

SEN2081 Respiratory Belt Sensor

PowerLab Sensors Series

Description

The PowerLab Sensors Respiratory Belt generates a voltage when there is a change in thoracic or abdominal circumference due to respiration. It contains a capacitive sensing element and custom electronics that respond linearly to changes in length. It is comfortable to wear, and reliable.



Operation

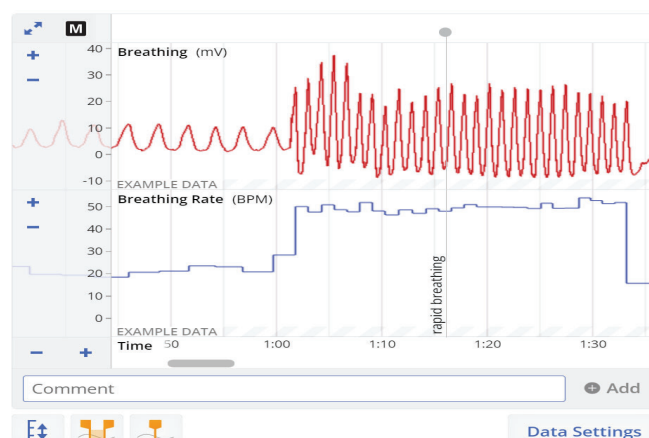
The transducer contains a flexible sensing element bonded to the inside of the fabric belt. The electronics in the plug will output a voltage proportional to how much the sensing element is stretched. Measurements are highly repeatable and can be calibrated to true displacement. The device should be placed around the body at the level of maximum respiratory expansion. This level will change between upright and supine positions. The adjustable strap allows size adjustment. The belt should be pretensioned slightly.

To use the Respiratory Belt Sensor, plug the sensor 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 a computer. A green LED on the connector housing indicates the transducer is receiving power and is ready for use.

Application

The PowerLab Sensors Respiratory Belt is used to observe respiration by measuring changes in abdominal or thoracic circumference. These measurements can indicate inspiration and expiration as well as derived breathing rate. The transducer may be used to characterize breathing patterns.

Typical Data



Typical breathing trace showing normal and rapid breathing

Caution

Read "Statement of Intended Use" on our website.

Cleaning and Care

Gently clean belt, cable, and connector housing (take care to avoid the actual connection pins with a disinfectant wipe. Ensure that excessive amounts of liquid disinfectant are not used on the connector housing. Do not immerse the USB connector.

Specifications

Output:	0 to 100 mV
Connector:	USB
Rest Sensor length:	80 mm (3.2")
Maximum elongation:	60 mm (2.4")
Width:	25 mm (1")
Belt Length (min):	220 mm (8.7")
Belt Length (max):	1400 mm (4.6")
Cable Length:	1.8 m (5.9")

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

Ordering Information

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For use with:

Laptop or desktop computer with Windows or Mac operating system