

## Technical data

Specification	OEM I	OEM II	OEM III	
Measurement Range	SpO <sub>2</sub>	0 - 100 %	0 - 100 %	0 - 100 %
	Pulse Rate	20 - 300 bpm	0 - 300 bpm	0 - 300 bpm
	Perfusion	0.02 - 30 % (no motion)	0.1 - 30 % (no motion)	0.1 - 30 % (no motion)
Accuracy	SpO <sub>2</sub>	60 - 100 % +/- 2 Arms <sup>1</sup> (no motion) 60 - 100 % +/- 3 Arms (motion condition) <sup>3</sup> 60 - 100 % +/- 2 Arms (low perfusion)		
	Pulse Rate	20 - 240 bpm +/- 3 bpm, > 240 bpm +/- 5 bpm (no motion) 20 - 240 bpm +/- 5 bpm, > 240 bpm unspecified (motion)		
Power requirements	OEM I	OEM II	OEM III	
Input voltage	3.3 VDC (+/- 0.1 V)	3.1 - 3.6 VDC	3.1 - 3.6 VDC	
Average power consumption <sup>4</sup>	50 mW, 75 Hz sampling rate	60 mW, 75 Hz sampling rate	24 mW, 75 Hz sampling rate	
Maximum power consumption <sup>4</sup>	≤ 70 mW, 75 Hz sampling rate ≤ 150 mW <sup>2</sup> , 300 Hz sampling rate	≤ 70 mW, 75 Hz sampling rate ≤ 175 mW <sup>2</sup> , 300 Hz sampling rate	≤ 29 mW, 75 Hz sampling rate ≤ 95 mW <sup>2</sup> , 300 Hz sampling rate	
Environmental conditions				
Operation	-25 to +60 °C			
Storage	-40 to +70 °C			
Relative humidity	15 % - 95 % (operation, non-condensing) 10 % - 95 % (storage, non-condensing)			
Environmental conditions				
Baud Rate	9600 baud up to 230400 baud			
Applied Standards				
SMARTsat module OEM I, II, III	IEC 60601-1:2005 (3rd Ed); IEC 60601-1 (2nd Ed) IEC 60601-1-2:2014 (4th Ed); IEC 60601-1-2 (3rd Ed) EN ISO 80601-2-61:2011; EN ISO 9919:2009 ISO 14971:2007; IEC 60601-1-6:2010 ; IEC 60601-1-11:2010			
SMARTsat sensors	ISO 10993-1:2009; ISO 10993-5:2009; ISO 10993-10:2010			
Miscellaneous	OEM I	OEM II	OEM III	
Dimensions (L x W x H)	50.8 mm x 35.1 mm x 6.6 mm	31.0 mm x 14.0 mm x 5.0 mm	31.0 mm x 14.0 mm x 5.0 mm	

<sup>1</sup> A<sub>rms</sub>: +/- 1 Arms represents approx 68 % of measurements

Specification subject to change

<sup>2</sup> High Resolution Pleth Mode (300 Hz sampling rate)

<sup>3</sup> Motion: Tested with selected motion patterns Index II

<sup>4</sup> Power consumption measured at a data transfer rate of 230 kBaud. Reduced data transfer rates increases the power consumption.

