

LIM SAS

User manual



Operating instructions :
PocketLIM

Pressio Auto option
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PocketLIM

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Author : Pascal Renébon

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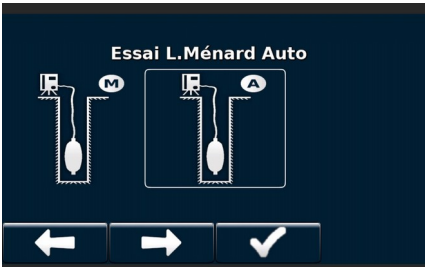
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1. Button descriptions and designations

PocketLIM has 5 buttons on the front panel. A Start/Stop button (M/A) and 4 buttons which control the various functions of each screen. The actions of these buttons vary according to the active screen. In the rest of the manual, we'll refer to them from left to right as "BP1", "BP2" and "BP3". BP2 BP3" and "BP4". These buttons can be pressed either on the physical button or on the touch button.

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2. Starting the "Option PressioAuto" device



To start the PocketLIM , press the central "On/Off" button ("M/A") , the device switches on, an application selection menu appears, move through it using the "BP1" and "BP2" arrows to frame the "L.Ménard Auto Test" icon, then press the "BP3" button to access the "PressioAuto Waiting" menu.

3. Attente PressioAuto" menu

Once you have validated the "Pressio Auto" option, or when you close a test, PocketLIM returns to one of the following waiting screens.

PressioAuto waiting screen

Waiting for field test Waiting for calibration Waiting for inertia



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3.1 Waiting screen description :

SP1: Drilling name

 The eye at the top center of the screen indicates that the "mirroring" option is active: i.e. the PocketLIM screen is visible on a remote device (smartphone or PC) and can be controlled remotely.

 Data transfer via GSM " " or WIFI " " is active. The number above the symbol indicates the number of files awaiting transfer. When the symbol is red, no network is detected; when it is green, a network is detected.

 USB symbol : The number above the symbol indicates the number of files waiting to be transferred per USB key. If the number is red , it indicates that no key is connected or detected , if the symbol is green , it indicates that a key is correctly connected , the transfer will be done automatically if the mode "USB auto synchronization" is on "ON" (see menu "Toolbox" "USB") , otherwise an intervention of the operator will be necessary (See notice "Toolbox Menu").

 Number of units (or functions) detected: this indicator checks that the PressioLIM is correctly connected to the PocketLIM. It should display "3"; if not, check the bus cable between PocketLIM and PressioLIM.

 indicates time

 accesses the "Toolbox" menu

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If the PocketLIM is in the Drilling/Pressiometer version, this icon allows you to switch to the drilling recording mode, so that you can perform a new pass after completing your pressuremeter test.



Indicates nitrogen cylinder pressure.



: Indicates the pressure of the central cell in the probe.



: Indicates the pressure of the probe's guard cell.



Indicates differential pressure (PG - PR).



Auto or Manu indicates whether the PressioLIM is in 100% automatic mode or in Manual mode (Semi-automatic). The number (here 1.00) indicates the value of the pressure increase for the next step.



Creep: indicates the creep value, the difference in volume over the last 30 seconds of the last recorded stage.



Creep: indicates the increase in probe volume between the last 2 recorded stops .



. indicates the number of the last recorded stage .

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Field indicates that you are about to record a field test, the numerical value indicates the test depth.



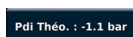
Calibration indicates that you are about to record a calibration test.



Inertia indicates that you are about to perform an inertia test.



: Indication of the volume of water in the probe.



Popup window : Popup window which appears when the "Pdi" icon is pressed. It indicates the theoretical setting of the differential pressure at the depth of the landing. Pressing this popup causes it to go out.



Water level: symbolizes the water level in the column.

Temps	1	15	30	60
Vol.	293	293	293	293
Pr	0.00	0.00	0.00	0.00

Volume and central pressure: indicates the volume and central pressure values in the probe at 1s , 15s , 30s and 60s from the last recorded stop.



Tools: the "Tools" icon gives access to various menus for checking equipment operation or probe condition.



Start a new pressuremeter test.

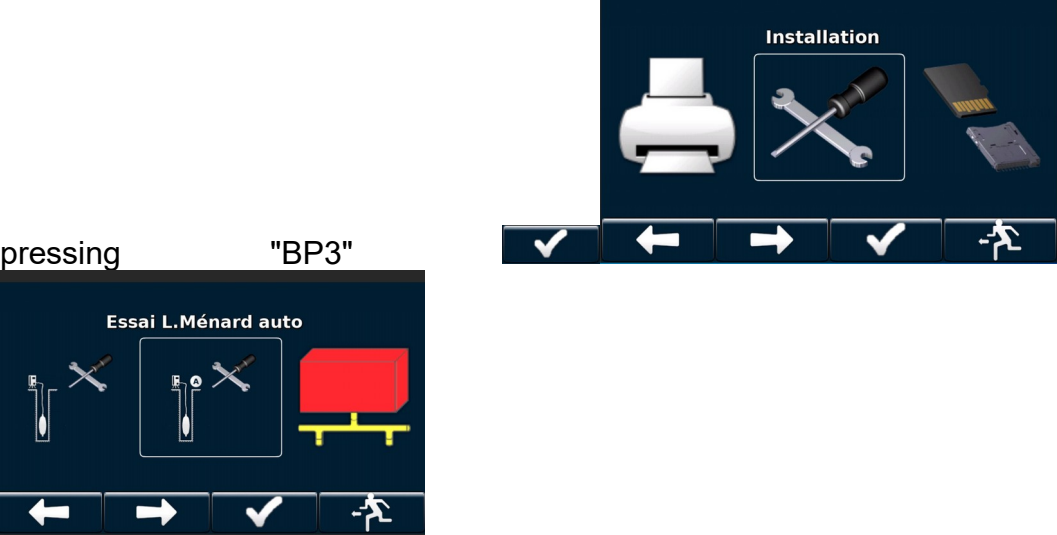
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4. PressioAuto Option Toolbox" menu.

In the "PressioAuto" version, the "Toolbox" menu allows you to make certain settings specific to this application. For menus common to all options, please refer to the general "Toolbox menu" manual.

4.1 Reset pressure sensors :

To reset the pressure sensors to "ZERO", go to the "Installation" menu, "L.Ménard auto test", "Pressures". From the "Standby" menu, press "BP1".  then select the installation menu using the "BP1" and "BP2" arrows and confirm by pressing "V" on "BP3".  then select the "L.Ménard auto test" option using the "BP1" or "BP2" buttons, and confirm by



Then select the "Pressures" icon using the "BP1" or "BP2" arrows and confirm with "BP3"  .



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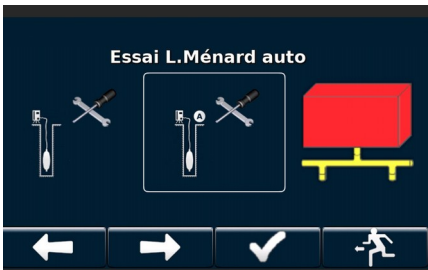
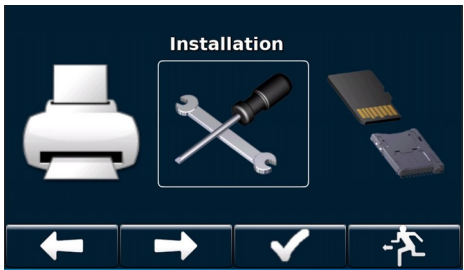


To reset a pressure to "Zero", put the corresponding valve on the cabinet in vertical position, then select it by pressing its icon (e.g. PB:), then press validate  in the window that appears on the screen. If you press the cross , the window will close without modifying the pressure.

4.2 Zeroing and volume control :

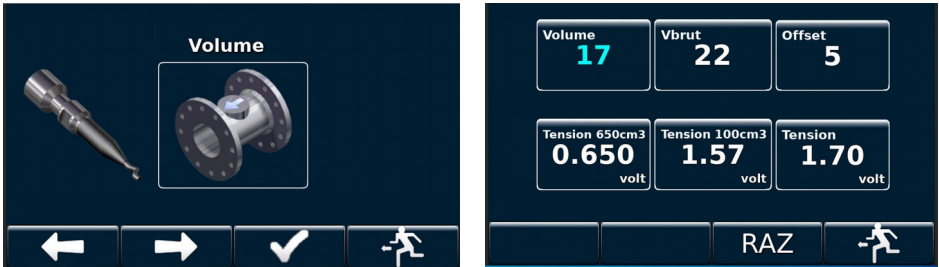
4.2.1 "Volume control" screen.

To control the volume settings or reset it to "Zero", go to the "Installation" menu, "L.Ménard auto test", "Volume". From the "Standby" menu, press "BP1".  then select the installation menu using the "BP1" and "BP2" arrows validate by pressing "V" "BP3"  then select the "L.Ménard auto test" option using the "BP1" or "BP2" buttons, then press "BP3" to confirm. 



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Then select the "Volume" icon using the "BP1" or "BP2" arrows and confirm with "BP3"  .



 volume of water measured relative to PressioLIM "Electronic Zero" level.

 : volume of water in sensor since last reset.

 offset between "Zero" at start of test and "Electronic Zero" (limited to +/-50 cm3 at start of test).

 U650": voltage corresponding to 650 cm3 of water in the measurement column (set by LIM when the device is commissioned).

 U100" : voltage corresponding to 100 cm3 of water in the measurement column (set by LIM when the device is commissioned).

 U" : voltage corresponding to the float position in the water column.

The three voltage values cannot be modified by the operator.



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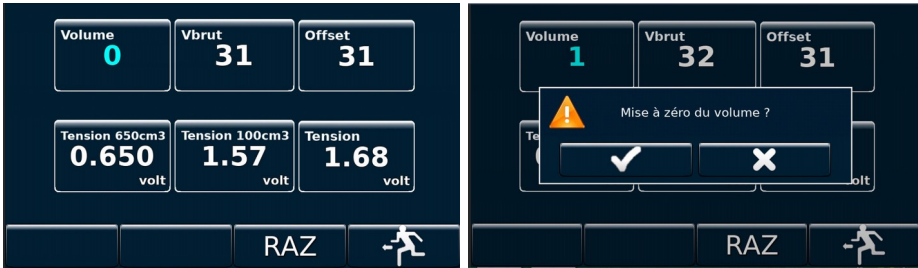
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4.2.2 Resetting volume to zero

If the "VBrut" volume shows a positive value, place the water filling funnel on the filling elbow and open the "Purge water" valve (vertical position), add water to the column until the value shown in "Vbrut" is equal to "Zero". Then press "Reset" and the "V" icon  in the window that appears on the screen.



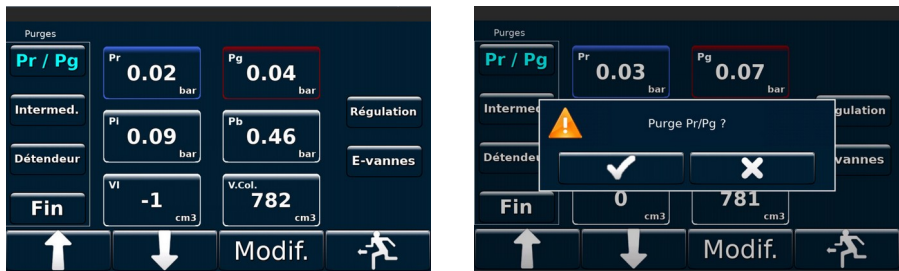
If the "VBrut" volume displays a negative value, press "RESET" to set the "Volume" icon value to "Zero", then go to the "Regulation" menu (chapter 7 P 15) to drain water until the "VI" value equals the offset displayed in the left-hand screen.

5. Purge" menu .

This menu is used to purge the various PressioLIM circuits. From the "Pressio Waiting" menu, press the "Tools" icon  to access a screen displaying the various PressioLIM volumes and pressures. PressioLIM Auto has 4 different pressure circuits. A "Pb" input circuit, corresponding to the pressure of the nitrogen bottle, a "Pr" circuit, corresponding to the water pressure of the probe's central cell, a "Pg" circuit, corresponding to the pressure of the probe's guard cells, and a "Pi" circuit (intermediate pressure) , used to facilitate the regulation of "Pr" and "Pg" pressures in

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test run. To purge a circuit, select it either by using the "BP1" or "BP2" arrows and then pressing "Modif"  , or by pressing directly with your finger on its icon (ex Pr and Pg : ), then press "V"  in the window that appears on the screen. If you press the cross  , you return to the previous screen without "ZEROING" the pressure.



Volume "VI" corresponds to the volume of liquid injected into the probe, volume "V.Col" corresponds to the useful volume of water remaining in the column.

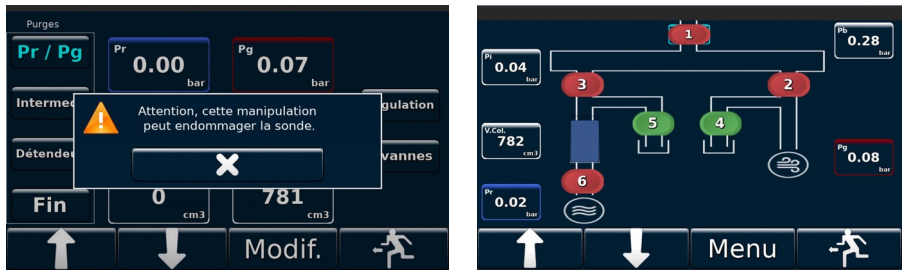
6. Solenoid valves" menu "E-vannes" :

6.1: Description "Solenoid valves menu" :

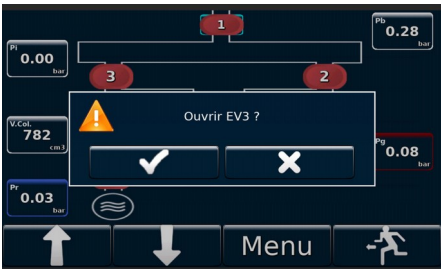
This menu is used to open each of the valves in the control circuit. Care must be taken when using it, as the circuits are opened without pressure control, and it is possible to connect the cylinder pressure directly to the probe.

To access this menu, go to the "Purge" menu, then click on "E-valves"  , an alert window appears, click on the cross to access the solenoid valve menu. If you wish to cancel your operation, click outside the window.

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In the solenoid valve control screen, closed valves are shown in red and open valves in green. To open a solenoid valve, press the corresponding number, a window will appear asking you to confirm your operation, press "V"  to validate or the cross  to cancel. Proceed in the same way to close a solenoid valve. Pressure values correspond to the pressure of each circuit. The "V.Col" value corresponds to the volume of water available in the column.



6.2 Solenoid valve functions.

The following effects are described when the solenoid valves are opened.

EV1: Connection between cylinder and intermediate chamber.

EV2: connects the intermediate chamber to the sensor guard cells.

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EV3: Connection of intermediate chamber and water column.

EV4: Opening of probe guard cell purge.

EV5: Opening of water column purge.

EV6: Connecting the water column to the probe's central cell.

Here are some typical combinations (EVs not listed are assumed to be closed):

EV1 + EV3 + EV5: purge cylinder pressure reducer (make sure cylinder is closed)

EV3 + EV5 : purge intermediate chamber.

EV4 : Purge probe guard cells.

EV5 + EV6 : Purge probe central cell.

7. Regulation" menu:

This menu allows you to inflate a probe to the pressure of your choice, controlling the bearings. It calibrates...

To access this menu from the "Standby" menu, press "Tools"  , then the "Regulation" icon  , to display the "Regulation" menu.

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7.1 Purging a probe :

First, prepare your probe and connect it to the pressuremeter cabinet.

Set the pressure you wish to have in the "Pr" circuit to purge your probe (usually 1 bar). Press "Pr target", then enter the desired pressure using the touch-sensitive keypad. Press "Start". When purging is complete (no air at the probe outlet), replace the plug on the probe, then press "pause", then "Purge Pr/PG". Once purging is complete, add water to the PressioLIM to bring its volume back to "Zero".



7.2 pre-dilating a probe :

Connect your probe to the PressioLIM, determine the pressure at which you want to dilate your probe, enter your probe's volume limit, the "Pr" and "Pg" pressures by pressing the corresponding zone and then using the touch-sensitive keypad.

Then press "Start", and PressioLIM will load the target pressures into the probe.

1st case: the volume of water in the probe reaches the volume limit you've set before reaching the target pressure, PressioLIM automatically triggers probe purging.

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2nd case: the target pressure is reached before the volume of water in the probe has reached the limit volume, the PressioLIM automatically maintains the pressure in the probe. You need to press "BP1" to stop regulation. If the volume reached is sufficient, press "Purge Pr/Pg" to start purging your probe. If not, enter higher "PR" and "PG" target pressures to increase probe expansion. Then press Start to load the new pressures into the probe.

Repeat this operation until you have reached your desired volume.

You can use this procedure to check the pressure tightness of a probe, by placing it in the calibration tube and building up pressure step by step.

8. Starting a pressuremeter test :

8.1 Test sequence :

LIM's "GEOLOG" software enables its customers to carry out automatic pressuremeter tests in accordance with standard NF-ISO 22476-4. For each probe used, the operator must first carry out a calibration test, then an inertia test, before being able to carry out a field test. The order in which these tests are carried out is imperative. Each of these tests will be stored in memory and can be reused as long as the operator has not deleted it. If the operator performs a new inertia test with a probe, he can use its last calibration. If the probe is recalibrated, a new inertia test must be performed.

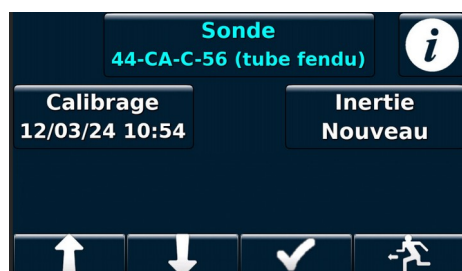
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8.2 Starting a test :

From the "waiting" screen, press "Start" **Départ** . This will take you to one of the following 3 screens, allowing you to select your probe and choose the test you wish to run.



"Calibration only" screen: No calibration is saved for this probe, so you must perform one to continue working.



"Calibration + Inertia" screen: A calibration is stored for this probe, but no inertia test is associated with it. You must perform one before continuing.

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Calibration + Inertia + Field" screen: For this probe, a calibration and its associated inertia test are available, and you can launch a field test.

Sonde 44-CA-C-56 (tube fendu) the designation of the selected probe.

i : Pressing this icon displays a table describing the probe.

Calibrage Nouveau : Indicates that no calibration has been saved for the selected probe. Pressing this icon will launch a calibration test.

Calibrage 01/03/24 14:28 Last calibration : Indicates the date and time of the last calibration performed with the selected probe. Pressing this icon will initiate a calibration test.

Inertie Nouveau Indicates that no inertia is associated with the current calibration. Pressing this icon will launch an inertia test.

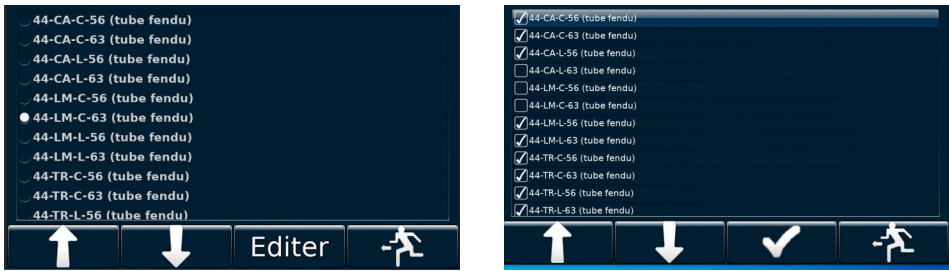
Inertie 01/03/24 15:22 Inertia test : Indicates the date and time of the last inertia test performed with the selected probe. Pressing this icon will launch a new inertia test.

Terrain Nouveau PocketLIM : Pressing this icon starts a new field test.

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9. Probe selection :

From any of the 3 previous screens, press the "Probe" icon to display the list of available probes. Select the one you wish to work with by positioning the point in front of it using the "BP1" or "BP2" arrows, or by pressing your finger on the corresponding line. Once the probe has been selected, press the "Bonhomme"  to return to the "Test selection" menu.



You can deactivate the probes you are not using from the current list by pressing "Edit"  , then selecting the probe(s) to be deactivated with the "BP1" or "BP2" arrows, or by pressing the corresponding line with your finger. Confirm your choice by pressing "V" "BP3"  . Press "BP4"  to exit the menu. You can reactivate any of the deleted probes at any time.



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10. Parameters to be entered at the start of a trial :

When you start a test, you arrive at one of the following 3 screens:
calibration test inertia test



field test



These parameters must be set at the start of the test, and will be saved for subsequent tests. Some are common to all test types, while others are specific to the test (field, inertia, calibration) performed.

10.1 Selecting the parameter to be modified:

To modify one of these parameters, select it with the "BP1" or "BP2" arrows or by pressing it with your finger, then press "BP3" "Menu" **Menu** then "Modify" **Modifier** to bring up

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a touch screen (alphanumeric parameters) or a choice list (predefined parameters).

10.2 Parameters common to field tests/inertia/calibration:

10.2.1 Alphanumeric parameters

Dossier **Site00** :Name of the folder in which the recording will be stored.

Nom Opérateur **Martin Francois** :Name of the operator performing the test.

Volume limite sonde **550 cm3** :Volume: Corresponds to the maximum volume of water allowed in the probe. When this volume is reached, PressioLIM triggers a purge of the probe without waiting for the end of the stage to avoid bursting.

Volume final essai **550 cm3** :Automatic test stop volume (not set in calibration test). When this volume is reached, PocketLIM terminates the current stop, records it and automatically purges the probe at the end of the stop. It is advisable to set it to a maximum value 50 cm3 lower than the probe limit volume.

Pression limite sonde **90.00 bar** :Pressure: Corresponds to the maximum permissible pressure in the probe. When this pressure is reached, the PressioLIM triggers a purge of the probe, without waiting for the end of the stage, to prevent it bursting. It is advisable to set it at a pressure at least 10 bar higher than the final test pressure, without ever exceeding the sheath pressure limit.

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Pression finale essai 60.00 bar

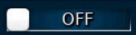
Corresponds to the pressure of the last recorded stop (not entered in inertia test). When this pressure is reached, PocketLIM terminates the current stop, records it and automatically purges the probe at the end of the stop. This pressure is defined in the contract specifications.

Pdi purge surface 3.00 bar

This pressure is defined in the contract specifications. During purging, PressioLIM maintains a pressure in the guard cells equal to the theoretical differential pressure plus the value of the surface Pdi. This parameter is not used for inertia testing.

10.2.2 :Auto mode :

10.2.2.1 Activation / Deactivation :

To activate or deactivate this mode, select the corresponding line with the "BP1" or "BP2" arrows, or press "ON"  to toggle it to "OFF"  and vice versa.

The operation of this mode is identical whether you are performing a calibration, inertia or field test.

10.2.2.2 "Auto" "ON" mode:

At the start of the test, the operator defines the criteria for stopping the test, which are the final pressure and final volume linked to the probe or to the site specifications.

To carry out the test, the operator simply presses "Start" "BP2" , PocketLIM automatically manages the pressure build-up, the choice of "Delta P" between 2 stages, and the "Start" button.

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also automatically triggers purging at the end of the test as soon as the first of the test stop criteria is reached. However, the operator can intervene at any time to modify the choice of "Delta P" or to stop the test.

10.2.2.3 "Auto" "OFF" mode :

At the start of the test, the operator defines the criteria for stopping the test, which are the final pressure and final volume linked to the probe or to the site specifications, as for the "Auto ON" mode. but in this mode, only pressure control is automated. At the end of each step, the PressioLIM waits for the operator to start the next step, and the "Delta P" step between each step is modified by the operator alone. The test is stopped automatically as soon as the first of the 2 criteria defined at the start of the test is reached, or at any time by the operator.

10.2.3 : "Bearing 0 bar" recording :

10.2.3.1 Activation / Deactivation :

To activate or deactivate this mode, select the corresponding line with the "BP1" or "BP2" arrows, or by pressing it, press "ON"  to toggle it to "OFF"  and vice versa.

10.2.3.2 Recording operation "0 bar" :

When the "Record 0 bar stage" option is set to "OFF", the PressioLIM performs the pressure build-up at the first stage and

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When the "Record at 0 bar" option is set to "ON", when the operator presses the "Start" button "BP2", the PressioLIM sets the guard pressure to the value corresponding to the probe position and starts the test.  the PressioLIM sets the guard pressure to the value corresponding to the probe position and sets the central pressure to "0 bar", then records the volumes at "0", "15" and "15". , "15" 30" and "60" seconds.

10.3 Parameters specific to calibration tests:

10.3.1 Alphanumeric parameters :

Nom calibrage **SP1**: Name under which your calibration will be saved.

Résistance propre de la membrane **0.54 bar** Technical characteristics of your probe membrane.

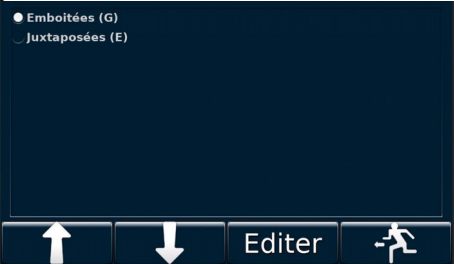
10.3.2 Predefined parameters :

Type de sonde Defines the type of probe used (nested or side-by-side cells).

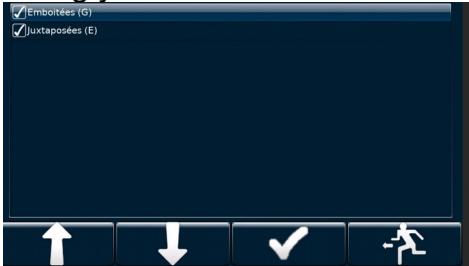
To modify this parameter, after selecting it, press "Menu" **Menu** , then "Modify" **Modifier** , position the point opposite the one corresponding to your probe, using the "BP1" and "BP2" arrows. Confirm your choice by pressing "BP4"  . You can deactivate and reactivate any probe type by pressing "Edit" **Editer** . In the screen on the right, use the arrows to select the type you wish to deactivate (or reactivate) with the dot, then press "BP3" to confirm.

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Pressing "BP4" returns you to the left-hand screen without

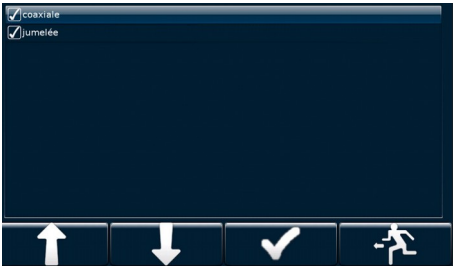
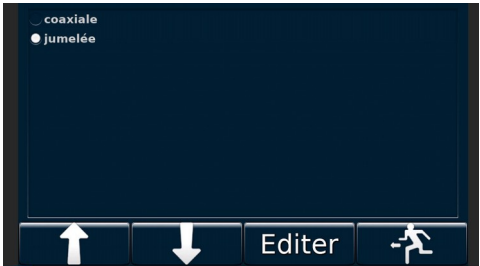


taking your modification into account.



Type de tubulure The tube type: twin or coaxial, corresponds to your probe's tubing.

To modify this parameter, after selecting it, press "Menu", then "Modifier", position the point opposite the one corresponding to your tubing using the "BP1" and "BP2" arrows. Confirm your choice by pressing "BP4". You can deactivate and reactivate any tubing type by pressing "Edit". In the right-hand screen below, use the arrows to select the type you wish to delete by moving the grey "banner" over it, then confirm by pressing "BP3", pressing "BP4" returns you to the left-hand screen without taking your change into account.



Long. tubulure PocketLIM: defines the length of your probe's tubing.



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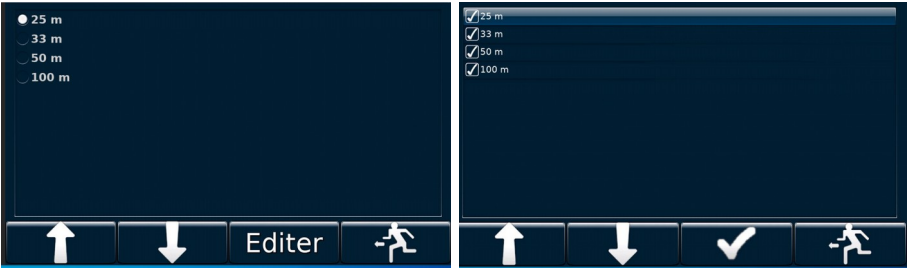
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To modify this parameter, after selecting it, press "Menu" **Menu** , then "Modify" **Modifier** , position the point opposite the one corresponding to your tubing using the "BP1" and "BP2" arrows. Confirm your choice by pressing "BP4" **BP4** . You can deactivate and reactivate a tubing length by pressing "Edit" **Editer** . In the right-hand screen below, use the arrows to select the length you wish to deactivate (or reactivate) with the dot, then press "BP3" **BP3** to confirm. Pressing "BP4" **BP4** returns you to the left-hand screen without taking your change into account.



10.4 Parameters specific to inertia tests:

Nom inertie **SP1** Name under which your inertia will be saved.

10.5 Parameters specific to field tests:

The parameters "Drilling machine", "Drilling method", "Tool diameter" and "Drilling fluid" will already have been saved during the drilling phase.

10.5.1 Alphanumeric parameters :

Nom forage **SP1** :Name under which your drilling will be saved.

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Fluage limite

Creep: corresponds to the maximum creep value allowed to increase the "Delta P" step between 2 steps. If the actual creep is less than the creep limit for 3 consecutive stages, the "Delta P" step will be increased to the next higher step in the list of selected "Delta P" steps, otherwise it will remain unchanged.

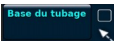
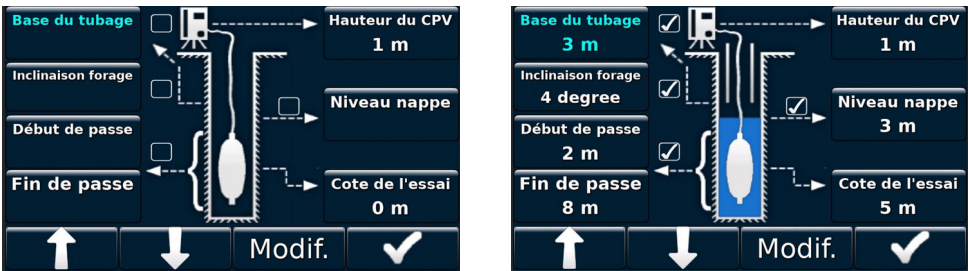
PdiAjuste

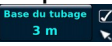
3.00 bar

Pdi: correction of the theoretical Pdi (differential pressure) recommended by probe manufacturers when carrying out tests at great depth or high pressure. It ranges from 0 to 3 bars.

When all parameters have been set, press the "BP4" button  on the screen corresponding to the type of test selected. If you have selected a "Calibration" or "Inertia" test, you will go directly to the "Test start" menu (see chapter 12), if you have selected a "Field" test, you will go to the selection screen for parameters specific to the test depth (see chapter 11).

11. Test depth parameters :



Indicates the absence of casing in the borehole. To activate the presence of a casing, press the "square"  opposite "casing", a value will be displayed below the text field .



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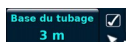
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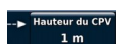
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Indicates the presence of a casing and its depth. If your borehole is not cased, press the "square"  to deactivate it.

To modify the "Casing base" dimension, press the text box and enter the actual casing depth using the touch-sensitive keyboard.

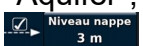


Base of casing: Corresponds to the height of the center of the CPV column in relation to the borehole entrance. This value is generally 1 m (CPV on tripod beside borehole). It may be negative in certain special cases (CPV below the borehole). This value is used to calculate differential pressure.



If there is no inclination, the borehole is vertical. If your borehole is inclined, press the "square"  opposite "Inclination", a value will be displayed below the text box . To modify it, press on the text box and enter the actual inclination using the touch-sensitive keyboard. To disable tilt, press the "square"  opposite "Tilt". The tilt value is used to calculate differential pressure.



Indicates that there is no water table in the borehole. To activate the presence of an aquifer, press the "square"  opposite "Aquifer", then enter the depth of the aquifer by pressing the text box  to bring up the touch-sensitive keyboard.

Start and end of pass:



If you carry out your pressuremeter tests by drilling pass, you can activate the "Pass start/end" function by pressing the "square"  opposite "Pass start". When you switch from "Drilling" to "Pressio" mode, PocketLIM will load the "Start/End" function.

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PressioLIM Auto" automatically sets the "Beginning and end of pass" ratings for the current pass. You can modify them manually by clicking on the text box. In this case, the recorder checks the consistency of the information: the start of the run must be lower than the end of the run, and vice versa. The test coast must lie between these 2 limits. If this option is disabled, there is no control of the depth dimension.



Depth: corresponds to the position of the probe center in relation to the start of drilling. This value is used to calculate differential pressure.

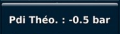
When all the fields in this table have been filled in, press "V" "BP4"  to access the "Wait for test" menu screen.

12. Test Standby" menu:

Only those parameters which are not described in sufficient detail in the "PressioAuto Waiting" menu will be described in this section.

12.1 Common parameters "Calibration" , "Inertia" , "Terrain".



Pdi: indicates differential pressure. Pressing this box displays a window  with the pressure value.



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If you wish to display the theoretical differential for the test, click on this window to suppress its display.

 indicates the volume of water in the probe at the start of the test. Pressing this box displays a window  proposing to reset the volume to "0". Validate this operation by pressing "V"  , you can cancel it by pressing the cross .

 Indicates nitrogen bottle pressure. This pressure must be at least 5 bar higher than the final test pressure to enable the test to be started. If this is not the case, the message "Insufficient cylinder pressure"  appears. Press the cross at  to make it disappear and increase your supply pressure to be able to carry out your test.

 Start button Pressing this button starts test recording.

 Stop button: Pressing this button stops the test.

 Indicates PressioLIM power supply voltage. It must be between 9 and 14 volts DC.

12.2 Parameters specific to the "Calibration" test :

Delta P  : Auto indicates that "Auto" mode is activated. Manu indicates that "Auto" mode is deactivated.

In "Auto calibration" mode, the pressure of the first step will be 1 bar and the pressure increase between 2 steps will be 1 bar until the probe "sticks" to the calibration tube, then the "delta P" will equal the



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tenth of the difference between the final test pressure and the pressure at which the probe will have "stuck", so as to ensure 10 steps for calculating the calibration coefficient.

Example: Final pressure 50 bar, pressure at which the probe has "stuck": 4 bar, "Delta P" will be $1/10 \times (50 - 4) = 4.6$ bar.

If Auto mode is deactivated, the first stage pressure will be 1 bar by default, but the operator can select it from the active "Delta P" by pressing  "Delta P manu". This "Delta P" will remain constant as long as the operator does not modify it by pressing .

12.3 Parameters specific to the "inertia" test :

Delta P   : For the inertia test, the default "Delta P" is 0.25 bar. The operator can modify it by pressing "Delta P"( or ) and selecting it from the active "Delta P". Delta P" changes during the test in the same way as in "Field test" mode.

12.4 Parameters specific to the "Field" test :



Delta P   : Indicates the value at which the pressure will be set.



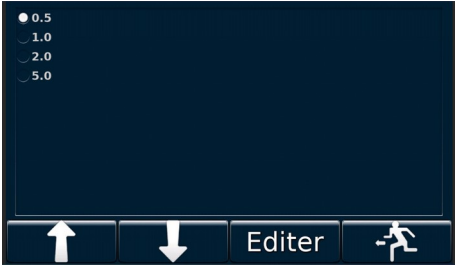
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This pressure is equal to the lowest active pressure in the "Delta P" list. If you wish to start your test with a different "Delta P", press this box to bring up the list of active "Delta P" (see left-hand screen below). Use the "BP1" or "BP2" arrows to position the point opposite the "Delta P" you want. validate your choice by pressing "V", "BP3"  , if you press "BP4"  , you will return to the previous screen without modifying the parameter.

From the "Active Delta P" menu, whether you're in "Calibration, Inertia or Terrain", if you press "Edit"  , you can activate or deactivate the "Delta P" you wish, this operation is totally reversible. Use the "BP1" and "BP2" arrows to select the value(s) you wish to delete, then press "V", "BP3" to confirm.  then press "BP4"  to exit this menu. The available "Delta P" values are: 0.2 - 0.25 - 0.5 - 1 - 2 - 3 - 4 - 5 and 10. The list of active "Delta P" cannot be modified during the test run.



In our example, the list of available "Delta P" will be as follows: 0.5 - 1- 2 and 5.



Note: The "Edit" menu is inactive during the last 5 seconds of a level.

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12.5 Test preparation :

Whatever test you are going to perform, check the cylinder pressure value. Select the "Delta P" of the first stage, then press "Start" to begin your test.

NB: for the "Calibration" test in auto mode, the "Delta P" is set to 1 bar and cannot be modified.

13. Performing a test in "Auto" mode:

From the "Test Standby" screen (see chapter 12), press "Start" "BP2"  to start recording. Whether you are in "Calibration", "Inertia" or "Field" mode, the zero pressure stop (paragraph 13.1) will only be recorded if this mode is active, otherwise you will go straight to the recording of the first non-zero pressure stop (paragraph 13.2). The precision of pressure regulation is +/- 0.2 bar in relation to the theoretical bearing pressure: for example, for a pressure of 20 bar, it will be regulated between 19.8 and 20.2 bar.

13.1 : Recording the active "0 bar bearing" :

13.1.1 Calibration mode, inertia or terrain with a depth of less than 10 m (PG < PR):

The PressioLIM purges the chambers of the PR and PG circuits to maintain their respective pressures at 0 bar, then starts recording the Bearing. At the end of the stage, PressioLIM triggers the pressure build-up and recording of the next stage.

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13.1.2 Field mode with a depth greater than 11 m (PG > PR):

The PressioLIM purges the PR circuit chamber to maintain its pressure at 0 bars and loads the PG value at the pressure corresponding to the test depth, then starts recording the Bearing. At the end of the test, PressioLIM triggers the pressure build-up and recording of the next stage.

Example: Bearing at "0 bar", test at 30 meters (PR 0 bars , PG 2 bars) :



13.2 : Recording the first stop:

At the end of the recording of the "0" bar stop, or if this option is deactivated, as soon as you press "Start" "BP2", the PressioLIM will start recording the next stop.  the PressioLIM will start recording tests. The PR pressure will be the lowest of the active "Delta P" values, and the PG will be calculated according to the test depth.



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Test at 5 m Test at 30 m



Pressing the "Creep" or "Delta 60" box toggles the display.

At the end of the stop recording, PressioLIM performs the pressure build-up and starts recording the next stop.

Test at 5 m Test at 30 m



13.3 : Evolution of "Delta P" during test :

The "Delta P" value (increase in PR pressure between 2 consecutive stops) is automatically managed by PocketLIM. If the creep value is below the "Creep limit" value defined by the operator at the start of the test (paragraph 10.5.1) over 3 consecutive stages, the new "Delta P" will be equal to the value immediately above the current "Delta P" in the list of active "Delta P" values. If the creep value is above the creep limit, the "Delta P" will remain unchanged. The sounder can also select the value of the next "Delta P" by pressing the



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box  and selecting the desired value from the list of active "Delta P".

13.4: Last level, automatic test stop :

The test will stop automatically when one of the 2 stop criteria (Pressure or Volume) defined at the start of the test is reached.

13.4.1 : Pressure stop

When the pressure in the probe reaches the stop pressure (test final pressure) defined at the start of the test, the PressioLIM terminates and records the current stage, and the message "Last stage Final pressure reached" is displayed on the PocketLIM screen. This message remains displayed until the operator presses the "cross" button.



At the end of the "60s" stage, PressioLIM triggers automatic purging of the probe. During the purge phase, the word "Purge" flashes in the test type display box (field, inertia, calibration). When the purge is complete, PocketLIM returns to the test standby screen. The operator can end the purge phase by pressing "BP2" "Start"  .

13.4.2 : Volume stop

If the probe volume reaches or exceeds the value set in the "Final test volume" parameter at the start of the test without reaching the

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At the end of the probe's volume limit, the PressioLIM completes and records the current stage, and the message "Last stage final volume reached" appears on the PocketLIM screen. This message will remain displayed until the operator presses the "cross" button.



At the end of the 60s, PressioLIM triggers automatic purging of the probe. During the purge phase, the word "Purge" flashes in the display box for the type of test (field, inertia, calibration). When the purge is complete, PocketLIM returns to the test standby screen. The operator can end the purge phase by pressing "BP2" "Start" **Départ** .

13.5 : Automatic emergency stop of test :

If, during the test, the pressure reaches the pressure limit value or the volume reaches the volume limit value defined at the start of the test, PressioLIM triggers an immediate purge of the probe without terminating the test, to avoid bursting the probe. The display then shows "Pressure limit reached" or "Volume limit reached".



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13.6 : Stops on operator intervention :

The operator may terminate the test at any time, either by an emergency stop or by a stop at the end of a landing.

13.6.1 : Emergency stop :

To trigger an emergency stop, the operator must press "BP3"  . The PressioLIM triggers an immediate purge of the probe and closes the test without waiting for the end of the stop, recording the values at the previous stop.

13.6.2 : End-of-stop :

To stop at the end of a stop, press "BP1" "Stop"  . The PressioLIM waits for the end of the current stop, then closes the test and records it. It then triggers an automatic probe purge.

14. Test sequence in "Manu" mode:

Recording phases, emergency stops, "Pressure" or "Volume" stops at the last stop are carried out in the same way as in "Auto" mode, only the launch of the next stop or the change of "Delta P" are different.

14.1 Moving on to the next level:

The test is started in the same way as in "Auto" mode. At the end of each level, PocketLIM will display the screen shown below, and the operator must press the "Start" button  to start the next recording.

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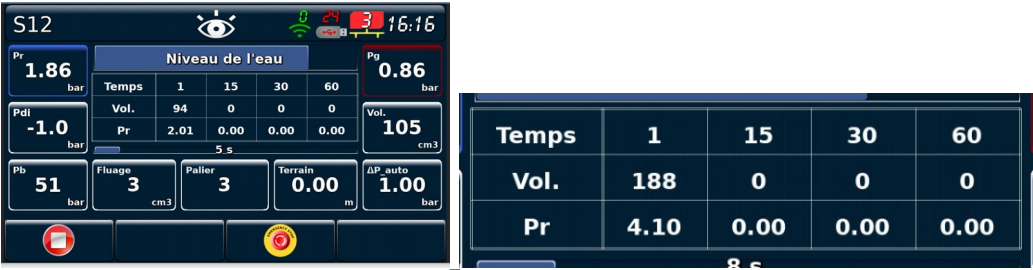
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14.2 Evolution of "Delta P" :

The evolution of the "Delta P" is left to the discretion of the sounder, the last "Delta P" chosen will be kept as long as the operator has not modified it. To change it, press the "Delta P manu" field  or the "BP4" button  then use the arrows to select the desired "Delta P" from the list of active "Delta P". To return to the main menu, press "BP4". 

15. Display curve or table of data being recorded :



Pressing the values table displays all values recorded since the first test level.

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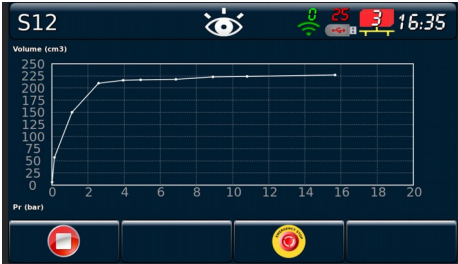
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S12   24 3 16:21

Pallier	Pr	V1	V15	V30	V60	Fluage	Δ60
1	0	83	64	51	38	-13	38
2	0.7	45	64	72	75	3	37
3	1.4	94	122	137	149	12	74
4	2.8	174	184	185	185	0	36
5	4.1	188	188	188	188	0	3
6	5.0	190	190	190	190	0	2

Pressing the table displays the curve for the current test.



Pressing the curve returns you to the standard screen.

16. Displaying the results of the last test recorded :

After test closure and before restarting the next test, it is possible to display the curves and recording tables of the last test performed. Pressing the values table displays the test curve.

Temps	1	15	30	60
Vol.	188	0	0	0
Pr	4.10	0.00	0.00	0.00

8 s

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Pressing the curve displays the test report.

Site		Essai de Terrain	
Site00		S12	
Date Début mer., 03 avril 2024 16:23:38		Coef. étalonnage N/A	
Ref. CPV CPVA803	Opérateur	Nom Fichier 59950240403162338P	
Machine	Méthode Tarière simple	Ref. Inertie 59950240403092806P.bor	
Hauteur du CPV 1 m	Nappe 3 m	Profondeur 0 m	Inclinaison forage 0 degree

Pressing the screen displays the table of pressure and volume values at each step.

Palier	Pr	V1	V15	V30	V60	Fluage	Δ60
1	0.01	-1	0	-1	6	7	6
2	0.14	10	34	48	57	9	51
3	1.11	91	119	135	150	15	93
4	2.58	180	205	209	210	1	60
5	3.94	216	216	216	216	0	6
6	4.91	217	217	216	217	1	1
7	6.86	219	218	218	218	0	1
8	8.91	223	222	222	223	1	5
9	10.80	225	225	224	224	0	1

Only 9 lines are displayed at any one time. Press the "BP1" or "BP2" arrows to display the masked values.

For these 3 displays, pressing "BP4" returns you to the test standby screen.

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17. Correction of column water volume:

At the start of a test, PocketLIM checks that there is sufficient water in the column to complete the test, or that the volume of water is not too great to allow "negative creep" at the start of the test.

17.1 Insufficient water volume :

If the message "Insufficient water volume" appears on the screen, press the  cross to clear it.



You must top up the water level in the column to start your test. To do this, go to "Volume" in the "Toolbox" menu (see chapter 4), place your funnel on the filling elbow (top left of the CPV), open the "Water" purge valve (vertical position) and add water until the gross volume "Vgross" is displayed.

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Press the reset button " to reset the volume  and the offset  to zero.			
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18. Touchpad" operation



Nom forage Name of the field or parameter being modified

Texte 1@+ Text being modified

 Change to upper or lower case

 Switch to numeric keypad and punctuation

 Switch to alphanumeric keyboard

 Access to mathematical signs

 Deleting: press once to delete character by character, press and release to delete the entire line of text.

Validates text entered and exits keyboard menu.

Exits keyboard menu without saving changes .

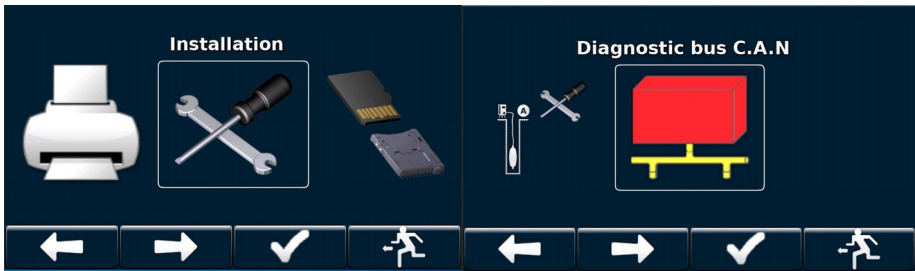
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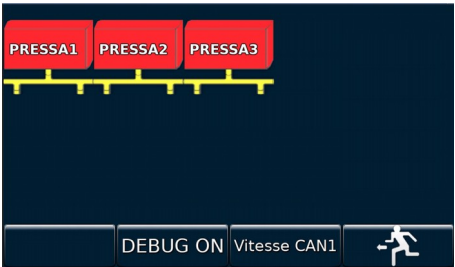
19. Diagnostic Bus Can" menu

This menu is used to check the detection of the "PressioAuto" card.

To access this menu, from the "Standby" menu, press the "BP1" button  then select the "Installation" option using the "BP1" and "BP2" arrows, then confirm by pressing "BP3".  select the "Diagnostic BusCan" option



then confirm your choice by pressing "BP3"  , you should see "PRESSA1-PRESSA2-PRESSA3" on the screen,



If nothing is displayed, check the "Bus" cable between PocketLIM and PressioLIM.

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