

PM-9000Express

PATIENT MONITOR

Technical specifications

Safety

IEC60601-1 approved, CE marking according to MDD93/42/EEC

Dimension and Weight

Dimension: 318mm (W) x 270mm (H) x 137mm (D)
 Weight: < 7.5kg
 Operation Environment
 Power Requirements: AC100-240V(10%), 50/60 Hz(3Hz), 140VA
 Temperature: 0-40°C
 Humidity: 15-95% non-condensing

Patient Range

Neonate, pediatric, and adult patients

Performance Specifications

Display: 12.1" color TFT
 Rolling and refreshing waveform display
 Resolution: 800x600
 Multi displays selectable, including:
 Standard display
 Large-font Display
 Trend coexist display
 Freeze display with 40-second full-disclosure
 Alarm limit display
 Multi-lead and ECG simultaneous display
 Bed-to-bed view display
 OxyCRG dynamic view display

Trace:

8 waveforms
 Sweep Speed: 6.25mm/s, 12.5mm/s, 25mm/s, 50mm/s

Indicator:

Alarm indicator light
 Power indicator light
 Battery indicator light
 Working Indicator light
 QRS beep and alarm sound

Interface:

Parameter cable interface
 AC Power input socket
 Network interface
 External VGA interface for connection of an alternate display
 Aux Output interface (Analog/Defi-Synchro/Nurse Call)

Li-ion Battery:

Rechargeable
 Maximum 6.5 hours for charging;
 5 hours for continuous working

Lead Acid Battery:

Rechargeable
 Maximum 12 hours for charging;
 2 hours for continuous working
 1-96 hours

Trend time:

Alarm: User-adjustable High and Low limits 3-level audible and visual alarm
 Networking: Connected to central monitoring system (available in US market in the middle of 2006)
 Recorder: Built-in, thermal array
 Plethysmogram waveform: 2 channels
 Record mode: manual, on alarm, time-defined, etc.
 Paper width: 50mm
 Print speed: 25mm/s, 50mm/s

ECG

5-lead and 3-lead selectable

Input: 5-lead: RA; LA; RL; LL; V
 I; II; III; aVR; aVL; aVF; V1-V6
 2 channels
 Lead selection: x0, 125; x0.25; x0.5; x1; x2; auto
 ECG waveform: 12.5mm/s, 25mm/s, 50mm/s
 Gain selection: x0, 125; x0.25; x0.5; x1; x2; auto
 Sweep speed: Adult: 15-300bpm; neonate/ Pediatric: 15-350bpm
 Heart Rate range: 1bpm or ± 1%, whichever is greater
 Accuracy: 1bpm
 Resolution: 1bpm
 Filter: Diagnostic mode: 0.05-100Hz
 Monitoring mode: 0.5-40 Hz
 Surgical mode: 1-20Hz
 Protection: Withstand 4000VAC/50Hz voltage in isolation
 Against electrosurgical interference and defibrillation
 Scaling signal: 1mV5%
 Alarm range: 15-350bpm
 Alarm: YES, audible and visual alarm, alarm events recallable

Respiration

Method: Thoracic impedance
 Sensing leads: Lead I and lead II are optional (default: lead II)
 Operation modes: Auto/ Manual
 Measurement range: Adult: 0-120rpm; Neonate/Pediatric: 0-150rpm
 Apnea alarm: YES
 Alarm: YES, audible and visual alarm, alarm events recallable

NIBP

Method: Automatic oscillometric
 Operation modes: Manual/Automatic/Continuous
 Auto measure time: Adjustable
 Measurement unit: mmHg/kPa selectable
 Measurement types: Systolic, Diastolic, Mean

Range of systolic pressure

Adult Mode 40-270 mmHg
 Pediatric Mode 40-200 mmHg
 Neonatal Mode 40-135 mmHg

Range of diastolic pressure

Adult Mode 10-210 mmHg
 Pediatric Mode 10-150 mmHg
 Neonatal Mode 10-95 mmHg

Range of mean pressure

Adult Mode 20-230mmHg
 Pediatric Mode 20-165mmHg
 Neonatal Mode 20-110mmHg

Accuracy of blood pressure measurement

The mean error shall be less than ± 5 mmHg
 The standard deviation shall be less than 8 mmHg

Over-pressure protection:

Resolution: 1mmHg
 Alarm: Systolic, Diastolic, Mean

SpO₂

MINDRAY SpO₂

Measurement range: 0-100%
 Resolution: 1%
 Accuracy: ± 2% (70-100%, Adult/Pediatric, non-motion);
 ± 3% (70-100%, Neonate, non-motion);
 ± 3% (70-100%, Adult/Pediatric/Neonate, motion);
 0-69% unspecified
 Alarm range: 0-100%
 Pulse rate: Range: 20-254bpm
 Resolution: 1bpm
 Accuracy: ± 3bpm (non-motion), ± 5bpm (motion)
 Alarm range: 20-254bpm

