Defibrillator Analyzers

Defibrillator Analyzer

Features - DA-2006 Series

- Pulsed Biphasic, Biphasic and Monophasic Compatible
- Fully AED Compatible
- Graphical Display with Backlighting & Simultaneous Details of Parameters with Scrolling Option Control
- On-Screen Viewing of Defib & Pace Waveforms
- 5000 V, 1000 Joule Capacity
- High & Low Ranges
- Cardioversion Delay Measurement
- Charge Time Measurement
- Waveform Storage & Playback
- 10 AHA & European Color Coded Universal Patient Lead Connectors
- 25 Pin Connector for Centronics Printer
- Power: Two 9V Batteries or Included Universal Battery Eliminator
- Low Battery Indicator
- Flash Programmable, Field Upgradeable
- Auto Sequence Testing
- PC Utility Software for Auto Sequence Development & Maintenance
- Storage for 50 Custom Sequences

Features - DA-2006P

- 26 Selectable Internal Loads
- Full Pulse Analysis
- On-Screen Viewing of Pace Waveform
- Demand Sensitivity Test
- Refractory Period Tests
- 50/60 Hz Interference Test Signals
- Pacer Input Defib Protection

DA-2006P

The DA-2006 and DA-2006P Defibrillator Analyzer Series take advantage of the latest electronic technology and deliver accurate, consistent test results on all defibrillators, regardless of manufacturer or model.

Whether you need to test output energy, cardioversion delay time, maximum energy charge time, or your AED, the DA-2006 and DA-2006P will deliver. You can even capture and view the actual output energy and pacer waveforms to check for any abnormalities.

With 26 internal test loads, the DA-2006P delivers a full range of capabilities for testing the Transcutaneous Pacemaker function of your advanced level defibrillators, including tests like demand sensitivity, refractory period, rate, pacer pulse width, pacer pulse amplitude, etc. Test pacer functionality with the peace of mind that the Pacer Input terminals on the DA-2006P are internally protected against accidental defibrillator discharge.

The DA-2006 & DA-2006P offers automated testing. Create and store up to 50 unique testing “auto sequences”, including both defibrillator and pacer tests. You can easily edit existing sequences and create new ones with our unique PC-based utility software. You can also “clone” a specific set of auto sequences to multiple analyzers.

SPECIFICATIONS

ENERGY OUTPUT MEASUREMENT	
METHOD	Monophasic, Biphasic or Pulsed Biphasic
LOAD RESISTANCE	50 Ω ± 1%, Non-Inductive (< 1 µH)
DISPLAY RESOLUTION	0.1 J
MEASUREMENT TIME WINDOW	100 ms
ABSOLUTE MAX PEAK VOLTAGE	6000 V
PULSE WIDTH	100 ms
CHARGE TIME MEASUREMENT	0.1 to 99.9 s

	HIGH RANGE	LOW RANGE
VOLTAGE	≤ 5000 V	≤ 1000 V
CURRENT	≤ 100 A	≤ 20 A
ENERGY	≤ 1000 J	≤ 50 J
ACCURACY	≤ 100 J ± 2 J	≤ 20 J ± 0.4 J
	> 100 J ± 2% of reading	> 20 J ± 2% of reading
TRIGGER LEVEL	100 V	20 V
PLAYBACK AMPLITUDE	1 mV / 1000 V Lead 1	1 mV / 1000 V Lead 1
TEST PULSE	125 J ± 20%	5 J ± 20%
OSCILLOSCOPE OUTPUT ATTENUATION	1000:1	200:1
CARDIOVERSION	DELAY	0 to 6000 ms
	RESOLUTION	0.1 ms
	ACCURACY	± 2 ms
WAVEFORM PLAYBACK	OUTPUT	LEAD I & PLATES
	SCREEN	200:1 Time Base Expansion
SYNC TIME MEASUREMENTS	TIMING WINDOW	Starts at peak of each R-wave
	TEST WAVEFORMS	All waveform simulations available
	DELAY TIME ACCURACY	± 1 ms

PATIENT SIMULATOR		
ECG WAVEFORM RATES	ECG NSR	30, 40, 45, 60, 80, 90, 100, 120, 140, 160, 180, 200, 220, 240, 260, 280, 300 BPM
	SINE	0.1, 0.2, 0.5, 5, 10, 40, 50, 60, 100 Hz
	SQUARE	0.125, 2.000 Hz
	TRIANGLE	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)	
ACCURACY	RATE	± 1%
	AMPLITUDE	± 2% @ Lead II
HIGH LEVEL	OUTPUT	200 times Amplitude
	ACCURACY	± 5%
QRS DURATION	80 ms	
LEAD TO LEAD IMPEDANCE	1000 Ω	
ECG ARRHYTHMIA SELECTIONS	Ventricular Fibrillation	
	Atrial Fibrillation	
	Second Degree A-V Block	
	Right Bundle Branch Block	
	Premature Atrial Contraction	
	PVC Early	
	PVC Standard	
	PVC R on T	
	Multifocal PVC	
	Bigeminy	
	Run of 5 PVCs	
	Ventricular Tachycardia	
ECG SHOCK ADVISORY ALGORITHM TEST SELECTIONS	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	
	SupraVentricular Tachycardia @ 90 BPM	

