

ProDAQ LXI Instruments

ProDAQ 6132-AA Isolated Precision Voltage Input LXI Instrument

OVERVIEW

The ProDAQ 6132 is an LXI instrument designed for up to 32-channel isolated precision voltage measurements. Each channel is isolated from both the chassis and all other channels.

The ProDAQ 6132 provides an easy to use, cost effective and scalable solution for the most demanding voltage measurement applications. As a standalone LXI instrument it can be directly connected to your network and operated either through the integrated web pages or integrated to your data acquisition application using the VISA I/O library. Measurement data can be read from the instrument or directly streamed to one or several servers. Multiple devices can be synchronized via the IEEE1588 precision time protocol. The unit is equipped with a redundant power supply and two Ethernet ports.

FEATURES

Analog Inputs: Each channel of the ProDAQ 6132 has a 16-bit SAR ADC to provide the highest possible measurement accuracy. Each channel is isolated from any other and also from the chassis, with a working isolation voltage up to 300V continuous. This allows any channel not only to float to different voltage potentials but also reduces the possibility of ground loop error. Each channel is protected against overvoltage, both short-term transient spikes as well as constant DC voltages up to $\pm 30V$. An EMI filter is included per channel to reduce the possibility of error due to high-frequency conducted noise. Each channel has four independent gain and three independent filter settings.

Simultaneous Sampling: The ProDAQ 6132 has a dedicated ADC per channel. This allows for true simultaneous sampling of all channels. The maximum scan rate per module is 2000 S/s.

Various Mounting Options: The ProDAQ 6132 comes in a 1U high unit suitable for rack mount in a standard 19" rack if used with the ProDAQ 5725 Rack-Mount kit. The ProDAQ 6132 can also be desktop mounted using the ProDAQ 5726 Stackable Tabletop Feet Set.



Features & Benefits

- ▶ **19", 1U** Solution for **32 Voltage Input Channels**
- ▶ **Channel Isolation** up to **$\pm 300V$ continuous** (input to input, inputs to ground and between inputs, outputs and power supplies)
- ▶ **Simultaneous Sampling** of all channels
- ▶ **Up to 2kS/s** sample rate
- ▶ **Gains** of 1, 2, 4 and 8
- ▶ **Three Low Pass Filters** of 10Hz, 100Hz and 1kHz
- ▶ **Redundant** Power Supply
- ▶ **Dual** Ethernet Ports



SPECIFICATIONS

ProDAQ 6132 Isolated Precision Voltage LXI Instrument

General

Number of signal channels	32
Isolation	300 V _{RMS} (Channel to channel and channel to chassis)
ADC Resolution	16-bit
ADC Sampling Rates	1 Hz to 2 kHz, 1 Hz resolution
Analog Bandwidth, 3dB	10 Hz, 100 Hz, 1 kHz
Analog BW Tolerance	±2 % typical, ±10 % maximum
Channel Input Protection	±30 V DC
Input Impedance	≥1 MΩ, 10 MΩ typical
Input Connectors	25-pin Female D-Sub x 8 (4 Channels per connector)

Voltage Measurement

Input Signal Type	Differential, DC coupled, Voltage	
Input Ranges	±1.25 V, ±2.5 V, ±5 V, ±10 V	
Gain Steps, G	1, 2, 4, 8	
Voltage Resolution	305/G μV	
Input Offset Error	±(0.05+0.2/G) mV typical, ≤ ±0.1% FSO	
Full Scale Error	±(0.1+0.2/G) mV typical, ≤ ±0.1% FSO	
DC Accuracy, any voltage	±(0.1+0.2/G) mV typical, ≤ ±0.1% FSO	
Digitizer Non-Linearity	±0.01% maximum	
Input Offset Current	±2 nA typical, ±10 nA maximum, 10 °C to 30 °C	
Input Bias Current	±15 nA typical, ±50 nA maximum, 10 °C to 30 °C	
Filtering	2-pole analog Bessel anti-aliasing filter, 10 Hz, 100 Hz and 1 kHz selectable	
Filter implementation	Hardware	
CMRR, DC to 50Hz	≥75dB, 120 dB typical, all gains	
CMV	± 10 V	
Temperature Stability	8 ppm/°C typical at Full Scale, < 70 ppm/°C maximum	
Calibration	External calibration source	
AC Performance Sinewave, 10 Hz, Gain 1, 18 V _{PP} 100 Hz Filter, 1 ksp	SNR	92 dB typical, 90 dB minimum
	SINAD	91 dB typical, 89 dB minimum
	THD	0.001 % typical, 0.002 % maximum
	SFDR	105 dB typical, 98 dB minimum
AC Performance Sinewave, 10 Hz, Gain 8, 2.25 V _{PP} 100 Hz Filter, 1 ksp	SNR	91 dB typical, 90 dB minimum
	SINAD	87 dB typical, 86 dB minimum
	THD	0.003 % typical, 0.004 % maximum
	SFDR	91 dB typical, 90 dB minimum
Crosstalk, Sine wave all channels, Gain 1, 20 V _{PP} , 50 R to IGND on channel under test 1 kHz Filter, 1 ksp, Balanced Input	f _{IN} = 300 Hz	118 dB typical, 102 dB minimum
	f _{IN} = 900 Hz	110 dB typical, 102 dB minimum
Noise, all filter settings	0.2/G mV _{RMS} typical, 0.3/G mV _{RMS} maximum	
Warm-up Time	≥ 30 minutes	

Ordering Information

- ▶ **6132-AA** LXI Isolated Precision Voltage Input Instrument, 32 Channel

Related Products:

- ▶ **5725-AA** Rack-Mount Kit
- ▶ **5726-AA** Stackable Tabletop Feet Set

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Control Interface	
Physical Interface	Two redundant network ports, 10/100/1000 Base-TX
Software Interface	SCPI over VXI-11 protocol (VISA), TCP/IP, Web Interface
Operating System Support	Windows 10
Environmental	
Temperature	5 °C to +50 °C (operational) -40 °C to +70 °C (storage only)
Humidity	5% - 95% (non-condensing)
Size	425 mm x 330 mm x 43.5 mm (excl. connectors)
Weight	5 kg
Power Supply	
Input	Two redundant inputs, 85 - 264V AC, 47 - 63 Hz each
Power	40 W typical