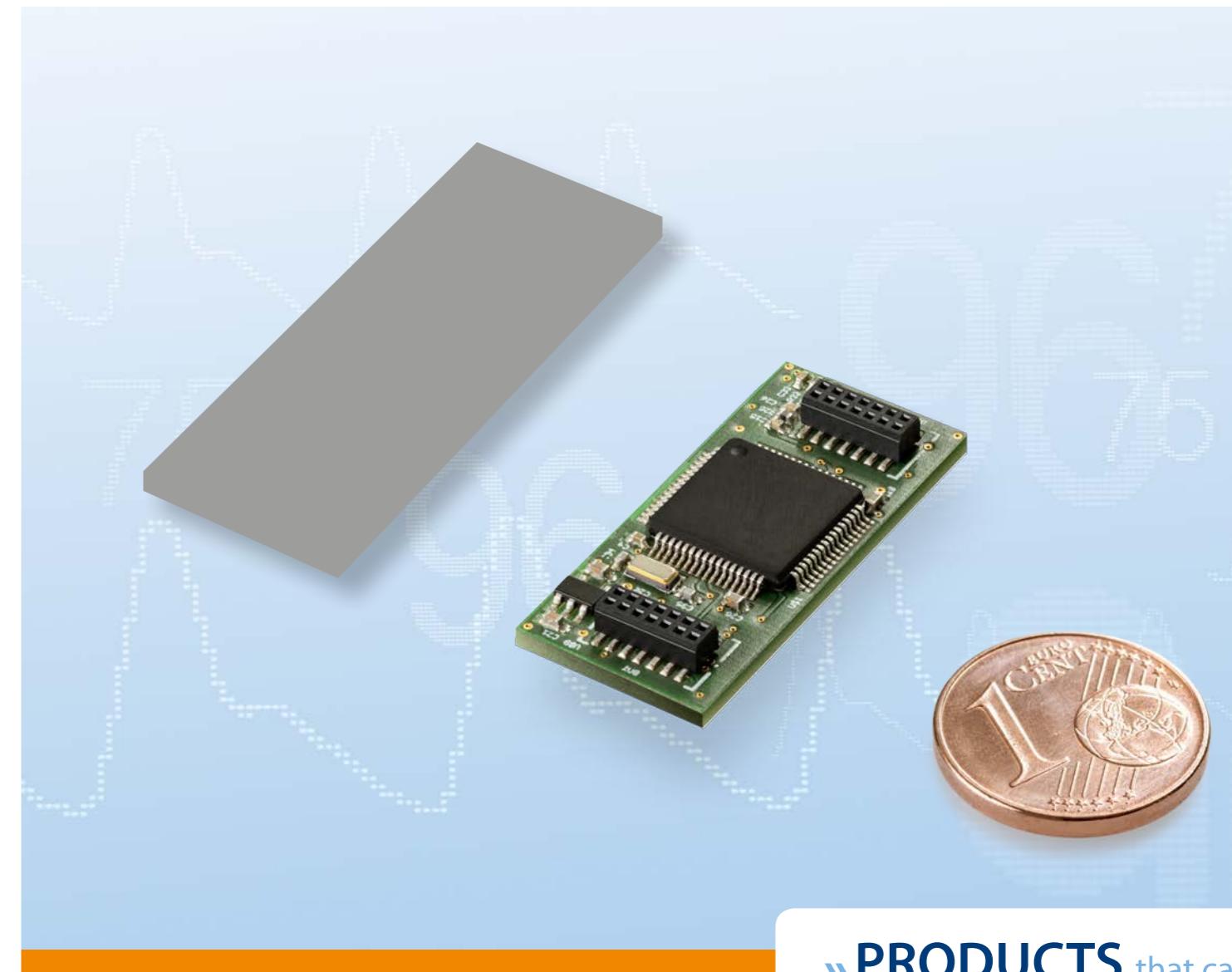
**SMARTsat® modules** are designed to comply with 2nd and 3rd edition standards.

