

VitalSense®-XHR Sensor

Heart Rate & Respiration Rate Sensor



The VitalSense-XHR sensor is an **innovative, compact device** that wirelessly transmits Heart Rate and Respiration Rate to the VitalSense telemetric physiological monitoring system.

This state-of-the-art sensor enables researchers to monitor heart rate and respiratory rate on ambulatory subjects.

The XHR is a chest-worn wireless physiological monitor that incorporates an ECG-signal processor. It attaches to two standard ECG pads or to a dry electrode band. The XHR senses heart rate and respiratory rate and transmits the data in near real time to the VitalSense® monitor four times per minute. The monitor logs the data in nonvolatile memory.

The XHR sensor is:

- Accurate
- Water-resistant
- Lightweight
- Comfortable

Battery Function

The rechargeable battery in the XHR provides four days of battery life on a full charge.

The proprietary multi-charger can reset and recharge up to three devices simultaneously.

Data

Data are downloaded, stored and/or exported via the proprietary VitalSense application software. The software is a user-friendly Windows®-based program and allows for data storage in text or VitalSense Binary Format. Files can be exported in plain text format or in Microsoft Excel® file format.

Specifications

HEART RATE RANGE	16 – 240 BPM
HEART RATE RESOLUTION	+/- 1 BPM
HEART RATE ACCURACY	> of +/- 10% or 5 BPM
RESPIRATION RATE	2 RPM ≤ 1/4 the HR

VS-XHR meets AAMI EC-13 standard for Heart Rate monitors (applicable clauses)

VitalSense-XHR Sensor is not for sale in the U.S.

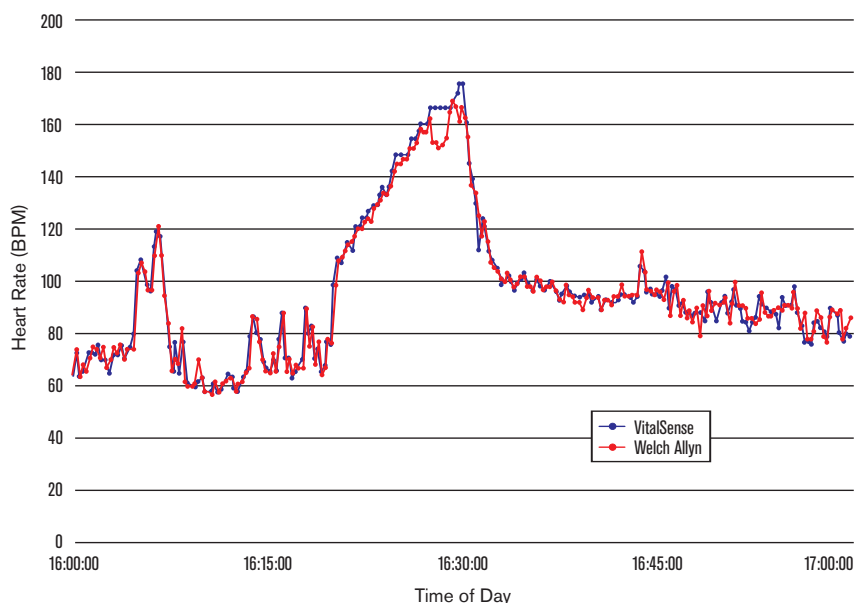


A Shared Vision. A Shared Future.

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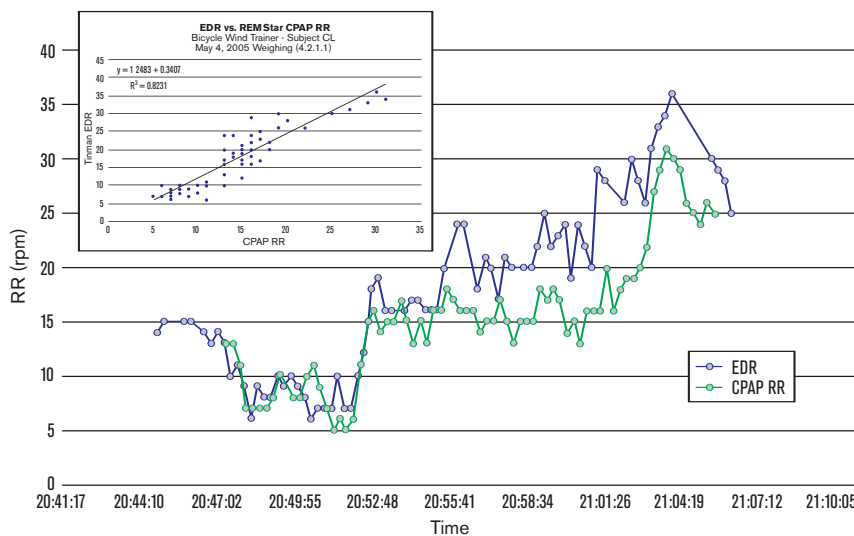
SB 02/17/06 MCI 4100426

VitalSense HR Compared to Welch-Allyn Atlas Monitor HR Treadmill Exercise



Heart rate is measured every 15 seconds by both the VitalSense-XHR heart rate sensor and the Welch-Allen Electrocardiogram during treadmill exercise. There is a linear correlation between the two devices, $R^2=0.97$. The XHR has fewer artifacts at peak treadmill exercise.

Respiration Rate – EDR & REMStar CPAP Bicycle Wind Trainer



Respiratory rate is ECG derived. This demonstrates the relationship between Electrocardiogram Derived Respiration (EDR) and respiration measured by a Respironics CPAP device during bicycle ergometry. There is a significant correlation between the two methods, $R^2=0.82$.

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