

Extra-Cardiac NeuroStimulator Pachón

Patent Pending US & Abroad

Quick Instruction Manual

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This device was created to allow the stimulation of the vagus nerve without direct contact. A detailed description of the technique can be found at the link:

<https://www.sciencedirect.com/science/article/pii/S2405500X15002728>

(Simplified Method for Vagal Effect Evaluation in Cardiac Ablation and Electrophysiological Procedures. Jose C.Pachon M; Enrique I.Pachon M; Tomas G.Santillana P.; Tasso J.Lobo; Carlos T.C.Pachon; Juan C.Pachon M.; Remy N.Albornoz V.; Juan C.Zerpa A) - Figure 1.

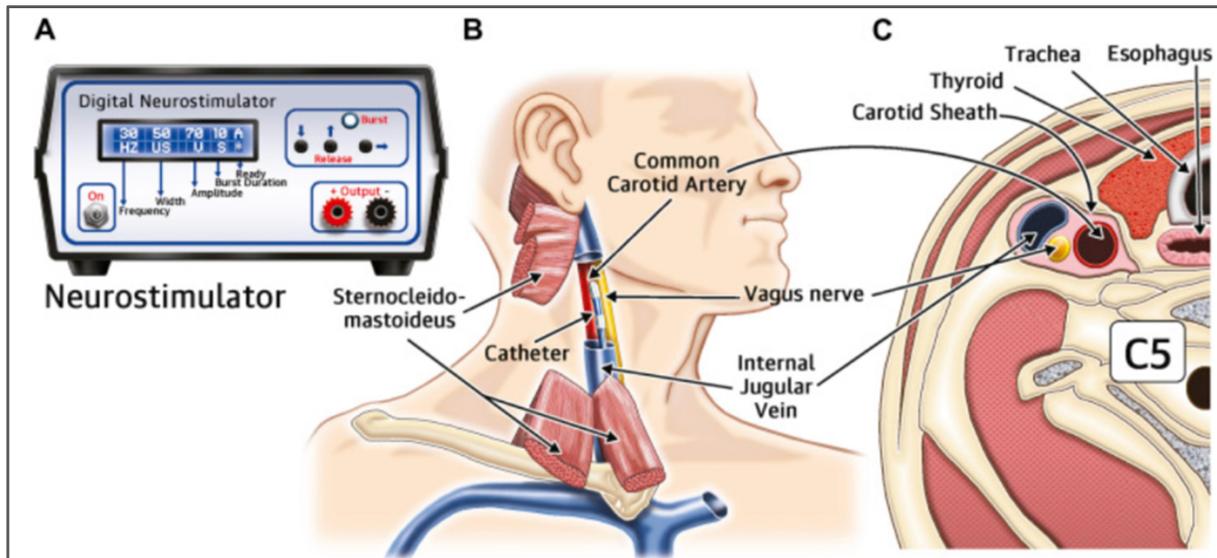


Figure 1: Simplified scheme of the technique to stimulate the vagus nerve without direct contact during electrophysiological procedures.

2

Front panel layout:

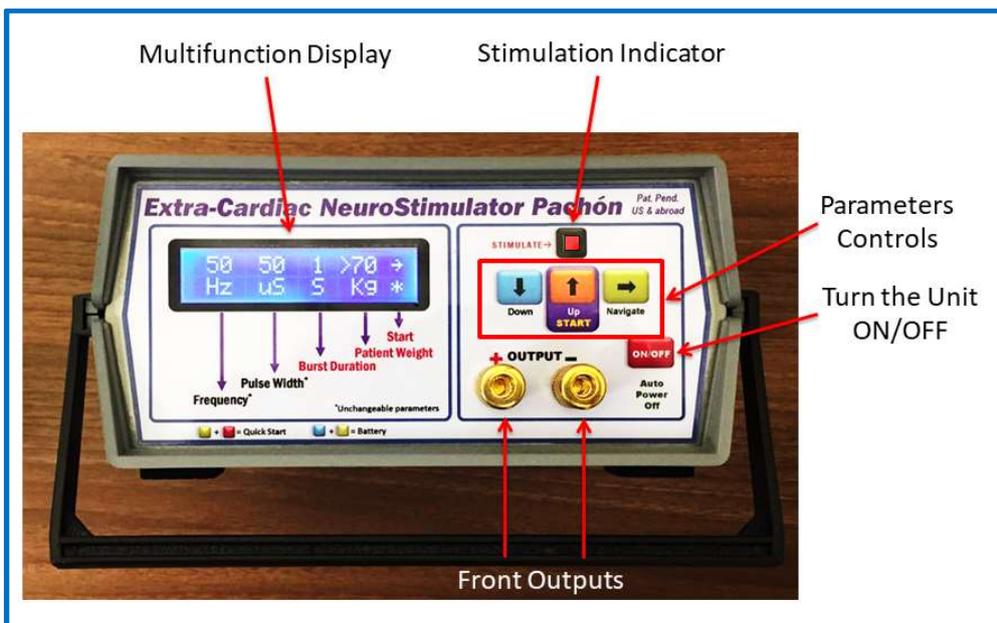


Figure 2: The front panel Layout.

3

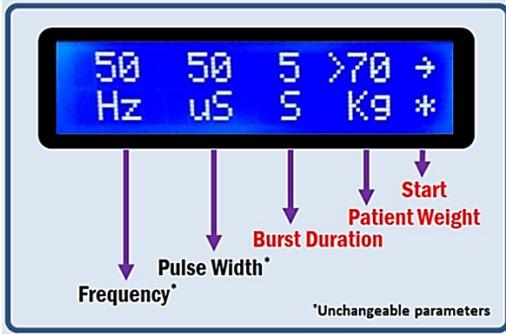


Figure 3: The multifunction display shows all stimulating parameters. The black ones (*) are unchangeable.

Neurostimulator Mode (Figure 2, Figure 3)				
Cursor Position	Identification	Minimum Value	Maximum Value	Meaning
1	Frequency	50Hz	Unchangeable	Stimulation Frequency in 50Hz
2	Pulse Width	50uS	Unchangeable	Pulse duration in 50 microseconds
3	Burst Duration	1s	10s	Burst Duration in seconds
4	Patient Weight	20Kg	>70Kg	Patient Weight from 20Kg up to 70Kg or more
5	Start	*	#	Start stimulation



Figure 4: ON/OFF Button

Power On and Off Button (Figure 4)	
Press ON/OFF once	Turn the unit on (The last used parameters will be shown on the screen).
Press ON/OFF again	Turn the Unit Off (After 10 minutes ON, the unit will turn off automatically to power saving - a message will be displayed to allow a new period of operation without interruption). The last stimulation program will be automatically recorded in the device memory.



Figure 5: Parameter control panel

Parameters Control (Figure 5)	
Stimulate	lit when stimulating
↓	Reduces the value of the flashing parameter
↑	1. Increases the value of the flashing parameter 2. Releases the stimulation if START is pressed while * is blinking
→	Navigate among the parameters

6

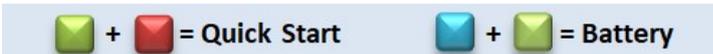


Figure 6: Combined functions

Combined functions (Figure 6)	
→ + ON	Pressing ON while keeping the → button pressed, skip boot
↓ + →	Simultaneously pressing the ↓ button and the → button, when the power is on, shows the battery condition.

7



Figure 7: Rear Panel

Rear panel (Figure 7)	
Auxiliary OUTPUT (-) (+)	Rear panel outputs are compatible with standard electrophysiology catheter connectors. This output delivers the same stimulus from the front panel one
18V/1A MAX.	Connector for charging the battery. Only use the charger supplied with the unit. This charger can be connected in either 127 or 220V (18V/1A Maximum).
Quick Start	Frame with basic recommendations for using the device (Figure 9).



Figure 8: Sleep mode message.

This message (Figure 8) appears with the stimulate light blinking, if the unit was on at least by 10 minutes without pressing any key. In 5 seconds the device will auto shut-off to save battery or press any key to return to normal operation.

The device is equipped with four long-life lithium-ion batteries (model 18650 – 2250mAh) and a specific charger. When the battery charge is close to 20%, a complete charge must be performed by connecting the charger (bivolt) to the back connection for 6 hours. It is not possible use the neurostimulator during battery charging . After years of use, if the battery cycle is reduced, the unit needs to return to have the battery replaced.

It is possible to see the condition of the battery when the device is turned on, while it is booting, or at any time when it is turned on by simultaneously pressing the  (Down) and  (Navigate) buttons.

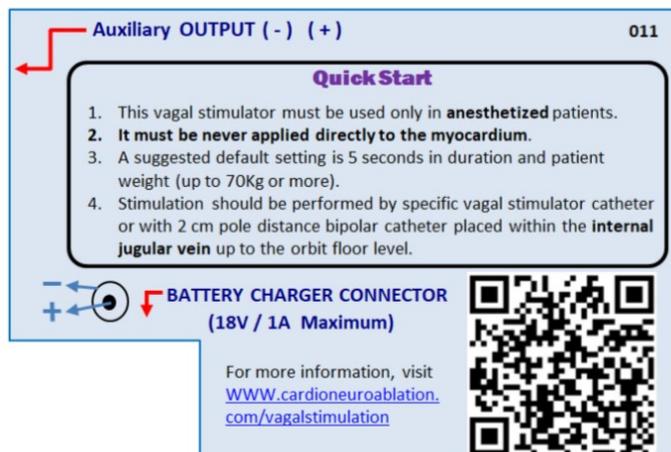


Figure 9: Rear panel instructions.

Supplied accessories: Polarized cables, bivolt power supply (18V/1A), USA plug adapter, this manual.

For more information, visit WWW.cardioneuroablation.com/vagalstimulation