PM-2000XL Pro

Advanced monitoring system for Critical care Operation Room and Post Anesthesia Care

Safety Standards

CE Marking in accordance to Council Directive 2007/47/EC concerning Medical Devices
IEC 60601-1+A1+A2;IEC 60601-1-2+A1;

Physical Specification

Size: 370 mm (L) x 175 mm (L) x 320 mm (H)
Weight: Standard Configuration 7 kg(with one battery)

Display

15"Color TFT LCD (Touch-screen Optional)
Resolution: 1024X768dpi/800 X 600 dpi
Traces Displayed: up to 8
Waveforms Displayed: up to 13
Various Working Interface Selectable:
Standard Monitoring Display
Large Font Intensive Care Display
Trend Graph/ Monitoring Co-Display
Bed to Bed view Display (Optional)
OxyCRG Dynamic View Display
Drug Dose Calculation Interface
Sweep Speed: 6.25mm/s, 12.5mm/s, 25mm/s, 50mm/s

Environment Requirement

Ambient Temperature: -20℃ - 55℃(-4-131° F)
Humidity: 15%-95% non-condensing

Power Supply

External Power Supply
100-240V AC, 50/60HZ
Internal Battery Power Supply
Type: Rechargeable Li-ion
4200 mAh 14.8 V DC
2100 mAh (optional)
Battery working period:
6 hours maximum (with 2× 4200mAh batteries)
Recharging time < 360 minutes(4200 mAh)
< 150 minutes(2100 mAh)

RESP

Method: Trans-thoracic impedance
Operation mode: Auto/ Manual
RR Measurement range: Adult: 0~120 rPM
Neonate/Pediatric: 0~150 rPM
Resolution: 1rPM
Apnea alarm threshold: 10s,15s,20s (default),25s,30s,35s,40s
Alarm: 3 levels of audible and visual alarm, alarm events recallable
Band width: 0.2-2.5Hz (-3dB)
Sweep speed: 6.25mm/s, 12.5mm/s, 25mm/s, 50mm/s

ECG

Lead type: 5-lead and 3-lead selectable, 12-lead optional
3 leadwire cable: RA; LA; LL or R; L; F
5 leadwire cable: RA; LA; RL; LL; V or R; L; N; F; C
12-lead (including 3/5-lead) optional
Input: 10 leadwire cable: RA; LA; RL; LL; V1-V6 or R; L; N; F; C1-C6
Lead selection: 3-lead: I; II; III;
5-lead: I; II; III; aVR; aVL; aVF; V
12-lead: I; II; III; aVR; aVL; aVF; V1-V6
Gain selection: x0.125; x0.25; x0.5; x1; x2; x4; auto
Sweep speed: 6.25mm/s,12.5mm/s, 25mm/s, 50mm/s
ECG HR Range: Adult: 15-300bpm
Pediatric / Neonate: 15-350bpm
Resolution & accuracy: ± 1bpm or ± 1%, whichever is greater
Filter:
Diagnostic mode: 0.05-100Hz or 0.05-150Hz(optional 12-lead)
Monitoring mode: 0.5-40 Hz
Surgical mode: 1-20Hz
Protection: Withstand 5000VAC/50Hz voltage in isolation against Defibrillation and electrosurgical interference
ST-Segment Detection:
Measurement range: -2.0 mV~2.0mV
Alarm range: -2.0 mV~2.0mV
ST-Segment Arrhythmia analysis and catergorization : Yes

Alarm: 3 levels of audible and visual alarm, alarm events recallable
12 lead ECG analysis:
208 Reference Diagnostic Results
Pace maker detection:
Yes, and 5 types abnormal status detectable
IEC 60601-2-25; AAMI EC 11/EC 13
IEC 60601-2-27

NIBP

Method: Automatic Oscillometric
Operation modes: Manual/Automatic/Continuous
Auto measurement time interval: Adjustable
1/2/3/4/5/10/15/30/60/90/120/240/480 Minutes
Measurement unit: mmHg/kPa selectable
Measurement types: Systolic, Diastolic, Mean
Pressure range for Adults: Systolic: 40 - 270 mmHg
Diastolic: 10 - 215 mmHg
Mean: 20 - 235 mmHg
Pressure range for Pediatrics: Systolic: 40 - 200 mmHg
Diastolic: 10 - 150 mmHg
Mean: 20-165 mmHg
Pressure range for Neonates: Systolic: 40 - 135 mmHg
Diastolic: 10 - 100 mmHg
Mean: 20 - 110 mmHg
Leak test and pressure auto calibration: Yes
Over-pressure protection: Dual Safety protection
Resolution: 1mmHg
Accuracy: Max mean error ± 5 mmHg
Max standard deviation ± 8 mmHg
Alarm: Systolic, Diastolic, Mean
PR from NIBP: Measurement 40~240 bpm
Resolution 1 bpm
Accuracy 3bpm or 3% whichever is greater
Leak test and pressure auto calibration: Yes
IEC 60601-2-30

