



## Features

Monitored parameters:

Oxygen saturation, heart rate, respiration

Operating time with batteries: 8 h minimum

Displays: Graphical LCD display, 5 LEDs

Memory modes: Event, trend, full-disclosure and compliance

Alarm notification: Acoustic and visual

Data transfer: USB port

# VitaGuard® VG 3100

## The Heart Rate, Apnea and Oxygen Saturation Monitor

The VitaGuard® VG 3100 is the most versatile of the VitaGuard® monitors. It monitors oxygen saturation (SpO<sub>2</sub>), heart rate and respiration of risk patients of all ages, thus giving medical personnel and caregivers the security they need, both in ambulatory and clinical environments.

### Comforting Monitoring

Monitoring can be accomplished at any time and in almost every place. The VitaGuard® VG 3100 generates acoustic and visual alarms when no respiration or movement is detected for a preset time, i.e. central apnea\*, or when the measured oxygen saturation or heart rate violates the limits set by the operator. For SpO<sub>2</sub>, the Masimo Signal Extraction Technology (SET®) is used. A technical alarm is emitted and a corresponding message displayed should an electrode or the SpO<sub>2</sub> sensor become loose. A port is also provided for connecting the monitor to an external alarm unit or a nurse call unit.

### Extensive Data Storage

In the event of a physiological alarm, the measured values, their associated waveforms, and the monitor settings for selectable periods prior to and after the event are automatically stored. Over 400 such events can be captured in the event driven memory. Both manual and

interval driven data storage is also possible. Furthermore, additional limits may be set to capture events silently, for example, if the silent SpO<sub>2</sub> lower limit is set to 92 %, then once the SpO<sub>2</sub> value falls below this limit, the event will be silently registered by the monitor. Parallel to the event driven memory, the VG 3100 incorporates a 144-hour trend loop memory and a 16-hour full-disclosure loop memory for continuous data storage.

### Innovative Technology – Easy to Use

Considering all its features, the versatile monitor weighs only approx. 700 grams. The clearly arranged layout of the control elements ensures ease of operation, not only for trained clinical personnel but also for caregivers without previous medical or technical training. The numerous ways of powering the monitor, be it via the mains supply, the rechargeable power pack, single-use batteries, or using the car power adapter, allow for a wide range of applications.

### Comprehensive Data Evaluation

The stored values and waveforms can be viewed directly on the monitor's high-resolution graphical LCD display. Alternatively, using GETEMED's VitaWin® software, the event, trend, full-disclosure and compliance recordings can be transferred to a PC via the USB port, visualized, evaluated and documented.



\* obstructive apnea cannot be detected

# VitaGuard® VG 3100

## Technical Data

<b>General</b>	
Weight	Approx. 700 g with power pack
Dimensions	205 mm x135 mm x 45 mm
Power supply	4.8 V NiMH power pack or 4 x 1.5 V alkaline LR6 batteries, 9 V power adapter NA 3000-2
Power adapter NA 3000-2	Input: 100 ... 240 V, 50 ... 60 Hz, 400 mA / Output: 9 VDC, 1.5 A
Power pack recharge time	<6 h
Operating time	>8 h with power pack or batteries
Replace battery message	Message on LCD display
Battery exhaustion message	Visual and acoustic warning
Keys	6 pushbuttons
ECG/respiration connector	8-pin miniature round connector, type CF input
SpO <sub>2</sub> connector	14-pin mini-ribbon connector, type BF input
USB connector	Mini USB to connect with a PC
AUX connector features	Interface for modem, external alarm unit output, nurse call unit output and 2 analog inputs (AUX 1 & 2)
Display elements	5 LEDs and a graphical LCD display (320 x 240 dots) with backlight when powered by external or auto- mobile power adapter
Alarm warnings	Visual and acoustic as per DIN EN 60601-2-49 and DIN EN 60601-1-8
<b>Apnea Monitor</b>	
Method	Impedance pneumography
Resolution	1/min
Apnea pause settings	8, 10, 12 ... 30, 32, 34 s
End of alarm condition	2 breaths within 6 s
Minimum amplitude	Approx. 0.2 Ohm
Signal recognition	Green LED and selectable beep tone
<b>Heart Rate Monitor</b>	
Heart rate range	25 ... 270/min
Resolution	1/min
Bradycardia alarm settings	30, 35 ... 175, 180/min
Tachycardia alarm settings	100, 105 ... 250, 255/min
Minimum amplitude	Approx. 0.2 mV
Selectable ECG leads	Einthoven I, II or III
Signal recognition	Green LED and selectable beep tone

Distributor

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<b>Pulse Rate Monitor</b>	
Method	Pulse oximetry
Pulse rate range	25 ... 240/min
Resolution	1/min
Accuracy	±3 digits without motion, ±5 digits during motion
Alarm settings	Same as for heart rate monitor
<b>SpO<sub>2</sub> Monitor</b>	
SpO <sub>2</sub> range	1 ... 100 %
Resolution	1%
Accuracy	±3 digits for SpO <sub>2</sub> above 70 %
Alarm settings	Selectable from 50 ... 100 %
Sensitivity	Minimum (APOD = Adaptive Probe Off Detection), standard, maximum
<b>Memory</b>	
Storage functions	Event, trend, full-disclosure and compliance memories
Storage capacity	up to approx. 400 events, depend- ing on pre-alarm and post-alarm settings, 144 h trend, 16 h full- disclosure
Stored data	ECG, heart rate, respiration, basal impedance, SpO <sub>2</sub> , pulse rate, signal IQ, plethysmograph, perfusion in- dex, status, analog inputs AUX 1 & 2
<b>Classifications</b>	
Product classification	IIb according to MDD 93/42/EEC
Ingress protection	IP 21 according to DIN EN 60529
German "Hilfsmittelnummer"	21.30.01.0005
<b>Environmental Conditions</b>	
Operating temperature	5 ... 40 °C
Relative humidity	5 ... 95 %, non-condensing
Storage and transport temperature range	-40 ... 70°C
<b>Standard Delivery</b>	
VitaGuard® VG 3100, ECG patient cable, neonatal ECG electrodes, SpO <sub>2</sub> patient cable, SpO <sub>2</sub> disposable sensor, power adapter NA 3000-2, NiMH power pack, user manual, pouch including belt, transport case	
<b>Optional Accessories</b>	
Automobile power adapter NAK 3000-2, wide range of SpO <sub>2</sub> sensors (disposable and reusable), external alarm unit, clinic mounting frame, VitaWin® analysis software	

Subject to change

Manufactured by



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