DA-2006-VL

TRANSCUTANEOUS PACEMAKER ANALYZER			
PULSE RATE	RANGE	30 to 800 ppm	
	ACCURACY	± 1% or 2 ppm (whichever is greater)	
PULSE WIDTH	RANGE	0.6 to 80 ms	
	ACCURACY	± 1% or ± 0.3 ms (whichever is greater)	
VOLTAGE	VARIABLE LOAD INPUT	200 V	
	FIXED LOAD INPUT	15 V	
OSCILLOSCOPE OUTPUT	AMPLITUDE ATTENUATION	0 – 15 V	10.24:1
		15 – 60 V	41:1
		> 60 V	164:1
	MAX OUTPUT	200 V	
DEMAND SENSITIVITY	WAVEFORMS	Square, Triangle, Haversine	
	WIDTH	10, 25, 40, 100, 200 ms	
	OUTPUT AMPLITUDE	ECG OUTPUT	0 to 4 mV
		PACER INPUT (50 TO 400 OHMS)	0 to 10 mV / 50 Ω
		PACER INPUT (500 TO 2300 OHMS & OPEN)	0 to 100 mV
		DEFIBRILLATOR PLATES	0 to 10 mV
	OUTPUT RESOLUTION	ECG OUTPUT	40 µV
		PACER INPUT (50 TO 400 OHMS)	40 µV
		PACER INPUT (500 TO 2300 OHMS & OPEN)	1 mV
		DEFIBRILLATOR PLATES	0.1 mV
	OUTPUT ACCURACY	± 2%	
	INPUT RATE	ECG OUTPUT	N/A
		PACER INPUT	30 to 100 ppm
		DEFIBRILLATOR PLATES	30 to 100 ppm
	PACING	20 to 500 ms	
REFRACTORY PERIOD	SENSING	20 to 500 ms	
	ACCURACY	± 2 ms	
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	50 Ω	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 mV
		50 Ω	0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20 mV
		150 Ω	0, 3, 6, 9, 12, 15, 18, 21, 24, 27, 30 mV
		200 Ω	0, 4, 8, 12, 16, 20, 24, 28, 32, 36, 40 mV
		300 Ω	0, 6, 12, 18, 24, 30, 36, 42, 48, 54, 60 mV
		400 Ω	0, 8, 16, 24, 32, 40, 48, 56, 64, 72, 80 mV
		≥ 500 Ω	0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100 mV
	DEFIB PLATES	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 mV	
TEST LOAD	LOAD VALUES	50, 100, 150, 200, 300, 400, 500, 600, 700, 800, 900, 1000, 1100, 1200, 1300, 1400, 1500, 1600, 1700, 1800, 1900, 2000, 2100, 2200, 2300 Ω	
	ACCURACY	50 to 1300 Ω	± 1%
		1400 to 2300 Ω	± 1.5%
PULSE CURRENT	RANGE	4 to 300 mA (100 Ω load)	
	ACCURACY	± 5% or ± 0.5 mA (whichever is greater)	
	LIMIT	50 – 600 Ω	300 mA
		700 Ω	286 mA
		800 Ω	250 mA
		900 Ω	222 mA
		1000 Ω	200 mA
		1100 Ω	182 mA
		1200 Ω	167 mA
		1300 Ω	154 mA
		1400 Ω	143 mA
		1500 Ω	133 mA
		1600 Ω	125 mA
		1700 Ω	118 mA
		1800 Ω	111 mA
		1900 Ω	105 mA
		2000 Ω	100 mA
		2100 Ω	95 mA
		2200 Ω	91 mA
		2300 Ω	87 mA

Our DA-2006-VL, works in conjunction with our DA-2006 Series Defibrillator Analyzers, providing Variable Loads used when testing Defibrillators to assure the proper electrical current is delivered to the heart, per IEC 60601-2-4 and AAMI DF80 standards. **See page 19**.

