

sentec

Digital Transcutaneous
Blood Gas Monitoring



SenTec OxiVenT™ Illuminate Ventilation and Oxygenation

PCO2 | **PO2**

Continuous | Noninvasive | Safe | Easy to Use | Accurate



OxiVenT™ – overcoming limitations of arterial blood gases, etCO₂ and SpO₂ monitoring

Assessing ventilation and oxygenation in neonatal patients is a challenge. With the SenTec OxiVenT™ Sensor, a new generation of transcutaneous measurement technique overcomes the limitations of current methods and helps healthcare professionals to guide ventilation and oxygenation-related treatments in neonates

**For better patient outcomes
where it matters most.**



Why SpO₂ is not enough

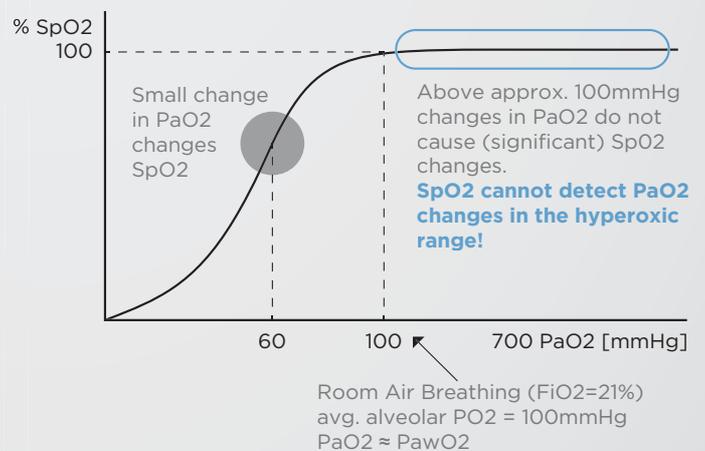
Due to the S-Shape of the 'oxyhemoglobin dissociation curve' (ODC) hyperoxemia/hyperoxia cannot be detected by pulse oximetry (SpO₂). Monitoring tcPO₂ provides a crucial parameter to avoid the risk of hyperoxia and severe complications such as **Retinopathy of Prematurity (ROP)**.

Arterial Blood Gas sampling

Provides only a snapshot every few hours and bears the risk of invasiveness, especially in neonatal patients.

EtCO₂ Monitoring

Is sometimes inefficient in patients with small tidal volumes and inapplicable in certain ventilation modes such as HFO.



Dedicated to neonatal needs

SenTec's revolutionary OxiVenT™ Sensor featuring optical tcPO2 combined with state-of-the-art tcPCO2 technique provides continuous and accurate feedback on ventilation and oxygenation changes.

Different display options:

tcPCO2, tcPO2 and heating power trends



Baseline and Delta values

Two different SenTec TC Sensors¹ connectable:



V-Sign™ Sensor:
PCO2 measured by Stow-Severinghaus type PCO2 sensor
- reliable and safe
- clinically trusted for more than 10 years



OxiVenT™ Sensor:
PCO2 | PO2
tcPO2 measured by dynamic fluorescence quenching
- virtually drift free
- high accuracy

¹ For pediatric & adult patients additional SpO2 & Pulse Rate available in the same Sensor.

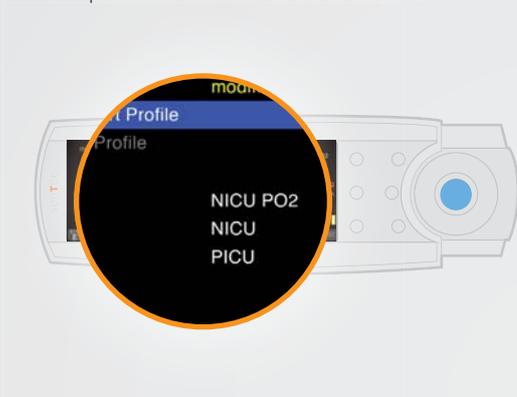
Set baseline and markers

Set a baseline just before changing the treatment to assess the impact on the patient's ventilation and oxygenation.

