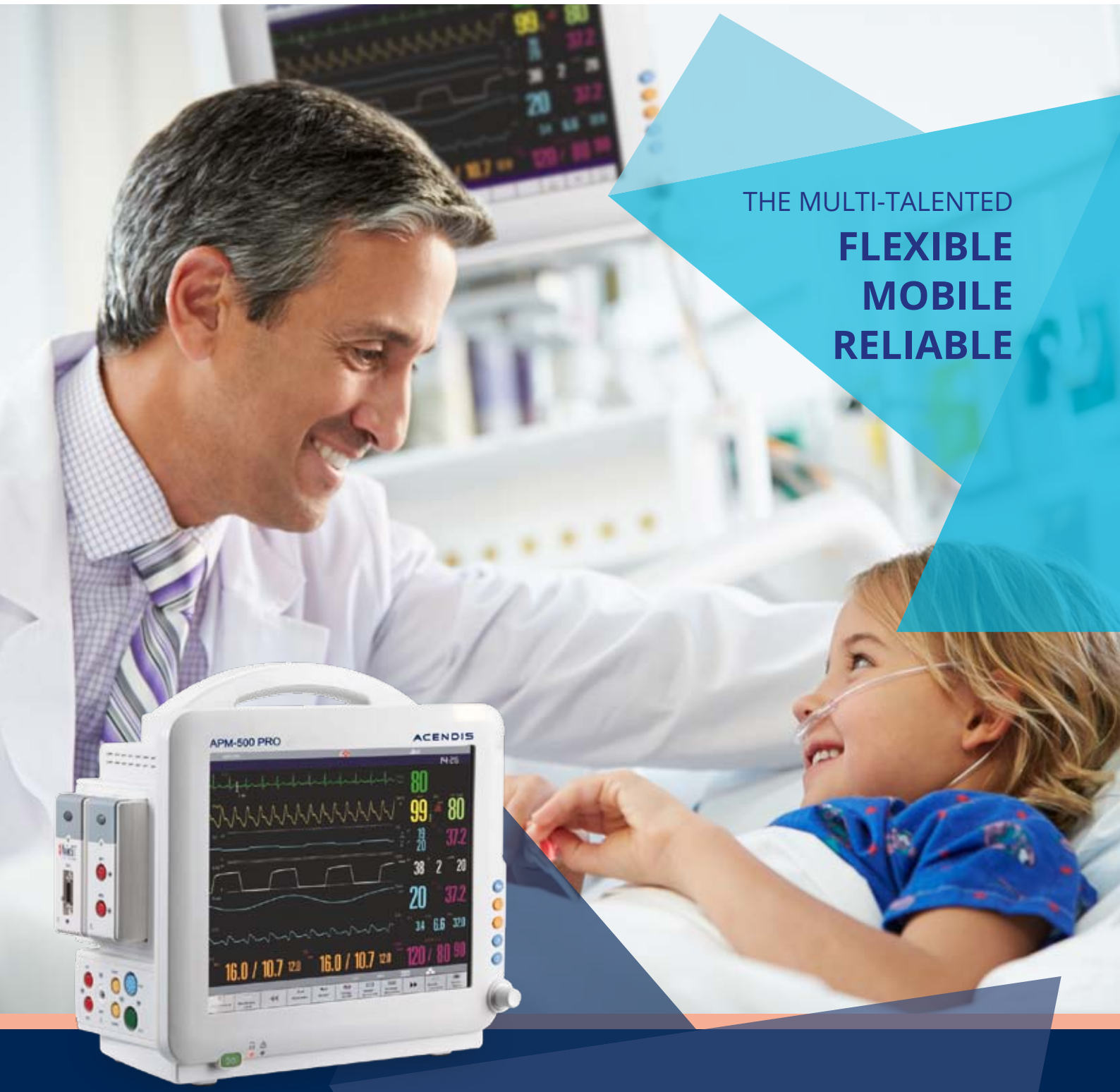
ACENDIS

Together, all the way.