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**bluepoint MEDICAL**

# SMARTsat®

High performance SpO<sub>2</sub> technology for OEMs



**bluepoint MEDICAL**

ISO  
3rd edition  
compliant



Made in Germany

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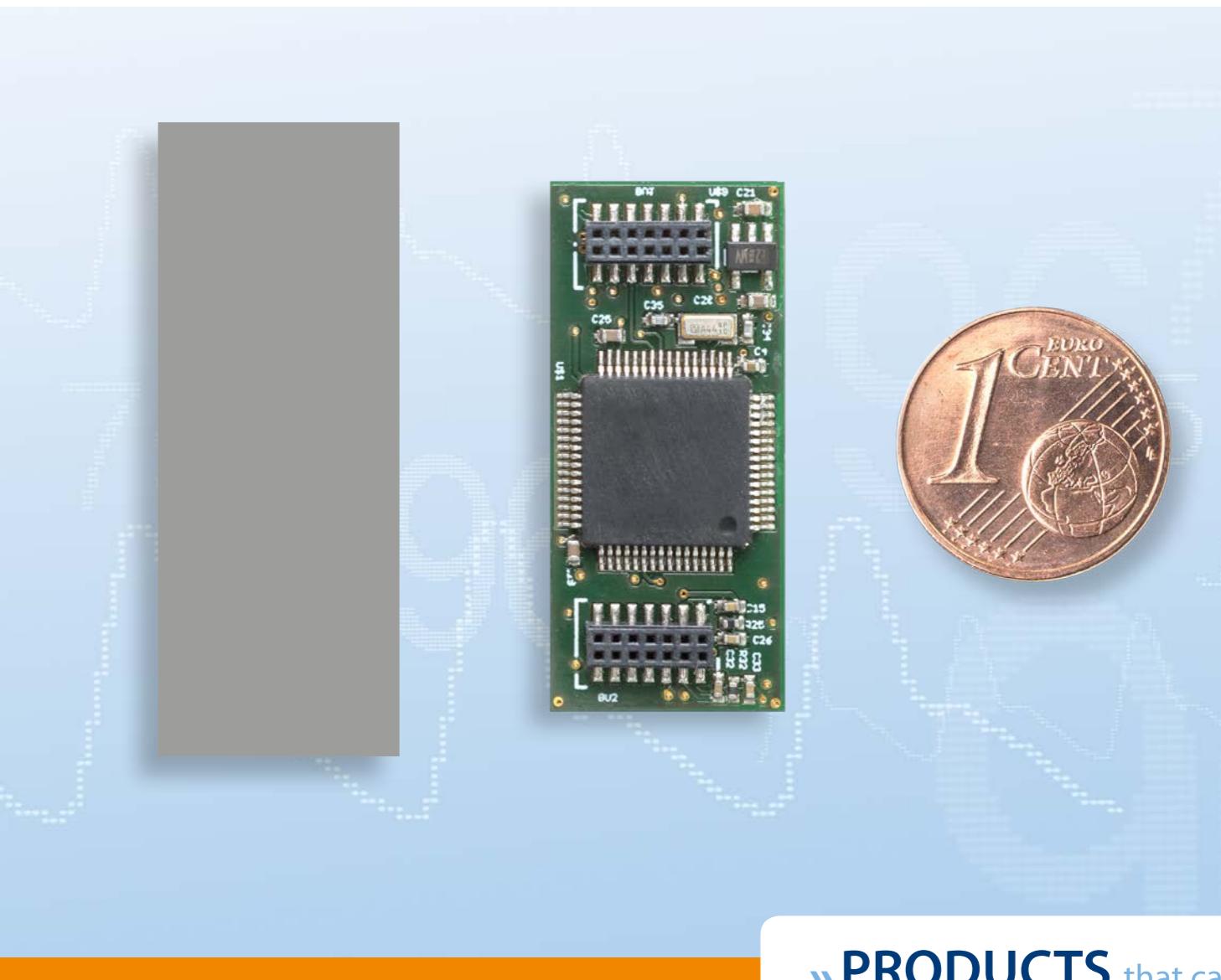
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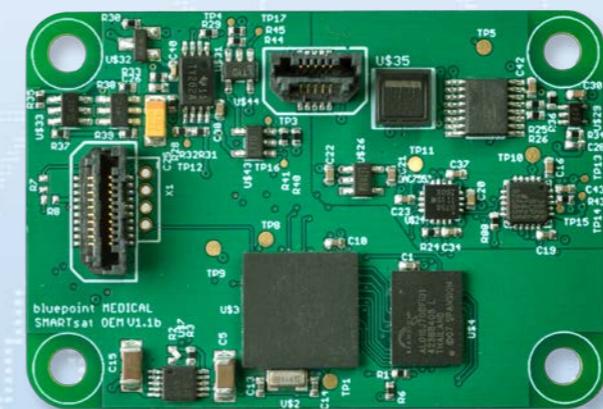
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## SMARTsat®

High performance SpO<sub>2</sub> technology for OEMs





## SMARTsat technology – Now you have a choice! «

### » High performance SpO<sub>2</sub> technology for OEMs

The SMARTsat technology platform was developed over the last few years in close cooperation with well-established research institutions and university hospitals.

The very latest and innovative signal processing technologies and algorithms enable precise measurements, even under very difficult physiological conditions. SMARTsat technology has extremely low power consumption requirements, and is a real alternative for OEM customers whom require high-end pulse oximetry solutions for their applications.

