

ZOLL

Semi-Automatic Defibrillator Monitor Pacemaker

MSeries

AED

The Smallest, Lightest AED
with Total Resuscitation Capabilities



ZOLL
It's about time.

ZOLL M Series AED

- The smallest, lightest, brightest defibrillator with semi-automatic and manual defibrillation that meets all needs for BLS and ALS.
- Rugged, easy-to-use, straightforward controls, high contrast display, user configurable voice and visual prompts, and Error Correction.
- Proven superior clinical performance with patented ZOLL external pacing and the new ZOLL low energy Rectilinear Biphasic Defibrillation Waveform.
- Complete documentation with multiple application printer, easy-to-use code markers and a standard PC data card. Download to ZOLL Data Control software for analysis or as a data component of the ZOLL RescueNet™ System.

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Complete Therapeutic and Monitoring Capabilities

The M Series AED provides resuscitation capability in a rugged and upgradeable unit. Semi-automatic and manual defibrillation, integrated AC or DC power, multiple application printer, "best of class" SpO₂, 12 lead ECG and EtCO₂* all available in an amazingly lightweight unit (11lb/5kg).

M Series Specifications

ECG Monitoring

Patient Connection: 3-lead ECG cable, paddles or MFE Pads. Selectable by front panel switch.

Input Protection: Fully defibrillator protected. Special circuit prevents distortion of ECG by pacer pulse. (Pacer version 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 Hz (-3 dB) standard/
0.05-150 Hz diagnostic.

Lead Selection: Displayed on monitor.

ECG Size: 0.5, 1, 1.5, 2, 3 cm/mV - display on monitor.

Heart Rate: Digital display 0-300 bpm ± 5%.

Heart Rate Alarm: On/Off displayed on monitor. User-selectable, tachycardia 60-280 bpm, bradycardia 20-100 bpm.

1 Volt ECG Out: 1.0 volt/cm of deflection on strip chart recorder. < 25 ms delay from patient ECG input.

Display Format: Non-fade moving bar display. **SmartAlarms™:** Beeper/voice prompts indicate shockable rhythm.

Display

Screen Type: High-resolution display.

Screen Size: 5 inches (12.7 cm) diagonally.

Sweep Speed: 25 mm/sec.

Viewing Time: 4 seconds.

Channels: 2.

Information: Heart Rate, Lead/Pads, Alarm On/Off, SpO₂, EtCO₂*, AED Functions and Prompts, Defibrillator Test Function, Error Corrections and Faults, Pacer Functions (optional), Code Markers, Alarm Selection and Limits, Delivered Energy.

Defibrillator

General:

Waveform: Damped sinusoid or ZOLL Rectilinear Biphasic

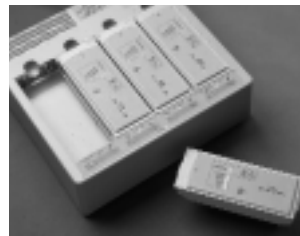
Charge Time: Less than 7 seconds with a new fully charged battery (first 15 charges to max energy.) Depleted batteries will result in a longer defibrillator charge time.

Energy Display: Monitor display indicates both selected and delivered energy.

Multi-Function Electrode (MFE) Pads: Specifically designed pre-gelled ZOLL stat-padz™ 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.



Optional Smart Batteries™ and Base Power Charger 4x4 with Auto Test are the ultimate total battery system.



Manual mode option provides complete ALS monitoring, pacing and defibrillation.

Manual:

Energy Selection: Damped Sine: Selectable at 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 30, 50, 75, 100, 150, 200, 300, 360 joules. (Delivered into 50Ω load.) Selected using controls on sternum paddle or device front panel. Rectilinear Biphasic energy selection up to 200 joules maximum.

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 apex 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 > 100µV and wide complex ventricular tachycardia with rates greater than 150bpm.

Charge Controls: Control on device front panel.

