Defibrillator Monitor Pacemaker with Non-Invasive Blood Pressure (NIBP)

Complete Diagnostic and Monitoring Capabilities

Semi-automatic and manual defibrillators with proven NIBP technology.
Complete Diagnostic and Monitoring Capabilities

ZOLL® M Series® defibrillators with integrated non-invasive blood pressure measurement provide accurate readings in semi-automatic and manual modes. Combined with optional SpO₂, 12-lead ECG and EtCO₂ monitoring, the M Series with NIBP is the easiest to use total resuscitation device.

M Series Specifications

ECG Monitoring
- Patient Connection: 5-lead ECG cable, paddles or MFE Pads. Selectable by heart panel switch.
- Input Protection: Fully defibrillator protected. Special circuit prevents distortion of ECG by pacing pulse (Pacemakerversion only).
- Implanted Pacemaker Spike Display: Dedicated circuitry detects most implanted pacemaker spikes and provides standard display marker of spike on ECG trace.
- Bandwidth: 0.5-40 kHz, standard 0.05-100 Hz diagnostic.
- Lead Selection: Displayed on monitor.
- ECG Size: 0.5, 1, 1.5, 2, 3 mm/mV — displayed on monitor.
- Heart Rate: Digital display 0-300bpm ±5%.
- Heart Rate Alarm: Off/On displayed on monitor. Unselectable, tachycardia 90-200bpm, bradycardia 10-100bpm.
- 7 Volt ECG: Out.1.0 V/m of deflection on strip chart recorder, 2.5mm delay from patient ECG.
- Display Format: Non-fade moving bar display. SmartAlarm™ Beep/voice prompts indicate shockable rhythm.

Display
- Screen Type: High-resolution display.
- Screen Size: 5 inches (12.7cm) diagonally.
- Swee Speed: 25mm/sec.
- Viewing Time: 4 seconds.
- Channels: 2.

Defibrillator
- General:
- Waveforms: Damped sinusoid or ZOLL Rectilinear Biphasic™.
- Charge Time: Less than 7 seconds with a new fully charged battery (first 15 charges to max energy). Depleted batteries will result in a longer defibrillator charge time.
- Energy Display: Monitor display indicates both selected and delivered energy.
- Multi-Function Electrode (MFE) Pads: Specifically designed pre-gelled ZOLL® stat-powiz™ Multi-Function Electrodes packaged in pairs.
- Built-in Defibrillator Tester: Tests defibrillator energy output and continuity of Universal Cable and paddles; documented on PCMCIA card and strip chart.
- Multi-Function Electrode Impedance Measurement Range: 0-250 ohms.

Manual
- Energy: Selection: Damper Size: Selectable at 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 30, 40, 50, 75, 100, 150, 200, 300, 360 joules. (Delivered mitt size 50 ohm load) Selected using controls on sternum paddle or device front panel. Rectilinear Biphasic energy selection up to 200 joules.
- Synchronized Mode: Synchronizes defibrillator pulse to patient’s R-wave. “SYNC” message displayed on monitor. Marker on display and recorder paper identifies R-wave discharge point.
- Paddles: External anterior/anterior adult and pediatric.
- Adult paddles slide off to expose pediatric paddles.
- Charge Controls: Control on ape paddle and on device front panel.

Semi-Automatic:
- AED Function: Auto analyze and charge x3 with programmable auto energy level selection, screen prompts and voice prompts. Advisory Function: Single analysis or programmable auto re-analyze x3 with programmable auto energy level selection and screen prompts.
- Shockable Rhythms: Ventricular fibrillation with amplitude >105µV and wide complex ventricular tachycardia with rates greater than 150bpm.
- Charge Controls: Control on device front panel.
- Energy Selection: Automatic, pre-set shock 1, 2, 3 energy levels—user-configurable. Selectable at 200, 300, 360 joules monophasic, 120, 150, 200 joules biphasic default. Selected using controls on device front panel.

