RIGEL MEDICAL
TESTED, TRUSTED... WORLDWIDE.

PatSim 200

USER MANUAL

Warning of electrical danger!
Warnung vor elektrischer Gefahr!
Avertissement: Danger electrique!
Advertencia de riesgo eléctrico
警告电气危险!
Ryzyko porażenia elektrycznego!

Important, follow the documentation!
Wichtig, Anweisungen befolgen!
Important, suivez la documentation!
Importante, ¡Siga la documentación!
重要事项, 参照文档!
Ważne, postępuj zgodnie z dokumentacją!

rigelmedical.com

Rigel Medical 5 year Warranty Statement

To activate your 5-year warranty, register your product at the below link. Terms and conditions apply.

www.rigelmedical.com/5years

Calibration Statement

The PatSim 200 Patient Simulator is fully calibrated and found to be within the specified performance and accuracy at the time of production. The Seaward Group provides its products through a variety of channels; therefore, it may be possible that the calibration date on the provided certificate may not represent the actual date of first use.

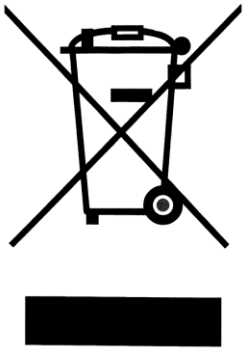
Experience has indicated that the calibration of this instrument is not affected by storage prior to receipt by the user. We therefore recommend that the recalibration period be based on a 12-month interval from the first date the unit is placed into service.

For information on service or calibration please go to the link below.

www.rigelmedical.com/calibration

Date received into service; / /

Disposal of old product



The PatSim 200 Patient Simulator has been designed and manufactured with high quality materials and components, which can be recycled and reused.

Please familiarise yourself with the appropriate local separate collection system for electrical and electronic products or contact your local supplier for further information.

Please dispose of this product according to local regulations. Do not dispose of this product along with normal waste material. By offering your old products for recycling, you will help prevent potential negative consequences for the environment and human health.

User Notes

These operating instructions are intended for the use of adequately trained personnel.

Important, follow the documentation! This symbol indicates that the operating instructions must be adhered to in order to avoid danger.

If the PatSim 200 is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

This product contains a lithium-ion battery:

Do not disassemble, crush, or puncture the battery.
Do not short the external contacts on the battery.
Do not dispose of the battery in fire or water.
Do not expose the battery to temperatures above 60 °C (140 °F).
Keep the battery away from children.
Avoid exposing the battery to excessive shock or vibration.
Do not use a damaged battery.
If the battery pack has leaking fluids, do not touch these fluids.
Dispose of a leaking battery.

1. Introduction

The PatSim 200 from Rigel was designed to make patient simulation quicker.

Unlike other Patient Simulators, the PatSim 200 uses a home and recall function to easily move between tests and store your most used sequences, no more clicking and scrolling through 'tree style' hierarchy to perform each test.

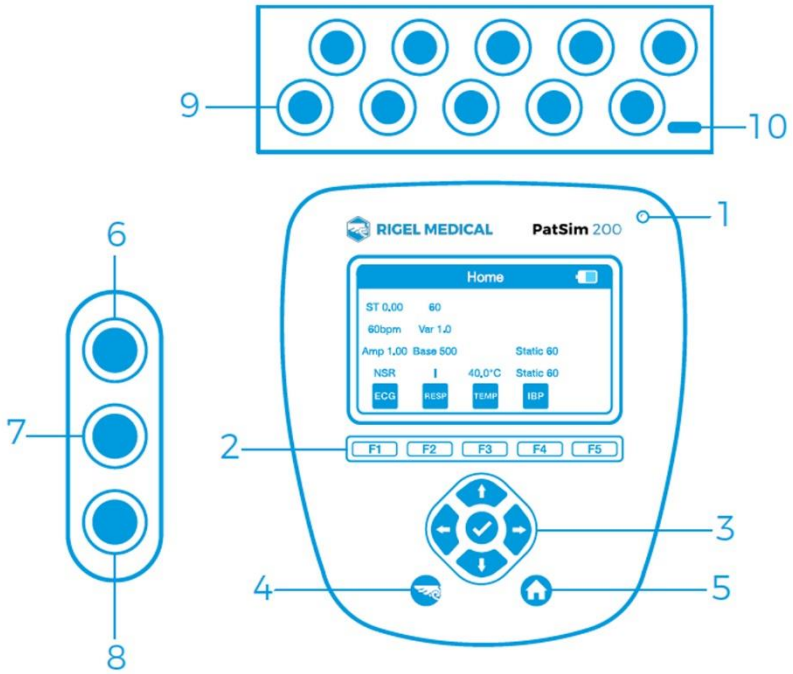
The handheld PatSim 200 is capable of the below simulations:

- ECG
  - ECG wave forms
  - Arrhythmias
  - Performance Waveforms
  - Pacer Waveforms
  - Fetal Maternal
- Respiration
- Temperature
- Invasive Blood Pressure (2 Channel)

The PatSim 200 forms part of a comprehensive range of high-performance specialist biomedical test equipment supplied by Rigel Medical, part of the Seaward Group.

For further information go to www.rigelmedical.com

1.1. Getting to know your PatSim 200



1. Charging LED status
2. Function keys F1-F5
3. Navigation keys
4. Rigel key – on/off
5. Home screen button
6. Temperature output
7. IBP1 output
8. IBP2 output
9. Universal ECG connections x10
10. Micro USB power input

1.2. In the Box

Quick start guide
Universal USB Power Supply
10 x Applied Part Adaptors
Calibration Certificate
PatSim 200 Simulator
PatSim 200 carry case

1.3. Additional & Optional Accessories

Replacement Battery	404A954
Temperature Cable (unterminated)	404A955
IBP Cable (unterminated)	404A956
Replacement Carry Case	404A950
Applied Part Adaptors	404A951
Universal USB Power Supply	404A952

1.4. Charging

The PatSim 200 is supplied with a universal USB charger. You should only use the supplied charger with your PatSim 200.

Whilst the charger is connected to the unit and energised, the LED light on the top right of the top fascia will be illuminated.

Note: The LED does not indicate the charging status.

Whilst the PatSim 200 is powered on, you will also see the below symbols on the display.


Bulk Charging


Trickle Charging

The PatSim 200 may be used whilst charging however displayed signal quality may be reduced on some monitor types.

1.5. Battery Status

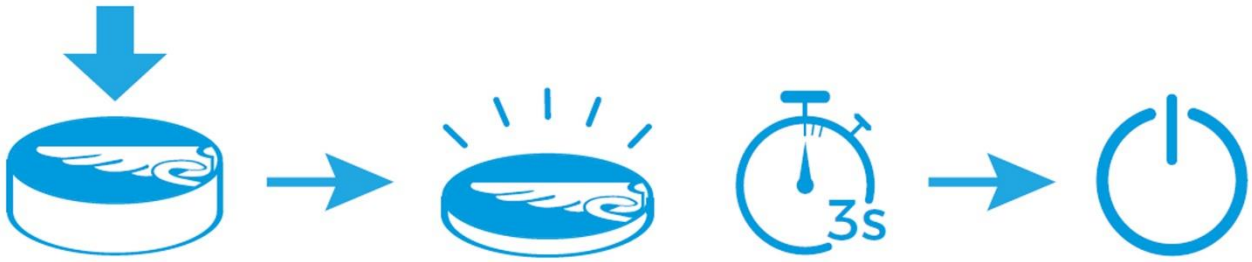
During normal use, the PatSim 200 automatically checks the battery status and shows the closest representation using the symbols below.

Fully charged

Battery empty

When the battery is completely empty the unit will warn the user that it is about to turn off before shutting down.

