# MWT Beat-Watch Defibrillator

## Fields of Application

**Health Problem Addressed**
Defibrillators are lifesaving devices that apply an electric shock to establish a more normal cardiac rhythm in patients who are experiencing ventricular fibrillation (VF) or another shockable rhythm.

**Product Description**
The defibrillator charges with a large capacitor. For external defibrillation, paddles are needed to discharge on the patient’s chest. Disposable defibrillation electrodes may be used as an alternative. For internal defibrillation, small concave paddles are used. An ECG monitor included is used to verify a shockable rhythm and the effectiveness of treatment. The defibrillator can be equipped with optional monitoring capabilities, such as pulse oximetry, end-tidal carbon dioxide and NIBP.

## Versatile
Light, Strong, comfortable strap Designed without sharp edges, ideal for emergency transport. The battery, which is easy to replace, allow more than 100 shocks.

## Easy of Use
All operations are concentrated in only two buttons. Ready to use in less than 6 seconds. Biphasic power delivery of up to 360 Joules.

## Practical
Easy operation -1, 2, 3 standard. Clear interface and quick access main functions.

## Smart
Innovative interface that automatically adjusts to the number of parameters, presenting the important information in a clearer and more organized way. Smart monitoring alarms.

## Advanced
Equipped with the AED (Automated External Defibrillator) Mode, Beat-Watch becomes even more compete and appropriate, being ideal for accompaniment of high patients because it has Sudden Death Prevention (SDP) technology. This characteristic allows Beat-Watch to monitor the patient continually and indentify the beginning of ventricular Fibrillation or rapid Ventricular Tachycardia episode. In this Situation, the equipment activates a visual and sound alarm, allowing the patient to be treated with shock in a much shorter time, significantly increasing the chances of reversing cardiorespiratory arrest.

### Standardisation

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### GENERAL SPECIFICATIONS

**Dimensions with pads:** 30.0 cm (11.81 in) length, 21.5 cm (8.46 in) depth, 28.0 cm (11.02 in) height.

**Weight:** Device - 4.90 Kg (10.80lbs), Battery - 0.75 Kg (1.65 lbs), Ext. pads - 0.85 Kg (1.87 lbs). Complete Equipment 6.50 Kg (14.33lbs).

**Electrical:** AC: 100 to 265 VAC, 50/60 Hz (automatic selection), DC external: 11 to 16 VDC.

**Replaceable battery:** Type: NiMH, 14.4 VDC 4.5 A/h.

**Duration:** Battery with full charge - 3.5 hours in monitor mode, without printer, or a minimum of 140 shocks at 360 joules or a minimum of 200 shocks at 200 joules.

**Memory:** Type: Nand Flash, Capacity: 2 Mbytes. Patients stored >150 patients.

**Storage:** 15 seconds of ECG when in shock, physiological alarm and panel events.

### DISPLAY

**Battery level indicator:** Yes.

Size: 9.93 cm (3.90 in) x 13.24 (5.21 in) cm.

**Diagonal:** 6.5".

Type: LCD TFT color.

**Resolution:** 640 x 480 pixels (VGA).

Scan speed: 12.5; 25 and 50 mm/s.

**ECG (up to 12 derivations)**

**Inputs:** 3, 5 or 10 lead ECG cable, External pads, Multifunctional pads.

**Range:** 15 to 350 BPM, Precision: +/- 1 BPM from 15 to 350 BPM.

**Rejection in common mode:** Greater than 90 dB, measured according to AAMI standards for heart monitors (EC 13).

### DEFIBRILLATOR

**Waveform:** Biphasic truncated exponential. Waveform parameters adjusted in terms of patient’s impedance.

**Shock application:** Multifunctional adhesive Pads, Defibrillation Pads.

**Adult/external defibrillation:** Scales: 1, 2, 3, 4, 5, 10, 20, 30, 40, 50, 80, 100, 150, 200, 250, 300 and 360 Joules. Maximum power limited to 50 J with internal or children’s pads.

**Controls:** On/Off button, charge, shock, synchronism.

**Charge control:** Button on the front panel.

**Shock control:** Buttons on the external pads.

**Synchronized control:** SYNC button on the front panel.

**Charge indicators:** Sound signal of equipment being charged, Sound signal of completed charge, LED on external pads and charge level indicated on the display.

**Maximum charging time:** (200J)

Network and battery < 4s, (360J)

Network and battery < 6s

**Sensitivity:** 5, 10, 15, 20, 30 and 40 mm/mV.

AC line filter: 60 Hz or 50 Hz.

ECG response frequency: Diagnostic mode - (0.05 -100 Hz), Monitor Mode - (1-40 Hz).

**Patient insulation:** Defibrillation proof.

**ECG:** CF Type.

**SPO2:** CF Type.

**Loose Electrode:** Identified and low level alarm.

**Defibrillator discharge:** < 5 seconds.
### EXTERNAL PACEMAKER (OPTIONAL)

**Modes:** Demand or fixed.

**Amplitude:** From 5 mA to 200 mA (resolution of 5 mA), accuracy 10%. Pulse width: 20 ms (+/- 1ms).

**Frequency:** From 30 ppm to 180 ppm (increments of 5 ppm), accuracy ± 2%.

**Refractory period:** 340 ms (from 30 to 80 ppm), 240 ms (from 90 to 180 ppm).

### AED MODULE (OPTIONAL)

**Functional characteristics:** Voice instructions, visual indications, CPR instructions, USB 2.0. Multilanguage, Sudden Death Prevention Technology (SDP).

**USB:** USB 2.0 for transfer of the electrocardiogram stored in AED mode to a compatible PC.

**SoftDEA:** Software for viewing the data transferred to the PC.

### CAPNOGRAPHY (OPTIONAL)

Measurement range: CO2: 0 – 99 mmHg

Precision: +/- 3% from 0 to 40 mmHg, +/- 8% from 41 to 76 mmHg, +/- 10% from 77 to 99 mmHg.

Calibration: two points

Start: 10 seconds for CO2 curve start, Less than 3 minutes for complete functioning.

Consumption: 0,8 W

Compensation: BTPS, N2O, O2

### PRINTER (OPTIONAL)

**Type:** Thermal.

**Weight:** 0,4 KG.

**Speed:** 12.5; 25 or 50 mm/s with precision of ±5%.

**Paper size:** 50 mm (width) x 30 m (maximum length).

### SpO2 (OPTIONAL)

**SpO2 range:** 0 to 100 %.

**Pulso range:** 30 to 250 BPM.

**SpO2 precision:** +/- 2 % from 70 to 100%, +/- 3 % from 50 to 69%,

**Pulse Precision:** +/- 2 BPM

**Scan speed:** 12.5; 25 and 50 mm/s

### STANDARDS:

- NBR IEC 60601-1:1994 + emenda 1997
- EN 60601-1-2:2007
- NBR IEC 60601-1-2:2006
- EN 60601-2-4:2003
- NBR IEC 60601-2-4:2005
- EN 60601-2-27:2006
- EN 60601-2-49:2001
- NBR IEC 60601-2-49:2003