

VENUS

Specifications

Physical Specifications

Display
15.6" TFT Touch screen
Resolution: 1366 x 768
Number of traces: up to 12 ECG waveforms
Dimension: 398x302x183mm(MxHxD)
Weight: < 7 kg under standard configuration
LAN: 1 standard RJ45 port
WLAN: IEEE 802.11b/g/n
USB: 2 USB connectors
HDMI: 1 HDMI monitor connector
Output: 1 connector for Nurse call, Defib Sync Analog Output

ECG

Lead type: 3-lead, 5-lead, 12-lead (optional)
ECG waveform: 2 channels, 7 channels, 12 channels
Display sensitivity (wave gain):
1.25mm/mV (x0.125), 2.5mm/mV (x0.25), 5mm/mV (x0.5),
10mm/mV (x1.0), 20mm/mV (x2.0), 40mm/mV (x4.0),
Auto
Wave sweep speed:
3.125mm/s, 6.25mm/s, 12.5 mm/s, 25 mm/s, 50 mm/s
Bandwidth
Diagnostic mode: 0.05Hz~150Hz
Monitor mode: 0.5Hz~40Hz
Surgery mode: 0.5Hz~25Hz
Strong filter mode: 5Hz~25Hz
CMRR > 100dB
Notch: 50/60Hz notch filter can be set on or off
Differential input impedance > 5MΩ
Electrode polarization voltage range: ±400mV
HR range: 15 ~ 350 bpm
Baseline recovery time < 3s after defibrillation (in monitor and surgery mode)
Calibration signal: 1mV (peak - peak), accuracy ±3%

RESP

Measurement method: Thoracic electrical bioimpedance
Measuring lead: Lead I, II
Wave gain: x0.25, x0.5, x1, x2
Respiratory impedance range: 0.5-5.0Ω
Respiration range: 0 - 150bpm
Baseline impedance: 500-4000Ω
Gain: 10 grades
Scan speed: 3.125mm/s, 6.25mm/s, 12.5 mm/s, 25mm/s

TEMP

Accuracy: ±0.1°C or ±0.2°F (without probe)
Measurement range: 5~50°C (41~122°F)
Channel: Two channels
Resolution: 0.1°C

SpO2

Measurement range: 0-100%
Parameter monitoring: Perfusion Index (PI)
Pleth Variability Index (PVI)

Resolution: 1%
Accuracy: ±2% or ±2bpm
Refreshing Rate: 1s
Pleth wave speed: 3.125mm/s, 6.25mm/s, 12.5 mm/s, 25mm/s

Masimo SET® SpO2 (Optional)

Measurement range: 0-100%
Resolution: 1%
Accuracy: ±2% (70-100%, Adult/Pediatric, non-motion, low perfusion);
±3% (70-100%, Neonate, non-motion);
±3% (70-100%, motion);
0-69%, unspecified
Refreshing Rate: 1s

Pulse Rate

Range: 20-300 bpm
Resolution: 1bpm
Accuracy: ±2bpm (non-motion)
±5bpm (motion)
Refreshing rate: 1s

NIBP

Measurement method: Automatic oscillometric method
Operating mode: Manual, automatic, continuous
Measurement unit: mmHg/kPa selectable
Typical measurement time: 20-40s
Measurement type: Systolic, Diastolic, Mean
Measurement range (mmHg)
Range of Systolic pressure: Adult 40-280
Pediatric 40-200
Neonatal 40-135
Range of Diastolic pressure: Adult 10-210
Pediatric 10-150
Neonatal 10-95
Range of Mean pressure: Adult 20-230
Pediatric 20-165
Neonatal 20-105

Measurement accuracy
Maximum average error: ±5mmHg
Maximum standard deviation: 8mmHg
Resolution: 1mmHg
Interval: 1, 2, 3, 4, 5, 10, 15, 30, 60, 90, 120, 180, 240, 480 minutes
Overpressure protection: Software and hardware, double safety protection
Cuff pressure range: 0-300mmHg

IBP (Optional)

Channel: 2-channel or 4-channel
ART: 0 to 300 mmHg
PA: -6 to 120 mmHg
CVP/RAP/LAP/ICP: -10 to 40 mmHg
Measurement range: P1/P2 -50 to 300 mmHg
Resolution: 1mmHg
Accuracy:
±2% or ±1mmHg, whichever is greater (without sensor)
Sensitivity: 5μV/mmHg/V
Impedance range: 300 to 3000Ω

C.O. (Optional)

Method: Thermodilution
Range: C.O.: 0.2 to 20 L/min
TB: 23 to 45 °C
TI: -1 to 27°C
Accuracy: C.O.: ±5% or ±0.1L/min, whichever is greater
TB, TI: ±0.5°C (without sensor)

Northern Mainstream CO2 (Optional)