According to the ISO Standards, the approved pulse oximetry sensors are calibrated and evaluated against dyshemoglobin-free reference measurements, which were determined from CO oximeter data and do not contain saturation components of the hemoglobin fractions SaCO and SaMet.

SMARTsat has been calibrated within the range of 60 - 100 % SpO<sub>2</sub>.

#### SMARTsat ARMS in the SaO<sub>2</sub> ranges

	100 - 60 %	100 - 90 %	90 - 80 %	80 - 70 %	70 - 60 %
<b>SoftCap</b> <b>Softsensor</b>	1.5	1.3	1.1	1.5	2.4
<b>SoftFlap</b> <b>Fingerclip</b>	1.2	1.0	1.0	1.2	2.0
<b>SoftWrap</b> <b>Wrapstyle</b>	1.5	0.9	0.9	1.7	3.2
<b>Disposable</b> <b>Adult</b>	1.7	1.1	1.5	2.0	2.4
<b>Earprobe</b>	1.3	1.3	1.4	1.3	1.7



### » Typical applications

SMARTsat is designed for integration into:

- High-End SpO<sub>2</sub> monitoring devices
- Patient monitors
- Transport monitors
- Sleep screening devices
- Defibrillators
- Home care monitors
- ... and more

## Flexible robust and hygienic

### » Bluepoint® MEDICAL provides advanced sensors latest technology which features high quality and comfort.

#### SoftCap® SC/SCM/SCP



#### SoftWrap® W



Due to its robust design, the SoftCap® and SoftWrap® sensors are well suited for use in the tough environment of rescue services, emergency care and hospital facilities. Reliable elimination of even the most problematic pathogens using highly effective disinfectants.

Bluepoint® Soft Sensors are manufactured from premium materials and their design allows for effective high-level disinfection. This reduces the risk of nosocomial infection associated with surface-borne pathogenic microorganisms.

#### Additional sensors

##### SoftFlap® SF



##### Ear Sensor EP



#### Disposables



SoftFlap® sensors are the ideal solution for ambulatory use, or for long-term monitoring. Advanced manufacturing technologies, materials and design elements found their use in these sensors.

High-quality ear sensor with very pleasant wearing comfort and utility. The ear sensor has an additional sensor holder that prevents the ear sensor while wearing/using slip on the ear or is demolished.

Disposable sensors with Plaster Tape – high flexibility and adaptability distinguishes this particularly soft material. By the use of Plaster Tapes the sensors are repeatedly re-applied. Available versions for adults, pediatrics, infants and neonates.



## SMARTsat technology – Now you have a choice! «



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### Typical applications

SMARTsat is designed for integration into:

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## Flexible robust and hygienic

**Bluepoint® MEDICAL** provides advanced sensors latest technology which features high quality and comfort.

### Additional sensors



#### SoftCap® SC/SCM/SCP SoftWrap® W

Due to its robust design, the SoftCap® and SoftWrap® sensors are well suited for use in the tough environment of rescue services, emergency care and hospital facilities.



Reliable elimination of even the most problematic pathogens using highly effective disinfectants. Bluepoint® Soft Sensors are manufactured from premium materials and their design allows for effective high-level disinfection. This reduces the risk of nosocomial infection associated with surface-borne pathogenic microorganisms.



#### SoftFlap® SF

SoftFlap® sensors are the ideal solution for ambulatory use, or for long-term monitoring. Advanced manufacturing technologies, materials and design elements found their use in these sensors.



