

## **SEN2101 Force Sensor (50g)**

*PowerLab Sensors Series*

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### **Description**

A low-cost amplified bridge-type force sensor with a measuring range of 50 g. The sensor provides a fixed +4.8 V excitation source for the internal sensor. Software-controlled DC offset adjustment is provided. A detachable mounting bar is incorporated with the unit.



### **Theory of Operation**

The Force Sensor provides excitation and signal amplification for its internal strain-gauge transducer in a single device. An excitation voltage of 4.8 V is applied to the transducer, with the output signal being differentially amplified. Offset adjustment is provided, allowing transducer offsets or pretension load signals to be removed before recording.

### **Operation**

To use the Force Sensor, plug it into the USB port of a laptop or desktop computer with a Windows or Mac operating system. Alternatively, plug the sensor into the PowerLab T1 or a USB hub connected to that computer. A blue LED on the connector housing indicates the sensor is receiving power and is ready for use.

## Application

Typical measurements using strain-gauge transducers include force, smooth muscle contractions, displacement, animal arterial and venous pressure.

## Typical Data

The data below show force and ECG recordings from a frog heart.



*Force and ECG*

## Caution

Read “Statement of Intended Use” on our website.

## Specifications

Linear Operating Range:	50g
Input ranges:	5 mV
DC drift:	<0.1% full-scale per deg C
Combined signal-noise ratio:	>60 dB (200Hz bandwidth)
Full Scale Output:	0.54 mV @ 50g
Load Cell Sensitivity:	10.8 $\mu$ V/g
Minimum Reliable Force:	0.05 g
DC offset adjustment:	software-controlled
Operating conditions:	0 – 40 °C, 0 – 90% humidity — non-condensing
Weight including cable:	140g
Enclosure size (l×w×h):	57x30x19 mm (excluding mounting bar)
Cable length:	1.8m (5.9')

All specifications were tested at the time of printing and are subject to change.

## Ordering Information

SEN2101 Force Sensor (50g)

For use with:

Laptop or desktop computer with Windows or Mac operating system

**ADINSTRUMENTS.com**

ISO 9001:2015 Certified Quality Management System

WARRANTY: 1 year as per ADInstruments warranty terms for PowerLab Sensors.