PHILIPS

Remote Diagnostic Technologies

Tempus LS

Professional defibrillator

AED and Manual

Tempus LS specifications

Introduction

Tempus LS is a small, fully-featured biphasic defibrillator, designed to enable prehospital caregivers to deliver care more efficiently[1]

Overview

Full range of features with manual, AED, synchronized cardioversion and pacing in a small, highly robust package
Utilizes the widely used, low energy 200 J biphasic BTE waveform
Small enough to enable new choices in transport and deployment
Long battery life: 300 shocks at 200 J
Water and solid object ingress protection for austere environments with rating of IP66
Plug-in sensor allows real-time CPR measurement and feedback
Fully integrated communications capability enables the transmission of defibrillator events to the Tempus Pro in real time[4]
Large color display with multiple configurations and large numeric view

Control Interface

Defibrillator interface is via clearly labelled buttons

Display

Color 145 mm (5.7"), 640x480 pixels
Multiple user-selectable display formats
NVG compatible

Medical Features

Manual Defibrillation

Biphasic Truncated Exponential (BTE) waveform for defibrillation and synchronized cardioversion
1 - 200 J user configurable energy levels (1 - 10, 15, 20, 30, 50, 70, 90, 100, 120, 150, 170 & 200 J)
Adult and pediatric modes available
Charge time: 9 seconds to 200 J from first charge
Time to shock from cold start-up: <15 seconds to 200 J
Disposable adult and child pads

AED

Indicated for coarse and fine VF & VT with a patient impedance of 25 - 250 Ω
Analyze time: 9 seconds
Mains filter: 50/60 Hz or OFF
AED algorithm: >90% sensitivity
AED protocol in accordance with AHA/ERC guidance

ECG Monitoring

1-Lead monitoring using pads or 3-Lead via Tempus Pro-compatible ECG cable
Speed: 12.5 mm/sec, 25 mm/sec, 50 mm/sec
Heart rate range: 15 - 300 beats per minute (bpm) ±5, Accuracy: ±10%
50/60 Hz mains filter

$EtCO_2$ Monitoring

Remote display of $EtCO_2$ using data from Tempus Pro

Pacer

Fixed and demand modes provided, overdrive feature
0 - 200 mA ±5 mA pulses
40 - 240 bpm ±1.5% range
20 ms pulse width ±5%

Synchronised Cardioversion

Synchronizes to R wave markers displayed on-screen
<60 ms from R wave peak
Automatically reverts to asynchronous delivery after shock has been provided

CPR Feedback[4]

Optional plug-in-sensor provides on-screen feedback of compressions, rate, depth and quality
Audible feedback and on-screen messaging provided to ensure compliance to AHA/ERC guidelines
AHA/ERC guideline settings can be updated through USB with a manufacturer-provided software update

Battery and Power

Operating Time

At least 300 shocks at 200 J from a fully charged battery
>12 hours ECG monitoring from a fully charged battery

Battery

Rechargeable, user replaceable lithium-ion battery
Charge time: 3 hours to 90% [2,3]

Power Supply

Small size: 133 x 60.7 x 41 mm (5.24" x 2.39" x 1.62")
Rated 100 - 240 V, 50 - 60Hz & 115 V 400 Hz 0.5 A
Vehicle adaptor 11-27 V dc available[4]

External Charger[4]

Optional external battery chargers

Physical Dimensions

Standalone size: 200 mm (7.9") wide x 164 (6.5") high x 72 (2.8") deep, cube 142". With rear clip depth is 96 mm (3.8")
Standalone weight: 1.95 kg (4.3 lbs) with battery (without accessories)

Environmental and Storage

Environment

Operating temperature range: For transient operation -20 °C ... 50 °C (-4 °F to122 °F) according to IEC 60601-1-12
Relative humidity: 15% - 95% (non-condensing) operating and storage
Altitude: -200 m to +5486 m (-656' to +18000')
Storage temperature range: 40 °C ... 75 °C (-40 °F to 176 °F) relative humidity at 0 - 95 % (noncondensing) Atmospheric pressure 500...1200hPa
Solid and liquid ingress protected to IP66 according IEC60529 Standards
Medical Electrical Equipment: IEC 60601-1-12•Airborne equipment: RTCA DO-160G, 2010 section 21 cat. M
Exceeds requirements of MIL-STD 810G 1.22 m (4') 26 drops all corners, edges and faces
Crash Safety: 20 g per DO160E Sec 7.2 Type F
Vibration: MIL-STD 810G rotary wing (UH-60 & CH-47), fixed wing (jet profile), fixed wing (turboprop profile), composite wheeled vehicle; Ground Vehicle per EN1789
Operational shock: 40 g per MIL-STD 810G, 6 g per RTCA DO-160E

Mount

Electromechanical mount compliant with ground and air (fixed and rotary wing) vehicles available[4]

Communications

Integral Bluetooth

Version: V2 EDR class 2
Automatic data flow of code data from defibrillator to monitor

Integral USB

1 USB-A socket and 1 USB-B socket
For use with CPR or SpO_2 sensor

1. Tempus LS is not approved for commercial distribution in the US. Tempus LS-Manual is 510(k) cleared and available for sale in the US.
2. Subject to conditions of storage and use, times are approximate.
3. Tempus switched off while charging, charging takes longer when the device is active.
4. Optional, additional feature.

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