Energy Selection: Automatic, preset shock 1, 2, 3, energy levels—user configurable. Selectable at 200, 300, 360 joules monophasic; 120, 150, 200 joules biphasic. Selected using controls on device front panel.

Pacemaker (Pacer Version Only)

Type: VVI demand; asynchronous (fixed rate) when used without ECG leads or in ASYNC pacing mode.

Pulse: Rectilinear, constant current; 40 milliseconds ± 2%; amplitude variable 0 to 140 mA ± 5% or 5 mA, whichever is greater; digitally displayed on the monitor (increments or decrements by a value of 2 mA); rate variable from 30 to 180 ppm ± 1.5% (increments or decrements by a value of 2 ppm).

Output Protection: Fully defibrillator protected and isolated.

Multi-Function Electrode (MFE) Pads: Specifically designed pre-gelled ZOLL stat-padz Multi-Function Electrodes packaged in pairs.

Recorder (Recorder Version Only)

Paper: 80 mm thermal (grid width), 90 mm (paper width).

Speed: 12.5, 25 mm/sec. (user-selectable), 6-second delay.

Annotations: Time, date, defib energy, heart rate, pacer output (pacer version only), QRS sync marker, ECG size, lead, alarm, defib test OK/Fail, analyze ECG, pads off, analysis halted, noisy ECG, shock advised, no shock advised, ECG too large, ECG too small, and diagnostic bandwidth.

Printing Method: High-resolution, thermal array print head.

Print-out Modes: Manual or automatic - user-configurable.

On/Off Control: Front panel and paddle.

Automatic Function: 15-second recording initiated by alarm activation or defibrillator discharge.

* Subject to 510k clearance and AED integration. Specifications subject to change without notice. ZOLL Data Control, SmartAlarms, Xtreme Pack, RescueNet and stat-padz are trademarks of ZOLL Medical Corporation. © ZOLL Medical Corporation 2000. All rights reserved. 9656-0129 Printed in USA 10M 2/00

Voice Prompts

"Attach pads", "Check pads", "Check patient", "Stand clear", "Press shock".

Visual Prompts

Analyze, Shock adv, No shock adv, Joules selected, Charging, Press shock, Check patient, If no pulse do CPR.

PCMCIA Card Slots

Accepts two standard series Type II Flash Cards, 1-32 MB; Fax modem card capability in slot 2.

PCMCIA Card

Records continuous ECG and device data; optionally records digitally compressed audio data; 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: 35 defibrillator discharges at maximum energy, or 3 hours minimum of continuous ECG monitoring, or 2.5 hours of continuous ECG monitoring/pacing at 60 mA, 80 beats/min.

Additional parameters will effect operating time. Consult your operator's guide.

General

Size: 6.8 in (17.3 cm) high x 10.3 in (26.2 cm) wide x 8.2 in (20.8 cm) deep.

Weight: 11.5 lb. (5.23 kg) with Universal Cable and battery; 13.5 lb. (6.14 kg) with paddles.

Design Standards: Meets or exceeds UL 2601, AAMI DF-39, AAMI DF-2, and IEC 601-2-4.

Patient Safety: All patient connections are electrically isolated.

Environmental: Operating Temperature: 0° to 55°C; Storage and Shipping Temperature: -40° to 65°C; Humidity: 5 to 95% relative humidity, non-condensing; Vibration: Mil Std 810E, Minimum Integrity Test; Shock: IEC 68-2-27, 50g 6ms half sine; Operating Pressure: 594 to 1060 mBar; Material Ingress: IEC 529, IP23; Electromagnetic Compatibility (EMC): CISPR; 11 Class B Radiated and Conducted Emissions; Electromagnetic Immunity: AAMI DF-2; IEC 801-3 to 20 V/m; Electrostatic Discharge: AAMI DF-2; IEC 1000-4-2; Conducted Susceptibility: IEC 1000-4-4, 1000-4-5, 1000-4-6.

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

Options: Xtreme Pack I Carry Case, Xtreme Pack II Durable Rubber Case for added protection

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