

## Student Strain Gage Data Acquisition Device

### FEATURES

- Single-channel strain gage data acquisition
- Hardware and software support for full-bridge, half-bridge, and 120Ω 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  $\pm 16,000 \mu\epsilon$
- Powered via the USB interface
- Intuitive, user-friendly software
- No calibration is required



### 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.

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: 120Ω

Half bridge: 1000Ω

#### Data Conversion

**A/D converter:**

24-bit delta-sigma with a low-noise amplifier (gain of 50)

#### Measurement Range

**Strain range:**  $\pm 16,000 \mu\epsilon$  at GF=2.000

**Resolution:** 1% of reading (GF = 2.000)

#### Measurement Accuracy

**Resolution:** 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

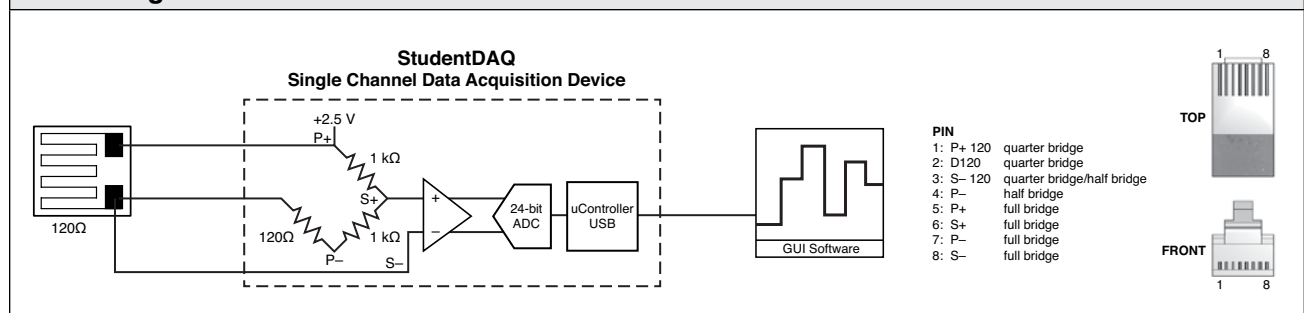
#### Size:

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

#### Weight:

0.05 lb (0.023 kg)

### Block Diagram





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