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Student Strain Gage Data Acquisition Device

FEATURES

- Single-channel strain gage data acquisition
- Hardware and software support for full-bridge, half-bridge, and quarter-bridge circuits
- Built-in bridge completion
- 3-wire strain gage connection
- 80-Hz data rate
- Fixed excitation of 2.5 V
- Input range of ±16,000 με
- Powered via the USB interface
- Intuitive, user-friendly software
- No calibration is needed
- Units: με, mV/V, and engineering units (user defined)
- Time stamped recorded data

DESCRIPTION

The Student Data Acquisition Device is a single-channel, USB-powered measurement device for use with resistive strain gages. Internal bridge completion supports full-, half-, and quarter-bridge configurations.

Model	3-Wire Quarter Bridge
MM01-120	120 Ω
MM01-350	350 Ω
MM01-1K	1000 Ω

This device is designed for use in applications where a convenient, low-cost, easy-to-use strain gage measurement is required. It is ideal for classroom environments or gage installation verification.

Operation of the StudentDAQ is performed with commands sent via a USB connection. User-friendly application software is provided to control the StudentDAQ with a Microsoft® Windows®-based personal computer. Complete source code, written in National Instruments® LabVIEW® is provided. A .NET interface is also included.

SPECIFICATIONS

Input Connections

Type: RJ-45 Modular

Quantity: 1

Bridge Configurations

Types: Quarter, half, and full bridges

Internal bridge completion:
Quarter bridge: 120 Ω, 350 Ω, 1000 Ω
Half bridge: 1000 Ω

Data Conversion

A/D converter:
24-bit delta-sigma with a low-noise amplifier (gain of 50)

Measurement Range

Strain range: ±16,000 με at GF=2.000

Resolution: 1με (GF = 2.000)

Accuracy: 1% of reading (GF = 2.000)

Balance Control

Type: Software

Control: Manual

Bridge Excitation

Value: 2.5 VDC nominal

Control: Fixed

Communication Interface

Universal serial bus (USB)

Case material:

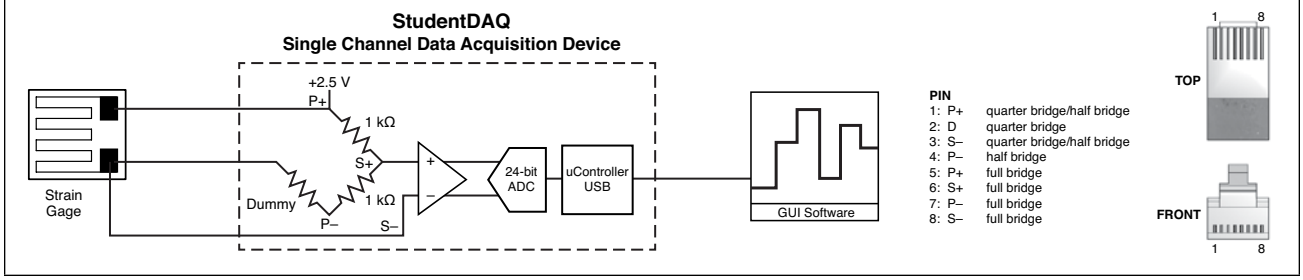
Plastic

Size and Weight:

1.0 W x 1.0 H x 3.5 L inches (25.4 x 25.4 x 88.9 mm)

0.05 lb (0.023 kg)

Block Diagram



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