Rugged, transport unit

User-friendly controls and display

Optional built-in noninvasive pacing

AC or DC auxiliary power supply

Serial 12-lead adapter available

Optional “hands-free” defibrillation adapter

CODE SUMMARY™ critical event record

The Medtronic Physio-Control LIFEPAK 10 defibrillator/monitor/pacemaker was designed to withstand the harsh environment faced by emergency medical providers throughout the world. This rugged, portable unit, which follows the tradition of the company’s LIFEPAK 5 defibrillator/monitor, is built tough to withstand demanding field requirements.

Features include simple 1-2-3 operation and user-friendly display, and CODE SUMMARY critical event record, which recaps critical events from the moment of “power on.” This unit also features optional built-in noninvasive pacing, AC or DC auxiliary power supply, and a defibrillation adapter for “hands-free” defibrillation. A serial 12-lead adapter is also available.

For ease in transferring a patient from prehospital to hospital care, electrodes and cables are compatible with the family of LIFEPAK 9 defibrillator/monitors. This unit was designed for easier maintenance with on-screen diagnostics for test and calibration. It also includes an integral chassis which allows 360° serviceability.

The LIFEPAK 10 defibrillator/monitor/pacemaker joins the Medtronic Physio-Control family of prehospital products.
**ECG MONITOR**

- **ECG lead selection:** Paddles I, II, III
- **Input:** Isolated ECG via QUIK-LOOK® defibrillator paddles, FAST-PATCH® electrodes, or 3-lead patient cable.
- **ECG cable length:** 3.96m (13 ft) total length; 3.05m cable (10 ft); with 0.91m leads (3 ft)
- **Electrical isolation and shielding:** Input protected against high voltage defibrillator pulses and radio frequency interference per FDA Standard MDS-201-0004. RF interference depends on distance from RF source, radio output power, radiating frequency, vehicle environment, etc.
- **Common mode rejection:** Minimum 100dB with respect to chassis ground at 60Hz, 65dB minimum with respect to isolated ground.

**Cardioscope display**

- **Size:** 72.5mm (2.85 in) x 43.5mm (1.7 in), non-fade
- **Sweep speed:** 25mm/sec
- **Frequency Response:**
  - 1 to 30Hz, -3dB (monitor freq. resp.; domestic)
  - 0.5 to 25Hz, -1.4dB (monitor freq. resp.; agency)
  - 0.05 to 30Hz, -3dB (expanded freq. resp. while recorder in DIAG mode)
- **Strip chart recorder**
  - **Paper size:** 50mm x 30m (100 ft)
  - **Paper speed:** 25mm/sec

**ECG MONITOR**

- **Frequency Response:**
  - 1 to 30Hz, -3dB (monitor freq. resp.; domestic)
  - 0.5 to 25Hz, -1.4dB (monitor freq. resp.; agency)
  - 0.05 to 30Hz, -3dB (expanded freq. resp. while recorder in DIAG mode)
- **Charge time:**
  - 25 discharges at 360 joules per Battery Pak
  - 45 minutes of monitoring or
  - 45 minutes of standby at 25°C

**CODE SUMMARY critical event record:** Digitally stored record of critical ECG and device parameters.

**Status display:**

- **Heart rate:** 3 digit readout displays rates from 20 to 295 bpm
- **Available energy**
- **Pacing rate (optional)**
- **Pacing current (optional)**
- **DIAG (if recorder is operating in diagnostic frequency)**

**ECG output:**

- **Unmodulated:** 1V/mV at x 1.0 gain
- **Modulated:** 1400Hz ± 2% center frequency, 1Vrms, ± 10%
- **Frequency response:** matches strip chart recorder

**QUICK-PACE® NONINVASIVE PACEMAKER**

- **Output rate:** 40 to 170 bpm
- **Output waveform:** Monophasic, truncated, exponential current pulse (20msec; 15 to 25% droop)
- **Output current:** 0 to 200mA
- **Refractory period:** 200 to 340msec (function of rate)

**ECG MONITOR**

- **Waveform:** S5msec monophasic pulse (Edmark) per AAMI spec
- **Energy select:** 0, 5, 10, 20, 50, 100, 200, 300, 360 joules
- **Paddle controls:** Charge (with indicator light); Record (activates strip chart recorder); Energy select (rotating dial; 0 to 360J); Discharge (dual energy discharge buttons, one on each paddle).
- **Charge time:** Charge to 360 joules in less than 12 seconds above 0°C.
- **Paddle area:** 82cm²
- **Synchronizer:** Delivers energy discharge within 20msec of sync marker on cardioverter (triggers to patient generated QRS complexes).
- **Cord length:** 2.3m (7.5 ft)

**ENVIRONMENTAL**

- **Temperature:**
  - Standby: 5 to 55°C (41 to 131°F)
  - Operating: -10 to 55°C (14 to 131°F) after minimum two hour storage at standby temperature
  - Storage (exclusive of batteries): -30 to 65°C (-22 to 149°F)
- **Humidity:**
  - 0 to 95% (noncondensing)
  - 0 to 34°C (32 to 99.2°F)
  - 0 to 80% (noncondensing)
  - 35 to 55°C (95 to 131°F)
- **Atmospheric pressure:** 759 to 439mmHg (-570 to +15,000 ft)
- **Shock (Drop):** With carrying case (soft case), passes drops of 43 inches from the handle (30 inches from case). This exceeds test levels per ECRI Report, Contract No. 223-77-5035, prepared for FDA (April 1979).
- **Vibration Helicopter Aircraft:** MIL-STD-810D, Method 514.3 (category 6). Test levels per U.S. Army Aeromedical Research Laboratory Report No. 91-14, Section 2.6.3. (March 1991), (UH-1 helicopter, floor under co-pilot’s seat).
- **Vibration Fixed-Wing, Turboprop Transport:** (take off and climb) Test level of 0016g/Hz, the maximum level per figure 32(31) of ECRI Report, Contract No. 223-77-5035. Prepared for FDA (April 1979).
- **Sealed case:** MIL-STD-108E and IEC 601-2-4

**GENERAL**

- **Battery:** 3 NiCad batteries, 12V, 1.0 amp hours each.
  - A new Battery Pak registering at least 100% capacity on the Battery Support System will provide at a minimum:
  - 45 minutes of monitoring or
  - 30 minutes of pacing or
  - 25 discharges at 360 joules per Battery Pak

**Physical characteristics**

- **Height:** 10.4cm (4 in)
- **Width:** 40.6cm (16 in)
- **Depth:** 37cm (14.6 in)
- **Weight:** 9kg (20 lbs)

All specifications at 25°C unless otherwise stated.