Detail with Defibrillator-Plates

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SECULIFE DF+
DEFIBRILLATOR ANALYZER

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SECULIFE DF+
DEFIBRILLATOR | ANALYZER

DEFIBRILLATOR ANALYZER

THE SECULIFE DF+ IS A MICROPROCESSOR-BASED INSTRUMENT THAT IS USED IN THE TESTING OF DEFIBRILLATORS.
IT MEASURES THE ENERGY OUTPUT AND PROVIDES INFORMATION ABOUT THE PULSE. IT IS USED ON MANUAL, SEMI-AUTOMATIC AND AUTOMATIC DEFIBRILLATORS WITH MONOPHASIC OR BIPHASIC OUTPUTS.

Seculife DF+ additionally provides a Transcutaneous Pacemaker analysis function. It measures and displays pacer pulse information as well as performing Refractory Period, Sensitivity and Immunity testing.
It has a built-in 50 ohm human body simulation load as well as 12 lead ECG with arrhythmias and performance waveforms. Additionally, they have a centronics printer port, a serial port, oscilloscope output, high level ECG output, as well as provision for a battery eliminator.
The Seculife DF+ makes viewing and selecting the desired waveforms and test data quick and intuitive, with all operational information being available on the 240 by 64 pixel graphic display that enables the user to perform an easy setting of all parameters and to scroll though the available options.

FEATURES

- Biphasic Energy Measurement
- Simple to Operate
- Fully AED Compatible
- On-Screen viewing of Defibrillator Waveform
- Drop down choice screens list all options for parameters
- Monophasic & Biphasic compatible
- 5000 V, 1000 Joule Capacity
- Cardioversion delay measurement
- Charge time measurement
- Waveform storage & playback
- 10 Universal patient lead connectors
- 25 PIN Connector for Centronics Printer
- 9 Volt Battery Power
- Low Battery Indicator
- Display Backlight
- Full Remote Operation via RS-232
- Flash Programmable for Upgrades
- 26 Selectable Internal Loads
- Full Pulse Analysis
- Demand Sensitivity Test
- Refractory Period Tests
- 50/60 Hz Interference Test Signals
- Pacer Input Defib Protection

TECHNICAL DATA

ENERGY OUTPUT MEASUREMENT GENERAL

Method	Biphasic
Load resistance	50 Ohms +/- 1 % Non-inductive (<1 µH)
Diaplay resolution	0.1 Joules
Measurement time window	100 ms
Absolute max peak voltage	6000 Volts
Pulse width	100 ms

LOW RANGE

Voltage	<1000 Volts
Max current	24 Amps
Max energy	50 Joules
Accuracy	+/- 2 % of reading for >20 Joules +/- 0.4 Joules for <20 Joules
Trigger level	20 Volts
Playback amplitude	1 mV / 1000 V Lead 1
Test pulse	5 Joules +/- 20 %

HIGH RANGE

Voltage	<5000 Volts
Max current	120 Amps
Max energy	1000 Joules
Accuracy	+/- 2 % of reading for >100 Joules +/- 2 Joules for <100 Joules
Trigger level	100 Volts
Playback amplitude	1 mV / 1000 V Lead 1
Test pulse	125 Joules +/- 20 %

Other

Oscilloscope output	
high measuring range	1000:1 amplitude-attenuated
low measuring range	200:1 amplitude-attenuated
Waveform playback	
output	Lead I & Plates
screen	200:1 Time Base Expansion
Sync time measurements	
timing window	Starts 40 ms before each R-wave peak
test waveforms	All waveform simulations available
delay time accuracy	+/- 1 ms
Charge time measurement	from 0.1 to 99.9 sec

CARDIOVERSION

Delay	0 to 6000 ms
Resolution	0.1 ms
Accuracy	+/- 2 ms

ECG NSR

Rate Accuracy	30 to 300 BPM +/- 1 %
Amplitude Accuracy	0.5, 1.0, 1.5, 2.0 mV [Lead II] +/- 2 % @ Lead II
High level Accuracy	200 times Amplitude +/- 5 %
QRS duration	80 ms

ECG PERFORMANCE

Sine wave	0.1 to 100 Hz
Square wave	0.125, 2.000 Hz
Triangle wave	2.000, 2.500 Hz
Pulse wave	30, 60, 120 BPM; 60 ms width
Amplitude	0.5, 1.0, 1.5, 2.0 mV [Lead II]
Rate accuracy	+/- 1 %
Amplitude accuracy	+/- 2 % @ Lead II