NIBP (Optional, by Omron M3600)

(OMRON® is a registered trademark of Omron Corporation.
SMART INFLATION™ is a trademark of Omron Healthcare Co., LTD.)
Measurement Ranges
Adult/Pediatric:
Pulse Rate: 40 - 200bpm
Systolic Pressure: 60 - 250mmHg
Diastolic Pressure: 40 - 200mmHg
Mean Arterial Pressure: 45 - 235mmHg
Neonate:
Pulse Rate: 40 - 240bpm
Systolic Pressure: 40 - 120mmHg
Diastolic Pressure: 20 - 90mmHg
Mean Arterial Pressure: 30 - 100mmHg
Measurement Accuracy
Pulse Rate: ± 2bpm or 2% of reading whichever is greater
Blood Pressure: Complies with ANSI/AAMI SP10:2002
Measurement
Modes of Measurement: Manual
Long-term automatic
Short-term automatic
Smart inflation™
Smart measurement
High speed
Pressure Transducers: Two independent solid-state
Deflation Methods: Dynamic Linear Deflation
rate specific to pulse rate

SpO₂

Measurement & Alarm Range: 0 - 100% (SpO₂)
Resolution: 1%;
Accuracy: ± 2% (70-100%, Adult/Pediatric);
± 3% (70-100%, Neonate)
PR Measurement and Alarm Range: 30 - 300bpm
Resoluton: 1bpm
Accuracy: 3bpm
Refresh 1s
ISO 9919

SpO₂ (optional, by Nellcor OxiMax™)

Measurement & Alarm Range: 0 - 100%
Resolution: 1%;
Accuracy: ± 2-3% (70-100%, Adult/Pediatric);
± 3-3.5% (70-100%, Neonate)
PR Measurement and Alarm Range: 20 - 300bpm
Resoluton: 1bpm
Accuracy: 3bpm (depends on probe)

Temperature (2 Channels, 1 probe by default)

Measurement range: 0~50℃(32-122° F)
Resolution: 0.1℃
Accuracy: ±0.1℃ (without probe)
Channel: Dual-channel. Provide T1; T2; ΔT
IEC 12470-4

IBP (Up to 4 Channels, optional)

Measuremed Pressure: ART, PA, CVP, RAP, LAP, ICP, P1,P2
Measurement range: -50 - 300 mmHg; Resolution: 1 mmHg
Accuracy: ±2% or ± 1 mmHg, whichever is greater (without probe)
Sensitivity: 5 μV/V/mmHg;
Impedance range: 300-3000Ω
IEC 60601-2-34

Respironics CO_2 (Mainstream / Sidestream, optional)

By Philips Respronics CAPNOSTAT 5® & LoFlo™ Technology
Range: 0~150mmHg
Accuracy: ±2% 0~40mmHg,
±5% 41~70mmHg
±8% 71~100mmHg
±10% 101~150 mmHg
AwRR Accuracy: ±1 rpm
Convenient design for intubated and non-intubated applciations
Possible to work at low sample flow rate: 50ml / minute
Detailed specification refer to the user manual of Respronics
ISO 21647

C.O. (optional)

Method: Thermodilution Technology
Measuring range
CO 0.1 ~ 20L/min
TB 23℃ ~ 43℃
TI -1℃ ~ 27℃
Alarm range 23℃ ~ 43℃

Anesthetic GAS/O_2 (optional)

Technology Infra-red absorption characteristic
Paramagnetic Oxygen: Optional

Gas CO_2, O_2, N_2O, Des, Iso, Enf, Hal, Sev
Warm-up time
(IRMA AX+) Iso accuracy mode: 45 s
Full accuracy mode: 60s
(ISA OR+ / AX+) <20s
Sample flow rate (for ISA OR+ / AX+) 50± 10 ml/min
Measuring range
CO_2: 0 ~ 15%
N_2O: 0 ~ 100%
Hal/Iso/Enf: 0 ~ 8%
Sev: 0~10%
Des: 0 ~ 22%
O_2: 0 ~ 100%(ISA OR+/AX+)
Respiratory Rate: 0-150bpm ±1bpm
MAC Value displayed
ISO 21647

