Biphasic Automatic AED Defibrillator Monitor

CCS-DM7000

Waveform Details:

The tables below provide details of the waveforms delivered by the DM7000 when connected to resistive loads of 25, 50, and 100 Ohms and set to its maximum output. The waveforms are characterized by tyDM7000al values for peak current (Ip), and for monophasic: duration of the output phase (t) or for biphasic: duration of the first output phase (tphase1), and duration of the second output phase (tphase2). The values shown are within 10%.

Waveform: M&B Model DM7000 Truncated Exponential Monophasic

Output Energy Accuracy:

+/- 10% or 1J (whichever is greater) at 50 ohms

+/- 15% or 1J (whichever is greater) at 25 to 100 ohms

Energy Select:

External: 2, 5, 7, 10, 20, 30, 50, 70, 100, 150, 200, 300, 360 J.

Charge Time:

< 7 seconds @ 360 J (with a SmartPak Plus battery after 15discharges).

<9 seconds @ 360 J (with a SuperPac battery after 15discharges).

< 15 seconds @ 360 J (no battery, 90% AC mains voltage)Charge Indicator: Audible and graphic.

Output:

Adult paddles, pediatric adapter and multipurpose hands-free adapter available.

Synchronizer: Delivers energy within 60 msec.

Disarm: Front panel switch.

Monitor/Display :

Input: 3-lead, 5-lead, patient cable, paddles, or multi-purpose hands-free adapter.

Size: 6.5 inches (16.5 cm) diagonal, non-fade.

Type: color (TFT)

Display Resolution: 800 x 600 pixels.

Sweep Speed: 12.5mm/s,25mm/s,50mm/s

Lead Selections: Paddles (Pads), I, II, III, AVR, AVL, AVF, V.

Frequency Response: (User-selectable).

2 to 20 Hz Limited mode

1 to 40 Hz Monitor mode (before Rev. T8/U8)

0.05 to 150 Hz Diagnostic mode

0.5 to 30 Hz AED mode

Common Mode Rejection:

Meets AAMI EC13-1992, section 3.1.2.1c for 1.2 mV

T-wave (1.0 mV with diagnostic response) and 1mV QRS.
Diagnostic Signals Applied to Patient Connections:
Leads off / active noise suppression sensing circuit is
< 0.1mA DC. The impedance / respiration detector signal
frequency is 45 ± 4kHz at 78mA RMS (117mV RMS into
an impedance of 1.5kW) pseudo-sinewave.
Heart Rate Meter: 20 to 300 BPM.
Heart Rate Alarms: User-selectable.
Size: 0.125, 0.25, 0.5, 1, 2, 4 cm/mv and auto-ranging.
Aspect Ratio: 0.5, 0.1, 0.4, 0.8, 1.6, respectively.
ECG Output: 1 V/mV.
Heart Rate Meter Response Time:
Responds to a 40 BPM step increase in heart rate in 2 to
4.5seconds per AAMI EC-13-1992, section 3.1.2.1.f.
Responds to a 40 BPM step decrease in 1.4 to 3.9 seconds
per AAMI EC-13-1992, section 3.1.2.1.f. Response times
include a 2.5-second display update interval.
Heart Rate Response to Irregular Rhythm: (AAMI EC13-1992,
section 4.1.2.1.e.)
Ventricular Bigeminy: 80 BPM (expected)
Slow Alternating Ventricular Bigeminy: 60 BPM (expected)
Rapid Alternating Ventricular Bigeminy: 120 BPM (expected)
Bidirectional Systole: 45 BPM (expected)
Tachycardia Response Time:
Response time to tachycardia alarm is on average 3.43 seconds (with a range of 1.15 to 10.69 seconds) per AAMI EC-13-1992,
section 3.1.2.1.g. Response times include a 2.5second display update interval.

