Алматы (7273)495-231
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81
Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Саранск (8342)22-96-24
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35
Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

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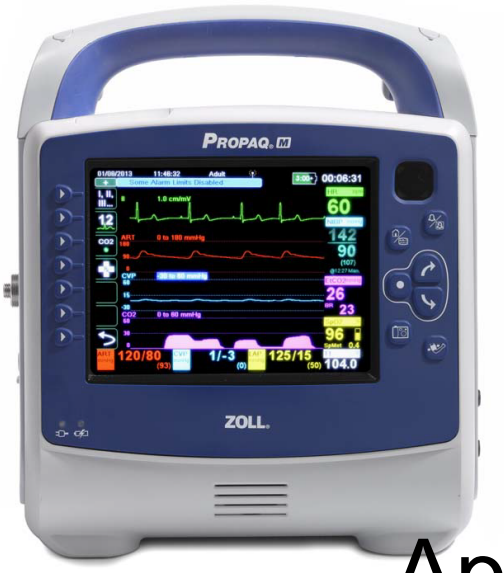
Технические характеристики на

портативные автоматические дефибрилляторы Propaq M

компании ZOLL

Виды аксессуаров: кабели, наборы проводов прекардиального отведения, шланги, замки, одиночные трубки с разъемом Лауэра, комплекты неонатальных манжет, одноразовые датчики для пациентов, многоразовые датчики на палец, адгезивные датчики, многоразовые педиатрические зонды, многофункциональные терапевтические кабели, стерилизуемые внутренние ручки, итнерфейсные кабели, зонды, электроды и др.



Appendix A Specifications

This chapter provides specification information for the Propaq M Monitor.

Monitor/Display

Input: 3-lead, 5-lead, or 12-lead patient cable.

Type: Color LCD, 640 x 480 pixels, 800 MCD

Sweep Speed: 25 mm / sec or 50 mm / sec (User Selectable)

Lead Selections: I, II, III, AVR, AVL, AVF, V1-6.

Frequency Response:

3/5/12 Lead Continuous Monitoring (user selectable):

0.67 to 20Hz Limited response

0.67 to 40Hz Monitor response

Acquired 12-lead snapshots (supervisor selectable):

0.525 to 40Hz Filtered Diagnostic response

0.525 to 150Hz Diagnostic response

Per methods a, b, c of EC11 3.2.7.2

Common Mode Rejection:

Complies with AAMI EC13-2002 section 4.2.9.10.

Tall T-Wave Rejection:

Meets AAMI EC13-2002, section 4.1.2.1c for 0.9 mV

T-wave (0.8 mV with diagnostic response) and 1mV QRS.

Diagnostic Signals Applied to Patient Connections:

Leads off / active noise suppression sensing circuit is < 0.1 microamps DC. The impedance /respiration detector signal frequency is 72 ± 7 kHz at 77 microamps RMS pseudo-sinewave into 100 ohms.

Heart Rate Range: 30 to 300 BPM.

Heart Rate Accuracy: +/- 3% or +/- 3BPM, whichever is greater.

Displayed Heart Rate: Average of last 5 beat-to-beat intervals.

Heart Rate Alarms: User-selectable.

Size: 0.125, 0.25, 0.5, 1, 2, 4 cm/mv and auto-ranging.

Heart Rate Meter Response Time:

Responds to a 40 BPM step increase in heart rate within 4.5 seconds per AAMI EC-13-2002, section 4.1.2.1.f. Responds to a 40 BPM step decrease within 3.9 seconds per AAMI EC-13-2002, section 4.1.2.1.f. Response times include a 1.0-second display update interval.

Heart Rate Response to Irregular Rhythm: (AAMI EC13-2002, 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 3.4 seconds per AAMI EC-13-2002, section 4.1.2.1.g, and IEC 60601-2-27:2011, subclause 201.7.9.2.9.101 b) 6). Response times include a 1.0 second display update interval.

Pacemaker Pulse Rejection:
(In accordance with AAMI EC13:2002, section 4.1.4 and IEC 60601-2-27:2011, subclause 201.12.1.101.13)

- Pulses without overshoot: Rejects all pulses with amplitude of +2 mV to +700 mV and duration of 0.1 ms to 2 ms, with no tail.
- Pulses with overshoot: Rejects all pulses with amplitude of +2 mV to +700 mV and duration of 0.1 ms to 2 ms, with overshoot up to 100 ms.
- A-V sequential pulses: A-V sequential pacemaker pulses may not be rejected.
- Fast ECG signals: Approximately 50% of ECG input pulses with a slew rate of 3 V/s RTI may trigger the pacemaker pulse detector.

Electrosurgery Protection: The Propaq M is suitable for use in the presence of electrosurgery as specified in IEC 60601-2-25 and IEC 60601-2-34. Burn hazard protection via a 1K current limiting resistor contained in each ECG leadwire.

Impedance Pneumography

Displayed Data: Numeric breath rate, Impedance waveform

Breath rate range: Adult, Ped: 2 to 150 breaths / minute

Neonates: 3 to 150 breaths / minute

Breath rate accuracy: 2% or +/- 2 breaths / minute, whichever is greater

Displayed Breath Rate: Average of last 10 breath-to-breath rates.

Leads: Lead I (RA – LA), Lead II (RA – LL)

Sweep Speed: 3.13, 6.25, 12.5 mm/sec

Alarm settings: High, low, and no breath rate alarm

Alarms

Heart Rate Alarms:

Audible: 5 pulse, 900 Hz tone, with a PW of 125 msec, a PRI of 250 msec, and a repetition interval of 15 seconds.

Visual: Heart Rate Alarm causes the heart rate to be displayed in red, with a white background.

The red device status LED will flash a rate of 1.7 Hz.

Lead Fault Alarm:

Audible: 3 pulse, 500 Hz, triplet tone with a PW of 200 msec, a PRI of 200 msec. The lead fault tone repeats at a repetition interval of 30 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.