1.6. Powering On/Off

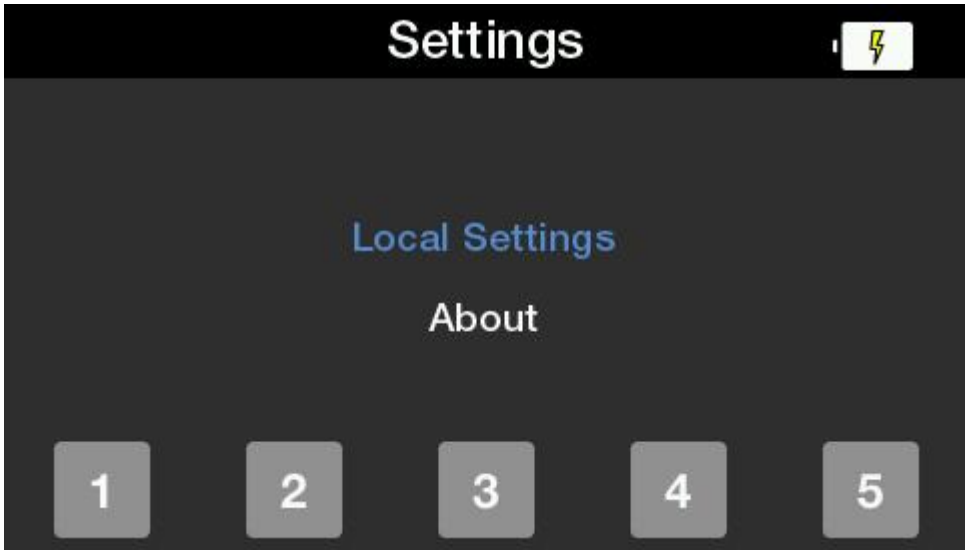


2. Getting Started

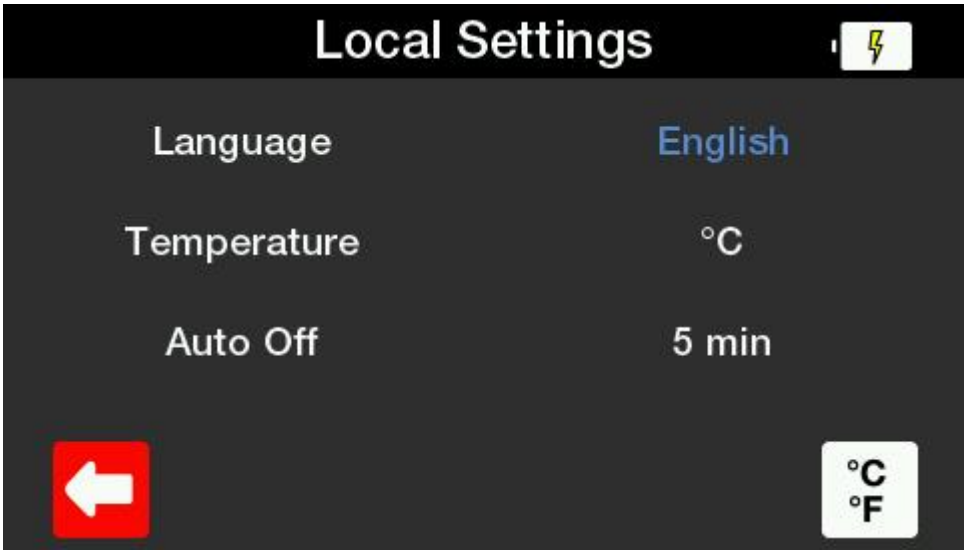
2.1. Setup

In the PatSim 200 there are options to change the language, temperature units and auto off time of the instrument.

Selecting the Rigel key in any screen will display the Settings menu.



The up & down navigation keys can be used to highlight Local Settings and selected using the tick button.



The up & down navigation keys can be used to highlight the parameter to change and the left & right navigation keys to change this parameter. The fast key, F5, can be used to switch between °C & °F.

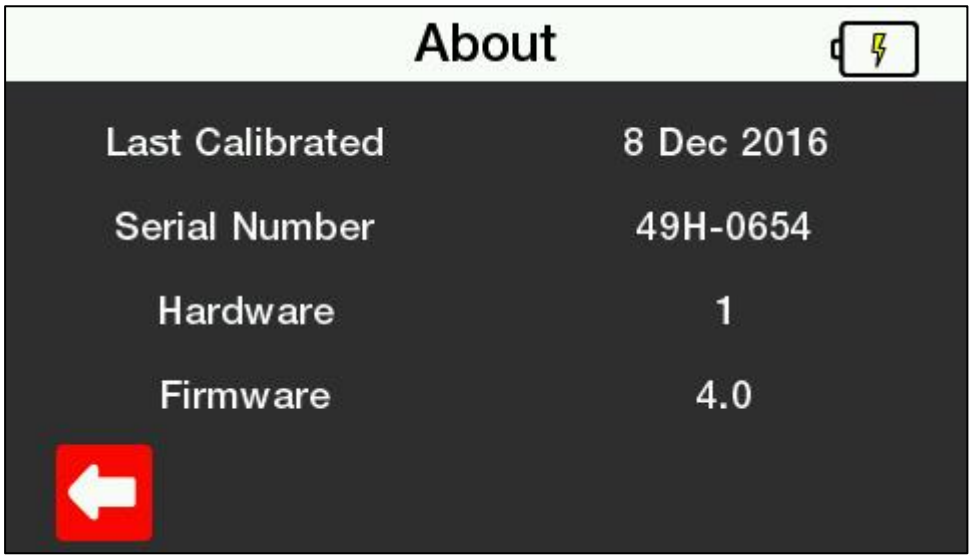
Selecting Home or back, F1, will automatically save these settings. The settings will remain when the unit is powered down and back on.

Available Settings	
Language	English
	German
	French
	Spanish
	Polish
	Simplified Chinese
Temperature	°C
	°F
Auto Off	Off
	2 min
	5 min
	10 min
	30 min
	60 min

2.2. About

From the **Settings** screen information about the tester can be viewed. Highlight **About** using the up and down navigation keys and select using the tick button.

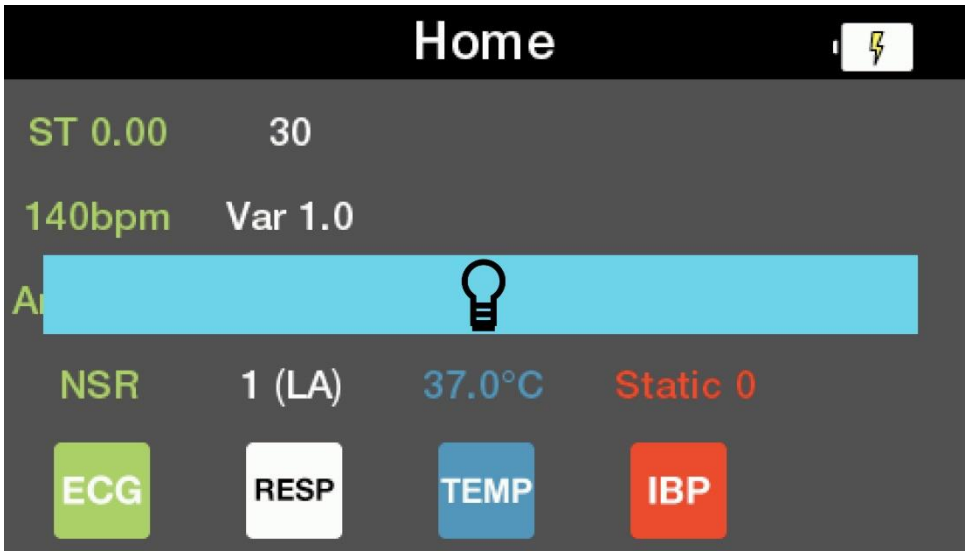
The **About** screen shows information on when the unit was last calibrated, the serial number, hardware, and firmware versions.



To leave this screen you can select the back button, **F1**, to go back to the **Settings** menu or the **Home** button to go back to the **Home** screen.

2.3. Screen Brightness

The screen brightness can be altered using the left or right navigation keys whilst in the **Home** screen.



2.4. Favourite Simulations

Up to five favourite simulation settings can be saved for recall at any time.

2.4.1. Default Settings

The unit will be delivered with five default settings as detailed below.

