DAQ832

32-channel, 16-bit Instrumentation Recorder

The DAQ800 series of Instrumentation recorders are data acquisition systems that feature high performance analog-to-digital conversion with associated signal conditioning. Easy to set up by using DynaDAQ software.

FREE VersaDAQ Demo Software

TYPICAL APPLICATIONS

Transient testing

Material analysis

Design verification

Stress testing

Quality control

Acoustic & vibration measurements

32 channel, 16-bit digital data recorder for high-speed data acquistion.

FEATURES

- 32 Channels of dynamic recording at up to 6.4 Mbytes per second

- Analog to Digital conversion with 16-bit resolution and sigma-delta technology

- Independent programmable gain per channel

- Fiber-optic connection to host computer for high noise immunity

- Windows based DynaDAQ software interface for system setup and data monitoring

- Removable screw-type termination blocks

- Data conversion down loadable in ASCII/binary format to post-process analysis programs

GENERAL DESCRIPTION

The DAQ832 instrumentation recorder is a data acquisition system that features high performance analog-to-digital conversion with associated signal conditioning. This instrument, coupled with a dedicated host computer running the Windows NT operating system, combines to form a complete data acquisition system.

The maximum sampling rate of the DAQ832 is 200,000 samples-per-second. Each channel contains a sigma-delta analog-to-digital converter. The sigma-delta architecture provides inherent filtering and synchronous sampling without the need for costly sample/hold amplifiers or sophisticated analog anti-aliasing filters. The DAQ832 can support aggregate data rates up to 6.4 megabytes per second.

Each channel has independently programmable input spans from ±10mV to ±10V, which is provided by an instrumentation amplifier on the input. The DAQ832 has 10 selections for the voltage-input range to ensure full utilization of the ADC's dynamic range. An option is available to allow voltage input ranges of up to ±15 V.

Connections for field wiring are accommodated by screw-type terminations located on the front of the unit. Each channel termination consists of signal, return and shield. Two ground terminations are also available for external connection. The screw-type termination blocks are removable to allow easy access to the connections.

An option associated with the termination panel includes the addition of trifilar wound transformers for improved common-mode rejection. This is particularly important since high frequency common-mode voltages can produce offsets error when acquiring low-level signals.

The communication connection to the host computer is accomplished through a pair of fiber-optic cables. This connection is used for setup, control, and data collection. The fiber-optic transmission media provides high noise immunity in a very small form factor.

(NOTE: The host computer is dedicated for the data acquisition process and therefore cannot be used as a general purpose PC while in data acquisition mode.)

The data acquisition setup and configuration is controlled by software resident on the host computer. Prior to data collection, a monitoring function allows the user to verify input connections to the DAQ832 through a series of utility functions. These functions include a graph view and numeric display for validation of the sensor inputs. Once data has been collected on the host computer in binary format, a viewer is available to examine the data collected. This viewer can display data collected in many visual formats. The binary file viewer is configurable by the user to satisfy multiple viewing requirements. The viewer also contains functions for searching the collected data and for measuring both time and amplitude. The binary data collected can be converted to tab delimited ASCII format so that the data can be imported into third party data analysis packages.

Item	Specification
Number of Input Channels	32
Input Signal Range	+/-10mV to +/- 10V with 1, 2, 5, 10 gain progression (Std) +/-15mV to +/- 15V with 1, 2, 5, 10 gain progression (V option)
Input Bandwidth	Up to 92.8 kHz (-3 dB) at maximum sampling rate
Stopband Rejection	-96 dB above 107.2 kHz at maximum sampling rate
Input Protection	±17 V
Common Mode Input Range	±10 V
Common Mode Rejection	80 dB, DC to 50 kHz
Input Impedance	20 Megohms
Maximum Conversion Data Rate	Programmable up to 200 ksamples/seconds/ channel
Conversion Rate Selections	200K, 100K, 50K, 25K, 12.5K, and 6.25K samples/sec
Aggregate Data Rates	6.4 Megabytes/sec (3.2 Mega samples/sec)
Maximum Conversion Rates as it relates to active number of Channels	8 channels at 200 ksamples/second/channel 16 channels at 200 ksamples/second/channel 32 channels at 100 ksamples/second/channel
ADC Resolution	16 Bits
Dimensions (height x width x depth)	15.3 x 6.0 x 21.6 (inches)
Weight	24.8 pounds

ORDERING INFORMATION

Description	Part Number
32 Channel Instrumentation Recorder	DAQ-832
32 Channel Instrumentation Recorder with Trifilar	Model DAQ 832T
32 Channel Instrumentation Recorder with +/-15V Input Range	Model DAQ 832V
32 Channel Instrumentation Recorder with Trifilar Transformers and +/-15V Input Range	Model DAQ 832TV

Specifications contained within this data sheet are subject to change without notice.

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