ECG GENERAL

Lead to Lead Impedance [RL, LL, RA, LA]	1000 Ohm
Lead to Lead Impedance [V1-V6]	1000 Ohm

ECG ARRHYTHMIA SELECTIONS

- Ventricular Fibrillation
- Atrial Fibrillation
- Second Degree A-V Block
- Premature Atrial Contraction
- PVC Early
- PVC Standard
- PVC R on T
- Multifocal PVC
- Bigeminy
- Run of 5 PVCs
- Ventricular Tachycardia

ECG SIGNALS [SHOCK ADVISORY ALGORITHM TEST]

- Asystole
- Coarse Ventricular Fibrillation
- Fine Ventricular Fibrillation
- Multifocal Ventricular Tachycardia @ 140 BPM
- Multifocal Ventricular Tachycardia @ 160 BPM
- Polyfocal Ventricular Tachycardia @ 140 BPM
- Polyfocal Ventricular Tachycardia @ 160 BPM
- Supra Ventricular Tachycardia @ 90 BPM

DATA INPUTS

- Parallel Printer Port
- RS232C [for computer control]

PHYSICAL/ ELECTRICAL

Display	LCD Graphical 256 x 64 Pixels, Backlight 3.4 x 9.8 x 10.7 Inches [86.4 x 249 x 271.8 mm] ABS Plastic
Weight	< 5 Lbs [< 2.3 Kg]
Face Plate	Lexan, Back printed
Operating range	15 to 40 C
Storage range	-20 to 65 C
Power	Battery, 9 VDC [2 required] (NE 1604) Alkaline
Battery eliminator [optional]	BE2006PU [120 VAC] – US BE2006PE [220 VAC] – Euro 10V, 300 mA DC

TRANSCUTANEOUS PACEMAKER ANALYZER

TEST LOAD

Range	50, 100, 150, 200, 300, 400, 500, 600, 700, 800, 900, 1000, 1100, 1200, 1300, 1400, 1500, 1600, 1700, 1800, 1900, 2000. 2300 Ohm
Accuracy	50 to 1300 Ohm +/- 1% 1400 to 2300 Ohm +/- 1,5%

OSCILLOSCOPE OUTPUT

0 - 150 V	10, 24:1 amplitude attenuation
15 - 60 V	41:1 amplitude attenuation
> 60 V	164:1 amplitude attenuation
max Output	200 V

PULSE MEASUREMENTS

Amplitude Accuracy	4 to 300 mA (100 Ohm Load) +/- 5% or +/- 0.5 mA
Rate Accuracy	30 to 800 PPM +/- 1% or 2 PPM
Pulse width Accuracy	0,6 to 80 ms +/- 1% or 2 +/- 0,3 ms
max Voltage	200 V [Variable Load Input Jacks] 15V [Fixed Load Input Jacks]

50/60 HZ INTERFERENCE TEST SIGNAL

ECG -Output	0; 0,4; 0,8; 1,2; 1,6; 2,0; 2,4; 2,8; 3,2; 3,6; 4,0 mV
Pacer Input > 500 Ohm	0, 10, 20, 30, 40, 50, 60, 70, 80, 90,100 mV
Defibrillator Plates	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 mV

DEMAND SENSITIVITY

Waveforms

Selection	Square, Triangle, Haversine
Width	10, 25, 40, 100, 200 ms

ECG Output

Amplitude out	0 to 4 mV
Resolution out	40 µv
Accuracy out	+/- 2 %

Pacer Input [50 to 400 Ohms]

Amplitude out	0 to 4 mV
Resolution out	40 µv
Accuracy out	+/- 2%
Rate in	30 to 120 PPM

Pacer Input [500 to 2300 Ohms & open]

Amplitude out	0 to 100 mV
Resolution out	1 mV
Accuracy out	+/- 2%
Rate in	30 to 120 PPM

Defibrillator Plates

Amplitude out	0 bis 10 mV
Resolution out	0,1 mV
Accuracy out	+/- 2%
Rate in	30 bis 120 PPM

REFRACTORY PERIOD

Pacing	20 to 500 ms
Sensing	20 to 500 ms
Accuracy	+/- 2 ms