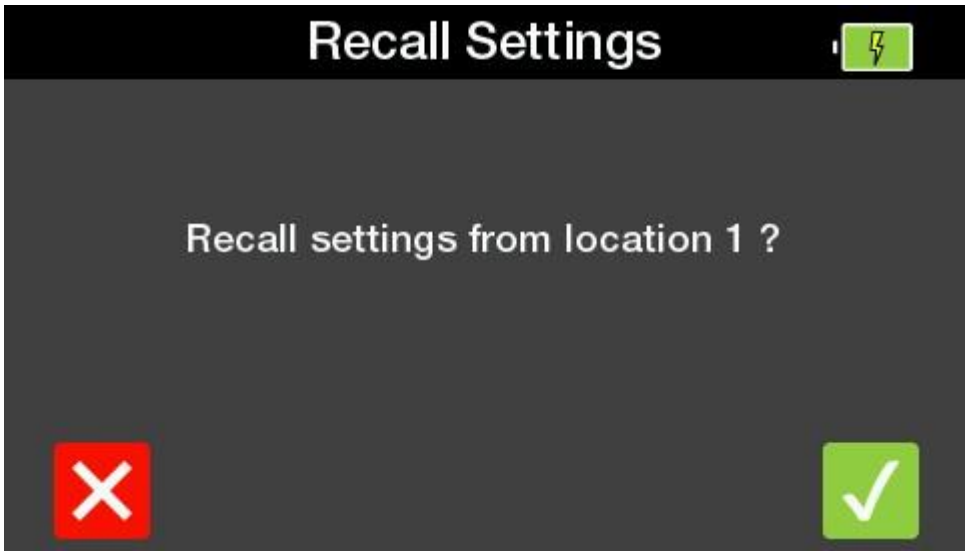
Memory	Location	1	2	3	4	5
ECG	Patient	Child	Adult	Adult	Adult	Adult
	Waveform	NSR	NSR	VTACH	AFIB-C	VFIB-C
	Amplitude	1.00mV	1.00mV	1.00mV	1.00mV	1.00mV
	HR	140 bpm	60 bpm	N/A	N/A	N/A
	ST	0.00mV	0.00mV	N/A	N/A	N/A
RESP	Rate	30brpm	15brpm	30brpm	40brpm	60brpm
	Variation	1.0 Ω	1.0 Ω	1.0 Ω	1.0 Ω	1.0 Ω
	Baseline	500 Ω	500 Ω	500 Ω	500 Ω	500 Ω
	Lead	1 (LA)	1 (LA)	2 (LL)	1 (LA)	1 (LA)
	Apnea	Off	Off	Off	Off	Off
TEMP	Temperature	37 °C (98.6 °F)	37 °C (98.6 °F)	37 °C (98.6 °F)	40 °C (104.0 °F)	40 °C (104.0 °F)
IBP 1	Static	0mmHg	0mmHg	0mmHg	0mmHg	0mmHg
	Dynamic	Off	Off	Off	Off	Off
	Artifact	Off	Off	Off	Off	Off
	Mode	Manual	Manual	Manual	Manual	Manual
	Sensitivity	5µV	5µV	5µV	5µV	5µV
IBP 2	Static	0mmHg	0mmHg	0mmHg	0mmHg	0mmHg
	Dynamic	Off	Off	Off	Off	Off
	Artifact	Off	Off	Off	Off	Off
	Sensitivity	5µV	5µV	5µV	5µV	5µV

2.4.2. Recalling a Favourite Setting

Selecting the Rigel key in any screen will display the Settings menu.

Selecting one of the five function keys allows access to the corresponding / default settings.

In the **Recall Settings** screen a message asking if you are sure is displayed.



Select **F5** and the instrument will switch to the **Home** screen with the recalled settings selected. Select **F1** to go back to the **Settings** menu without recalling settings.

2.4.3. Adding a New Favourite Setting

Selecting the **Rigel** key in any screen will display the **Settings** menu.

Holding one of the function keys for 3 seconds will save the current settings to that memory location. A message asking if you are sure will be displayed.

Select **F5** and the instrument displays a message **Saving settings….**, then **Settings saved** before returning to the **Home** screen. Select **F1** to go back to the **Settings** menu without saving settings.

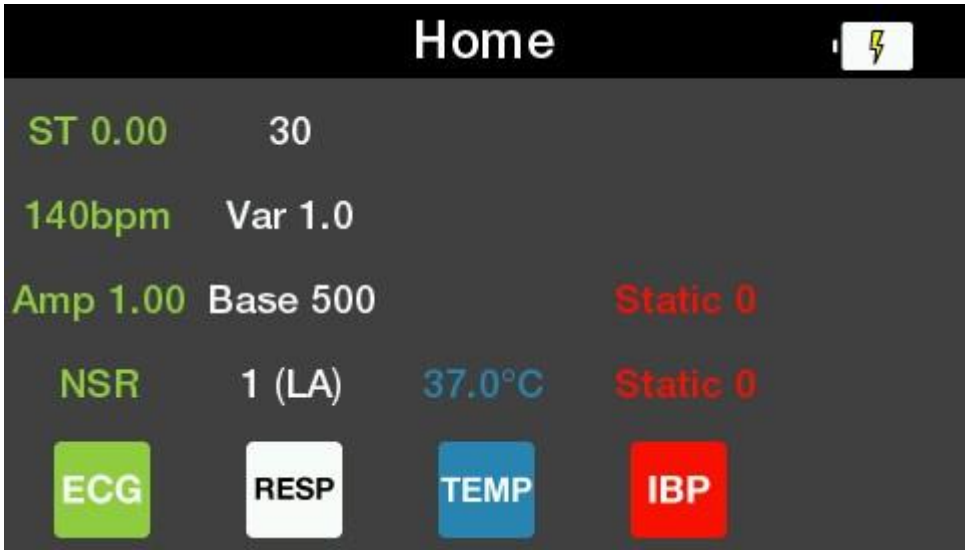
3. Simulation Settings

The PatSim 200 is capable of the below simulations:

- ECG
  - ECG wave forms
  - Arrhythmias
  - Performance Waveforms
  - Pacer Waveforms
  - Fetal Maternal
- Respiration
- Temperature
- Invasive Blood Pressure (2 Channel)

A list of all settings available for each simulation are available at the end of each section.

Upon power-up, the **Home** screen is displayed showing the simulation menus on function keys F1 to F4 and a summary of the current settings.



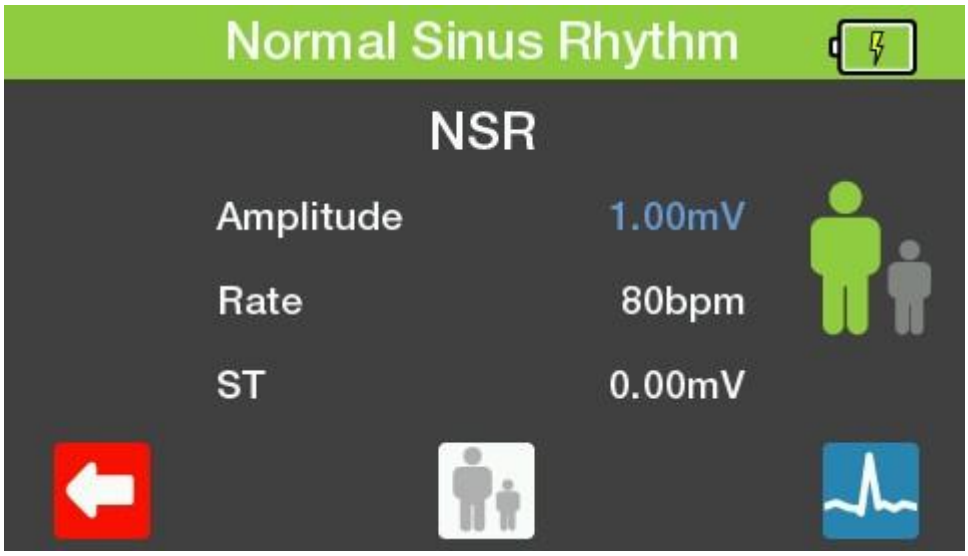
3.1. ECG Settings

Selecting F1 from the Home screen selects the ECG Menu with the current settings displayed.

Note: All ECG waveform images are representations specifically for Lead II

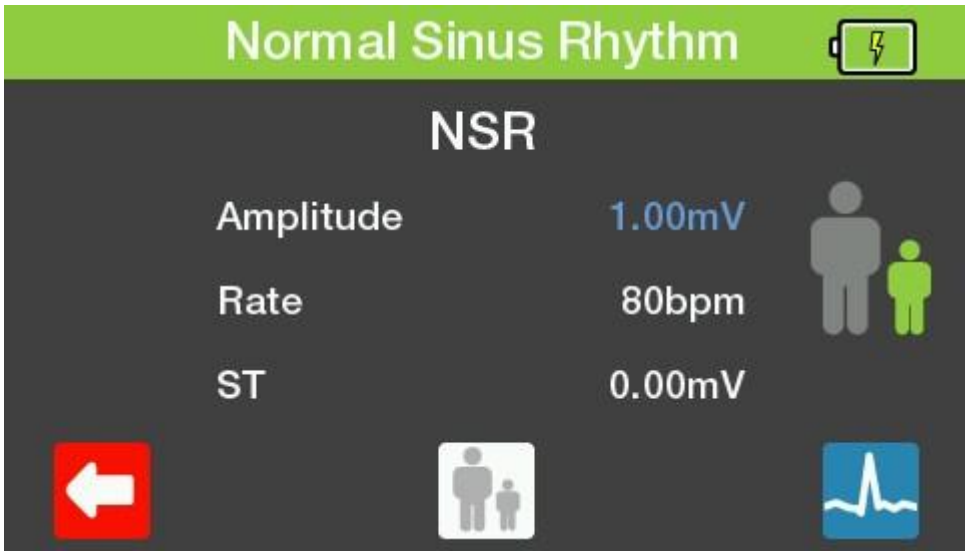
3.1.1. Normal Sinus Rhythm

Selecting F1 in the ECG Menu displays the Normal Sinus Rhythm menu. This screen shows the current settings. The up & down navigation keys can be used to highlight the parameter to change and the left & right navigation keys to select the required parameter.

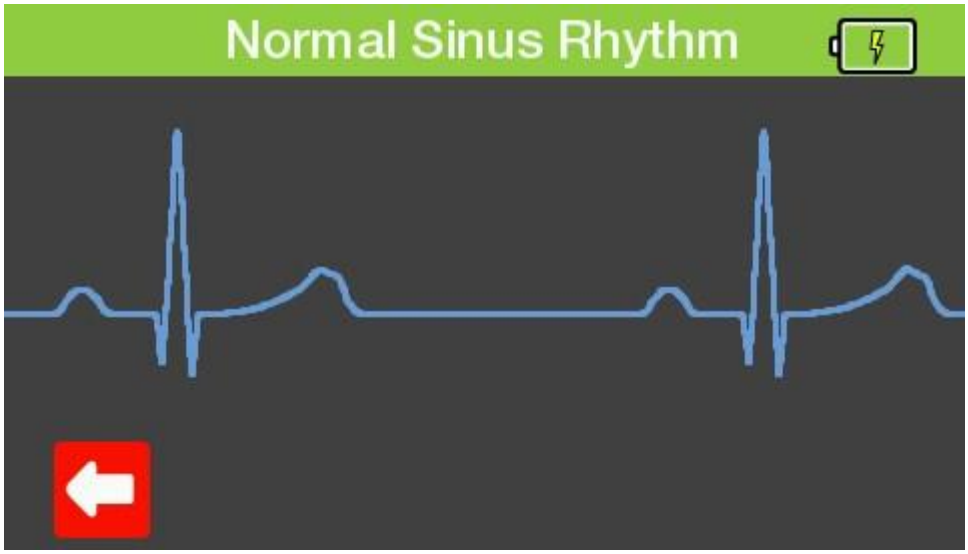


Selecting F3 switches between adult and neonatal settings.

The figure highlighted in green, on the right hand of this menu, represents the current selection.



Selecting F5 displays a visual representation of the waveform expected on the monitor using the current settings.

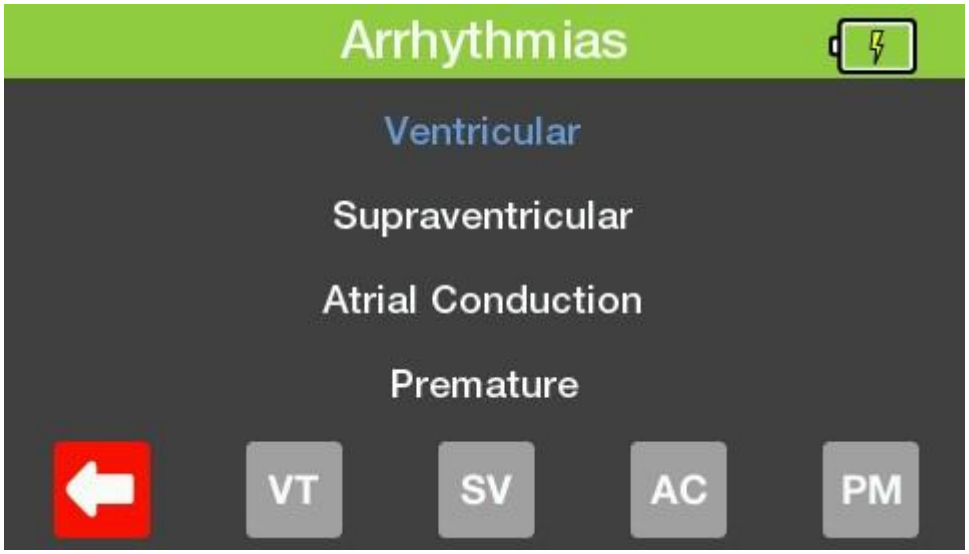


To leave any of these screens select the back button, **F1**, to go back to the previous menu or the **Home** button to go back to the **Home** screen.

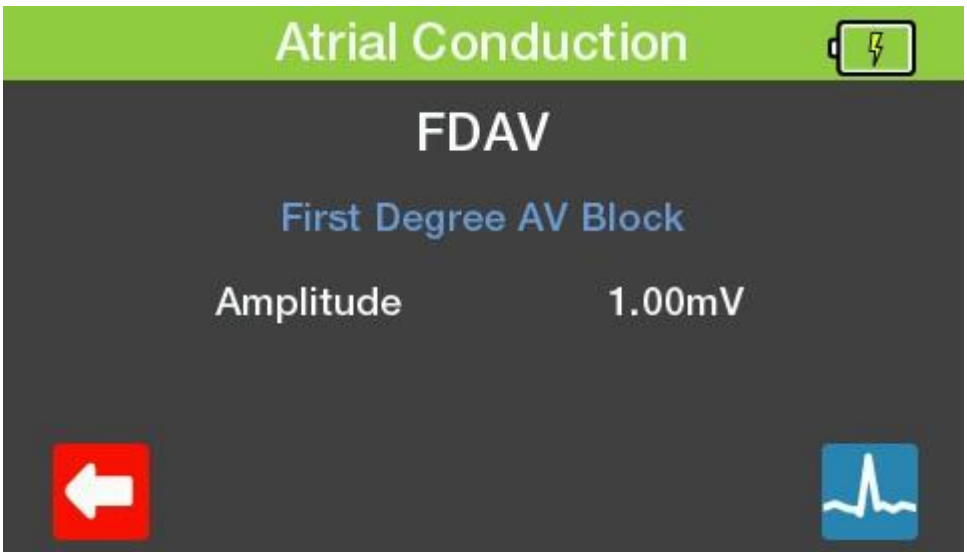
Amplitude (lead II)	0.05 mV to 0.45 mV (0.05 mV steps) 0.5 mV to 5.5 mV (0.5 mV steps)
Rates	30, 40, 50, 60, 70, 80, 90, 100, 120, 140, 160, 180, 200, 220, 240, 260, 280, 300 bpm
ST Segments	-0.8 mV to +0.8 mV in 0.1 mV steps and +0.05mV and –0.05mV on Lead II

