reduces the maximum drift specification at +9 V to just 8 µV/°C. Note that for the temperature compensation to function the ProDAQ 6100 requires V1.51 firmware and above.

The ProDAQ 3202 voltage reference plug-in output can be switched directly to the programmable gain amplifier of different ProDAQ analog-to-digital converter (ADC) function cards for on-the-fly calibration or for self-test purposes.

Features & Benefits

- Full-scale, programmable calibration from 4.5 mV to 9 V
- Differential output
- Accuracy of ±170 µV at 9 V
- Temperature Compensation
- Low Noise Output

For more information, visit www.bustec.com

Learn more about the ProDAQ 3202 on our website by scanning the code below.

SPECIFICATIONS

OUTPUT

Nominal Output Voltages	±4.5 mV, ±9 mV, ±45 mV, ±90 mV, ±450 mV, ±900 mV, ±4.5 V, ±9 V, 0 V (GND) Remark: The actual output values are measured during calibration and stored on the card.
Output Resistance	< 5 Ω, 3 Ω typical
Max. Capacitive Load	10 nF

1 YEAR ACCURACY (TCAL ± 3°C, 99% CONFIDENCE)

Output	Accuracy (µV)
±9 V	< ±170
±4.5 V	< ±85
±900 mV	< ±30
±450 mV	< ±25
±90 mV	< ±18
±45 mV	< ±16
±9 mV	< ±16
±4.5 mV	< ±16

OUTPUT VOLTAGE DRIFT (TEMPERATURE COMPENSATED)

Output	Typical (µV/°C)	Maximum (µV/°C)
±9 V	4	8
±4.5 V	2	4
±900 mV	1.5	3
±450 mV	1.5	3
±90 mV	1.5	3
±45 mV	1.5	3
±9 mV	1.5	3
±4.5 mV	1.5	3

PHYSICAL CHARACTERISTICS

Dimensions	56 mm x 34 mm
Weight	45 g

POWER REQUIREMENTS

Power Consumption	< 350 mW

ENVIRONMENTAL

Temperature	0°C to +50°C (operational) - 40°C to +70°C (storage only)
Humidity	10% - 90% (non-condensing)

SOFTWARE SUPPORT

Driver support for Microsoft Windows, and Linux
(Contact Bustec Ltd. for more information)

WARRANTY PERIOD

12 months (extended periods available at additional cost)

Ordering Information

- **3202-AA** Programmable voltage reference plug-in

Related Products

- **ProDAQ 6100** LXI Function Card Carrier

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