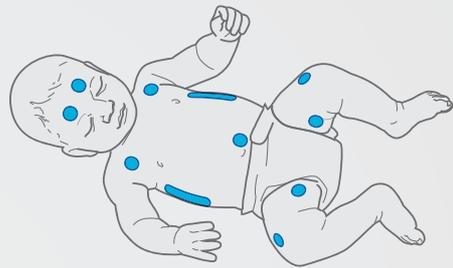


User profiles

Quickly adapt settings to your needs: select individually customized profiles stored on the monitor.



Select from multiple recommended measurement sites

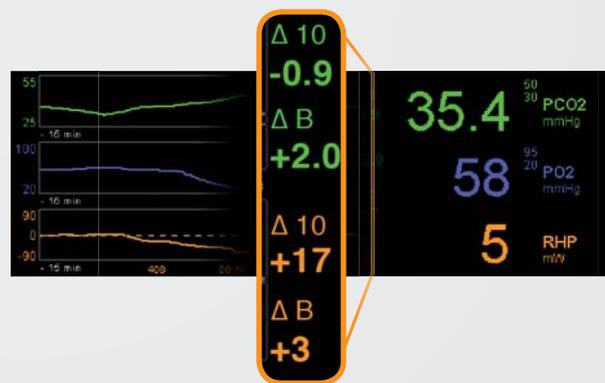


Trendlines allow early detection of ventilation and oxygenation changes

Estimates of PaCO2 and PaO2 in trendline, baselines, and delta values.

Relative Heating Power

(RHP) shows the required heating power to keep the Sensor at set temperature. Changes of RHP may be attributable to changes in perfusion.



Delta values

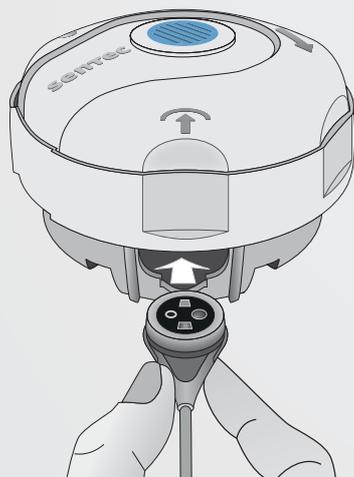
Numerical indication of the difference between the current reading and the reading from the set Baseline and 10 min before.

Effective and efficient monitoring

Save your time for the important tasks

SmartCalMem

Disconnect the Sensor (e.g. to untangle cables or to move the patient) without removing the Sensor from the patient. No need to recalibrate the Sensor when re-connecting.



Automatic calibration management

Simply store the Sensor in the Docking Station - calibration is fully automatic. Within a few minutes "Ready for Use" status is established and maintained until patient application.

Easy maintenance

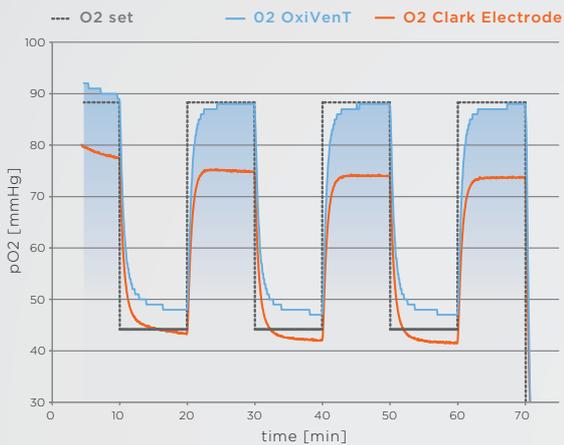
One simple tool to perform the membrane change. Membrane life up to 42 days.

Transportable

Lightweight, dedicated mounting plates/roll stands, battery life up to 10 hours.