3.1.2. Arrhythmias

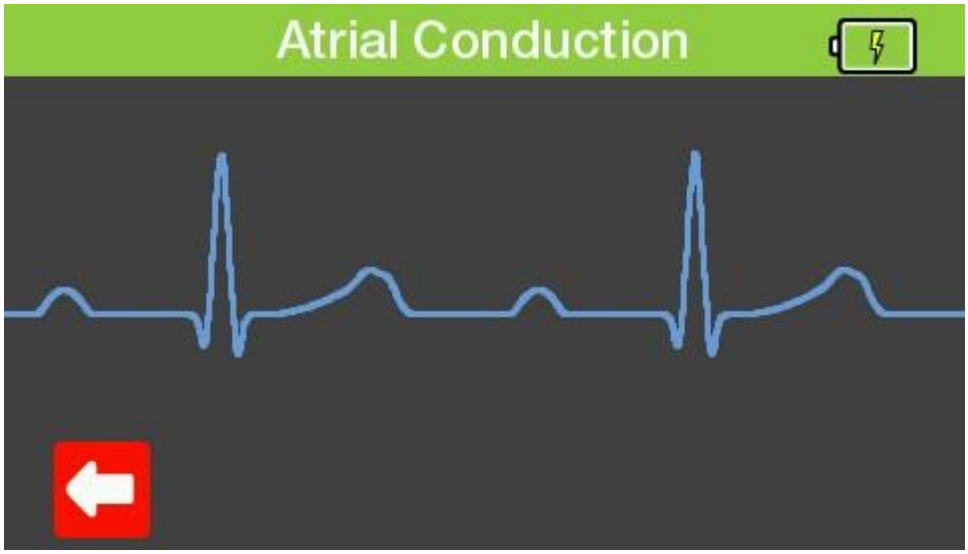
Selecting F2 in the ECG Menu displays the Arrhythmias menu. The up & down arrow keys can be used to highlight the type of arrhythmia to simulate and selected using the tick button. Alternatively, the function keys, F2 to F4, can be used as fast keys to select the corresponding arrhythmia type.



The left and right navigation keys can be used to highlight the specific arrhythmia to be used in the simulation. The navigation keys are used to select the amplitude.



Selecting F5 displays a visual representation of the waveform expected to be found on the monitor with the current settings.



To leave any of these screens select the back button, F1, to go back to the previous menu or the Home button to go back to the Home screen.

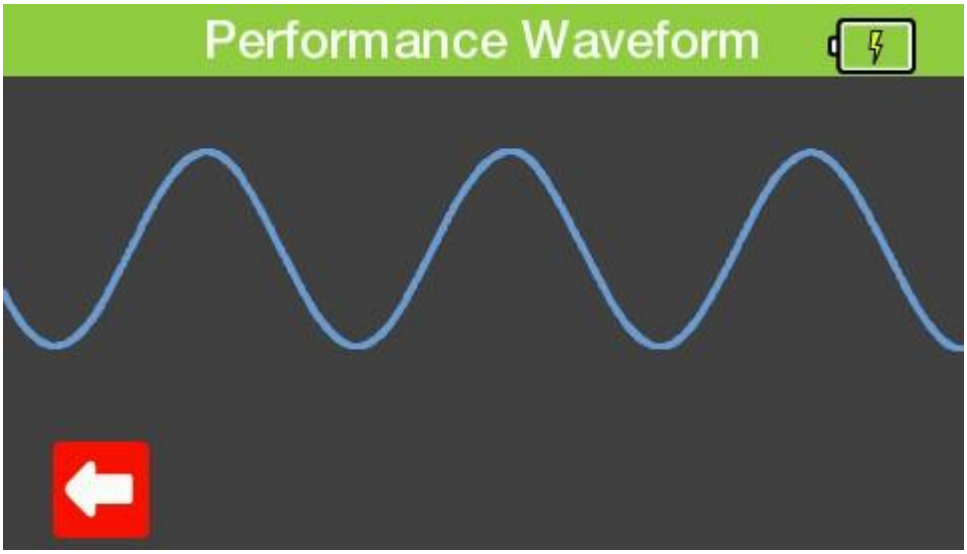
Available Arrhythmia Settings	
Ventricular	Asystole
	Bigeminy
	Trigeminy
	Ventricular Tachycardia
	Ventricular Fibrillation - Coarse
	Ventricular Fibrillation – Fine
Supraventricular	Atrial Fibrillation – Coarse
	Atrial Fibrillation – Fine
	Atrial Flutter
	Sinus Arrhythmia
	Missing Beat
	Atrial Tachycardia
	Paroxysmal Tachycardia
	Nodal Rhythm
	Supraventricular Tachycardia
Atrial Conduction	First Degree AV Block
	Left Bundle Branch Block
	Right Bundle Branch Block
	Second Degree AV Block - Mobitz I
	Second Degree AV Block - Mobitz II
	Third Degree AV Block

Premature	Premature Atrial Contraction Premature Nodal Contraction Premature Left Ventricle Contraction Premature Left Ventricle Contraction - Early Premature Left Ventricle Contraction - R on T Premature Right Ventricle Contraction Premature Right Ventricle Contraction - Early Premature Right Ventricle Contraction - R on T Premature Ventricular Contraction – Frequent Multifocal Premature Ventricular Contraction - 6 / min Premature Ventricular Contraction - 12 / min Premature Ventricular Contraction - 24 / min
Amplitude (lead II)	0.05 mV to 0.45 mV (0.05 mV steps) 0.5 mV to 5.5 mV (0.5 mV steps)

3.1.3. Performance Waveform

Selecting F3 in the ECG Menu displays the Performance Waveform menu. This screen shows the current settings. The up & down navigation keys can be used to highlight the parameter to change and the left & right navigation keys to select the required parameter.

Selecting F5 displays a visual representation of the waveform expected to be found on the monitor with the current settings.



To leave any of these screens select the back button, F1, to go back to the previous menu or the Home button to go back to the Home screen.

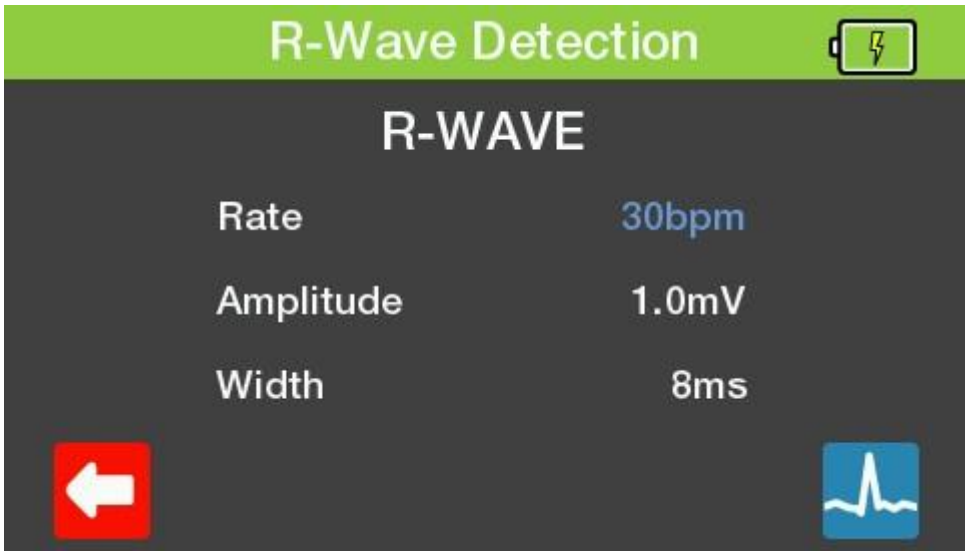
Available Performance Waveforms

Sine Waves	0.05, 0.5, 1, 10, 25, 30, 40, 50, 60, and 100 Hz
Square Waves	0.125, 2 Hz
Pulse	60bpm or 240bpm
Triangle Wave	2 Hz
Performance amplitude	0.5 to 5.0 mV in 0.5 mV steps

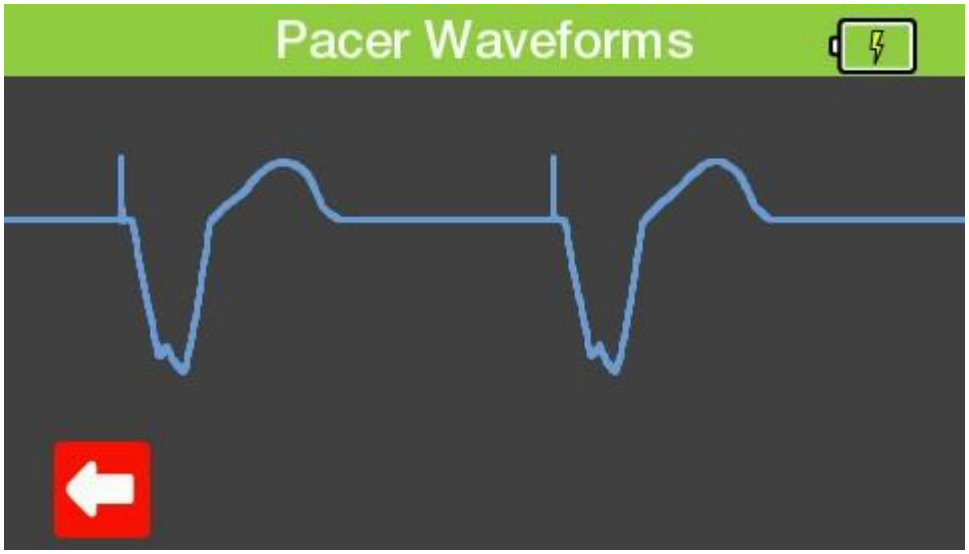
3.1.4. Pacer Waveforms

Selecting F4 in the ECG Menu displays the Pacer Waveforms menu. This screen shows the current settings. The up & down navigation keys can be used to highlight the parameter to change and the left & right navigation keys to select the required parameter.