THE MULTI-TALENTED

FLEXIBLE

MOBILE

RELIABLE

ACENDIS APM-500 PRO

VITAL SIGNS MONITOR

Flexible, Mobile, Reliable.

ACENDIS
Together, all the way.

APM-500 / 500 PRO

Modular Patient Monitor

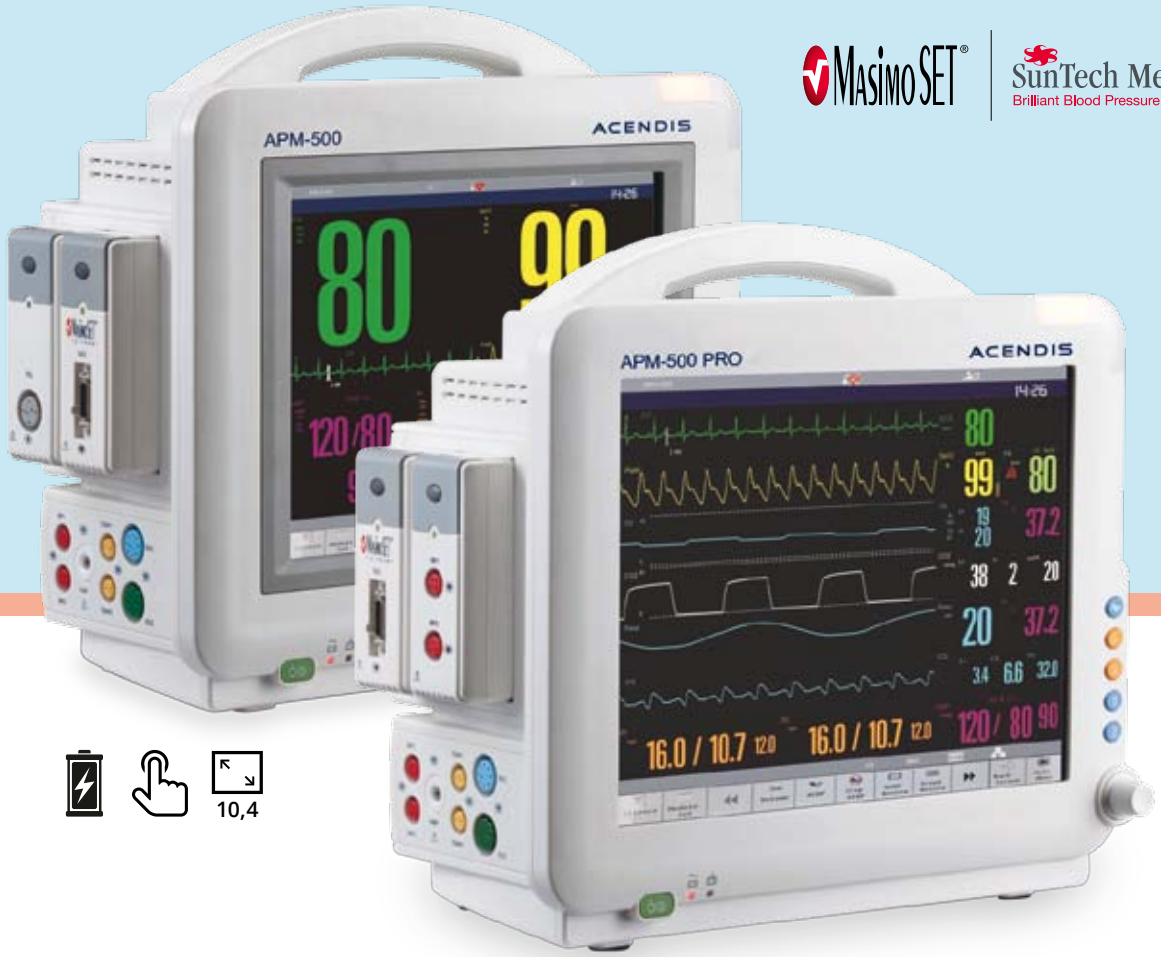
- Large 12.1 „TFT Color Display for clear and fast presentation
- Touchscreen for intuitive operation
- Good readability in any environment
- Safe operation thanks to illuminated buttons
- Reliable data for well-founded diagnostics

The ACENDIS APM-500 monitor series is designed to meet the requirements of various hospital environments. The optional modules also allow an upgrade for intensive acute monitoring.