Physiological Alarms (NIBP, SpO_2, Resp, CO_2, IP & Temp):

Audible: Same as Heart Rate Alarm

Visual: Physiological alarms cause the alarming parameter to be displayed in Red with a white background. The red device status LED will flash at a rate of 1.7 Hz.

Audio Pause (Silence) Duration: 90 seconds.

Invalid Operation Alert Tone:

A short, low-pitched tone is audible when a selected control button is unavailable for use or an invalid entry is detected. Tone frequency is 160 Hz. Duration is 250 msec.

Maximum Alarm Delay (Includes Alarm Condition Delay and Signal Generation Delay):

Heart rate/pulse rate:

- if source is ECG, 9 seconds
- if source is SpO_2, 10 seconds
- if source is IBP, 6 seconds
- if source is NIBP, no hold off

SpO_2, SpCO, and SpMet Saturation: 10 seconds

$EtCO_2$: 7 seconds

$FiCO_2$: 5 seconds

IBP (Systolic, Diastolic, Mean): 3 seconds

Temperature: 2 seconds

Printer (Recorder)

Type: High-resolution thermal array.

Annotation: Time, date, ECG lead, ECG gain, heart rate and treatment summary events.

Paper Width: 80 mm.

Paper Speed: 25 mm/sec, 50 mm/sec

Delay: 6 seconds.

Frequency Response: Automatically set to monitor's frequency response.

Treatment Summary:

10 switches to record key ACLS events (IV, INTUB, EPI, LIDO, ATROP, etc.). Automatically logs into memory the type of event, time and ECG sample.

Full Disclosure Case Log: A combination of 32 monitor snapshots; 500 non-ECG events; and 24 hours of continuous ECG (4 waveforms), Capnography and IBP (3 channels). The actual information stored can be more or less depending on the use profile and the log configuration settings.

Record Modes: Manual and automatic (User-configurable).

Battery

Type: Rechargeable Lithium-Ion, 11.1Vdc, 6.6 Ah, 73Wh

Capacity:

With a new, fully charged battery operating at room temperature:

- At least 7.5 hours of continuous monitoring of ECG, SpO_2, CO_2, three Invasive Pressure channels, and 2 channels of Temperature, with NIBP measurements every 15 minutes (display set to 30%).

Note: Proper battery care is required to maintain maximum available capacity.

Battery Indicators:

5 Battery capacity LED indicators, Fault indicator, Recalibration indicator

Recharge Rate: 100% in 4 hours, when initiated at Low Battery indication.

General

Weight:

With Battery: 8.5 lbs.

With Battery and Printer: 9.9 lbs.

Dimensions:

Without Handle: 8.9” x 8.7” x 6.5”

With Handle: 8.9” x 10.4” x 7.1”

With Printer: 8.9” x 10.4” x 7.9”

Operating:

Temperature: 0 to 50° C

Humidity: 15 to 95% RH (non-condensing)

Vibration:

- MIL-STD 810G, Method 514.6, Profile for combined UH-1, UH-60, and CH-47 Rotary Wing Aircraft.
- EN 1789 for ambulance

Shock: MIL-STD 810G, Method 516.6, Tested at 75 g

Bump: EN 1789 (IEC 60068-2-29)

Drop: MIL-STD 810G, Method 516-6, Tested at 1 meter with 26 drops

IEC 60601-1, Tested at 2 meters

Altitude: -170 M to 4572 M (-557 feet to 15,000 feet)

Transport and Storage:

Temperature: -30 to 70°C

Note:	The Propaq M device may not perform to specifications when stored at the upper or lower extreme limits of storage temperature and immediately put into use.

Humidity: 15 to 95% RH (non-condensing)

Atmospheric pressure: 572 mbar to 1034 mbar

Shock/vibration: MIL STD 810G, Method 514.6, 4.4.2, Procedure II

Safety Classification: Class 1 and internal power per IEC/EN 60601-1

Enclosure Protection:

Solid Foreign Object: IEC 60529, IP5X

Water: IEC 60529, IPX5

Auxiliary Operating Power:

Auxiliary Power Adapter, 8300-0004

Input: 100-240V ∿ 50-60 Hz, 2A

100-115V ∿ 400 Hz, 2A

Output: 14.5V ⎓ 4.15A

80W (peak)

IP Rating: IP23

CO_2

Range: 0 to 150 mmHg

Accuracy CO_2:

CO_2 Partial Pressure*	**Accuracy ****
0-38 mmHg	± 2 mmHg
39-99 mmHg	± (5% of reading + 0.08% for every 1 mmHg above 38 mmHg)
100-150 mmHg	± (5% of reading + 0.08% for every 1 mmHg above 38 mmHg)

* At sea level.

** Accuracy applies for breath rates of up to 80 bpm. For breath rates above 80 bpm, accuracy is 4 mmHg or ±12% of reading whichever is greater, for $EtCO_2$ values exceeding 18 mmHg. This is tested according to and is compliant with ISO 21647. To achieve the specified accuracies for breath rates above 60 breaths/minute, the Microstream FilterLine H Set for Infant/Neonatal must be used. Above 40 C, ± 1mmHg or ± 2.5% (whichever is greater) has to be added to the tolerance of the accuracy specs.

CO_2 Sampling Interval: 50 msec

Drift of Measurement Accuracy: Over any 24-hour period, the accuracy claims listed above are maintained.

The accuracy specification is maintained to within 4% for the following gas mixtures (all values are in Vol.%).

CO_2	**N_2**	**O_2**	**N_2O**	**H_20**	**Anesthetic Agents**
1.0 to 13	0 to 97.5	0 to 100	0 to 80	Dry to saturated	According to EN 21647

Respiration Range: 0 to 149 breaths per minute

Respiration Rate Accuracy:

0 to 70 bpm: ±1 bpm

71 to 120 bpm: ±2 bpm

121 to 149 bpm: ±3 bpm

Flow rate: 50 ml/min -7.5 + 15 ml/min, flow measured by volume.

Total System Response Time: 2.9 seconds typical, 3.9 seconds maximum.