NIBP
- Characteristics and Specifications
  - Patient Population: Adult, Pediatric
  - Method: Oscillometric
  - Control: Automatic and manual measurements
  - Auto Intermittent: 2.5, 5, 10, 15, 20, 30, 45, 60, 90, 120min.
  - STAT Mode: Maximum number of measurements in 5 minutes, not to exceed 10
  - Displayed Pressure: Systolic, Diastolic, Mean
  - Displayed Units: mmHg, kPa
  - Systolic Range: 40 to 260mmHg
  - Diastolic Range: 25 to 200mmHg
  - Mean Range: 30 to 220mmHg
  - Pressure Transducer Accuracy: ±3mmHg
  - Redundant Circuit Output Limit: 300mmHg
  - Pulse Rate Range: 40 to 200bpm
  - Typical Measurement Time: 30 seconds

Standards:
- NIBP Safety: Per IEC 60601-1 and EN 1060-3
- NIBP Performance: Per EN 1060-1 and EN 1060-3

Pacemaker (Pacer Version Only)
- Tidal volume demand, square-root (fixed rate) when used without ECG leads or in ASYNCH pacing mode.
- Pulse: Rectilinear, current constant, 40 milliseconds ±5%, amplitude variable 0 to 140mA ±5% or 5mA, whichever is greater.
- Digital display on the monitoring increments or decrements by a value of 2mA; rate variable from 30 to 180bpm ±5% (increments or decrements by a value of 2ppm).
- Output Protection: Fully defibrillator protected and isolated.
- Multi-Function Electrode (MFE) Pads: Specifically designed pre-gelled ZOLL® stat-powiz™ Multi-Function Electrodes packaged in pairs.

Recorder
- Paper: 80mm thermal (grid width) 45mm (paper width), Speed: 25mm/sec., 100mm/sec.
- Annnotations: Time, date, defibr energy, heart rate, pacer output (pacer version only), GRS sync marker, ECG size, lead, alarm, heart-blackout, failure, analysis halted, error ECG, shock advised, no shock advised, ECG too large, ECG too small and diagnostic bandwidth.
- Printing Method: High-resolution, thermal array print head.
- Printout Mode: Manual or automatic—user-configurable.
- On/Off Control: Front panel and paddle.
- Automatic Function: 15-second recording initiated by alarm activation or defibrillator discharge.

Voice Prompts
- “Attach pads,” “Check pads,” “Check patient,” “Stand clear,” “Press shock,” “No shock advised,” “Check pulse,” “Press shock,” “Defib test OK/Fail,”
- “No shock,” “Defib test OK/Fail,” “If no pulse do CPR.”

PCMCIA Card Slots
- Accepts two standard series Type II Flash Cards, 1-16 MB: Fax modem card capability in slot 2.

PCMCIA Card
- Records continuous ECG and device data: optionally records digitally compressed audio data (AED version only), play on PC with Specified Card Reader and ZOLL Data Control™.

Battery Packs
- Type: Rechargeable, sealed lead acid.
- Recharge Time: 4 hours or less with integral charger.
- Operating Time: For a new, fully charged battery pack at 20°C, 360 defibrillator discharges at maximum energy, or 2.3 hours minimum of continuous ECG monitoring at pacing of 60mA, 80 beats/min.
- Additional parameters will affect operating time. Consult your operator’s guide.

General
- Size: 15.2cm (25.8cm) length x 6.1cm (24.0cm) width x 8.2cm (20.8cm) height.
- Weight: 14.6lb (6.62kg) with Universal Cable and battery; 13.5lb. (6.14kg) with paddles.

Design Standards:
- Safety: Patient all connections are electrically isolated.
- Environmental: Operating Temperature: 0°C to 50°C, Storage and Shipping Temperature: -40°C to 60°C. Humidity: 5% to 95% relative humidity, non-condensing; Vibration: Mil Std 810E, Minimum Intensity: Shock: IEC 68-2-7, 50g half-sine.
- ECG Output: 59mV to 100mV/50cm Material Impenetrable: IEC 526; IEC 60601-1-2 Electromagnetic Emissivity (EMI); CISPR 11 Class B Radiated and Conducted Emissions, Electromagnetic Immunity: AAMI DF-2: IEC 60601-2-4; IEC 60601-2-10; Electromagnetic Discharge: AAMI DF-2: IEC 60601-2, Conducted Susceptibility: IEC 1000-4-4, 1000-4-5, 1000-4-6.

AC Power: Meets all IEC, UL and AAMI safety requirements.

Specifications subject to change without notice.

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