The built-in recorder and an automatic event recording function ensure the integrity of monitoring data.
The intuitive operation via touchscreen makes it easy to set up and the large font allows an error-free reading of the data.
A user-friendly operation of APM500 / APM 500 Pro is ensured by the operating concept of touchscreen, rotary knob and the function shortcut keys. So you operate the monitor at any time quickly and safely.

The APM-500 / 500 PRO is perfect for use in the fields of emergency, station, OR, ICU.

MASIMO SET® | SunTech Medical
Brilliant Blood Pressure Solutions™



10,4

12,1

Size and Weight
Size: 318 mm x 264 mm x 152 mm
Weight: ≤ 4.5 kg
Standard Module Slot: 2

Power supply
Power Voltage: AC 100 - 240 V 50/60Hz
Input Current: 1.1 ~ 0.5 A
Safety class: Category I

Display
APM-500 PRO: 12.1"
APM-500: 10.4"
Color TFT-LCD
Resolution: 800 x 600 Pixels

Battery
Type: Rechargeable Lithium Battery, 11.1 V / 4.0 AH
Operating time under the normal use and full charge: ≥ 210 minutes

Recorder (Option)
Method: Thermal Dot Array
Paper Width: 50 mm (1.97 in)
Paper Length: 15 m
Paper Speed: 12.5 / 25 / 50 (mm/sec)
Traces: Maximum 3 Tracks
Recording Way: Real-Time Recording, Periodic Recording, Alarm Recording

Alarm
Level: Low, Medium and High
Indication: Auditory and Visual
Patient Physiological Alarm Light Color: Yellow & Red
Equipment Technical Alarm Light Color: Blue
Supports Pitch Tone and Multi-Level Volume

Input device
Touchscreen: Standard Configuration
Knob: Standard Configuration
Mouse Input: Support
Keyboard Input: Support

System Output & Extensible Interfaces
Ethernet Network: 1 Standard RJ45 Socket
Defibrillation Output: 1 BNC Connector
Nurse Call: 1 RJ11 Connector
Video Output: 1 VGA port
USB 1.1 Port: 2
SO Memory Card: 2G (Option)
Analog Output (EGG or IBP): Option

Trend & Reviewing:
Trend:
Long Trend: 168 h, minimum resolution is 1min (Store when power goes off)
High Resolution Trend: 2 h, minimum resolution is 5 s
NIBP Measurement Reviewing: 1000 Groups
ARR Event: 128 groups of ARR event and the associated waveform
Alarm events: 128 groups of parameter alarm events and associated parameter waveform at the alarm moment
Full Disclosure waveform: 96 hours for 3 waveforms (with 4G SO card)

Environment
Operating Temperature: 0 °C ~ +40 °C
Storage Temperature: -20 °C ~ +50 °C
Operating Humidity: 15 % to 85 % non condensing
Storage Humidity: 10 % to 93 % non condensing
Operating Atmospheric Pressure: 860 hPa to 1060 hPa
Storage Atmospheric Pressure: 500 hPa to 1060 hPa