Pulse Oximeter

Range:

Oxygen Saturation (% SpO_2)	0% - 100%
Carboxyhemoglobin Saturation (% SpCO)	0% - 99%
Methemoglobin Saturation (% SpMet)	0% - 99%
Total Hemoglobin (g/dL SpHb)	0 – 25 g/dL
Total Oxygen Content (% SpOC)	0 – 35 ml/dL
Perfusion Index (% PI)	0.02% - 20%
Pleth Variability Index (% PVI)	0% - 100%
Pulse Rate (bpm)	25 - 240 beats per minute

Accuracy:

Oxygen Saturation (% SpO_2) - During No Motion Conditions

60 -80 ± 3%, Adults/Pediatrics/Infants

70 - 100 ± 2%, Adults/ Pediatrics/Infants; ± 3%, Neonates

Oxygen Saturation (% SpO_2) - During Motion Conditions

70% - 100% ±3% Adults/ Pediatrics/Infants/Neonates

Oxygen Saturation (% SpO_2) - During Low Perfusion Conditions

70 - 100 ± 2%, Adults/Pediatrics/Infants/Neonates

Pulse Rate (bpm) - During No Motion Conditions

25 - 240 ±3 bpm Adults/Pediatrics/Infants/Neonates

Pulse Rate (bpm) - During Motion Conditions

25 - 240 ±5 bpm Adults/Pediatrics/Infants/Neonates

Pulse Rate (bpm) - During Low Perfusion Conditions

25 - 240 ±3 bpm Adults/Pediatrics/Infants/Neonates

Carboxyhemoglobin Saturation (% SpCO)

1% - 40% ±3% Adults/Pediatrics/Infants

Methemoglobin Saturation (% SpMet)

1% - 15% ±1% Adults/Pediatrics/Infants/Neonates

Total Hemoglobin (ml/dL SpHb)

8 – 17 ±1 g/dL (arterial or venous) Adults/Pediatrics

Resolution:

SpO_2: 1%

SpCO: 1%

SpMet: 0.1% for range up to 9.9%, 1% for range 10 - 99%

SpHb: 0.1 g/dL

SpOC: 0.1 ml/dL

PVI: 1%

PI: 0.1%

Pulse rate: 1 bpm (beats per minute)

Alarm Limits: On/Off displayed on monitor. User selectable.

SpO_2: High 72 - 100% saturation, Low 70 - 98% saturation
SpCO: High 2 - 100% saturation, Low 0 - 99% saturation
SpMet: High 1 - 100% saturation, Low 0 - 99% saturation
SpHb: High 2 - 25 g/dL, Low 0 - 24.9 g/dL
SpOC: High 0.1 – 35 ml/dL, Low 0 – 34.9 ml/dL
PVI: High 2 – 100%, Low 0 – 98%
PI: High 0.2 – 20%, Low 0 – 19.8%
Pulse Rate: High 60 - 235 beats per minute, Low 20 - 100 beats per minute

SpO_2 Wavelength for Sensors:

Masimo's LNOP and LNCS sensors use Red and Infrared light emitting diodes. The wavelengths for all of the sensors except LNOP tip clip (LNOP TC-I), LNCS/M-LNCS tip clip (LNCS/M-LNCS TC-I), LNOP transflectance (LNOP TF-1), and LNCS/M- LNCS transflectance (LNCS/M-LNCS TF-1), are identified as follows:

LED	Wavelength
Red	660 nm
Infrared	905 nm

The LNOP tip clip (LNOP TC-I) and LNCS/M-LNCS tip clip (LNCS/M-LNCS TC-I) sensors use different light emitting diodes. The wavelength information is as follows:

LED	Wavelength
Red	653 nm
Infrared	880 nm

The LNOP transflectance (LNCS/M-LNCS TF-I) forehead sensors use different light emitting diodes. The wavelength information is as follows:

LED	Wavelength
Red	660 nm
Infrared	880 nm

For Sp02 calculations with a rainbow sensor, the wavelength values shown inthe above tables are the same. For rainbow parameter measurements, sensors use light emitting diodes in both the visible and infrared spectrum from the 500 nm to 1400 nm range.

Energies (Radiant Power) of light for LNCS Sensors at 50 mA pulsed:

≤ 15 mW

Energies (Radiant Power) of light for Rainbow Sensors at 100 mA pulsed:

≤ 25 mW

Bio-Compatibility:

Patient contacting material meets requirements of ISO 10993-1, Biological Evaluation of Medical Device - Part I, for external devices, intact surfaces and short-term exposure

Environmental:

Operating Temperature: 0º to 50º C (32º to 122º F)
Storage Temperature: -40º to 70º C (-40º to 158º F)

Electromagnetic Immunity (SpO_2 Option Only):

AAMI DF-80; EN61000-4-3:2002 to 10 V/m

Notes:

- SpO_2, SpCO and SpMet accuracy was determined by testing on healthy adult volunteers in the range of 60-100% $Sp0_2$, 0-40% SpCO, and 0-15% SpMet against a laboratory CO-Oximeter. $Sp0_2$ and SpMet accuracy was determined on 16 neonatal NICU patients ranging in age from 7-135 days old and weighing between 0.5-4.25 kg. Seventy-nine (79) data samples were collected over a range of 70-100% $Sa0_2$ and 0.5-2.5% MetHb with a resultant accuracy of 2.9% SpO_2 and 0.9% SpMet.
- The Masimo sensors have been validated for no motion accuracy in human blood studies on healthy adult male and female volunteers with light to dark skin pigmentation in induced hypoxia studies in the range of 70-100% SpO_2 against a laboratory CO-Oximeter and ECG monitor. This variation equals plus or minus one standard deviation. Plus or minus one standard deviation encompasses 68% of the population.
- The Masimo sensors have been validated for motion accuracy in human blood studies on healthy adult male and female volunteers with light to dark skin pigmentation in induced hypoxia studies in the range of 70-100% SpO_2 against a laboratory CO-oximeter and ECG monitor. This variation equals plus or minus one standard deviation which encompasses 68% of the population.
- The Masimo SET Technology has been validated for low perfusion accuracy in bench top testing against a Biotek Index 2 simulator and Masimo's simulator with signal strengths of greater than 0.02% and transmission of greater than 5% for saturations ranging from 70 to 100%. This variation equals plus or minus one standard deviation which encompasses 68% of the population.
- The Masimo sensors have been validated for pulse rate accuracy for the range of 25-240 bpm in bench top testing against a Biotek Index 2 simulator. This variation equals plus or minus one standard deviation which encompasses 68% of the population.
- SpHb accuracy has been validated on healthy adult male and female volunteers and on surgical patients with light to dark skin pigmentation in the range of 8-17 g/dl SpHb against a laboratory CO-oximeter. This variation equals plus or minus one standard deviation which encompasses 68% of the population. The SpHb accuracy has not been validated with motion or low perfusion.
- The following substances may interfere with pulse CO-Oximetry measurements:
  - Elevated levels of Methemoglobin (MetHb) may lead to inaccurate SpO_2 and SpCO measurements
  - Elevated levels of Carboxyhemoglobin (COHb) may lead to inaccurate SpO_2 measurements.
  - Very low arterial Oxygen Saturation (SpO_2) levels may cause inaccurate SpCO and SpMet measurements.
  - Severe anemia may cause erroneous SpO_2 readings.
  - Dyes, or any substance containing dyes, that change usual blood pigmentation may cause erroneous readings.
  - Elevated levels of total bilirubin may lead to inaccurate SpO_2, SpMet, SpCO and SpHb readings.

Non-Invasive Blood Pressure

Technique: Non-invasive oscillometric method

Operating Modes: Automatic and manual

Automatic Intervals: 1, 2, 3, 5, 10, 15, 30 and 60 minute intervals.

Turbocuf: Maximum measurements allowable in a 5 minute period

Pressure Measurement Range:

Systolic: 20 to 260 mmHg

Diastolic: 10 to 220 mmHg

Mean: 13 to 230 mmHg

Static Pressure Accuracy: +/- 3 mmHg

Pulse Rate Range:

Adult: 30 to 200 +/- 5 BPM

Pediatric: 30 to 200 +/- 5 BPM

Neonatal: 35 to 220 +/- 5 BPM

Default Cuff Inflation Pressure:

Adult: 160 mmHg

Pediatric: 120 mmHg

Neonatal: 90 mmHg

Maximum Cuff Inflation Pressure:

Adult: 270 mmHg

Pediatric: 170 mmHg

Neonatal: 130 mmHg

Single Fault Backup Overpressure Limit:

Adult: 308 mmHg

Pediatric: 205 mmHg

Neonatal: 154 mmHg

Typical Determination time without Artifact:

Measurements on the deflation: 30 to 45 seconds

Measurements on the inflation (SureBP)*: 15 to 30 seconds

* using dual lumen cuffs

Maximum Determination Time - Measurement on the Inflation

Adult: 150 seconds

Pediatric:120 seconds

Neonatal:80 seconds

Blood Pressure Validation:

Blood pressure measurements determined with this device are equivalent to those obtained by a trained observer using the cuff/stethoscope auscultation method for adults and pediatric patients and equivalent to an intra-arterial measurement for neonatal patients, within the limits prescribed by the American National Standards Institute (ANSI-AAMI SP10). To receive a copy of the report containing the AAMI SP10 results, contact the ZOLL Technical Service Department.

NIBP Accuracy:

NIBP accuracy has been verified utilizing clinical test methods which have been determined to meet the requirements of EN ISO 81060-2:2012.

Invasive Pressures

Number of Channels: 3

Pressure range: -30 to 300 mmHg

Pressure Accuracy: +/- 2 mmHg or 2% of reading, whichever is greater, plus transducer error.

Pulse Rate Range: 25 to 250 BPM

Pulse Rate Accuracy: +/- 3 BPM, or +/- 3% of value whichever is greater

Pulse Rate Display: Average of last 4 beat-to-beat intervals.

Zero Adjust: + / - 200 mmHg

Transducer:

Sensitivity: 5uV/V/mmHg

Offset: +/- 125 mmHg including transducer offset

Excitation Impedance Range: 150 to 10,000 ohms

Excitation Voltage: 4.75 +/- 0.25 VDC

Connector: 6-pin circular MS3100 series

Connect to:	A	B	C	D	E
Signal Type	Sig (-)	Exc (+)	Sig (+)	Exc (-)	shield

Temperature

Number of Channels: 2

Measurement Range: 0° to 50° C

Accuracy:

± 0.1° C from 10° C to 50° C, plus probe error

± 0.2° C from 0° C to 10° C, plus probe error

Resolution: 0.1° C

Scale: Fahrenheit or Celsius.

Temperature Display Signal: 20Hz, no averaging.

Probe: YSI 400 and 700 series

Mode of Operation: Direct mode

Display: T1, T2, ΔT

Minimum Measurement Time: See the probe's Instructions for Use to obtain minimum measurement times for accurate readings. The Propaq M does not add any clinically significant time to obtain accurate readings.

Electromagnetic Compatibility Guidance and Manufacturer's Declaration

In-Flight Use (RTCA/DO-160):

The Propaq M unit complies with RTCA/DO-160, Environmental Conditions and Test Procedures for Airborne Equipment, using the methods in Section 21, Category M for Radiated and Conducted Radio Frequency Energy.

<table>
<tr><th colspan="3">Guidance and manufacturer's declaration – electromagnetic emissions</th></tr>
<tr><td colspan="3">The Propaq M unit is intended for use in the electromagnetic environment specified below. The customer or the user of the Propaq M unit should assure that it is used in such an environment.</td></tr>
<tr><th>Emissions test</th><th>Compliance</th><th>Electromagnetic environment – guidance</th></tr>
<tr><td>RF emissions CISPR 11</td><td>Group 1</td><td>The Propaq M unit uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.</td></tr>
<tr><td>RF emissions CISPR 11</td><td>Class B</td><td rowspan="3">The Propaq M unit is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.</td></tr>
<tr><td>Harmonic emission IEC 61000-3-2</td><td>Class A</td></tr>
<tr><td>Voltage fluctuations/ flicker emissions IEC 61000-3-3</td><td>Complies</td></tr>
<tr><td colspan="3">Medical Electrical Equipment needs special precautions regarding EMC and needs to be installed and put into service according to EMC information provided in this document.</td></tr>
</table>

Electromagnetic Immunity (IEC 60601-1-2)

The Propag M monitor's essential performance is ECG, SpO2, CO2 (respiration), IBP, NIBP, and temperature (TEMP), as specified in this Appendix. The Propaq M monitor meets basic safety and essential performance when it is operated in the electromagnetic environment specified in the following tables.

Guidance and manufacturer's declaration – electromagnetic immunity			
The Propaq is intended for use in the electromagnetic environment specified below. The customer or the user of the Propaq M should assure that it is used in such an environment.			
Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment – guidance**
Electrostatic discharge (ESD) IEC 61000-4-2	± 8 kV contact ± 15 kV air	± 8 kV contact ± 15 kV air	The relative humidity should be at least 5%.
Electrical fast transient / burst IEC 61000-4-4	± 2 kV for power supply lines ± 1 kV for input/ output lines	± 2 kV for power supply lines ± 1 kV for input/ output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	± 1 kV line(s) to line(s) ± 2 kV line(s) to earth	± 1 kV differential mode ± 2 kV common mode	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5% U_T (>95% dip in U_T) for 0.5 cycle 40% U_T (60% dip in U_T) for 5 cycles 70% U_T (30% dip in U_T) for 25 cycles <5% U_T (>95% dip in U_T) for 5 sec	<5% U_T (>95% dip in U_T) for 0.5 cycle 40% U_T (60% dip in U_T) for 5 cycles 70% U_T (30% dip in U_T) for 25 cycles <5% U_T (>95% dip in U_T) for 5 sec	Mains power quality should be that of a typical commercial or hospital environment. If the user of the Propaq M unit requires continued operation during power mains interruptions, it is recommended that the Propaq M unit be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	30 A/m	30 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
Note: U_T is the AC mains voltage prior to application of the test level.			

Caution In extreme cases, ESD events have the capability to reset the Propaq M. In the case of a system reset it may be necessary to re-zero the IBP channels. If ECG, SPO_2, or temperature monitoring fail due to an ESD event, the system may require a power cycle to restart those features.

Electromagnetic Immunity

Guidance and manufacturer's declaration – electromagnetic immunity			
The functions of the Propaq M are intended for use in the electromagnetic environment specified below. The customer or user of the Propaq M should ensure that it is used in such an environment.			
Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment – guidance**
			Portable and mobile RF communications equipment should be used no closer to any part of the Propaq M, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. **Recommended separation distance**
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz outside ISM bands[a]	3 Vrms	$d = 1.2\sqrt{P}$
	10 Vrms 150 kHz to 80 MHz in ISM bands[a]	10 Vrms	$d = 1.2\sqrt{P}$
Radiated RF IEC 61000-4-3 (ECG monitoring from PADS and SpO2)	10 V/m 80 MHz to 2.5 GHz	10 V/m	$d = 1.2\sqrt{P}$ 80 MHz to 800 MHz $d = 2.3\sqrt{P}$ 800 MHz to 2.7 GHz
Radiated RF IEC 61000-4-3 (EtCO2, NIBP, Temp)	20 V/m 80 MHz to 2.7 GHz	20 V/m	$d = 0.6\sqrt{P}$ 80 MHz to 800 MHz $d = 1.2\sqrt{P}$ 800 MHz to 2.7 GHz
Radiated RF IEC 61000-4-3 (all other functions)	10 V/m 80 MHz to 2.7 GHz	20 V/m	$d = 0.6\sqrt{P}$ 80 MHz to 800 MHz $d = 1.2\sqrt{P}$ 800 MHz to 2.7 GHz
Radiated RF IEC 60601-1-2 (wireless communications)	28 V/m for GSM, TETRA 800, iDEN 820, CDMA 850, or LTE Band 5 services (0.3 m separation)	12 V/m	d = 0.7 minimum
	27 V/m for TETRA 400 service	27 V/m	d = 0.3 minimum
	28 V/m for GMRS 460, FRS 460, GSM 1800, CDMA 1900, GSM 1900, DECT, LTE Band 1, 3, 4, and 25, UMTS, Bluetooth, WLAN, 802.11 b/g/n, RFID 2450, and LTE Band 7 services	28 V/m	d = 0.3 minimum
	9 V/m for LTE Band 13 and 17, and WLAN 802.11 a/n services	9 V/m	d = 0.3 minimum

			where P is the maximum output power rating of the transmitter in watts according to the transmitter manufacturer and d is the recommended separation distance in meters.[b] Field strengths from fixed RF transmitters, as determined by electromagnetic site survey,[c] should be less than the compliance level in each frequency range.[d] Interference may occur in the vicinity of equipment marked with the following symbol: 
NOTE 1: At 80 MHz and 800 MHz, the higher frequency range applies. NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.			

a. The ISM (industrial, scientific, and medical) bands between 150 kHz and 80 MHz are 6.765 MHz to 6.795 MHz; 13.553 MHz to 13.567 MHz; 26.957 MHz to 27.283 MHz; and 40.66 MHz to 40.70 MHz.

b. The compliance levels in the ISM frequency bands between 150 kHz and 80 MHz and in the frequency range 80 MHz to 2.7 GHz are intended to decrease the likelihood that mobile/portable communications equipment could cause interference if it is inadvertently brought into patient areas. For this reason, an additional factor of 10/3 is used in calculating the recommended separation distance for transmitters in these frequency ranges.

c. Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the Propaq M is used exceeds the applicable RF compliance level above, the Propaq M should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the Propaq M.

d. Over the frequency ranges 150 kHz to 80 MHz field strength should be less than 3 V/m.

Recommended Separation Distances from RF Equipment for the Propaq M Functions

Recommended separation distances between portable and mobile RF communications equipment and the Propaq M

The functions of the Propaq M are intended for use in the electromagnetic environment in which radiated RF disturbances are controlled. The customer or user of the Propaq M can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the Propaq M as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of equipment (in watts)	**Separation distance according to frequency of transmitter (in meters) for ECG monitoring from leads**			
	150 kHz to 80 MHz outside ISM bands $d = 1.2\sqrt{P}$	**150 kHz to 80 MHz in ISM bands** $d = 1.2\sqrt{P}$	**80 MHz to 800 MHz** $d = 0.6\sqrt{P}$	**800 MHz to 2.7 GHz** $d = 1.2\sqrt{P}$
0.01	0.12	0.12	0.06	0.12
0.1	0.38	0.38	0.19	0.38
1	1.2	1.2	0.60	1.2
10	3.8	3.8	1.9	3.8
100	12	12	6	12
Rated maximum output power of equipment (in watts)	**Separation distance according to frequency of transmitter (in meters) for ECG monitoring from pads and SpO_2**			
	150 kHz to 80 MHz outside ISM bands $d = 1.2\sqrt{P}$	**150 kHz to 80 MHz in ISM bands** $d = 1.2\sqrt{P}$	**80 MHz to 800 MHz** $d = 1.2\sqrt{P}$	**800 MHz to 2.7 GHz** $d = 2.3\sqrt{P}$
0.01	0.12	0.12	0.12	0.23
0.1	0.38	0.38	0.38	0.73
1	1.2	1.2	1.2	2.3
10	3.8	3.8	3.8	7.3
100	12	12	12	23
Rated maximum output power of equipment (in watts)	**Separation distance according to frequency of transmitter (in meters) for all other functions**			
	150 kHz to 80 MHz $d = 1.2\sqrt{P}$	**80 MHz to 800 MHz** $d = 0.6\sqrt{P}$	**800 MHz to 2.7 GHz** $d = 1.2\sqrt{P}$	
0.01	0.12	0.02	0.04	
0.1	0.38	0.06	0.11	
1	1.2	0.18	0.35	
10	3.8	0.57	1.1	
100	12	1.8	3.5	

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in meters can be determined using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts according to the transmitter manufacturer.
NOTE 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.
NOTE 2: The ISM (industrial, scientific, and medical) bands between 150 kHz and 80 MHz are 6.765 MHz to 6.795 MHz; 13.553 MHz to 13.567 MHz; 26.957 MHz to 27.283 MHz; and 40.66 MHz to 40.70 MHz.
NOTE 3: An additional factor of 10/3 is used in calculating the recommended separation distances for transmitters in the ISM frequency bands between 150 kHz and 80 MHz and in the frequency range 80 MHz to 2.7 GHz to decrease the likelihood that mobile/portable communications equipment could cause interference if it is inadvertently brought into patient areas.
NOTE 4: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.

Caution Failure to maintain appropriate separation distance to RAIN RFID emitters (860-960 MHz) may cause a failure of ECG monitoring functions. The system may require a power cycle to restart those features.

Wireless Output Guidance and Manufacturer's Declaration

RF Transmission Emitted (IEC 60601-1-2)

The Propaq M unit complies with IEC 60601-1-2 for medical electrical equipment and medical electrical systems that include RF transmitters as specified below.

Standard	Frequency Range	Effective Radiated Power	Modulation Type	Data Rates
802.11b	2412-2472 MHz	100 mW	DSSS	1, 2, 5.5, 11 Mbps
802.11g	2412-2472 MHz	32 mW	OFDM	6, 9, 12, 24, 36, 48, 54 Mbps
802.11n	2412-2472 MHz	32 mW	OFDM	6.5, 13, 19.5, 26, 39, 52, 58.5, 65 Mbps
Bluetooth	2400-2483.5 MHz	10 mW	FHSS; GFSK/ DQPSK/8DPSK	1, 3 Mbps
802.11a	5180-5320 MHz 5500-5700 MHz 5745-5825 MHz	32 mW	OFDM	6, 9, 12, 24, 36, 48, 54 Mbps
802.11n	5180-5320 MHz 5500-5700 MHz 5745-5825 MHz	32 mW	OFDM	6.5, 13, 19.5, 26, 39, 52, 58.5, 65 Mbps

FCC Notice

ZOLL Medical Corporation has not approved any changes or modifications to this device by the user. Any changes or modifications could void the user's authority to operate the equipment. See 47 CFR Section 15.21.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. See 47 CFR Section 15.19(a)(3).

The user is cautioned to maintain 20cm (8 inches) of space from the product to ensure compliance with FCC requirements.

This device is limited to indoor use in the 5150MHz to 5250MHz band.

Note: Harmful Interference is defined by the FCC as follows:
Any emission, radiation or induction that endangers the functioning of a radio navigation service or of other safety services or seriously degrades, obstructs or repeatedly interrupts a radio communications service operating in accordance with FCC rules.

Canada, Industry Canada (IC) Notices

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Appendix B
Accessories

The following accessories are compatible for use with the Propaq M unit. To order any of these items, contact your local ZOLL representative.

ECG Accessories
ECG, 3-Lead Cable, AAMI
ECG, 3-Lead Cable, IEC
ECG, 5-Lead Cable, AAMI
ECG, 5-Lead Cable, IEC
ECG, 12-Lead “Breakaway” Patient Cable Complete (Trunk Cable, 4-lead wire set with detachable 6 “V” precordial lead wire set), AAMI
ECG, 12-Lead “Breakaway” Patient Cable Complete (Trunk Cable, 4-lead wire set with detachable 6 “V” precordial lead wire set), IEC
ECG, 4-Lead “Breakaway” Trunk Cable and 4 lead wire set only, AAMI
ECG, 4-Lead “Breakaway” Trunk Cable and 4 lead wire set only, IEC
ECG, Detachable 6 precordial lead wire set for “Breakaway” 12-Lead Patient Cable, AAMI
ECG, Detachable 6 precordial lead wire set for “Breakaway” 12-Lead Patient Cable, IEC