Measurement range: 0-19.7%, 150mmHg, or 0-20kPa
Resolution: 0.1mmHg
Measurement accuracy
0-40 mmHg: ± 2 mmHg
41-70 mmHg: ± 5% of reading
71-100 mmHg: ± 8% of reading
101-150 mmHg: ± 10% of reading
Respiration rate: 3-150 bpm
Respiration rate accuracy: 1% ± 1bpm
Warm-up time: 97% within 8s, full accuracy within 20s

Northern Sidestream CO2 (Optional)

Measurement range: 0-20% (0-150mmHg)
Accuracy: < 5.0% CO2 ± 2 mmHg
> 5.0% CO2: < 6% of reading
Respiration rate: 0 ~ 150 BPM
Respiration rate accuracy: 1% ± 1BPM
Warm-up time: 97% within 45s, full accuracy within 10 min
Rise times (t10-90%): About 100ms, when flow is 100 ml/min, adult water trap, 1.5m sampling tube
Delay time: < 3sec when flow is 100 ml/min, adult water trap, 1.5m sampling tube

Recorder (Optional)

Built-in, Thermal dot array
Horizontal resolution: 16 dots/mm (25 mm/s paper speed)
Vertical resolution: 8 dots/mm
Paper speed: 12.5mm/s, 25 mm/s, 50 mm/s
Number of waveform channels: 3

Masimo ISA™ Sidestream CO2 (Optional)

Warm-up time: Full accuracy within 10 seconds
Sampling flow rate: 50ml/min (+/-10%/min)
Measurement Range: 0-25%
Accuracy: 0-15% (±0.2% of the reading)
15-25%, unspecified
Rise time: 200ms, typical at 50ml/min flow rate
Total response time:
within 3 seconds (with 2 m Nomoline sampling line)
AWRR Range: 0-150bpm
AWRR Accuracy: ±1 breath

Masimo IRMA™ Mainstream CO2 (Optional)

Measurement Range: 0-25%
Accuracy: 0-15% (±0.2% of the reading)
15-25%, unspecified
Warm-up time: Full accuracy within 10 seconds
AWRR Range: 0-150bpm
AWRR Accuracy: ±1 breath

Masimo Multi-gas ISA AX+ Mainstream CO2 (Optional)

Gas: CO2, N2O, HAL, ISO, ENF, SEV, DES with automatic identification
Warm-up time: Full accuracy within 20 seconds for IRMA AX+ CO2 Accuracy: 0-10% ± (0.2% + 2% of the reading)
0-15% ± (0.3% + 2% of the reading)
N2O Accuracy: 0-100% ± (2% + 2% of the reading)
HAL, ISO, ENF: 0-8% ± (0.15% + 5% of the reading)
SEV: 0-10% ± (0.15% + 5% of the reading)
DES: 0-22% ± (0.15% + 5% of the reading)
Agent identification time: < 20s (typical < 10s)
AWRR range: 0-150bpm
AWRR accuracy: +/- 1bpm
Apnea time: 20-60s

Aspect BISx module (Optional)

Parameter Measurement:
BC: 0-30 (Only limited to the combined use of an external sensor with a BIS module)
EMG: 30-55dB (bar chart) with intensity between 30dB and 80dB (tendency chart)
BIS: 0-100
SQI: 0%-100%
SR: 0%-100%
SEF: 0.5Hz-30Hz
TP: 40-100Db
EEG Measurement:
Input impedance > 5MΩ
Noise (RTI) < 2μV (0.25-50Hz)
Input signal range: ±1mV
EEG bandwidth between: 0.25Hz-110Hz

NMT (Optional)

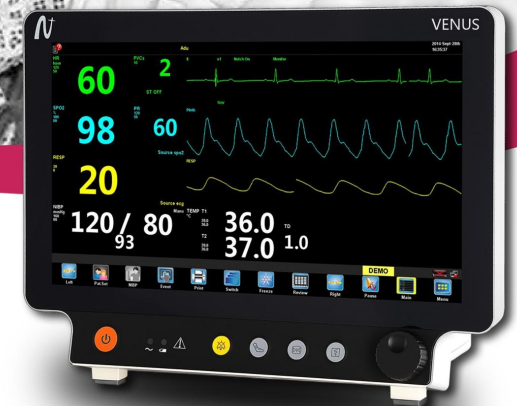
Microprocessor-controlled
Stimulation Mode: TOF, TOFS, PTC, 1Hz Twitch, 0.1Hz Twitch, DBS DBS3.3 and 3.2 (Double Burst), Tetanic Stimulation (Burst), 5s ~ 50Hz or 100Hz
Output (accuracy ± 5% of full scale value)
Surface electrodes:
Constant current, 0-60mA (0-12/18μC) up to 5KOhm.
Monophasic, 200μs or 300μs pulse width
Needle electrodes:
Constant current, 0-6mA (0-0.24μC) up to 5KOhm.
Monophasic, 40μs pulse width
Acceleration transducer: Accuracy ± 5% of full scale value
Temperature sensor: Range 20.0-41.5°C (accuracy ± 5°C)

