MICRO MEASUREMENTS
A VPG Brand

Data Acquisition Conditioner

FEATURES

- Four input channels with RJ45 connectors
- Quarter, half, and full bridge circuits
- Built-in bridge completion and shunt calibration
- 120, 350, and 1000 Ω dummy gages
- Automatic zero-balancing
- 8 Hz sampling rate
- Intuitive, user-friendly software communicates with up to six D4 units simultaneously
- Full control of all functions via USB Interface
- Portable, lightweight, and rugged design
- Powered via USB interface
- Programmable for custom applications

DESCRIPTION

The Model D4 Data Acquisition Conditioner is a portable, USB-powered precision instrument for use with resistive strain gages and strain gage-based transducers.

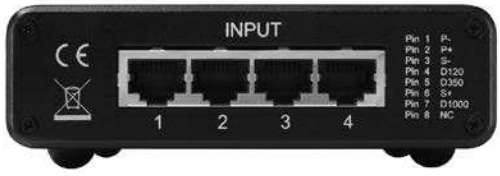
The Model D4 has four channels of data acquisition. Connection to each channel is via a RJ45 connector. Each channel of input accepts either quarter, half, or full bridge configuration. All required bridge completion components for 120, 350, and 1000 Ω bridges are supplied.

Operation of the Model D4 is performed with commands sent via the USB connection. User-friendly application software is provided to control the D4 with a MS Windows-based personal computer. The software connects with up to six D4 units to create a system of up to 24 channels. The D4 units can be connected directly to a computer through its USB ports or through a USB hub.

A Programmer's Reference Kit that includes a Programmer's Reference Manual, a NI LabVIEW instrument driver, and programming examples to simplify writing custom applications is also included. The D4 is also supplied with a calibration software utility that allows calibration of the D4 via the USB interface. The application software, Programmer's Reference Kit, and Instruction Manual are on a single CD included with the D4 unit.

The Model D4 uses modern digital signal processing technology to provide excellent noise rejection and stability. Proprietary scaling and linearization algorithms provide unsurpassed measurement accuracy for strain gage bridge measurements.

Front Panel



Back Panel

Data Acquisition Conditioner

SPECIFICATIONS

All specifications are nominal or typical at +73°F (+23°C) unless noted.

PARAMETER	SPECIFICATIONS
INPUT CONNECTIONS	
Type	RJ45
Quantity	4
BRIDGE CONFIGURATIONS	Quarter, half, and full bridge circuits. Internal bridge completion provided for 120, 350 and 1000 Ω quarter bridges, 60 to 2000 Ω half or full bridges.
DATA CONVERSION	
A/D Converter:	Delta-sigma with integral chopper-stabilized programmable gain instrumentation amplifier
Resolution:	24 bits. Noise-free resolution: 18 bits typ.
Filter:	Integrated linear phase FIR Sinc5 filter followed by a Sinc3 filter with a programmable decimation rate. Software selectable output rate provides >120 dB rejection of 50 or 60 Hz and higher level harmonics
MEASUREMENT RANGE/RESOLUTION	
Strain Range:	±31,000 με at GF = 2.000. (±15.5 mV/V)
Resolution:	±1 με at GF = 2.000 (±0.0005 mV/V)
MEASUREMENT ACCURACY	±0.1% of reading ±3 counts (Instrument Gage Factor = 2.000)
GAGE FACTOR CONTROL RANGE	0.500 to 9.900
BALANCE CONTROL	
Type:	Software
Control:	Manual or automatic
BRIDGE EXCITATION	
Value:	1.5 VDC nominal
Control:	Software enable/disable
Ratiometric measurement	Not degraded by variations in excitation voltage
SHUNT CALIBRATION	Shunt calibration across each dummy resistor to simulate 5000 με (±0.1%)
COMMUNICATION INTERFACE	USB 2.0. Cable included
POWER	USB, 5V 100 mA
ENVIRONMENTAL	
Temperature:	+32° to 122°F (0° to +50°C)
Humidity:	Up to 90%, non-condensing
CASE	
Material:	Aluminum
Size:	4.3 W x 1.4 H x 5.7 L inches (110 x 36 x 145 mm)
Weight:	0.8 lb. (0.36 kg)

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