Thermal Recorder (optional)

Built-in, direct thermal pixel array recorder
2 channels printing and 1,2 channels selectable
Up to 3 channels printing and 1,2,3channels selectable (to be released)
Print speed: 25mm/s, 50mm/s (to be released)
Paper width: 50 mm

I/O Interface

2-USB Ports
SD Card Socket
RS-232 Serial Port
RJ-45 Ethernet Port. IEEE 802.3
VGA output
Analog and Nurse Call output
Defibrillation Synchronization Output
WLAN Access Point 802.11g 54Mbps (optional)

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Distributor:

ENG-PM-2000XL Pro-V1.4-20110329

patient MONITOR

PM-2000XL Pro

PM-2000XL Pro
REV. 01
MAY 2011

Advanced®

Features

15˚ Color TFT Touch-screen (optional)

Touch-screen operation makes many functions directly accessible through simple, one-touch commands.

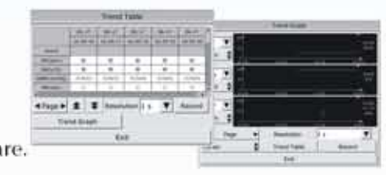
Features

- 15˚ high resolution color TFT display with maximum 13 waveforms
- Full touch-screen enables intuitive operation by clicking on the specific parameters or the waveform in real time, standard configuration includes the navigation knob
- Pacemaker detection, electrosurgical interference proof
- Defibrillation protection and defibrillation synchronization
- SD card slot enables memory extension for large data storage
- USB and serial ports enables abundant future upgrades
- VGA output and Analog output
- OxyCRG available to judge the respiration and circulation function for neonates
- Large font display
- Arrhythmia and S-T segment analysis
- Built-in rechargeable Li-ion (6 hours maximum with 2× 4200mAh batteries)
- Nurse Call function and bi-directional communication with MFM-CMS central station
- Multi language: English/ SimplifiedChinese/ Traditional Chinese/ Spanish/ Czech/ Italian/ Polish/ French/ German/ brazilian portugese/ Russian

Standard configuration: 3/5-lead ECG, NIBP, SpO_2, RESP, 2-Temp, PR
Optional: 12-lead ECG, Nellcor-SpO_2, Omron NIBP, 2-IBP/ 4-IBP, Mainstream / Sidestream CO_2
CO, Multi-Gas, Full Touch-screen, Thermal Recorder, WLAN Accessory.

Large data storage

120 hours graphic and tabular trends of all parameters;
1200 sets of NIBP measurement and 70 alarm events;
2-USB ports and SD card slot ensure data storage / function upgrades
Clinical data can be viewed and managed via PatientCare viewer software. (To be released)



Clinical Network

Bi-directional communication with CMS-2000 central station by wired or wireless connection

Complete and flexible mounting solution for ICU and operation room

With a variety of highly innovative mounting systems, PM-2000XL Pro's wall mount and rolling stand offer much better versatile interactions with the healthcare environment.

High-end parameters for more flexible clinical applications

12-lead ECG

Conventional diagnostic 12-lead ECG, and multi-lead arrhythmia, automatically 208 kinds of analysis results, up to 16 kinds of arrhythmias, 50 sets 12-lead analysis result review, 10 seconds of 12-lead waveform to review and print out

4-channel IBP

4-channel IBP help doctors to get concurrent access to both waveforms and values of multi-IBP in Operation Room, Coronary Care Units and Acuity CCUs

Anesthestic Gas/O_2

Mainstream (IRMA AX+)

CO_2, N_2O, and anesthetic agent measurement and identification probes
Complete gas analysis system contained within sensor head
Plug in and measure
Lower power consumption

Sidestream (ISA AX+ / ISA OR+)

Unique water handling Nomoline
Low sample flow 50ml/min for all type of patients
Extremely low power consumption and weight
Warm-up time 10/20 seconds before full performance

Paramagnetic Oxygen (for ISA OR+)

Fast response, totally linear
High stability and accuracy
Long operational life
Low maintenance requirements
Insignificant effect from background gases