Selecting F3 displays the R-Wave Detection menu. The up & down navigation keys can be used to highlight the parameter to change and the left & right navigation keys to select the required parameter.



Selecting F5, in either screen, displays a visual representation of the waveform expected to be found on the monitor with the current settings.

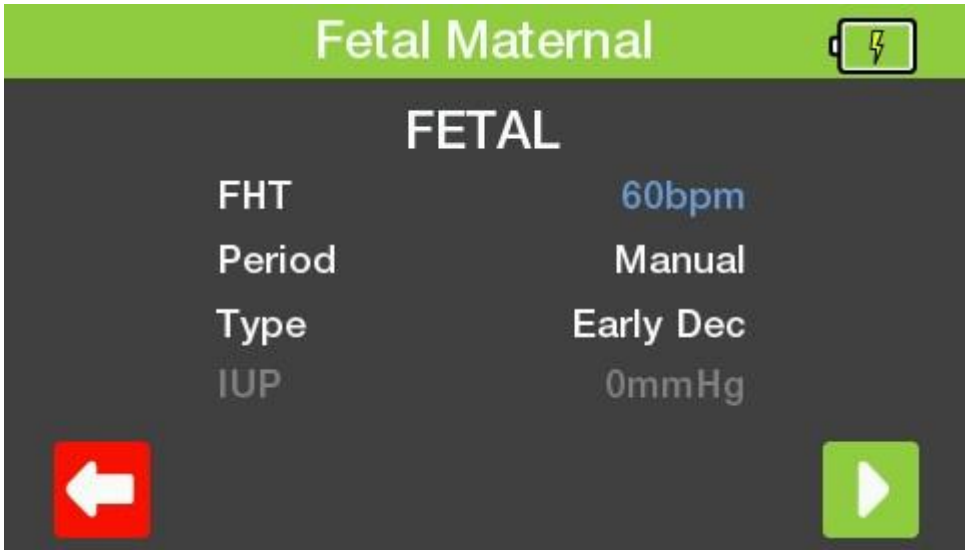


To leave any of these screens select the back button, F1, to go back to the previous menu or the Home button to go back to the Home screen.

Available Pacer Waveforms	
Simulated Rhythms	Asynchronous at 75 bpm Demand with frequent Sinus beats Demand with occasional Sinus beat Atrioventricular sequential Non-Capture Non-Function
Amplitude	1.0, 2.0, 5.0, 10.0 mV
Width	0.1, 0.2, 0.5, 1.0, 2.0 ms
R-Wave Detector Rate	30, 60, 80, 120, 200, 250 bpm
R-Wave Amplitude	0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0 mV
R- Wave Width	8, 10, 12, 20, 40, 60, 80, 100, 120, 140, 160, 180, 200 ms

3.1.5. Fetal Maternal

Selecting F5 in the ECG Menu displays the Fetal Maternal menu. This screen shows the current settings. The up & down navigation keys can be used to highlight the parameter to change and the left & right navigation keys to select the required parameter.



Selecting F5 starts the timer and selecting F5 again stops the timer.

Note: IUP is displayed for information only during the Fetal Simulation.

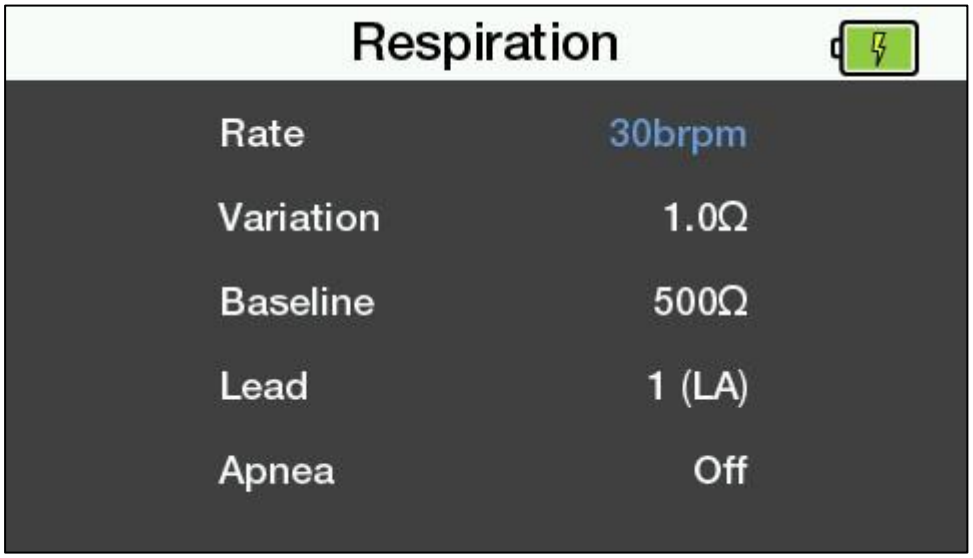
To leave any of these screens select the back button, F1, to go back to the previous menu or the Home button to go back to the Home screen.

Note: The Fetal simulation is output on IBP1.

Available Fetal Simulation Settings	
Maternal heart rate (fixed)	80 bpm
Fetal heart rate (selectable)	60, 90, 120, 140, 150, 210 and 240 bpm
Fetal heart rate (IUP)	140 bpm at beginning, then varying with pressure
Intrauterine-pressure waveforms (IBP1)	Early deceleration, late deceleration, and uniform acceleration
Simulation period	Manual or 2, 3, or 5 minutes

3.2. Respiration Settings

Selecting F2 from the Home screen displays the Respiration menu. This screen shows the current settings. The up & down navigation keys can be used to highlight the parameter to change and the left & right navigation keys to select the required parameter.



To leave this menu select the **Home** button to go back to the **Home** screen.

Available Respiration Settings	
Rate	0, 5, 10, 15, 30, 40, 60, 80, 120, 180 brpm
Resistance Variations	0.2, 0.5, 1.0, 3.0 Ω
Base Resistances	500, 1000, 1500 and 2000 Ω
Lead selection	Lead 1 (LA) and 2 (LL), user selectable
Apnea Simulation	ON / OFF

3.3. Temperature Settings

Selecting F3 from the Home screen displays the Temperature menu. This screen shows the current settings. The left & right navigation keys can be used to select a preferred setting. Alternatively, the function keys, F1 to F4, can be used as fast keys to select a corresponding temperature.