Alarms:

Heart Rate, BP, SpO2, Resp & Temp Alarm:
Audible: 5 pulse, 800 tone, with a PW of 150 msec, a PRI of 225 msec, and a repetition interval of 10 seconds.
Visual: Heart Rate Alarm causes the displayed heart rate to flash at 2 Hz. This display is located at the top of the display and is 0.4" high and 0.28 to 0.840" wide depending on num-ber of digits in the heart rate. Color is amber, black, white, or whatever the color the display text is.
Lead Fault Alarm: Audible: 3 pulse, 500 Hz, triplet tone with a PW of 200 msec, a PRI of 310 msec. When the HR alarm is set or the
pacer is on, the lead fault tone repeats at a repetition interval of 20 seconds.
Visual: Lead Fault condition causes a ”LEAD FAULT” message to be displayed on the trace along with a dashed line the width of the trace. The text is 0.18" high and is the color of the display text. The dashed line is 5" long, the width of the display. The signal is not modulated.
Physiological Alarms (SpO2):
Audible: See Heart Rate Alarm
Visual: Physiological alarms cause the displayed parameter to flash at 2 Hz. Color is amber, white or the same as the display colored text.
Mute Duration: 90 seconds.

Recorder :

Type: High-resolution thermal array.
Annotation: Time, date, ECG lead, ECG gain, heart rate, defibrillation and treatment summary ACLS events.
Paper Width: 50 mm.
Paper Speed: 25 mm/sec, 50 mm/sec, 12 Lead, 50 mm/sec

Delay: 6 seconds.
Frequency Response: Automatically set to monitor's frequency response.
Treatment Summary: 7 switches to record key ACLS events (IV, INTUB, EPI, LIDO, ATROP, etc.). Automatically logs into memory the type of event, time and ECG sample.
Tx Summary Log: 28 ECG events or 300 non-ECG events.
Record Modes: Manual and automatic (User-configurable).

Battery:

Standard Type: NiCad 12 volt - M&B SmartPak PlusTM.
Standard Capacity: Up to 2 hours ECG monitoring or 60 full-energy discharges or 1.5 hours combined ECG, SpO2 and BP monitoring while pacing. Actual operating times will depend on the number of features activated and the duration of their use. Proper battery care is required to maintain maximum available capacity.
Self-Test: Bi-color LED indicates battery charge state. Green = usable charge, Red = requires charging.
Low Battery Indicator: Flashing low battery icon on display and flashing LED on battery.
Recharge Rate: 80% in 3.5 hours. 100% in 4.5 hours.
High Capacity Type: NiMH 12 volt - M&B SuperPacTM.
High Capacity: Up to 4 hours ECG monitoring or 110 full-energy dis-charges or 3 hours combined ECG, SpO2 and BP monitor-ing while pacing. Actual operating times will depend on the number of features activated and the duration of their use.
Proper battery care is required to maintain maximum available capacity.
Recharge Rate: 80% in 7.5 hours. 100% in 9.5 hours.
Multiple Paired Contacts: Insures quick, error-free insertion and backup reliability.

Configuration:

Biphasic energy output: 2-360J
ECG monitoring
AED

Optional:

SpO2

Features:

Weight: 10 pounds (4.95 kg) (basic configuration).
Size: 13 x 12.5 x 5.3 inches (33 x 31.8 x 13.5 cm).
Operating: Temperature*: 0 to 45° C
Humidity* (NC): 15 to 95% RH (30 to 90% with CO2 probe)
Vibration*: MIL-STD 810E
Shock / Drop*: MIL-STD 810E
Altitude: Up to 4572 M (15,000 feet)
Transport and Storage:
Temperature: -30 to 70°C (-20 to 70°C with CO2 probe)
Humidity: 15 to 95% RH (non-condensing)
Atmospheric pressure: 860 to 1060 hPa
Shock/vibration: ISTA 1A
Enclosure Protection*:
Solid Foreign Object: IEC 529, IP2X
Water: IEC 529, IPX4.
All tests performed per AAMI DF-2 Defibrillation Standard.
Operating Power: M&B SmartPak or auxiliary power from either Welch
Allyn Quick Charger (971104) or the M&B Power
Supply/Paddle Tray (971029).