

ML320 Oximeter Pod

Pod Series

Description

The Oximeter Pod is designed to allow non-invasive measurement of blood oxygen saturation (SpO₂) using a Finger-Clip or Ear-Clip transducer. The Oximeter Pod will produce a direct saturation reading between 70 and 100% without the need to perform any other scaling.



System Compatibility

The Oximeter Pod connects to any PowerLab hardware units with Pod ports (8-pin DIN inputs). PowerLab and MacLab (except 4s, 8s and 16s) units without Pod ports require the FE305 Pod Expander.

The Oximeter Pod is supported by the following versions of ADInstruments software:

WINDOWS

- LabChart v6 or later
- Chart v3.4.8 or later
- Scope v3.6.3 or later

MACINTOSH

- LabChart v6 or later
- Chart v3.6.3 or later
- Scope v3.6.3 or later

Note: Earlier software versions do not support Pods.

Visit our website for information on operating system requirements.

Transducer Compatibility

The Oximeter Pod is designed to operate with ADInstruments supplied Finger-Clip and Ear-Clip transducers. The Oximeter Pod should not be used with any other type of SpO₂ transducer as damaged or inaccurate readings may result. The Oximeter Pod may be used with transducers manufactured by Nonin.

Applications

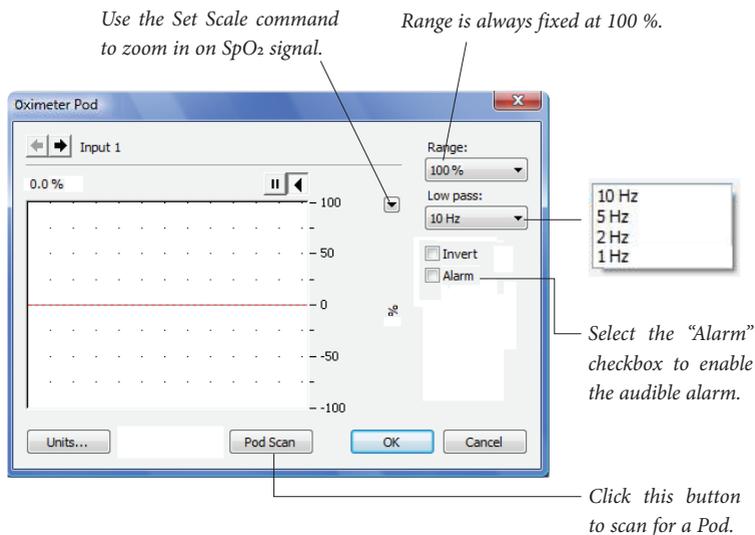
The Oximeter Pod is suitable for the measurement of oxygen saturation in the range 70 to 100 %.

Theory of Operation

The Oximeter Pod is designed to measure blood oxygen saturation (SpO_2) in pulsatile tissue. It does this by applying short pulses of light from semiconductor light emitting diodes in the transducer. The light is emitted through the tissue at two different frequencies and the level of transmitted light and received light is measured. Calculations are performed using the recorded level of transmitted light and the received light, which is then used to derive the SpO_2 reading. The light sources are semiconductor diodes located either in a Finger-Clip or Ear-Clip transducer. The Oximeter Pod produces an analog output voltage that is proportional to the oxygen saturation.

Operating Instructions

Connect a Finger-Clip or Ear-Clip transducer to the 9 pin D-type connector on the rear of the Oximeter Pod. Connect the 8-pin DIN cable from the rear of the Oximeter Pod to a PowerLab Pod Port or a Pod Expander connected to a PowerLab. Do not connect other devices such as a Front-ends or Instruments to the corresponding BNC connector on the channel used by the Pod. Pods can be connected to the PowerLab unit while ADInstruments software is running, but not when recording data. Once detected, the functions of the Oximeter Pod are combined with those of the PowerLab and software, replacing the Input Amplifier dialog with the Oximeter Pod dialog (shown below).



Using the Oximeter Pod

The Oximeter Pod is ready to be used straight away. Simply plug in the Finger-Clip or Ear-Clip transducer to the Oximeter Pod, run LabChart, Chart or Scope software and start recording. The Oximeter Pod is pre-calibrated to read in % SpO₂. The scale is fixed at 100% SpO₂ but can be adjusted by either stretching the vertical axis or using the Set Scale feature.

Note that it takes approximately 10 seconds for the Oximeter Pod to produce an accurate output from the time it is plugged in and the transducer is attached to the subject. If the Oximeter Pod cannot detect the subjects pulse, the reading will drop to 70% (corresponding to a loss of signal). If the Alarm check box is checked then you will also hear a continuous beep indicating that a pulse could not be detected. The alarm will also sound if the value of the SpO₂ drops below 70%.

Note that occlusion of the limb to which the transducer is attached may result in the loss of a detectable pulse and hence a loss of signal. To avoid this, the transducer should not be used for oximetry measurements on limbs fitted with blood pressure cuffs or other devices that may affect the pulse in the extremities.

Transducers

Finger Clip or Ear Clip transducers connect directly to the 9-pin socket on the rear of the Oximeter Pod.



MLT321 SpO₂ Finger Clip Transducer



MLT322 SpO₂ Ear Clip Transducer

Stacking and Unstacking Pods

Pods stack by clicking into place on top of each other. To separate stacked Pods, push the top Pod towards the back and then pull them apart from the back. See picture on right.



Caution

Read "Statement of Intended Use" on our website or in "Getting Started with PowerLab" before use. The Oximeter Pod is designed to operate only with ADInstruments approved finger or ear-clip transducers. The Oximeter Pod should not be used with any other type of SpO₂ transducer as damage or inaccurate readings may result. The Oximeter Pod may also be used with transducers manufactured by Nonin.

Specifications

Operating Principle:	Non-invasive blood oxygen saturation (SpO ₂) determination using red and infrared light passed through pulsating blood in vascular tissue.
Saturation range:	70 – 100%
Accuracy (70 – 100% saturation):	±2% for adults using Finger clip sensor ±4% of full scale using Ear clip sensor
Measurement wavelength:	Red (660 nm) Infrared (910 nm)
Measurement rate:	1 reading per second
Range:	18-320 BPM
Output signal:	1.75 V for 98 %
Resolution:	1 % steps
Operating conditions:	0 – 35°C, 0 – 90 % humidity (non condensing)
SpO ₂ acquisition time:	~10 second

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

Ordering Information:

Human Use Only:

ML320/F Oximeter Pod (Adult Finger Clip)

ML320/E Oximeter Pod (Ear Clip)

Additional transducers may be ordered separately:

MLT321 Adult Finger Clip (Human use only)

MLT322 Ear Clip (Human use only)