Propaq® MD

All the Advantages of a Propaq Monitor with a Defibrillator

MedicalSimulator
EMERGENCY RESPONSE

The Propaq® MD was specifically designed to meet the needs of the military and air medical operations when treating critical patients in the field. It combines the well-accepted and proven monitoring capabilities of the Propaq monitor with the clinically superior therapeutic capabilities of ZOLL defibrillation and non-invasive pacing technologies—at half the size of other monitor/defibrillators.

ZOLL®

Propaq MD
Smallest, Lightest, Most Advanced Monitor/ Defibrillator Available

- Robust communications options: integrated Wi-Fi, Bluetooth® with USB cellular modem, and Ethernet capabilities.

- 60% smaller and 40% lighter than other similar monitor/defibrillators.

- First critical care monitor/ defibrillator to receive the IP55 ingress protection rating because of its ability to resist jets of water and dust.

- Meets an unprecedented number of military and airworthiness standards.

- Only airworthy monitor/ defibrillator to offer three invasive pressure channels, necessary to monitor critical patients during long transports.

- Utilizes ZOLL's SurePower™ II battery technology. A single battery provides 6 hours of monitoring of all physiological parameters: 12-lead ECG, NIBP, EtCO$_2$, SpO$_2$, three invasive pressures, two temperature channels, and 10 200-joule shocks.

- First transport monitor/ defibrillator to offer multiple display modes to operate in bright sunlight or during night missions (NVG-friendly display).

- Available with Masimo rainbow® SET SpO$_2$, SpCO, SpMet, SpHb, SpOC, PI, and PVI.

ADVANCING RESUSCITATION. TODAY.®

Propaq MD Specifications

Defibrillator
Waveform: Rectilinear Biphasic™
Energy Selections: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 30, 50, 70, 85, 100, 120, 150, 200 joules
Energy Display: Monitor display indicates both selected and delivered energy.
Charge Time: < 7 seconds to 200 J, typical
Charge Controls: Control on apex paddle and on device front panel.
Paddles: External anterior/anterior adult and pediatric. Adult paddles slide off to expose pediatric paddles. Compatible with ZOLL external paddles (8000-1010-01), ZOLL internal paddles, and the Propaq MD multi-function therapy cable.
Synchronized Mode: Synchronizes defibrillator pulse to patient's R-wave. "SYNC" message displayed on monitor. Marker on display and on recorder paper identifies R-wave discharge point.
Built-In Defibrillator Tester: Tests defibrillator energy output and continuity of universal cable and paddles.
Modes: AED function with manual override, manual defibrillation.

CPR Feedback Technology
See-Thru CPR®: Artifact filtering
Real CPR Help®: Real-time depth and rate feedback
CPR Dashboard™: Numeric readout of depth and rate, release indicator, perfusion performance indicator (PPI)

External Pacer
Type: External transcutaneous pacing
Pulse Types: Rectilinear, constant current
Pulse Width: 40 ms ± 2 ms
Pacer Rate: 30 – 180 BPM ± 1.5%
Output Current: 0 – 140 mA ± 5% or 5 mA
Modes: Demand and Fixed

Display
Type: Bright, Color, LCD TFT
Brightness: User adjustable
Resolution: 640 x 480 pixels
Waveform Traces: Up to 4 waveforms
Display Modes: Standard, High Contrast, NVG (night vision goggle) Friendly
Waveform Display Width: 11.5 cm

ECG:
Cable Detection: Automatic 3-, 5-, 12-lead
Input: 3-lead cable, 5-lead cable, 12-lead cable, paddles, therapy cable
Cable Compatibility: Propaq Encore, Propaq CS
Leads: I, II, III, AVR, AVL, AVF, V1 – V6
Bandwidth: (User Selectable)
  0.67 – 20 Hz Limited mode
  0.67 – 40 Hz Monitor mode
  0.25 – 40 Hz Filtered Diagnostic mode
  0.05 to 150 Hz Diagnostic mode
Heart Rate Range: 30 – 300 BPM
Heart Rate Accuracy: ± 3 BPM or 3%
Pacer detection and display
Electrosurgery interference suppression
ESU and defibrillation protected
ECG Sizes: 0.125, 0.25, 0.5, 1, 2, 4 cm/mv, and auto-ranging
Sweep Speed: 25 mm/sec, 50 mm/sec
Common Mode Rejection: Complies with AAMI EC13-2002 section 4.2.9.10.

