AMPS-1

Advanced Modular Patient Simulator

Don't let the size fool you. This compact Simulator packs a lot of punch in a small package.

At only 7" X 4" X 1.25 inches, AMPS-1 fits comfortably in your hands and all leads and cables are conveniently fed from the top and bottom ends. Operate from the single 9 volt alkaline battery or with the optional battery eliminator.

The unique modular design of AMPS-1 allows you to get just what you need as you need it. Upgrading and adding modules is easily accomplished by you at your facility. No need to send it to a repair facility just to add features.

AMPS-1

All the Simulator you need — Now and for the future.

Innovation by design

The standard AMPS-1 is packed with...

- **12 lead ECG simulation with 9 independent outputs for each signal lead**
- **16 total ST Segments: 8 elevated and 8 depressed**
- **Axis Deviation: Normal (intermediate), horizontal, and vertical. (Modifies baseline ECG during arrhythmias)**
- **Neonatal Mode: ECG R wave width is reduced to 40ms**
- **ECG Performance Testing**
- **52 Arrhythmia selections**
- **Temperature and Respiration Simulations**
- **Pacer simulations**
- **Defibrillator training**
- **Remote Control via RS-232**

As your workload and budget dictate, easily add...

- **2 or 4 Electrically Isolated BP Channels, including Swan-Ganz simulation**
- **Cardiac output**
- **Mechanical Fetal Heart**
- **Fetal, Maternal and IUP simulations**

Easy to use and easy on your budget. AMPS-1 is all the simulator you need.

AMPS-1 – Performance Specifications

ECG General:
Full 12-Lead ECG with 9 independent outputs for each signal lead referenced to RL.
Output Impedances: 500, 1000, 1500, & 2000 ohms to RL.
High Level Output: 0.5 V/mV of low level selection.
Amplitude Accuracy: ± 2% 2 Hz Square Wave (Lead II).

Normal Sinus Rhythm:
Rates: 30, 40, 60, 80, 100, 120, 140, 160, 180, 200, 220, 240, 260, 280, 300 BPM. Accuracy ± 1%.
Amplitudes (Lead II): 5mV, 4mV, 3mV, 2mV, 1mV, .5mV, .25mV, .1mV.
ST Segments: 16 total – 8 elevated & 8 depressed.
ST Segment Levels (Lead II): -0.8 mV to +0.8 mV in 0.1 mV steps on Lead II, .
Axis Deviation: Normal (intermediate), horizontal, and vertical. Modifies baseline ECG during arrhythmias.
Neonatal Mode: ECG R wave width is reduced to 40ms.

ECG Performance Testing:
Square Wave: 2 Hz
Square Wave: 0.125 Hz
Pulse: 4.0 secs
Sine Waves: 0.05, 0.5, 1, 10, 25, 30, 40, 50, 60, and 100 Hz.
Triangle Wave: 2 Hz
R Wave Detector Test: 60 BPM haver-triangle wave with selectable ampl. and width.
Width: 8.0 ms to 200 ms (12 selections)
Amplitude (Lead II and V Leads): 5mV to 0.5mV.

Pacemaker:
Asynchronous
Demand with frequent sinus beat
Demand with occasional sinus beat
A-V sequential
Non-capture non-function
Rhythms: Async 75 BPM, Demand 1, Demand 2, AV Seq, Non capture, Non function.
 Pulse: -700 mV to +700 mV.
Accuracy : 5%
Width: 0.1, 0.2, 0.5, 1.0, 2.0 ms. Accuracy is 5%.
Pulse Polarity: Positive or negative.

Synchronization:
Accepts input during defib training.

RS-232 Interface:
RS-232 interface to PC.

Defibrillator Training:
With two emergency scenarios and a cardioversion procedure, AMPS-1 can be used for basic defibrillator training.

Cardiac Output:
Built in Cardiac Output feature, activation optional
4 adjustable injectate temperature selections that are factory set and user adjustable
Baseline of 36, 37 and 38 degrees °C.
Selections for 2 and 20 degrees °C.

Cardiac Output Selections:
Faulty Injectate Curve
Left to Right Shunt Curve
C.O. of 3, 4, 4.5, 5, 5.5, 6, 6.5, 7 l/min
Cal Pulse: 1o for 1 second
Cal Pulse: 1o for 4 seconds
CC .561 for 2 degrees injectate
CC .608 for 20 degrees injectate

Temperature:
2 Temperature Channels
Electronically Switched Temperature of 35, 37, 38, 40, 42°C.
Accuracy: 0.1°C
Probe Compatibility: 400 or 700 series YSI

Respiration:
Baseline Impedance: 500, 1000, 1500, 2000 ohms, LEADS I, II, III
Impedance Variations: 5, 4, 3, 2, 1, 0.5, 0.2, 0.1, 0.05, 0 Ω
Rates: 15 to 120 and 0 rpm for APNEA
Apnea Selections: 12, 22, 32 seconds, and continuous
Respiratory Effort (Inspiration/Expiration Ratio:) 5/1, 4/1, 3/1 (normal), 2/1, 1/1.

Optional Fetal / Maternal / IUP Simulations:
Fetal heart rates:60, 90, 120, 140, 150, 210, & 240 BPM
Trend
Uniform, Early and Late deceleration
Maternal heart rate fixed at 80 BPM
Waveform:12 lead ECG with complete p-qrs-t complex
Dynamic intrauterine pressure (iup) waveform: positive bell shaped pressure curve
Peak pressure:90 mmhg, Contraction duration:90 sec
Pressure transducer sensitivity:5 or 40 m v/v/mmhg
Input/output impedance: 300 ohms
Optional Mechanical Fetal Heart

Arrhythmia Selections:
Premature Beats Premature Atrial Contraction (PAC)
Nodal Premature Nodal Contraction (PNC)
Premature Ventricular Contraction (PVC)1
Left Ventricular Focus
PVC1 Early, Left Ventrical (LV) Focus
PVC1 R-on-T, Left Ventrical (LV) Focus
PVC2 Right Ventricular Focus
PVC2 Early, RV Focus
PVC2 R-on-T RV Focus
Multifocal PVCs

AED test waveforms:
- Atrial Fibrillation, Course   Atrial fibrillation, Fine
 Ventricular Fibrillation, Course   Ventricular Fibrillation, Fine
- Asystole, Flatline   Asystole, Random Baseline >0.1 mV
- Supraventricular Tachycardia   Ventricular Tachycardia @140,160 & 190BPM
- Torsades de Pointes @ 200 BPM   NSR @ 60 BPM

Conduction Defects:

First Degree Heart Block	Second Degree Heart Block
Third Degree Heart Block	Right Bundle Branch Block
Left Bundle Branch Block	Supraventricular Beats
Atrial Fibrillation (Coarse)	Atrial Fibrillation (Fine)
Atrial Flutter	Sinus Arrhythmia
Missed Beat (1 time event)	Paroxysmal Atrial Tachycardia
Nodal	Supraventricular Tachycardia
Ventricular Rhythm	PVCs 6/Minute
PVCs 12/Minute	PVCs 24/Minute
Frequent Multifocal	Asystole
Pair PVCs (1 time event)	Run 5 PVCs (1 time event)
Run 11 PVCs (1 time event)	Ventricular Tachycardia
Ventricular Fibrillation (Coarse)	Ventricular Fibrillation (Fine)
Bigeminy	Trigeminy

4 Blood Pressure Channels:
Electrically Isolated Channels
Dynamic BP waveforms are synchronized with normal sinus rhythm rates and track arrhythmia selections.
Respiration artifact can be selected on blood pressure channels
Transducer Sensitivity: 5 or 40 µV/V/mmHg
Calibrated Rate: 80 BPM normal sinus rhythm
Static Levels BP1/2/3/4: -10, -5, 0, 20, 40, 50, 60, 80, 100, 120, 150, 160, 180, 200, 240, 320, 400 mmHg
Automatic Swan-Ganz (every 15 seconds)
Manual Swan-Ganz, changes each time Enter is selected

All specifications subject to change without notice.

DATREND Systems Inc.

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