Safety
1EC60601-1 Approved
CE marking according to MDD93/42/EEC

Performance
ECG
Lead Mode: 3-leads ECG input
5-leads ECG input
12-leads ECG input
Lead selection: I, II, III
I, II, III, aVR, aVL, aVF, V-
I, II, III, aVR, aVL, aVF, V1 ~ V6 (Option)
Gain: 2.5 mm / mV (x0.25), 5 mm / mV (x0.5), 10 mm / mV (x1), 20 mm / mV (x2), 40 mm / mv (x4), Auto
CMRR: Monitor Mode ≥ 105 dB
Surgery Mode: ≥ 105 dB
Diagnostic Mode: ≥ 90 dB
Frequency response (-3 dB): Monitor Mode 0.5 ~ 40 Hz
Surgery Mode: 1 ~ 25Hz
Diagnostic Mode: 0.05 ~ 150 Hz
Input Impedance: ≥ 5.0 Mohm
ECG Signal Range: ± 10.0 mV
Electrode Offset Potential: ± 500 mV
Patient Leakage Current: < 10 uA
Standardizing Signal: 1 mV ± 5 %
Baseline Recovery: < 5 s after defibrillation (Mon or Surg Mode)
Indication of Electrode Separation: Every Electrode (exclusive of RL)
Protection: Breakdown Voltage 4000 VAC 50/60Hz; defibrillator proof
Sweep speed: 12.5mm/s, 25mm/s, 50mm/s

HR
Range: Adult 10 ~ 300 bpm
Pediatric & Neonate: 10 ~ 350 bpm
Refreshing time : ≤ 50 bpm Per 2 pulses
50 ~ 120bpm Per 4 pulses
≥ 120bpm Per 6 pulses
Resolution : 1 bpm
Accuracy: ± 1 % or ± 1 bpm, whichever is greater

ST Segment
Measurement Range: 2.0 mV ~ 2.0 mV
Accuracy: - 0.8 mV ~ 0.8mV; ± 0.02 mV or ± 10 %, whichever is greater
Over ± 0.8 mV: unspecified
Resolution: 0.01 mV

RESP
Method: Thoracic impedance
Lead Selected from: 1 (RA-LA) or II (RA-LL); Default: I
Gain: x 0.25, x 1 x2 x4
Bandwidth: 0.25 Hz to 2.0 Hz (-3dB)
Sweep Speed: 6.25 mm/s, 12.5 mm/s, 25 mm/s
Measurement Range: 0~150 rpm
Resolution: 1 rpm
Accuracy: ± 2 rpm or ± 2 %, whichever is greater
Delay of Apnea Alarm: 10 s, 15 s, 25 s, 30 s, 35 s, 40 s, 45 s, 50 s, 55 s, 60 s

NIBP
Way of Measurement: Automatic Oscillometry
Range of Measurement:
Adult: SYS 30~270 mmHg
DIA 10~220 mmHg
MAP 20~235 mmHg
Child: SYS 30~235 mmHg
DIA 10~220 mmHg
MAP 20~225 mmHg
Neonate: SYS 30~135 mmHg
DIA 10~100 mmHg
MAP 20~125 mmHg
Cuff Pressure Range: 0~300 mmHg
Resolution: 1 mmHg
Pressure Accuracy: Static: ± 2 % or ± 3 mmHg, whichever is greater
Clinical: ± 5 mmHg average error
Standard Deviation: ≤8 mmHg
Unit: mmHg, kPa
Measurement Mode: Manual, Auto, STAT
Intervals for AUTO Measurement Time: 1, 2, 3, 4, 5, 10, 15, 30, 60, 90 minutes; 2, 4, 8, 12 hours
STAT Mode Cycle Time: Keep 5 minutes, at 5 seconds interval
Overpressure Protection: Hardware and Software Double Protections
Pulse Rate Range: 40 ~ 240 bpm

ACENDIS-SpO_2 (Digital Technic)
Measurement Range: 0-100 %
Resolution: 1 %
Accuracy: At 70 ~ 100 %, ± 2 %
At 40 ~ 69 %, ± 3 %
At 0 ~ 39 %, unspecified

PR
Measurement Range: 25 ~ 254 bpm
Resolution: 1 bpm
Accuracy: ± 1 % or ± 1 bpm, whichever is greater