Operation Environment

Power: AC 100-250V, 50/60Hz
Temperature: 5-40°C
Humidity: < 80%
Patient Range: Adult, Pediatric, Neonate



Committed to Excellence



Venus
Critical Care Patient Monitor

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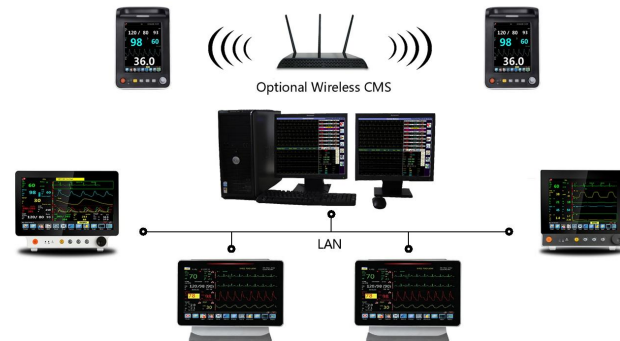
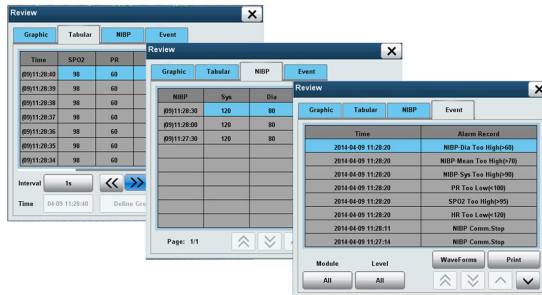


Features

- 15.6" High resolution TFT LCD Touch screen
- 10 waveform display, up to 12-lead ECG analysis
- Powerful calculation (Hemodynamic, Dose, Oxygenation, Ventilation)
- MEWS (Modified Early Warning Score)
- Pacemaker detection
- ST & arrhythmia analysis (26 types)
- SpO2 support PVI and PI, low perfusion 0.2%
- Night mode, standby mode, venipuncture mode
- Trolley/wall mount bracket solutions
- Support BIS module, NMT module
- Wired/Wireless/4G connection, support HL7 protocol to HIS
- SpO2 pulse-tone modulation (Pitch Tone)
- VGA/HDMI support external display
- Graphical & tabular trend review
- Rechargeable Lithium-ion Battery
- 72 hours full disclosure wave review for each patient

Easy access to view the historical data

- 480** Hours long trend
- 120** Min short trend
- 10000** NIBP measurement
- 200** alarm event



Central Monitoring System

Up to 64 beds
 Net work is compatible to wired or wireless CMS
 Auto adaptable to different screen resolution

Configuration

5-lead ECG, SpO2, NIBP, TEMP, Resp, PR; Touchscreen, HDMI, Li-ion battery

Optional

12-Lead ECG, Masimo/Nellcor SpO2, IBP, C.O., EtCO2, Multi-gas, BIS, NMT; Thermal Recorder, Wired/Wireless CMS, 4G module



Masimo SET® SpO2
 Measure-through Motion and Low Perfusion pulse oximetry delivers accurate and reliable oxygenation



Bispectral Index™ by Aspect
 Monitor the level of consciousness of the patient under general anesthesia or sedation provides BIS, SQI, EMG, SR, SEF, TP, PC value and EEG wave.



Masimo Gas Technology
 IRMA™ Mainstream & ISA™ Sidestream Analyzers
 Allows selection of the modality best suited to the application



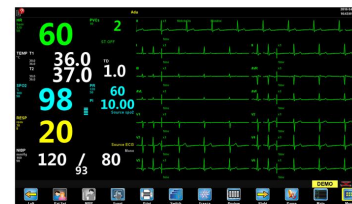
NMT
 Neuromuscular monitoring



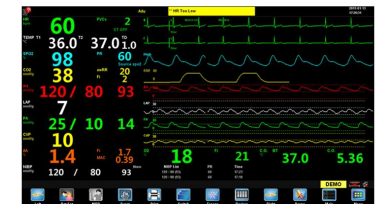
IBP
 2-4 Channel, support IBP waveform overlapping display



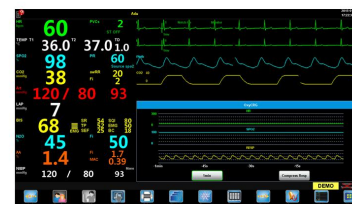
C.O.
 Cardiac Output



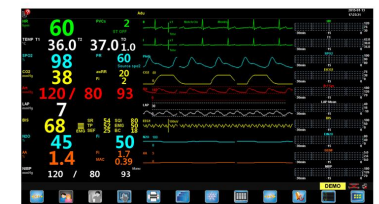
12-Lead ECG



4 channel IBP



OxyCRG screen



Dynamic trends