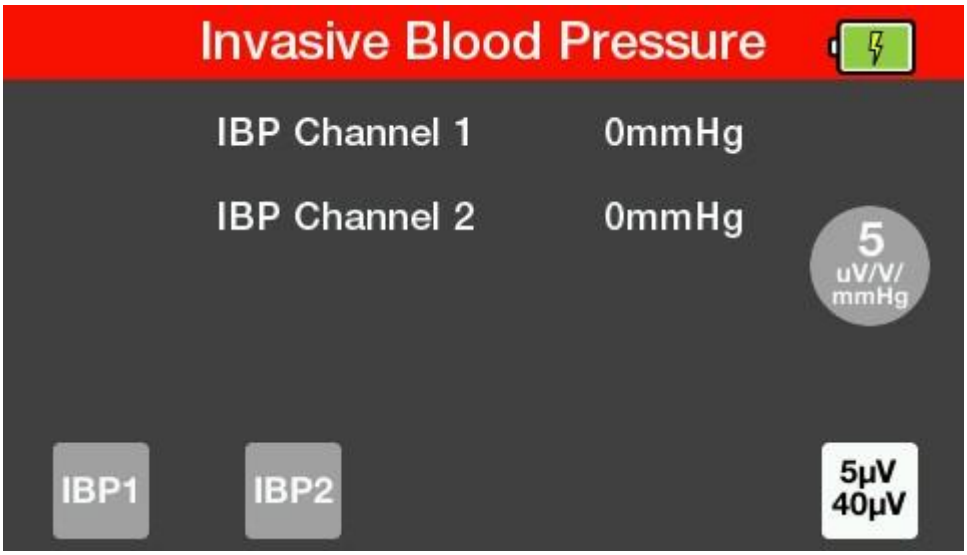
The function key F5 can be used to switch between °C & °F.

To leave this menu select the Home button to go back to the Home screen.

Available Temperature Settings	
Simulation	YSI 400 / 700A / 700B Static
Temperature unit	°C or °F, user selectable
Range	pre-set 4 values at 0.0, 24.0, 37.0, and 40.0°C pre-set 4 values at 32.0, 75.2, 98.6, 104.0°F
Accuracy	± 0.1 °C / °F
Connector	mini-DIN style

3.4. Invasive Blood Pressure Settings

Selecting F4 from the Home screen displays the Invasive Blood Pressure menu. This screen shows the current settings.



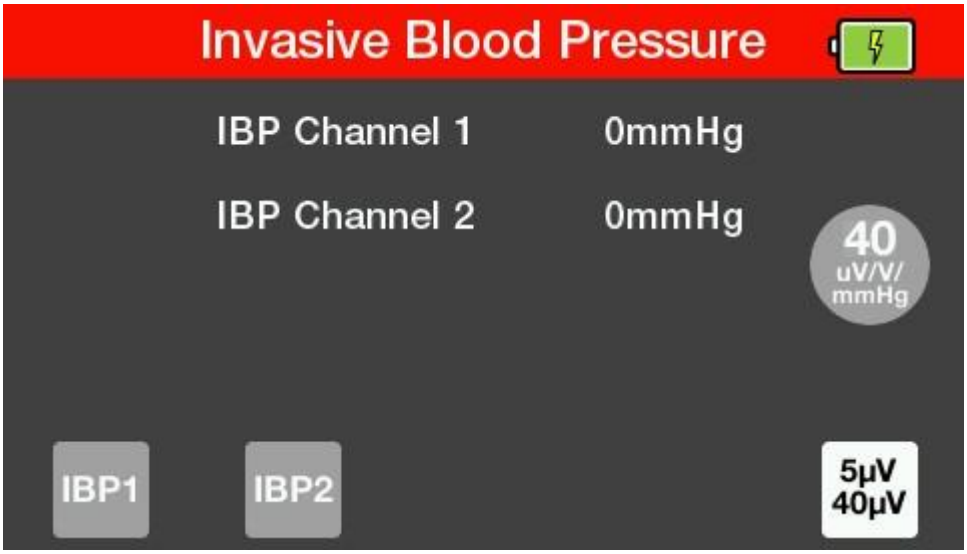
Use function keys F1 or F2 to select the required channel. The up & down navigation keys can be used to highlight the parameter to change and the left & right navigation keys to select the required parameter.

Setting Auto in Mode will cycle through all of the Dynamic settings one by one for 15 seconds each.

Note: Auto mode is only available on channel 1.

Selecting F3 resets all values back to zero.

The function key F5 can be used to switch the simulated sensitivity between 5µV and 40µV.



To leave this menu select the Home button to go back to the Home screen.

Available IBP Settings	
Channels	2
Static Pressure	-10, 5, 0, 20, 40, 50, 60, 80, 100, 150, 160, 200, 240, 320, 400 mmHg
Dynamic Simulation	Arterial [ART] 120/80 Radial Artery [RA] 120/80 Left Ventricle [LV] 120/00 Right Ventricle [RV] 25/00 Left Atrium [LA] 14/4 Pulmonary Artery Wedge [PAW] 10/2 Pulmonary Artery [PA] 25/10 Right Atrium (central venous) [CVP] 15/10
Auto Sequence (Channel 1 only)	Cycle through simulations with 15 second step duration: - Arterial [ART] 120/80 - Radial Artery [RA] 120/80 - Left Ventricle [LV] 120/00 - Right Ventricle [RV] 25/00 - Pulmonary Artery Wedge [PAW] 10/2 - Pulmonary Artery [PA] 25/10 - Right Atrium (central venous) [CVP] 15/10
Simulated sensitivity	5µV/V/mmHg or 40µV/V/mmHg (user selectable)

4. Maintaining the PatSim 200

4.1. Cleaning the PatSim 200

The PatSim 200 case can be cleaned with a damp cloth with, if necessary, a small amount of mild detergent. However, care must be taken to prevent excessive moisture around the socket panel or in the lead storage area.

Do not allow liquid inside the PatSim 200 or near the sockets. Do not use abrasives, solvents or alcohol.

If any liquid is spilt into the PatSim 200 case, the simulator should be returned for repair, stating the cause of the defect.

4.2. User Maintenance

The PatSim 200 is a rugged quality instrument. However, care should always be taken when using, transporting and storing this type of equipment. Failure to treat the product with care will reduce both the life of the instrument and its reliability.

If the PatSim 200 is subject to condensation, allow the tester to completely dry before use.

- Always check the PatSim 200 and supplied accessories for signs of damage and wear before use.
- Do not open the PatSim 200 under any circumstances.
- Keep the instrument clean and dry.
- Avoid testing in conditions of high electrostatic or electromagnetic fields.
- Maintenance should only be performed by authorised personnel.
- There are no user replaceable parts in the PatSim 200.
- The unit should be regularly calibrated (at least annually).

5. Specifications

5.1. Technical Specifications

General ECG	
Simulation	Full 12 lead ECG with independent outputs for each signal lead
Lead I	70%
Lead II	100%
Lead III	30%
Lead V1	24%
Lead V2	48%
Lead V3	100%
Lead V4	120%
Lead V5	112%
Lead V6	80%
ECG Normal Sinus Rhythm	
Simulation	Full 12 lead ECG with independent outputs for each signal lead
Heart Rate	18 selectable values 30-300 bpm
Accuracy	±1BPM or 1%
Amplitude (lead II)	0.05 mV to 0.45 mV (0.05 mV steps) 0.5 mV to 5.5 mV (0.5 mV steps)
Amplitude Accuracy	± 2%
ST Segments	18 selectable values, 8 elevated & 8 depressed
Neonatal Mode	ECG R wave width is reduced to 40ms
Arrhythmia Waveforms (Atrial)	
Amplitude (lead II)	0.05 mV to 0.45 mV (0.05 mV steps) 0.5 mV to 5.5 mV (0.5 mV steps)
Amplitude Accuracy	± 2%
Ventricular Waveforms	Asystole Bigeminy Trigeminy Ventricular Fibrillation (coarse) Ventricular Fibrillation (fine) Ventricular Tachycardia
Supraventricular Waveforms	Atrial Fibrillation coarse Atrial Fibrillation fine Atrial Flutter Atrial Tachycardia Missing beat Nodal rhythm Paroxysmal Atrial Tachycardia Sinus Arrhythmia Supraventricular Tachycardia

Atrial Conduction Waveforms	First Degree AV Block
	Left Bundle Branch Block
	Right Bundle Branch Block
	Second Degree AV Block - Mobitz I
	Second Degree AV Block - Mobitz II
	Third Degree AV Block
Premature Waveforms	Premature Atrial Contraction
	Premature Nodal Contraction
	Premature Left Ventricle Contraction
	Premature Left Ventricle Contraction – early
	Premature Right Ventricle Contraction - R on T
	Premature Ventricular Contraction - 6 / min
	Premature Ventricular Contraction – 12 / min
	Premature Ventricular Contraction - 24 / min
	Premature Ventricular Contraction – frequent multifocal