Patient Modes:
User Selectable: Adult, Pediatric, Neonate. Sets defaults for alarms, defibrillation energy, and NIBP settings.

Trends (on screen)
Tabular numeric format
All parameters trended/viewable
Trend Intervals: 1, 5, 10, 15, 30, 60 minutes
Duration: 24 hours at 1-minute intervals
Snapshots: Minimum of 32 display data captures (12 seconds of pre- and post-button press)
Quick Access Trend Display via Display Button

Printer
Waveforms Printed: 1, 2, or 3
Print Speeds: 25 mm/sec or 50 mm/sec

Print Modes: Manual or automatic (user configurable)
On/Off Control: Front panel or paddle
Paper Delay: 6 seconds
Frequency Response: Same as the monitor's settings
Paper Width: 80 mm

Masimo® rainbow® SET SpO$_2$
Saturation Range: 1 – 100%
Saturation Accuracy:
Oxygen saturation during no-motion conditions:
Adults, Pediatrics: 70 – 100%, ± 2 digits
0 – 69%, unspecified
Neonates: 70 – 100%, ± 3 digits
0 – 69%, unspecified
Oxygen saturation during motion conditions:
Adults, Pediatrics: 70 – 100%, ± 3 digits
0 – 69%, unspecified
Neonates: 70 – 100%, ± 3 digits
0 – 69%, unspecified
Oxygen saturation during low-perfusion conditions:
Adults, Pediatrics 70 – 100%, ± 2 digits
0 – 69%, unspecified
Neonates: 70 – 100%, ± 3 digits
0 – 69%, unspecified
Pulse Rate Range: 25 – 240 bpm
Pulse rate during no-motion conditions:
Adults, Pediatrics,
Neonates: 25 – 240 ± 3 digits
Pulse rate during motion conditions:
Adults, Pediatrics,
Neonates: 25 – 240 ± 5 digits
SpO$_2$ Average Time Setting:
4, 8 (default), 16 seconds

Masimo rainbow® SET SpCO®
Range: 0 – 99%
Accuracy: 1 – 40% ± 3 digits

Masimo rainbow® SET SpMet®
Range: 0 – 99%
Accuracy: 1 – 15% ± 1 digits

Masimo rainbow® SET SpHb®
Measurement Range: 0 – 25 g/dL
Accuracy (Adults/Infants/Pediatrics): 8 – 17 g/dL +/- 1 g/dL
Resolution (SpHb g/dL): 0.1 g/dL

Masimo rainbow® SET SPOC™
Measurement Range: 0 – 35 mL of O2/dL of blood
Resolution: 01. ml/dL

Masimo Perfusion Index (PI)
Measurement Range: 0.02 – 20%
Resolution: 0.1%

Masimo Pleth Variability Index (PVI®)
Measurement Range: 0 – 100%
Resolution: 1%

Noninvasive Blood Pressure (NIBP)
Smartcuf® and SureBP® NIBP technology
Measurement Intervals: 1-, 2-, 3-, 5-, 10-, 15-, 30-, and 60-minute, and manual
Quick Action NIBP Start/Stop button
TurboCuf: 5 min of repeated NIBP readings
Systolic, diastolic, mean display
On-screen manometer, with large numerics
Cuff overpressure protection
Typical Measurement Time:
  30 – 45 secs (on deflation)
  15 – 30 secs – SureBP (on inflation)
Standard Cuff Sizes: Neonate #1 – #5, Infant, Child, Sm Adult, Adult Long, Lg Adult, Thigh
Default Cuff Inflation Pressure:
  Adult: 160 mmHg
  Pediatric: 120 mmHg
  Neonatal: 90 mmHg
Pressure Measurement Range:
  Systolic: 20 – 260 mmHg
  Diastolic: 10 – 220 mmHg
  Mean: 13 – 230 mmHg