Nellcor-SpO_2, (Option)
Measurement Range: 0 ~ 100 %
Resolution: 1 %
Accuracy: At 70 ~ 100 %, ± 2 % (Adult/Pediatric)
At 70 ~ 100 %, ± 3 % (Neonate)
At 0 ~ 69 %, unspecified

PR
Measurement Range: 20 ~ 300 bpm
Resolution: 1 bpm
Accuracy: 20 bpm to 250 bpm: ± 3 bpm
251 bpm to 300 bpm: unspecified

Masimo SpO_2, (option)
Measurement range: 0 % to 100 %
Resolution: 1 %
Accuracy: 70 % to 100 % ± 2 % Adult/pediatric, non-motion conditions
70 % to 100% ± 3 % Neonate, non-motion conditions
70 % to 100 % ± 3 % Motion conditions
0 % to 69 % unspecified
Average time: 2-4 s, 4-6 s, 8 s, 10 s, 12 s, 14 s, 16 s

PR
Measurement range: 25 bpm to 240 bpm
Accuracy: ± 3 bpm Non-motion conditions
± 5 bpm motion conditions
Resolution: 1 bpm

TEMP
Max Channel: 6
Measurement Way: Thermal resistance way
Measurement Range: 0.0 °C ~ 50.0 °C (32 °F ~ 122 °F)
Accuracy: ± 0.1 °C or ± 1°F (exclusive of probe)
Resolution: 0.1 °C or 1 °F
Unit: Celsius (°C), Fahrenheit (°F)

IBP
Max Channel: 6
Measurement Way: Directly invasive pressure measurement
Sensitivity of Transducer: 5 uV/V/ mmHg, ± 2 %
Impedance of Transducer: 300 to 3,000 Ω
Measurement Range: -50 ~ +350 mmHg
Resolution: 1mmHg
Unit: mmHg, kPa, cmH_2O
Accuracy:
Static: ± 1 mmHg or 2 %, whichever is greater (exclusive of transducer)
± 4 mmHg or 4 %, whichever is greater (inclusive of transducer)
Dynamic: ± 4 mmHg or 4 %, whichever is greater
Transducer Sites: Arterial Pressure (ART)
Pulmonary Artery Pressure (PA)
Left Atrium Pressure (LAP)
Right Atrium Pressure (RAP)
Central Venous Pressure (CVP)
Intracranial Pressure (ICP)
P1/P2
Selection of Measurement Range:
ART: 0 ~ + 350 mmHg
PA: -10 ~ + 120 mmHg
CVP/RAP/LAP/ICP: -10 ~ + 40 mmHg
P1/P2: -50 ~ + 350 mmHg

$EtCO_2$ (Sidestream)
Measure Method: Infrared Spectrum
Measurement Range: 0.0 ~ 13.1 % (0 ~ 99.6 mmHg)
Resolution: 1 mmHg
Unit: %, mmHg, kPa
Accuracy: 0 % to 4.9 % ± 0.3 % (± 2 mmHg)
5.0 % to 13.1 %, < ± 10 % of reading
Measurement Range of awRR: 3 ~ 150 rpm
Calibration: Offset calibration: Auto, Manual, Gain Calibration

$EtCO_2$ (Mainstream)
Measure method: Infrared spectrum
Warm up time: Capnogram displayed in less than 15 seconds, At an ambient temperature of 25 °C, full specifications within 2 minutes
Measurement Range: 0.0 ~ 19.7 % (0 ~ 150 mmHg)
Resolution: 1 mmHg
Rise Time (10 l/min): ≤ 60 ms
Unit: %, mmHg, kPa
CO_2 Accuracy: 0 - 40 mmHg, ± 2 mmHg
41 - 70 mmHg, ± 5 % or reading
71 - 100 mmHg, ± 8 % or reading
101 - 150 mmHg, ± 10 % of reading
(at 760 mmHg, ambient temperature of 35 °C)
awRR Measurement Range: 0 ~ 150 rpm
awRR Measurement Accuracy: ± 1 rpm