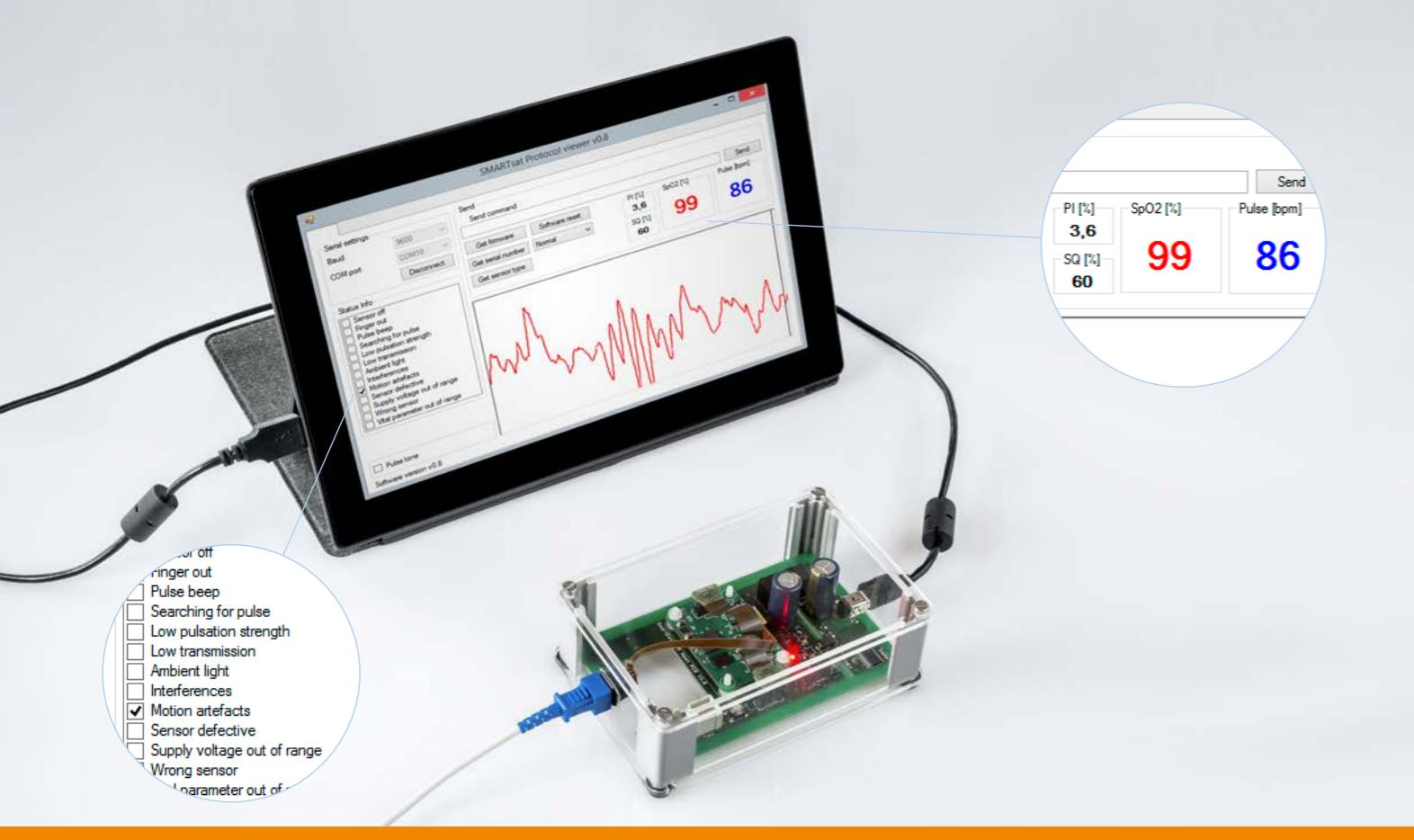
#### Ear Sensor EP

High-quality ear sensor with very pleasant wearing comfort and utility. The ear sensor has an additional sensor holder that prevents the ear sensor while wearing/using slip on the ear or is demolished.



#### Disposables

Disposable sensors with Plaster Tape – high flexibility and adaptability distinguishes this particularly soft material. By the use of Plaster Tapes the sensors are repeatedly re-applied. Available versions for adults, pediatrics, infants and neonates.



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## Flexible and easy to use

**Bluepoint® MEDICAL** provides advanced sensors latest technology which features high quality and comfort.

### SoftCap® SC and SCP

The SoftCap® SC and SoftCap® SCP Pediatric sensors from the Rubberboot® series are the 3rd generation of soft sensors utilising the latest production technologies, materials and design elements. The new Thermo-Q optosets from bluepoint® MEDICAL have a thermo-balanced light radiation characteristic with high light efficiency which significantly improves signal to noise ratio.



### SoftWrap® W

SoftWrap® sensors are universal and skin friendly in use. They are particularly suitable for every application, from adults to infants. Wrap tapes are provided with mounting loops, so a simple fixation of the wrap sensor is given.

### SoftFlap® SF

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### Available sensors