Maximum Cuff Inflation Pressure:
  Adult: 270 mmHg
  Pediatric: 170 mmHg
  Neonatal: 130 mmHg

Specifications subject to change without notice.

Microstream® etCO$_2$
Range:
  0 – 150 mmHg
Accuracy (mmHg):
  0 – 38: ± 2 mmHg
  39 – 150: ± 5 % + .08% /mmHg >38
Respiration Range: 0 – 149 breaths per minute
Respiration Rate Accuracy:
  0 – 70 BPM: ±1 BPM
  71 – 120 BPM: ±2 BPM
  121 – 149 BPM: ±3 BPM
Flow Rate: 50 ml/min -7.5 + 15 ml/min

ECG Impedance Respiration
User-Selectable Leads: RA-LA, RA-LL
Breath Rate Range:
  Adult/Pediatric modes: 2 – 150 RPM
  Neonate mode: 3 – 150 RPM
Respiration Rate Accuracy: ± 2 breaths/min or ± 2%
Sweep Speed: 3.13, 6.25, 12.5 mm/sec

Invasive Pressure
Three channels
Pressure Range: -30 – 300 mmHg
Pulse Rate Measurement Range: 25 – 250 BPM
Formats: S/D, S/D (M), (M) user selectable
User-Selectable Labels: P1, P2, P3, ABP, AO, ART, CVP, BAP, FAP, LAP, PAP, RAP, UAP, UVP, ICP
Transducer Requirements: 5 µV/V/mmHg
Zero Adjustment: ± 200 mmHg
Numeric Pressure Accuracy: ± 2 mmHg or 2% of reading, plus transducer error
Transducer Connector: Standard 6 pin AAMI

Temperature
Two YSI 400/700 compatible channels
Range: 0° – 50° C,
Units: °C or °F
Display: T1, T2, and Delta temp
Accuracy: ± 0.1° C

Power
Rechargeable, user replaceable, lithium-ion battery
Operating Time: 6 hours (display brightness at 30%, ECG, SpO$_2$, EtCO$_2$, IPx3, Temp x2 and NIBP every 15 min, and 10 200-joule shocks)
Battery:
  Size: 182 mm x 95 mm x 31 mm
  Weight: 1.36 lbs
  Battery Indicators: 5 battery capacity LED indicators, fault indicator, recalibration indicator
  Recharge Rate: 4 hours to 100%
AC Power Adapter: 100-240 VAC 50, 60, 400 Hz (@110V)

General
Weight: 10.6 lbs. without paper and battery
11.7 lbs. with paper and battery
Dimensions: 8.9" x 10.4" x 7.9"
With soft handle: 8.9" x 8.75" x 7.9"

Environmental
Operating Temperature: 0° – 50° C
Operating Relative Humidity: 15% – 95%, NC
Operating Altitude: Up to 15,000 ft
Transport/Storage Temperature: -30° – 70° C
Shock: IEC 60068-2-27, 100g, 6ms half sine
Drop:
  1 meter per MIL STD 810G, Method 516-6, 26 drops,
  EN 1789 30-inch functional drop,
  2 meter per IEC 60601-1
Vibration: MIL STD 810G, Method 514.6
4.4.2 Procedure II,
EN ISO 9919 per (IEC 60068-2.64)
EN 1789 for ambulance RTCA/DO-160G (multiple helicopter frequencies)
Enclosure Protection: (IEC 60529)
  Solid Foreign Object: IP5X
  Water Ingress: IPX5

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