Performance Waveforms	
Square Waves	2 Hz, 0.125 Hz
Triangle Wave	2 Hz
Pulse	60bpm or 240bpm
Sine Waves	0.05, 0.5, 1, 10, 25, 30, 40, 50, 60, and 100 Hz
R-Wave Detector Test	60 BPM haver-triangle wave with selectable width and amplitude
Haver-triangle Width	12 selectable values between 8 and 200 ms
Performance amplitude	0.5 to 5.0 mV in 0.5 mV steps
Amplitude	Full 12 lead ECG with independent outputs for each signal lead
Lead I	70%
Lead II	100%
Lead III:	30%
Lead V1-V6	100%

Pacer Waveforms	
Simulated Rhythms	Asynchronous at 75 bpm
	Demand with frequent sinus beat
	Demand with occasional sinus beat
	A-V sequential
	Non-capture
	Non-function
Pulse Amplitude	1.0, 2.0, 5.0, 10.0 mV
Accuracy	±10%
Width	5 selectable values 0.1-2.0 ms
Accuracy	± 5%

R Wave Detection	
Heart Rate	6 selectable values 30-250 BPM

Amplitude	0.05 mV to 0.50 mV (0.05 mV steps)
R wave width	13 selectable values 8-200ms
Respiration Simulation	
Rates	0, 5, 10, 15, 30, 40, 60, 80, 120, 180 brpm
Resistance Variations	0.2, 0.5, 1.0, 3.0 Ω
Accuracy	±10%
Base resistances	500, 1000, 1500 and 2000 Ω
Accuracy	±5%
Lead selection	1 (LA), 2(LL) user selectable
Apnoea Simulation	Manual on/off
Temperature Simulation	
Simulation	YSI 400 / 700A / 700B Static
Temperature unit	°C or °F, user selectable
Range	pre-set 4 values at 0.0, 24.0, 37.0, and 40.0°C pre-set 4 values at 32.0, 75.2, 98.6, 104.0°F
Accuracy	± 0.1 °C / °F
Connector	mini-DIN style
Invasive Blood Pressure Simulation	
Channels	2 channels
Static Pressure	-10,-5,0,20,40,50,60,80,100,150,160,200,240,320, 400mmHg
Dynamic Simulation	Arterial [ART] 120/80 Radial Artery [RA] 120/80 Left Ventricle [LV] 120/00 Right Ventricle [RV] 25/00 Right Atrium (central venous) [CVP] 15/10 Pulmonary Artery [PA] 25/10 Pulmonary Artery Wedge [PAW] 10/2 Left Atrium [LA] 14/4
Auto sequence (C1 only)	Cycle through simulations with 15 second step duration: Arterial [ART] 120/80 Radial Artery [RA] 120/80 Left Ventricle [LV] 120/00 Right Ventricle [RV] 25/00 Pulmonary Artery Wedge [PAW] 10/2 Pulmonary Artery [PA] 25/10 Right Atrium (central venous) [CVP] 15/10
Accuracy	± 1mmHg
Excitation voltage	2V to 16V
Impedance	350Ω Nominal
Simulated sensitivity	5µV/V/mmHg or 40µV/V/mmHg (user selectable)
Connector	mini-DIN style

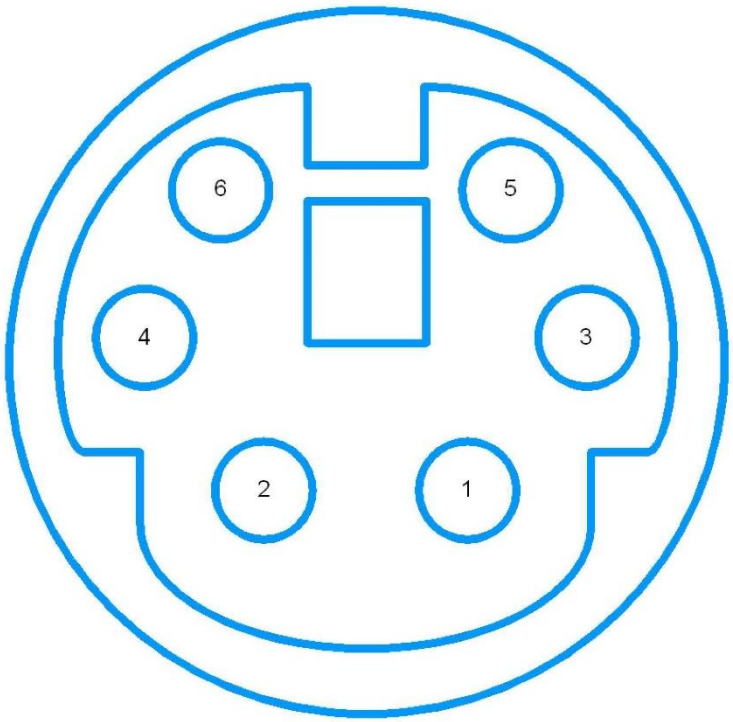
5.2. General Specifications

General Specifications	
Mains power/Battery info	3.7V 3900mAh 14.4WH Li-Ion battery 5V 1A USB micro-B power supply 100-240V ~ 50/60Hz 0.18A max.
Charge time (new battery)	Up to 6 hours
Battery life	Up to 8 hours (depending on simulation and screen brightness)
Weight	0.70 Kg / 1.5 lbs
Dimensions	180 x 150 x 55 mm, 7.1 x 5.9 x 2.2 inch
Serviceability	
Warranty:	5 years [terms and conditions apply]
Calibration:	1 year
Environmental	
Operating conditions	10 - 40°C (50 - 104°F) 0-90% RH – NC
Storage environment	-15 - 60°C (5 - 140°F) 0-90% RH – NC
Environmental protection	IP40
Impact Rating	IK08
Electrical Interfaces	
ECG (& respiration)	10 x 4 mm sockets
BP 1 – 2	6 pin mini DIN
Temperature	8 pin mini-DIN
USB Port	micro

6. Appendix

6.1. Invasive Blood Pressure Socket Wiring Diagram

The wiring diagram for any of the IBP sockets is as follows:



Notes:
1, Pinout:

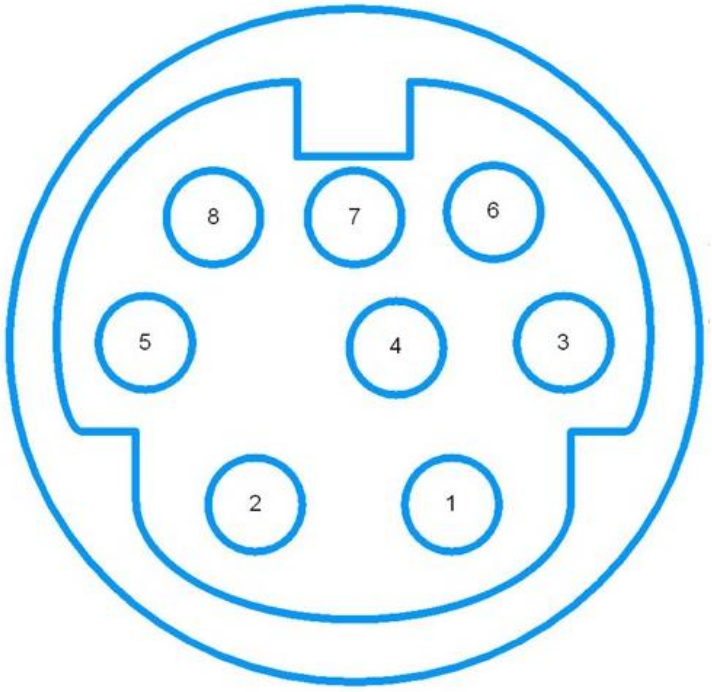
1. +VE Excitation
2. No Connection
3. +VE Output
4. –VE Excitation
5. No Connection
6. –VE Output

2, IBP 1 and 2 pinouts are identical

3, Pinout with respect to looking at the PatSim 200

6.2. Temperature Socket Wiring Diagram

The wiring diagram for the Temperature Output socket is as follows:



Notes:
1, Pinout:

1. No Connection
2. YSI400
3. No Connection
4. No Connection
5. YSI700B
6. No Connection
7. Temp Common
8. YSI700A

2, Pinout with respect to looking at the PatSim 200

7. Support

7.1. Contact Us

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