MASIMO SpO₂

Measurement range: 0-100%
 Resolution: 1%
 Accuracy: ± 2% (70-100%, Adult/Pediatric, non-motion);
 ± 3% (70-100%, Neonate, non-motion);
 ± 3% (70-100%, Adult/Pediatric/Neonate, motion);
 0-69% unspecified
 Alarm range: 0-100%
 Pulse rate: Range: 25-240bpm
 Resolution: 1bpm
 Accuracy: ± 3bpm (non-motion), ± 5bpm (motion)
 Alarm range: 25-240bpm

NELLCOR SpO₂

Measurement range: 0-100%
 Resolution: 1%
 Accuracy: ± 2% (70-100%, MAX-A, MAX-AL, MAX-N, MAX-P, MAX-I and MAX-FAST sensors);
 ± 2.5% (70-100%, OxiClq A, OxiClq N, OxiClq P and OxiClq I sensors);
 ± 3% (70-100%, D-Y5, DS-100A, OXI-A/N and OXI-F/I sensors);
 ± 3.5% (70-100%, MAX-R, D-YSE and D-YSPD sensors);
 0-69% unspecified
 Alarm range: 0-100%
 Pulse rate: Range: 20-300bpm
 Resolution: 1bpm
 Accuracy: 3bpm(20-250bpm);
 251-300bpm unspecified
 Alarm range: 20-250bpm

Temperature

Measurement range: 0-50°C
 Resolution: 0.1°C
 Accuracy: 0.1°C
 Channel: Dual-channel. Provide T1; T2; Δ T

IBP

Measurement range: -50-300mmHg
 Channel: 2 channels
 Pressure transducer: Sensitivity: 5V/V/mmHg
 Impedance range: 300-3000
 Pressure names: ART, PA, CVP, RAP, LAP, JCP, CPP
 Resolution: 1mmHg
 Accuracy: ± 2% or ± 1 mmHg, whichever is greater (exclusive of transducer)
 Alarm range: -50-300mmHg

EtCO₂

Microstream CO₂

CO₂ range: 0-99mmHg
 Accuracy: 0-38 mmHg ± 2 mmHg
 39-99 mmHg ± 5% of reading + 0.08% for every 1 mmHg (above 38 mmHg)

Resolution: Waveform: 0.1mmHg
 Value: 1 mmHg

Resolution

Sampling rate: 50ml/min -7.5+15ml/min
 Initialization time: 30 seconds (typical),
 Reaches ± 5% steady-state accuracy within 3 minutes.

Response time

Typical value: 2.9s, including the rising time and the delay time (adopting the FilterLine of standard length)
 Rising time: < 190ms (rising from 10% to 90%)
 Delay time: = 2.7s (typical value)
 Respiration rate: 0-150 breaths/min
 Respiration rate accuracy: 0 70bpm ± 1bpm
 71 120bpm ± 2bpm
 121 150bpm ± 3bpm
 Adult, neonate

Mode

Delay time: < 2s
 (Sampling line length: 0.55 inches; internal diameter: 0.055 inches; sampling gas flow rate: 150ml/min)

Welch Allyn CO₂ (Mainstream)

Method: Infrared Absorption
 Measuring Mode: Mainstream
 Measurement range: EtCO₂: 0-99mmHg
 InsCO₂: 0-99mmHg
 AwRR: 0-150bpm
 Resolution: EtCO₂: 1mmHg
 InsCO₂: 1mmHg
 AwRR: 1bpm
 CO₂ concentration: 2mmHg (0-40mmHg)
 5% of reading (41-76mmHg)
 10% of reading (77-99mmHg)
 AwRR: 2bpm
 Alarm range: Same as Measurement range

Multi-Gas/O₂

Method: Infrared Absorption
 Gas sorts: CO₂, N₂O, Des, Iso, Enf, Sev, Hal, O₂ (optional paramagnetic sensor)
 Measurement range: CO₂: 0-30%
 N₂O: 0-105%
 O₂: 0-105%
 Enf, Iso, Hal: 0-30%
 Sev: 0-30%
 Des: 0-30%
 Data output: Fi and ET values
 Respiration rate: ± 1bpm (2-60 bpm)
 61-100 bpm (unspecified)
 Up to 3 waveforms displayed
 Agent mixture detection
 MAC value displayed

Standard configuration:

ECG, RESP, Dual-TEMP, NIBP, SpO₂, Sealed Lead Acid Battery

Options:

Multigas/O₂, Dual-IBP, EtCO₂, Thermal Recorder, Li-ion Battery



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