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Programmable Autosequence

- **PC Based Software**
- **Create up to 50 Autosequences**
- **Up to 20 Steps Per Autosequence**
- **Autosequences can be cloned to Multiple Units**
- **Easily Share Autosequence Files via Email**

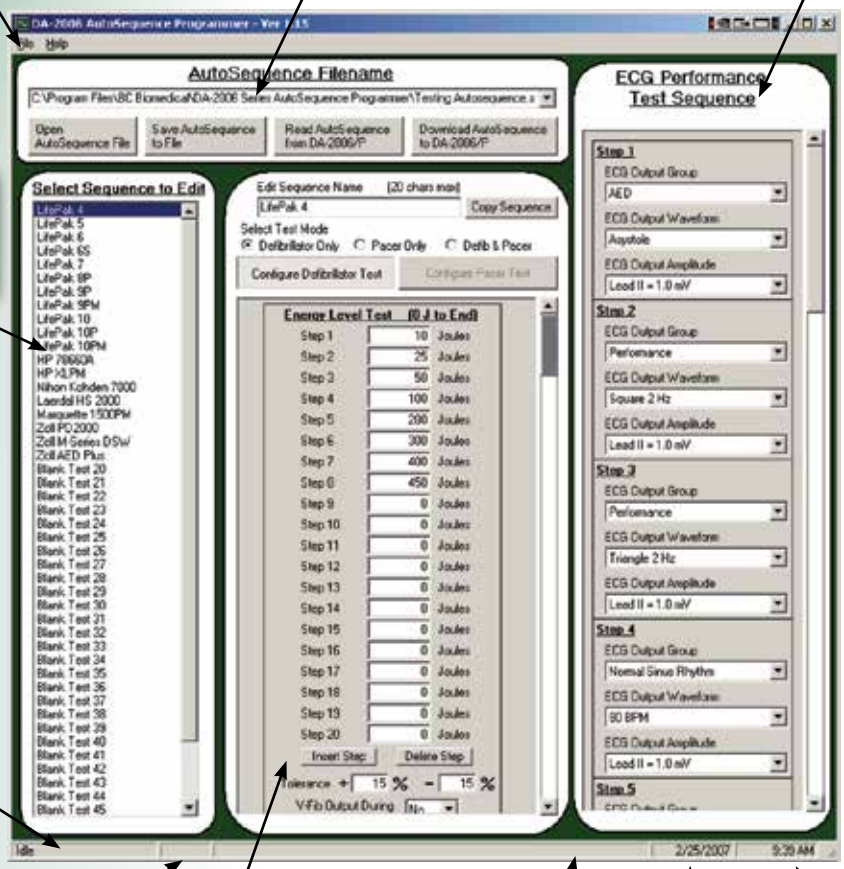
DA-2006

The BC Biomedical DA-2006 and DA-2006P defibrillator analyzers take autosequence test development to new levels. Never before has it been so easy to create new automated testing sequences, or edit existing ones. Our unique PC-based autosequence development software allows you to build and edit these automated testing sequences on your PC under the power and utility of the Windows operating system, rather than having to work on a cryptic small instrument display like other analyzers. You can create up to 50 autosequences to download to your DA-2006 or DA-2006P.

A starter set of 19 autosequences is provided. Autosequences can be defibrillator-only, transcutaneous pacer-only, or a combination of both. Each autosequence can support up to 20 output energy test steps, a maximum energy test (including charging time), a cardioversion test (at up to three different power levels), and transcutaneous pacer tests. You can take an existing autosequence and copy it to a new one, rename it, and make any minor changes necessary to have a brand new sequence for a different make and model defibrillator.

You can “clone” multiple DA-2006 or DA-2006P analyzers by downloading the same autosequence file to multiple analyzers. You can e-mail autosequence file sets for use in field or district offices away from the main office when changes are made. You can even save your DA-2006 or DA-2006P autosequence setup and easily put it back exactly the same way it was, prior to repair and calibration of your instrument.

Programming Auto Sequences Overview



Compatibility
For Microsoft® Windows Operating systems

BC Group makes defibrillator autosequence development and editing easier than competitive analyzers that offer such capability. Why struggle with limited on-instrument displays and cryptic development tools? Our DA-2006 and DA-2006P autosequence capability is in a class of its own.

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DA-2006-VL

Features - DA-2006-VL

- **Pulsed Biphasic, Biphasic and Monophasic Compatible**
- **Fully AED Compatible**
- **5000 V, 1000 Joule Capacity**
- **Smart Loads, no Settings to Change in DA-2006 or DA-2006P**
- **25-200 Ω Loads, 25 Ω Steps**

Our DA-2006-VL, works in conjunction with our DA-2006 Series Defibrillator Analyzers, providing Variable Loads used when testing Defibrillators to assure the proper electrical current is delivered to the heart, per IEC 60601-2-4 and AAMI DF80 standards.

The DA-2006-VL Load Selection is automatically detected by the DA-2006/P. There are no settings to change or configure on the DA-2006/P.

Typical DA-2006-VL Setup with DA-2006P

DA-2006-VL Side View