$EtCO_2$ (Microstream)
Measure Method: Infrared spectrum
Warm up time: Capnogram displayed in less than 20 seconds, at an ambient temperature of 25 °C, full specifications within 2 minutes
Measurement Range: 0 ~ 19.7 % (0 ~ 150 mmHg)
Resolution: 1 mmHg
Unit: %, mmHg, kPa
CO_2 Accuracy: 0 - 40 mmHg, ± 2 mmHg
41 - 70 mmHg, ± 5 % of reading
71 - 100 mmHg, ± 8 % of reading
101 - 150 mmHg, ± 10 % of reading
(at 760 mmHg, ambient temperature of 25 °C)
(when Rr > 80 rpm, all the range is ± 12 % or reading)
CO_2 response time: < 3 s
awRR Measurement Range: 2-150 bpm
awRR Measuremen Accuracy: ± 1 rpm
Sample Flow Rate: 50 ml/min ± 10 ml/min

Anesthetic Gas
Measure Method: Infrared Spectrum
Measure Mode: Mainstream or Sidestream
Fi and Et Values: CO_2, N_2O, O_2, AG (HAL, ISO, ENF, SEV, DES)
Resolution: 1 %
Unit: %
Calibration: Room air calibration performed automatically when changing airway adapter (< 5 sec)
Warm-up time: < 10 s, full accuracy within 1 min
Measurement and Alarm Range of AG:

Gas	Range	Accuracy
CO_2	0 - 10 %	± (0.3 % ABS + 4 % REL)
N_2O	0 - 100 %	± (2 % ABS + 5 % REL)
O_2	10 - 100 %	± (2 % ABS + 2 % REL)
HAL, ISO, ENF	0 - 5 %	± (0.2 % ABS + 10 % REL)
SEV	0 - 8 %	± (0.2 % ABS + 10 % REL)
DES	0 - 18 %	± (0.2 % ABS + 10 % REL)

awRR Measurement Range: 0 ~ 150 rpm
awRR Measurement Accuracy: ± 1 rpm
Rise Time (flowing speed 10 l/min): CO_2 ≤ 90 ms
O_2 ≤ 300 ms
N_2O ≤ 300 ms
Hal, Iso, Enf, Sev, Des ≤ 300 ms
Total System Response Time: < 1 Second

CO_2
Measurement Mode: Thermal dilution method
Measurement Wave: Thermal dilution curve
Measurement Parameters: C.O., TB, TI, C. I.
Measurement Range: C.O.: 0.1 L/min ~ 20 L/min
TB: 23.0 ~ 43.0 °C
TI: -1.0 ~ 27 °C
Resolution: C.O.: 0.1 L/min
TB: 0.1 °C
TI: 0.1 °C
Accuracy: C.O.: 2 % SD
TB.TI: ±0.1 °C
TB Alarm range: 23.0 ~ 43.0 °C, high/low limit can be adjusted continuously

Standard configation:
Mainunit: APM-500 PRO: 12.1" / APM-500: 10.4" TFT-LCD display 2 Standard Module Slots, Touchscreen, 1 RJ45 Ethernet Socket, 1 Defibrillation Output, 1 Nurse Call Socket, 1 VGA port, 2 USB 1.1 Port, 1 Lithium Rechargeable Battery

Options:
Option Module: Sidestream CO_2 Module, Microstream CO_2 Module, Mainstream CO_2 Module, AG Module, C.O. Module, IBP Module, Temp Module, Masimo SpO_2 Module, Nellcor SpO_2 Module
Navigating: USB compatible mouse and keyboard
Printing: 3 channel thermal recorder
Mounting: Rolling stand, wall mount
Battery: 11.1 V / 4.0 AH Rechargeable Lithium Battery
Other Options: External Display, Wireless Lan, Extensive Memory card, Analog Output (ECG or IBP)

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TURNKEY PROJECTS
FINANCIAL CONSULTING
MEDICAL PLANNING
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AFTER-SALES-SERVICE

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