CO_2 Accessories (Oridion Filterlines)
Smart CapnoLine Plus, Non-intubated filterline with O_2 Delivery, Adult, box of 25
Smart CapnoLine Plus, Non-intubated filterline with O_2 Delivery, Pediatric, box of 25
FilterLine H Set, Adult/Pediatric, box of 25
FilterLine H Set, Infant/Neonate, box of 25
FilterLine Set, Adult/Pediatric, box of 25
VitaLine H set Adult/Pediatric, box of 25
NIBP Accessories
Hoses
Hose, Infant/Neonate, 8', w/ female luer cuff connector, single lumen
Hose, Infant/Neonate, 8', w/ ISO Compliant connector
Hose, Adult/Pediatric, 10', w/ “twist lock” cuff connector, dual lumen
Hose, Adult/Pediatric, 5', w/ “twist lock” cuff connector, dual lumen
Reusable Cuffs (Welch Allyn Blood Pressure Flexiport Cuffs)
Neonate #1, 3.3 - 5.6 cm single tube w/ male luer connector, box of 10
Neonate #2, 4.2 - 7.1 cm single tube w/ male luer connector, box of 10
Neonate #3, 5.4 - 9.1 cm single tube w/ male luer connector, box of 10
Neonate #4, 6.9 - 11.7 cm single tube w/ male luer connector, box of 10
Neonate #5, 8.9 - 15.0 cm single tube w/ male luer connector, box of 10
Neonate #1, 3.3 - 5.6 cm single tube w/ ISO Compliant female non luer connector, box of 10
Neonate #2, 4.2 - 7.1 cm single tube w/ ISO Compliant female non luer connector, box of 10
Neonate #3, 5.4 - 9.1 cm single tube w / ISO Compliant female non luer connector, box of 10
Neonate #4, 6.9 - 11.7 cm single tube w/ / ISO Compliant female non luer connector, box of 10
Neonate #5, 8.9 - 15.0 cm single tube w/ / ISO Compliant female non luer connector, box of 10
Neonatal Cuff Kit, one each of sizes #1 - #5, single tube w/ male luer connector, bag of 5
Neonatal Cuff Kit, one each of sizes #1 - #5, single tube w/ / ISO Compliant female non luer connector, bag of 5
Welch Allyn REUSE-07-2MQ Cuff, Infant, 2-Tube, Twist lock connector
Welch Allyn REUSE-08-2MQ Cuff, Small Child, 2-Tube, Twist lock connector
Welch Allyn REUSE-09-2MQ Cuff, Child, 2-Tube, Twist lock connector
Welch Allyn REUSE-10-2MQ Cuff, Small Adult, 2-Tube, Twist lock connector
Welch Allyn REUSE-11-2MQ Cuff, Adult, 2-Tube, Twist lock connector

Welch Allyn REUSE-11L-2MQ Cuff, Adult Long, 2-Tube, Twist lock connector
Welch Allyn REUSE-12-2MQ Cuff, Lg Adult, 2-Tube, Twist lock connector
Welch Allyn REUSE-12L-2MQ Cuff, Lg Adult Long, 2-Tube, Twist lock connector
Welch Allyn REUSE-13-2MQ Cuff, Thigh, 2-Tube, Twist lock connector
SpO_2 Accessories
SpO_2 Rainbow Reusable Patient Cable: Connects to LNCS Single Use & Reusable Sensors (4 ft)
SpO_2 Rainbow Reusable Patient Cable: Connects to LNCS Single Use & Reusable Sensors (10 ft)
SpO_2 Rainbow Reusable Patient Cable: Connects to M-LNCS Single Use & Reusable Sensors (4 ft)
SpO_2 Rainbow Reusable Patient Cable: Connects to M-LNCS Single Use & Reusable Sensors (10 ft)
Rainbow DCI Adult Reusable Patient Cable/Sensor (3 ft)
Rainbow Adult Reusable Patient Sensor (3 ft)
LNCS Adult Reusable Patient Sensor (3 ft)
SpO_2 Rainbow DCI Pediatric Reusable Patient Cable/Sensor (3 ft)
SpO_2 Rainbow DCI Adult Reusable Patient Cable/Sensor (12 ft)
SpO_2 Rainbow DCI Pediatric Reusable Patient Cable/Sensor (12 ft)
SpO_2/SpCO/SpMet Rainbow DCI Adult Reusable Patient Cable/Sensor (8 ft)
SpO_2/SpCO/SpMet Rainbow DCI Adult Reusable Patient Cable/Sensor (12 ft)
SpO_2/SpCO/SpMet Rainbow DCI Pediatric Reusable Patient Cable/Sensor (8 ft)
SpO_2/SpCO/SpMet Rainbow DCI Pediatric Reusable Patient Cable/Sensor (12 ft)
SpO_2/SpCO/SpMet Rainbow Patient Cable: Connects to Single Use Sensors (4 ft)
SpO_2/SpCO/SpMet Rainbow Patient Cable: Connects to Single Use Sensors (12 ft)
SpO_2/SpCO/SpMet Rainbow Single Use Sensors: Patients > 30 kg (10 per Case)
SpO_2/SpCO/SpMet Rainbow Single Use Sensors: Patients < 3kg, > 30 kg (10 per Case)
SpO_2/SpCO/SpMet Rainbow Single Use Sensors: Patients 10-50 kg (10 per Case)
SpO_2/SpCO/SpMet Rainbow Single Use Sensors: Patients 3-10 kg (10 per Case)
Rainbow DCI SC-200 Adult Reusable Finger Sensor (SpHb, SpMet, SpO2), 3 ft. Sensor includes 200 SpHb Tests.
Rainbow DCI SC-200 Pediatric Reusable Finger Sensor (SpHb, SpMet, SpO2), 3 ft. Sensor includes 200 SpHb Tests.
Rainbow DCI SC-400 Adult Reusable Finger Sensor (SpHb, SpMet, SpO2), 3ft. Sensor includes 400 SpHb Tests.