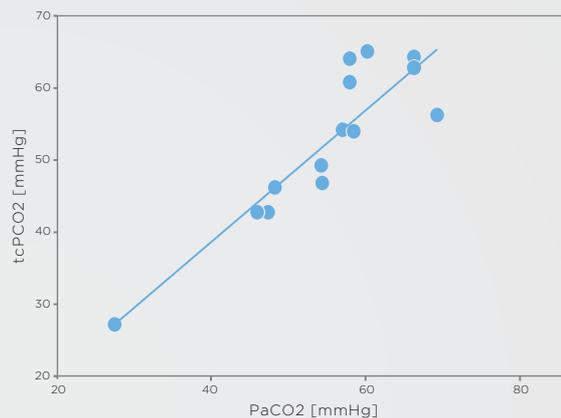
Excellent accuracy



In Vitro performance test of the SenTec OxiVenT™ tcPO₂ compared to a clark type electrode demonstrates higher accuracy [internal data].

Safe sensor temperature and site time management

- Redundant sensor temperature controls to avoid the risk of skin irritations.
- Automatic, institution-restrictable site time control and site inspection intervals.
- Automatic sensor temperature reduction if site time has elapsed and site inspection is missed.
- Safety-relevant parameters are password protected.
- A low Sensor temperature of 41°C (tcPCO₂) and 43°C (tcPO₂) is recommended in neonatal patients.



Comparison between tcPCO₂ measured with the SenTec Digital Monitoring System and arterial carbon dioxide in neonatal patients [Rowley] shows high correlation and accuracy*.

Automatic artifact detection

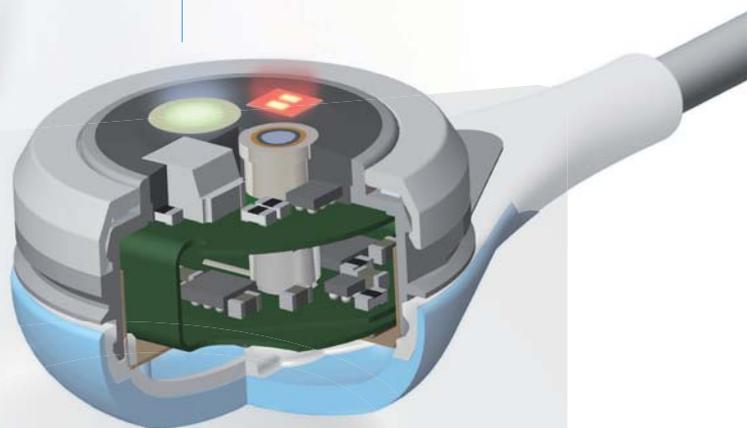
Automatic data quality verification and artifact detection.

*Poster presentation at AARC in 2008: Daniel D. Rowley et al, Charlottesville, Virginia, U.S.A. Also refer to Storre JH, Magnet FS, Dreher M, Windisch W. Transcutaneous monitoring as a replacement for arterial PCO₂ monitoring during nocturnal non-invasive ventilation. *Respir Med* 2011;105:143-150.

Reliable and safe

Best signal quality

Digital Sensor with integrated CPU. Measured signals are digitized and preanalyzed in the Sensor head for the best signal quality.



Multi Site Attachment Rings (MAR)

The design enables a gentle sensor application and a smooth removal without damaging the sensitive skin.



e.g.
Dräger, Philips
and EMR

Connectivity / Data Management

Direct connectivity to Patient Monitoring Systems.

Clinically trusted

Clinical usage of over 1000 SDMS with V-Sign™ in neonatal units and over 2000 SDMS in pediatric/adult units around the world.



Continuous and noninvasive monitoring of tcPO₂ and tcPCO₂ supports the therapy guiding in Neonates in...

- ... **noninvasive ventilation**
- ... **HFO / HFJV ventilation**
- ... **volume-targeted ventilation**
- ... **volume-limited ventilation**
- ... **lung recruitment**
- ... **oxygen titration**
- ... **weaning from mechanical ventilation**
- ... **decision to (re-)intubate or extubate**

Contact SenTec in Switzerland or our worldwide distribution partners.

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SenTec AG

Ringstrasse 39
CH-4106 Therwil
Switzerland
+41 61 726 97 60

www.sentec.ch



Your local distributor: