

# Multi-Parameter Simulators

PS-2200 PS-2210 Series

## Features - PS-2200 Series

- Simple to Operate
- Independent Lead Outputs produce a true 12 Lead ECG Signal
- 1, 2 or 4 Invasive BP Channels
- All BP Waveforms Available on all BP Channels
- 49 Arrhythmia Selections
- Respiration & Temperature Simulation
- ECG Performance Waveforms
- Dual Graphical Displays with Backlighting
- Drop Down Choice Screens List all Options for Parameters
- Special Power Up Feature allows user to choose to use default, last or custom settings
- Auto Sequences for BPM, Static-Pressure Levels & Performance
- 10 AHA & European Colour Coded Universal Patient Lead Connectors (with enough space between posts for the large diameter connectors)
- Mini DIN Connectors Compatible with Standard BP Cables (Optional Mini DIN-M to DIN-F Cable Adapter)
- % Battery Life & Low Battery Indicator
- Powered by Two 9V Batteries or Included Universal Battery Eliminator
- Full Remote Operation via RS-232
- Flash Programmable, Field Upgradeable
- Battery Eliminator Optional
- SpO2 Simulation
- Cardiac Output
- Fetal/Maternal Output
- Remote PSR-2200



The PS-2200 Multi-Parameter Patient Simulator Series are the most comprehensive, easy-to-use simulators on the market. These new portable simulators are intuitive to use since there are NO MORE CODES to enter.

Each model provides ECG, Blood Pressure, Respiration and Temperature Simulation. Models are available with one, two or four independent blood pressure outputs. All models will support the Fetal/Maternal, SpO2, Cardiac Output and PSR-2200 Remote options.

The PS-2200 Series makes viewing and selecting the desired waveforms and parameters quick and intuitive. All operational information is available at the same time on two cursor-based graphic displays, allowing for easy manoeuvring through parameters and scrolling through available options.

**U -TECH SYDNEY**  
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# Specifications

ECG NSR	
Rate	30, 40, 45, 60, 80, 90, 100, 120, 140, 160, 180, 200, 220, 240, 260, 280, 300 BPM
Accuracy	± 1%
Amplitude	.05, .10, .15, .20, .25, .30, .35, .40, .45, .50, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0 mV
Accuracy	± 2% @ Lead II
High Level	200 times Amplitude
Accuracy	± 5%
QRS Interval	Adult (80ms), Pediatric (40ms)
ST Segment (Elevation)	± 0, .05, .1, .2, .3, .4, .5, .6, .7, .8 mV
ECG Performance	
Sine Wave	0.1, 0.5, 5, 10, 40, 50, 60, 100 Hz
Square Wave	0.125, 2.000 Hz
Triangle Wave	2.000, 2.500 Hz
Pulse Wave	30, 60, 120 BPM; 60 ms
Amplitude	.05, .10, .15, .20, .25, .30, .35, .40, .45, .50, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0 mV
<b>R-Wave (Havertriangle)</b>	
Rate	30, 60, 80, 120, 200, 250 BPM
Width	8, 10, 12, 20, 30, 40, 50, 60, 70, 80, 90, 100, 120, 130, 140, 150, 160, 170, 180, 190, 200 ms
Amplitude	.05, .10, .15, .20, .25, .30, .35, .40, .45, .50, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0 mV
Rate Accuracy	± 1%
Amplitude Accuracy	± 2% @ Lead II
R-Wave <= 20 ms	± 5% @ Lead II
Blood Pressure	
Channels	1 – PS-2210 2 – PS-2220 4 – PS-2240
Static Pressure	-10, -5, 0, 20, 40, 50, 60, 80, 100, 150, 160, 200, 240, 250, 300, 320 400 mmHg
Accuracy	± (2% of Reading + 2 mmHg)
Impedance	300 Ohms
Accuracy	± 10%
Excitation Range	2 to 16 V RMS
Excitation Frequency	DC to 5 KHz
Sensitivity	5 or 40 µV/V/mmHg
Respiration Artifact	0 to 16 mmHg
Remote(Optional)	
Fully compatible with PSR-2200	

Pacemaker Waveforms	
Amplitude	1, 2, 3, 4, 5, 6, 7, 8, 9, 10 mV
Accuracy	± 10%
Width	0.1, 0.5, 1.0, 1.5, 2.0 ms
Accuracy	± 5%
Rate	75 BPM
Accuracy	±1%
Respiration	
Rate	Apnea, 15, 20, 30, 40, 60, 80, 100, 120 BrPM
Accuracy	± 1%
Impedance delta	0.1, 0.2, 0.5, 1.0, 2.0, 3.0 Ω
Accuracy	± 10% + 0.05 Ω
Baseline	500, 1000, 1500, 2000 Ω
Accuracy	± 5%
Lead	LA or LL
Temperature	
Temperature	0, 24, 30, 37, 40 °C (32.0, 75.2, 86.0, 98.6, 104.0 °F)
Accuracy	± 0.1 °C
Type	YSI Series 400 and 700
Fetal / Maternal	
Fetal Heart Rate	60, 90, 120, 140, 150, 210, 240 BPM
Inter Uterine Pressure Response Types	Uniform Deceleration Early Deceleration Late Deceleration Uniform Acceleration
IUP Wave	Bell Curve with 90 mmHg Peak and 90 Sec Width
IUP Trigger	Manual Auto: 2,3,5 Minute
Cardiac Output	
Injectate Volume	10 cc
Injectate Temperature	0 °C or 24 °C , ± 2%
Calibration Coefficient	0.542 (0 °C Inj), 0.595 (24 °C Inj)
Blood Temperature	37 °C (98.6 °F), ± 2%
Cardiac Output	2.5, 5.0, 10.0 l/min, ± 5%
Simulations	Normal Flow Faulty Injectate Left-to-Right Shunt Temperature Calibration Pulse
Temperature Calibration Pulse	1.5 °C Down for 1 sec, ± 1%
Catheter Type	Baxter Edwards, 93a-131-7f
SpO <sub>2</sub> Simulation (MSP-2100 & Finger SIM™ Req'd.)	
Rate	30 to 300 BPM
SpO <sub>2</sub> Output	80, 90 & 97%

PS-2220



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PS-2210  
with Cardiac  
Output Option