Rainbow DCI SC-400 Pediatric Reusable Finger Sensor (SpHb, SpMet, SpO2), 3ft. Sensor includes 400 SpHb Tests.
Rainbow R1-25L Adult Adhesive Sensors - SpHb, SpO2, SpMet box of 10
Rainbow R1-20L Infant Adhesive Sensors - SpHb, SpO2, SpMet box of 10
Rainbow R1-25 Butterfly Adult Adhesive Sensors (SpHb, SpO2, SpMet) box of 10
Rainbow R1-20 Butterfly Pediatric Adhesive Sensors (SpHb, SpO2, SpMet) box of 10
M-LNCS™ ADTX, Adult SpO2 adhesive sensor, > 30 kg. Single-patient use only
M-LNCS™ Pdtx-3, Pediatrics SpO2 adhesive sensor, 3 ft. cable, 10-50 kg. Single-patient use only
M-LNCS™ NeoPt-3, Neonatal SpO2 adhesive sensor, 3 ft. cable, < 1 kg. Single-patient use only
M-LNCS™ Inf-3, Infant SpO2 adhesive sensor, 3 ft. cable, 3-20 kg. Single-patient use only
Temperature Accessories
YSI Reusable Adult, Skin Probe
YSI Reusable Pediatric, Skin Probe
YSI Reusable Adult, Esophageal/Rectal
YSI Reusable Pediatric, Esophageal/Rectal
Sensor Adapter Cable for Disposable Probes
YSI Disposable Esophageal/Rectal Probe
YSI Disposable Skin Probe
IBP Accessories
Transducer Interface cable – Abbott
Transducer Interface cable - Edwards
Transducers: 5 μV/V/mm Hg, IEC 60601-2-34 and AAMI BP-22 compliant
Compatible IBP Transducers
Abbott Transpac® IV
Edwards Truwave®
To purchase these transducers, contact your local Abbott or Edwards distributor.
Power Accessories
ZOLL SurePower II Rechargable Battery
SurePower Charger Station
SurePower II Propaq M/MD Charger Adaptor

SurePower Single Bay Charger
Auxiliary Power Adapter, 8300-0004
Replacement Power Cord – U.S.
Replacement Power Cord – Japan

Mounting Accessories
Propaq M/MD Interface Plate
Propaq M/MD SMEED Mount
Propaq M/MD Litter Mount
Propaq M/MD Pole Mount
Propaq M/MD Wall Mount
Propaq M/MD Shelf Mount
Other Accessories
Propaq M Soft Carry Case
Propaq Low Profile Soft Handle
USB Flash Drive
Cable adapter, USB to Ethernet
USB Cable Extension
Multi-tech Cell Modem; GSM Version
Multi-tech Cell Modem; CDMA Version
Pre Grid Paper

Chapter 1
General Information

Product Description

The ZOLL® Propaq® M unit is an easy-to-use portable monitor that has the following monitoring capabilities: ECG, CO-Oximeter, Non-invasive Blood Pressure, IBP, CO_2, Temperature, and Respiration. It has been designed for all resuscitation situations and its rugged, compact, lightweight design makes it ideal for transport situations. It is powered by auxiliary power and an easily replaced battery pack that is quickly recharged in the device when it is connected to auxiliary power. In addition, the unit's battery may be recharged and tested using a ZOLL *SurePower™ Battery Charger Station*.

Note: Some of the monitoring functions are optional features. See "Propaq M Optional Features" on page 1-2 for the complete list of options. All features are included in this manual, but only purchased features will be available on your unit.

The product is designed for use in hospital, EMS, and rugged military environments. The unit has a large colorful LCD display of numerics and waveform data that provides easy visibility from across the room and at any angle. ECG, plethysmograph, and respiration waveform traces can be displayed simultaneously, giving easy access to all patient monitoring data at once. The display screen is configurable, so you can choose the best visual layout to fit your monitoring needs.

The Propaq M has a patient data review and collection system that allows you to view, store, and transfer patient data. The Propaq M unit contains a USB port, which you can use to transfer data to a PC and, optionally, a printer, that you can use to print patient data.

The Propaq M unit can send data through a wireless connection to remote locations. The unit can send 12-lead report snapshots (including trend data) or disclosure logs to a recipient via a ZOLL server. In addition, full disclosure cases, which also contain trend data, can be automatically retrieved from the Propaq M unit using ZOLL RescueNet® or ePCR software.

Propaq M Optional Features

The following features are optional in the Propaq M unit.

Note: All features are included in this manual, but only purchased features will be available on your unit.

Optional Feature
12-Lead ECG with Interpretation
SpO_2 (Masimo®) with SpCO® and SpMet®
SpHb® (Masimo®) with SpOC™, PVI® and PI
NIBP (with Smartcuf® and SureBP™)
$EtCO_2$ (Oridion® Microstream®)
Temperature (2 Channels)
Invasive Pressures (3 Channels)
Printer

How to Use This Manual

The Propaq M Operator's Guide provides information operators need for the safe and effective use and care of the Propaq M product. It is important that all persons using this device read and understand all the information contained within.

Please thoroughly read the safety considerations and warnings section.

Procedures for daily checkout and unit care are located in the Chapter 17, "Cleaning and Maintenance".

Operator’s Guide Updates

An issue or revision date for this manual is shown on the front cover. If more than three years have elapsed since this date, contact ZOLL Medical Corporation to determine if additional product information updates are available.

All users should carefully review each manual update to understand its significance and then file it in its appropriate section within this manual for subsequent reference.

Unpacking

Carefully inspect each container for damage. If the shipping container or cushion material is damaged, keep it until the contents have been checked for completeness and the instrument has been checked for mechanical and electrical integrity. If the contents are incomplete, if there is mechanical damage, or if the monitor does not pass its electrical self-test, U.S.A. customers should call ZOLL Medical Corporation (1-800-348-9011). Customers outside of the U.S.A. should contact the nearest ZOLL authorized representative. If the shipping container is damaged, also notify the carrier.

Алматы (7273)495-231
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81
Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Саранск (8342)22-96-24
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35
Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

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