

User's Manual

Pocket
VibPro

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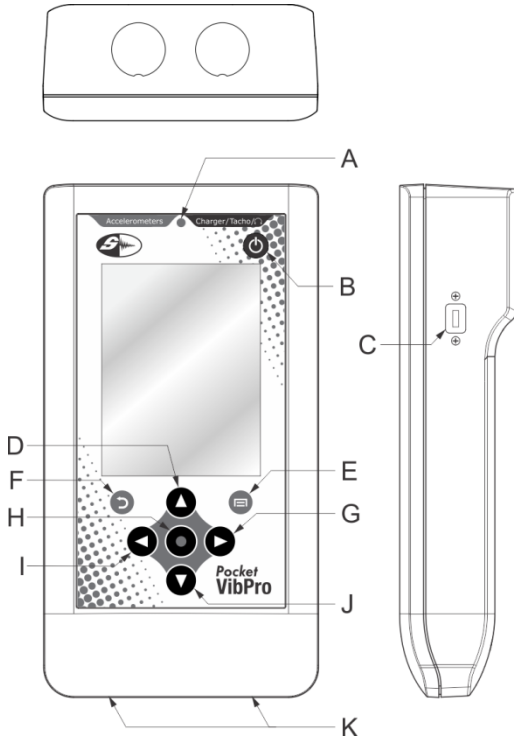
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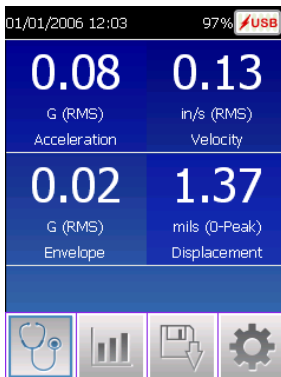
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VibPro Pocket parts:



- A. Turned on Led Light (green) / load initiator (red)
- B. On button
- C. Micro USB port
- D. Upward button
- E. Menu button
- F. Go back button
- G. Rightward button
- H. Enter button
- I. Leftward button
- J. Downward button
- K. Base load contacts

After initiating the device by pressing the ON key we will be able to see (after a few seconds) in the screen the acceleration vibration levels measured in g RMS, the velocity measured in mm/s RMS, acceleration envelope measured in g RMS and displacement measured in μm 0-Peak; all this in a way that if the provided sensor is already placed over the equipment that has to be measured, you will be able to visualize in a single screen the general vibration level of the machine.



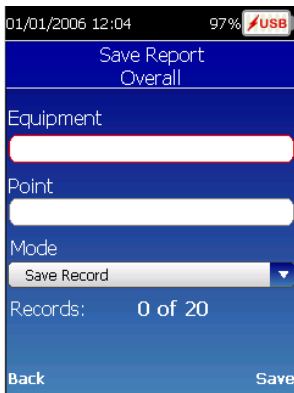
The frequency range managed in the different measurements is as follows: acceleration 2 Hz to 10000 Hz, enveloping, velocity and displacement 2 Hz to 1000 Hz

Data Saving

On the lower part of the screen you can see the representative icons of the different menu options. By pressing the menu key these icons disappear from the screen. The third option from the left is the data saving option, by pressing enter over this icon a window will open that allows saving reports in which it will be required to enter the name of the equipment and the control point. In order to enter this information, you will have to go to the corresponding box and press enter, this will display a virtual keyboard. This keyboard can be accessed by the arrow keys; you can use these keys to select the characters you need to enter.

Finally you will have to select the mode in which you wish to save the data, being PDF, CSV or both.

You can save up to 20 records, once that number is reached you will have to download the files to a PC in order to free the memory.



Diagnostic:

The first menu option on the left is the diagnostic function. By selecting this option with the arrow keys (right - left) and then pressing enter (central button) you will access the diagnostic parameter configuration screen. This will allow you to evaluate the condition state of the tested machine in accordance to the ISO 10816-3 standard. In order to achieve this you will just need to enter the operation rpm of the machine and its power expressed in Kw.

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In order to enter the rpm you will need to press Enter and a virtual numeric keyboard will display. You can select the corresponding value using the arrow keys and then you can accept it with the Enter key. If you want to delete an entered number you can use the Return key. And finally you can use the menu key to accept and save the rpm value.

With the Down Arrow key you can switch to the Machine Power field, and by pressing again the Down Arrow key a board will display in which you can select the Powers. Once here you can select the appropriate power by moving through the board with the Arrow keys (down - up). You can accept the selection by pressing the Enter key, and then you can press the Menu key to continue.

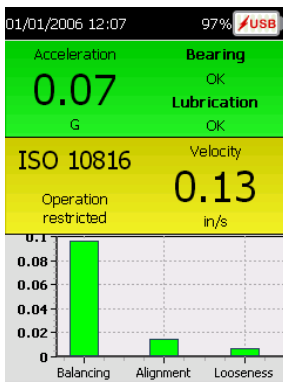
It is like this that we can access the diagnostic screen in which you can visualize at the top the value in

acceleration g RMS and the general state of the bearing and the lubricant film.

In the central part of the screen you can see the state of the machine in accordance to the ISO 10916-3 Standard and the velocity value in mm/s RMS. Finally, at the bottom you can see the balancing, alignment and mechanical clearance condition.

The Menu will display on the screen by pressing the Menu key, and with the Return key you can go back to the main screen.

The saving function works the same way as it does in the initial screen, allowing to generate and save a report of the performed diagnostic.



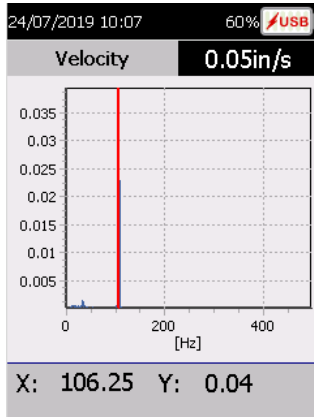
Spectrum Graphic

From the startup screen, along with the activated menu you can access the spectrum graphics by activating the menu second icon, in order to do this you will need to go over this icon with the right arrow key and press enter.

The screen will automatically show the acceleration spectrum graphic with a maximum frequency of 10000 Hz, with the left-right keys you can select different resolutions (Lines) and maximum Frequencies for each spectrum. If you want to select a different amount of lines or maximum frequencies to the one shown by default you will have to go over the corresponding parameter and change it using the up-down arrow keys.

To change the variable you will need to press Enter and the screen will start showing the different spectrums according to the following order: acceleration in 10000 Hz, velocity in 1000 Hz, displacement in 500 Hz and enveloping in 1000 Hz, all spectrums will be shown in 400 lines of resolution and the total value in RMS at the top right side of the screen.

Cursor tool: To activate the cursor on the spectrum screen you must press the menu key and looking for the second option from the left with enter will activate the cursor

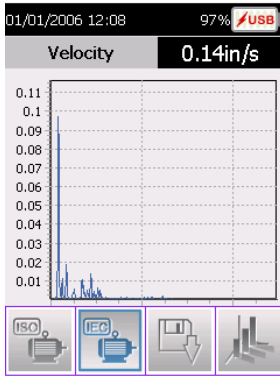


this will be located automatically on the component of greater amplitude showing on the lower part of the screen the X and Y values, to move the cursor it is enough to press the left or right keys and the cursor will move line by line for one side or the other, pressing the up or down keys the cursor will move from to 10 lines each time for one or the other side

You can save the measured spectrums by entering the aforementioned menu option, allowing generating a PDF of each of the spectrums shown in the screen.

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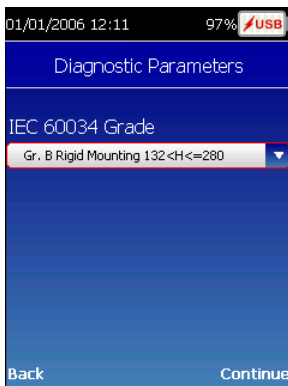


The screenshot shows a menu titled 'Save Report Spectrum'. The menu is blue with white text. Below the title, there are two input fields: 'Equipment' and 'Point'. At the bottom of the menu, there are two buttons: 'Back' on the left and 'Save PDF' on the right.

IEC 60034 Standard

By activating the menu in the spectrums screen you can access the IEC 60034 Standard application to diagnose

motors in the workshop. By pressing the second icon you can access the Diagnostic Parameters screen, with the Down arrow key you can activate the selection of the norm subgroup, you will have to choose the appropriate one in accordance to the motor that is going to be tested according to the following consideration: Grade A for motors in general, Grade B for motors with special requirements, you will have to select “Suspension” if the motor is simply leaning on the floor, “Montage” if the motor is rigidly tied on the floor and finally define the range of “H”, which is the height from the axis center to the ground.

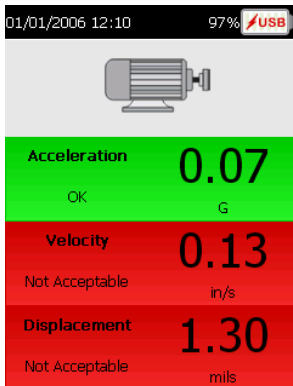


Once you selected the appropriate criterion press Enter and then “Continue”.

The screen will then display the variable, the acceleration RMS value and condition, velocity and

displacement in accordance to the standards of the aforementioned norm.

The saving function works the same way as it does in the main screen, allowing generating and saving a report of the performed diagnostic.



Activate Menu and select the spectrum icon to enter to the spectrums screen, once there you can go back to the startup screen by pressing Return.

Data Collector (Optional)

From the start screen, select the icon on the left side of the menu and press Enter.

You will access the second Menu bar. Press right arrow key till you reach the third option from the left and thus access the Routes Measurement function.



Press the Menu key and select the icon on the right.
Press Enter to access the configuration of the VibPro.

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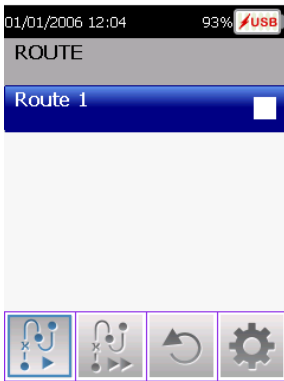


In Configuration mode, activate “Connect to PC” option. The message "Connect the equipment to the PC" will appear; at that time connect the equipment using the USB cable provided, then proceed to load a route as described in the Machinery Control software manual. After this disconnect the USB cable (always perform a safe disconnect, using the standard Windows procedures from the PC) press the Menu key and then the Back key to exit the configuration. Turn the equipment off.

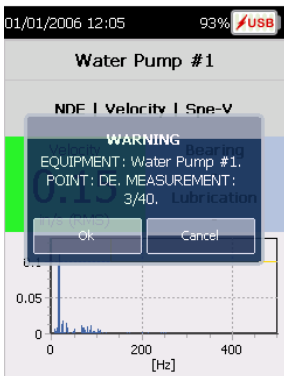
Turn the equipment on again, enter the route option as explained above, select the “plant” to measure and press Enter, select the subplant and press Enter, select the route and press Menu. On the left you will see the two measurement options, Detailed and Quick.

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Detailed measurement: Select this option and press Enter. This mode measures step by step each measurement, always displaying the value or graph corresponding to each measurement, always waiting for confirmation from the operator. When each new point or equipment message appears you must press the Enter key to begin measuring.



To confirm the current measurement and advance to the next one, press the Enter key again. This option is ideal for an operator with analyst capabilities, since it will allow you to have an idea of the state of the equipment as you carry out the routine. When a new measurement is displayed, you can discard it and measure again by pressing the Left key, pressing the Return key will exit the measuring mode and display the plant again.

Quick Measurement: This mode captures all measurements configured at the point without interacting with the operator, eg: ACCELERATION, VELOCITY and ENVELOPE SPECTRUM. If the values of all these measurements are “Normal” they are recorded in memory without displaying any graphs. The screen will flash for an instant this condition and move on.

If any of the measurements are flashed as CAUTION or EMERGENCY, you can see the graph, if you choose to do so, and then you can record with the Enter key.

If you want to repeat the measurement simply press the Left key and the measurement will be repeated again as many times as desired.

This can be done at each point of the machine. The unit will tell you when to move from point to point. Obviously this implies repositioning the sensor.

Reset Status: This function is very important because it allows the operator to return the status of a route and measurement to a Non-Measured state, in order to perform a new measurement of the equipment of the route without losing the measurements already performed. These past measurements will remain in the memory of the equipment, in this way the same route can be remeasured as many times as required, without needing to connect the equipment to the PC.

All you have to do is select the route you want to measure again and press the Menu key and then press RS to reset it to Not Measured.

When you perform a status reset, the values contained in the database of the last measurement become part of the history that is generated within the VibPro database.

Once you have confirmed the command to reset a plant or route, you will not have access to the values of the last run, until a transfer is made to the DSP Machinery Control software.

After completing the route measurement, press the Menu key and select the configuration option to reconnect the equipment to the PC and download the measured route as described in the Machinery Control manual

NOTE:

In the data collector option, this equipment supports measurements of 25600 lines of resolution at maximum frequencies of no less than 200 Hz, with a resolution of 12800 and 6400 lines. The maximum frequencies cannot be less than 50 Hz. At 3200 lines the maximum frequency cannot be less than 20 Hz, for the rest of the resolutions there is no frequency limitation.

Balancing

From the home screen selecting the icon on the left of the menu and pressing Enter, the second menu bar is accessed, with the right arrow key, activate the fourth option from the left and thus access to the rotor balancing function.



When entering the configuration screen, you must first select if you are going to balance on one or two planes, to select the different options we move with the keyboard arrows and we display the options with the central key, select the desired option and confirm by pressing the center key again.



Balancing in 1 Plane:

We move through the configuration of parameters with the arrow keys and the first option allows us to select the variable that will be used to perform the balancing, being able to choose Velocity or Displacement

Note:

For rotation speeds less than 400 RPM, it is recommended to select Displacement since it is the variable that is most amplified at low RPM, which will make the system more sensitive to the vibration caused by the imbalance.

The next option allows us to enter the number of fixed positions where to place the correction weights (for example, the blades of a fan), if you enter a certain

number of positions the system will tell us how to distribute the correction weight between two consecutive positions, the positions are counted upwards from position 1 which must coincide with the position of the mirror tape placed on the rotor to be read by the optical sensor and coinciding with the direction of rotation of the rotor, if 0 is entered the system will deliver as a correction position a fixed value expressed in degrees, taking the position of the tape as 0 ° and counting up to 360 ° in the direction of rotation

Finally, the test weight to be used must be entered in grams and its position, always with respect to the tape, pressing continue, we are already in a position to start balancing, by this time both the vibration sensor and the tachometer must be connected and positioned.

Before pressing continue to start the process the rotor must be rotating at the speed to which it is going to balance, press continue and when you see that the rpm read is stable press again continue, then carefully follow the instructions at the bottom of screen that will guide you through the whole process

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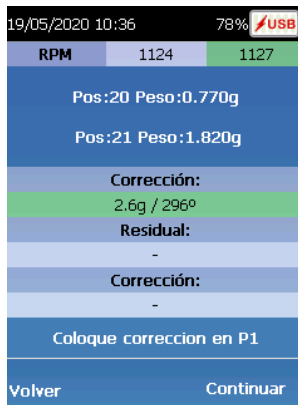
19/05/2020 10:22		79%	USB
RPM	-	-	
Sin Peso P1:			
-			
Con Peso P1:			
-			
Corrección:			
-			
Residual:			
-			
Corrección:			
-			
...			
Volver	Continuar		

19/05/2020 10:27		79%	USB
RPM	1124	-	
Sin Peso P1:			
-			
Con Peso P1:			
-			
Corrección:			
-			
Residual:			
-			
Corrección:			
-			
Coloque sensor en P1			
Volver	Continuar		

Pressing continue measures an initial spectrum of the system and then the initial unbalance value will be measured automatically, press continue again and this value is saved and the indication to place the test weight appears.

19/05/2020 10:30		79%	USB
RPM	1124	1126	
Sin Peso P1:			
4.726mm/s / 31°			
Con Peso P1:			
-			
Corrección:			
-			
Residual:			
-			
Corrección:			
-			
Coloque peso de prueba			
Volver	Continuar		

Stop the rotor, place the test weight in the indicated place, start the rotor again and when it reaches the working speed press continue, the system will measure the unbalance condition showing it on the screen, when it is stable press continue and the system will show the weight and correction position, if number of positions was entered it will also show the weight distributed in two consecutive positions.



19/05/2020 10:36		78%	USB
RPM	1124	1127	
Pos:20 Peso:0.770g			
Pos:21 Peso:1.820g			
Corrección:			
2.6g / 296°			
Residual:			
-			
Corrección:			
-			
Coloque correccion en P1			
Volver		Continuar	

Stop the rotor, remove the test weight, set the correction weights and start the rotor, pressing continue will show the obtained vibration value, a second correction may be necessary to achieve optimum balancing, press continue and the system will show the new correction, stop the rotor, put the new correction weights without removing the old ones and press continue, when the rotor is running again, now

the system asks if you want to continue with the balancing, if you select Yes, it will give you a new correction, selecting no, will measure the final spectrum finishing the process, press continue twice and you can save a report in PDF with the name that you designate



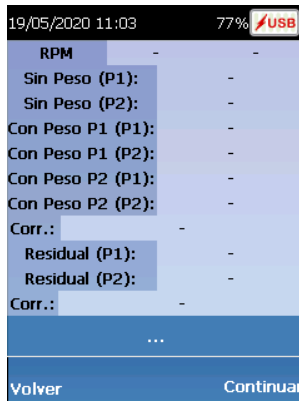
Balancing in two planes:


Selecting the option 2 planes the screen is divided into two columns allowing to enter parameters for each plane.

Here the same considerations apply as for balancing in one plane, taking into account that the correction weight can be the same for both planes or different,

entering the value as appropriate, at the end we press continue to start the process, make sure that both the tachometer as the vibration sensor are already positioned, the vibration sensor on the plane designated as 1.

Before pressing continue to start the process the rotor must be rotating at the speed to which it is going to balance, press continue and when you see that the rpm read is stable press again continue, then carefully follow the instructions at the bottom of screen that will guide you through the whole process



19/05/2020 11:03		77% 	
RPM	-	-	-
Sin Peso (P1):	-	-	-
Sin Peso (P2):	-	-	-
Con Peso P1 (P1):	-	-	-
Con Peso P1 (P2):	-	-	-
Con Peso P2 (P1):	-	-	-
Con Peso P2 (P2):	-	-	-
Corr.:	-	-	-
Residual (P1):	-	-	-
Residual (P2):	-	-	-
Corr.:	-	-	-
...			
Volver		Continuar	

Place the sensor on plane 1 and pressing continue measures an initial spectrum of the system for plane 1, press continue and place the sensor on plane 2, press continue and the initial spectrum of plane 2 will be measured, press continue and place the sensor on

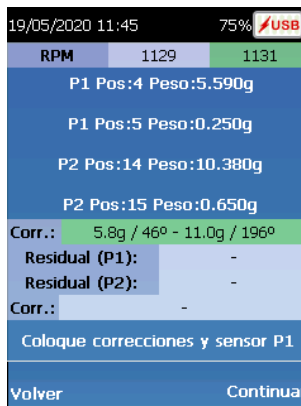
plane 1, press continue and the initial unbalance value in plane 1 will be measured, press continue again, this value is saved and place the sensor on plane 2, press continue and now the value of plane 2 is measured.

19/05/2020 11:15		76%	USB
RPM	1129	1129	
Sin Peso (P1):	4.700mm/s / 277°		
Sin Peso (P2):	5.683mm/s / 316°		
Con Peso P1 (P1):	-		
Con Peso P1 (P2):	-		
Con Peso P2 (P1):	-		
Con Peso P2 (P2):	-		
Corr.:	-		
Residual (P1):	-		
Residual (P2):	-		
Corr.:	-		
Coloque peso P1 y sensor P1			
Volver		Continuar	

Stop the rotor, place the test weight on plane 1 in the indicated place, place the sensor on plane 1, start the rotor again and when it reaches working speed press continue, the system will measure the unbalanced condition of plane 1 showing it on screen, when stable press continue and place the sensor on plane 2, press continue and the system will measure the unbalance condition of plane 2 showing it on screen, when it is stable press continue.

Stop the rotor, remove the test weight from plane 1, place the test weight on plane 2 in the indicated place, place the sensor on plane 1, start the rotor again and

when it reaches working speed press continue, the system will measure the unbalance condition of plane 1 showing it on the screen, when it is stable press continue and place the sensor on plane 2, press continue and the system will measure the unbalance condition of plane 2 showing it on the screen, press continue the system will show the weight and correction position for both plane 1 and plane 2, if number of positions was entered it will also show the weight distributed in two consecutive positions, for each plane.



19/05/2020 11:45		75%	USB
RPM	1129	1131	
P1 Pos:4 Peso:5.590g			
P1 Pos:5 Peso:0.250g			
P2 Pos:14 Peso:10.380g			
P2 Pos:15 Peso:0.650g			
Corr.:	5.8g / 46° - 11.0g / 196°		
Residual (P1):	-		
Residual (P2):	-		
Corr.:	-		
Coloque correcciones y sensor P1			
Volver			Continuar

For the rotor, remove the test weight from plane 2, place the correction weights in each plane, place the sensor on plane 1 and start the rotor, pressing continue will show the vibration value obtained on plane 1, press

continue and place the sensor in plane 2, pressing continue will show the value obtained in plane 2.

A second correction may be necessary to achieve optimal balancing, press continue and the system will display the new correction, for the rotor, place the new correction weights without removing the old ones and perform the above operation again, now the system asks if you want continue balancing, if you select Yes, it will give you a new correction, selecting no, it will measure the final spectrum for each plane, finishing the process, press continue twice and you can save a report in PDF with the name that you designate

Setting

From the startup screen you can access the equipment configuration by selecting the icon to the right of the menu and pressing Enter.

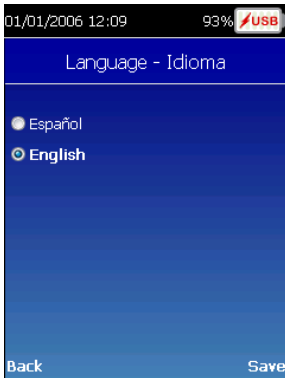


In this screen are presented various parameters that allow defining the general configuration of the system:

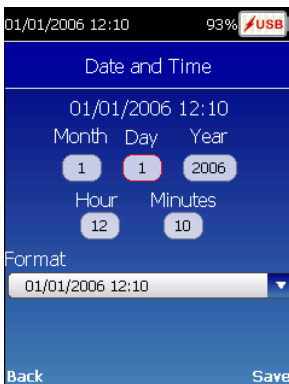
Language: allows switching the equipment operation language between Spanish and English.

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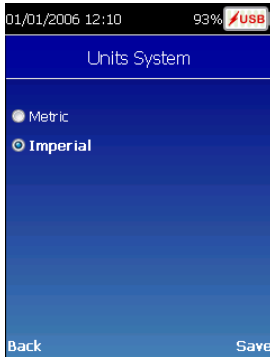


Time and date: modifies the time and date of the system. Although the equipment is configured from the factory with the correct time and date, it is possible, due to different time zones, that there may be the need to correct this data.



Units System: allows switching between metric and imperial system. This will only affect the velocity and

displacement measurements displaying them in in/s and mils respectively.



Channels and Sensors: This option allows to change the sensibility of the sensors to use in case you want to use a different sensor to the one provided with the equipment.

In order to do this you will need to select the corresponding channel with the up-down arrow, then with Enter the numeric keyboard will be enabled to enter the sensor sensibility expressed in mV.

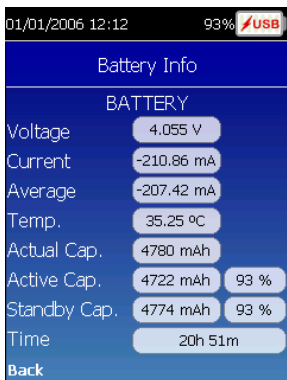
In this option it's also be found the possibility to select the applicable filter to the enveloping measurement. There are four options: none (no applicable filter), 1250 Hz to 2500 Hz, 2500 Hz to 5000 Hz and 5000 Hz to 10000 Hz. The 1250 Hz to 2500 Hz filter is the one selected by default.

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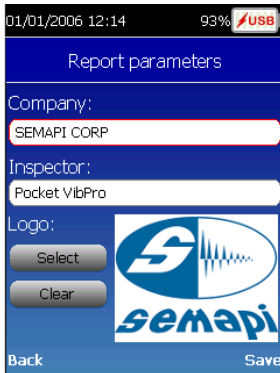
Battery Information: this screen is solely informative. It displays information in regards to the state and capacity of the battery. Finally the Time field shows the estimated time remaining of the equipment battery.



Reports: this option allows adding to the report the name of the company and the name of the inspector that performed the measurement. If you wish to do so, you can also add to the report a company logo.

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Connect to the PC: you will have to choose this option each time that you wish to download the saved reports to a PC, by connecting the equipment by means of the provided USB cable.



Equipment content:

