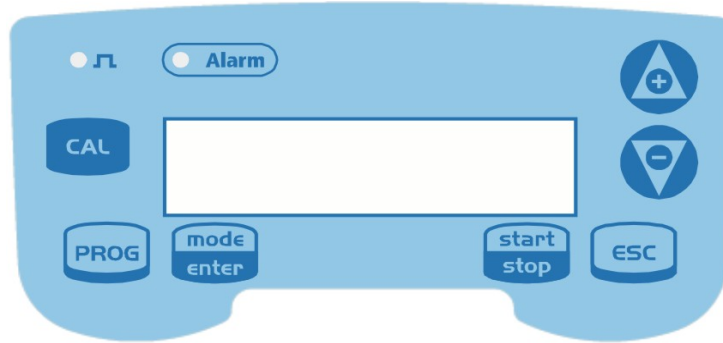











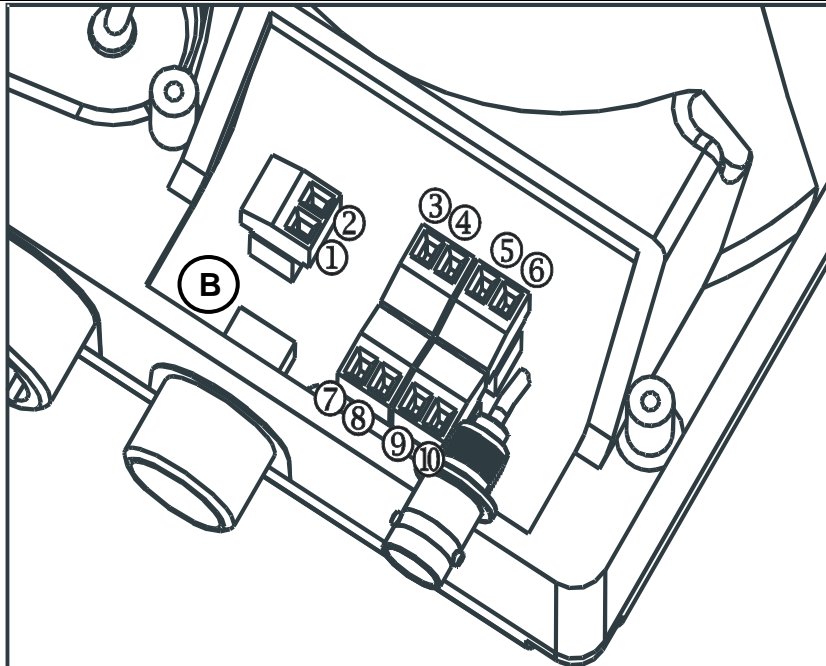








## Control Panel – TEKNA TPR



	Access to the programming menu
	When pressed during the pump operation phase, it cyclically displays the programmed values on the display; When pressed at the same time as the   keys, it increases or lowers a value dependent on the selected operating mode. During programming it carries out an “enter” function, meaning that it confirms entry to the various menu levels and modifications within the same.
	Starts and stops the pump. In the event of a level alarm (alarm function only), flow alarm and active memory alarm, it deactivates the signal on the display.
	Used to “exit” the various menu levels. Before definitively exiting the programming phase, you will be asked if you wish to save any changes.
	Access to the pump calibration menu. If in Off mode, the calibration menu is not activated.
	Used to run upwards through the menu or increase the numerical values to be changed. Can be used to start dosage in Batch mode
	Used to run downwards through the menu, or decrease the numerical values to be changed.
	Flashing green LED during dosage
	Red LED that lights up in various alarm situations

### Electrical connections



	1	Alarm relay	
	2		
	3	Pole +	Exit 4-20 mA 500 Ω max load
	4	Pole -	
	5	Remote control input (start-stop)	
	6		
	7	Temperature probe input	
	8		
	9	Flow sensor input	
	10		
	B	Input level control	

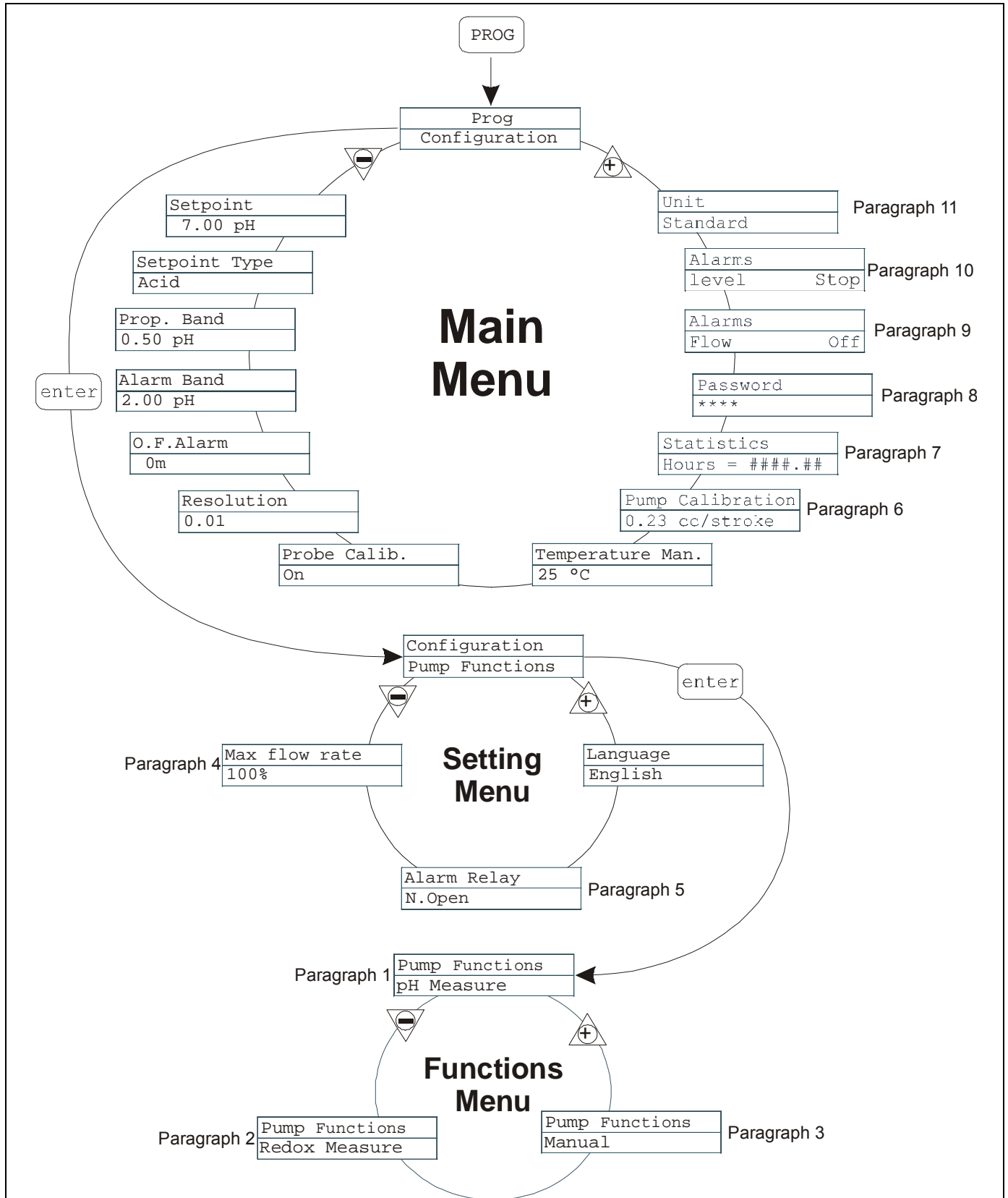
You can access the programming menu by pressing the  key for over three seconds. The   keys can be used to run through the menu items, with the   key being used to access changes. The pump is programmed in constant mode in the factory. The pump automatically returns to the operating mode after 1 minute of no activity. Any data entered in these circumstances will not be saved. The  key can be used to exit the various programming levels. Upon exiting programming, the display will show:

Exit
No Save

▽ ▲

Exit
Save

  to confirm the selection



## Setting the Language

Programming	Operation
<pre> graph TD     PROG[PROG] --&gt; CONFIG[Configuration]     CONFIG --&gt; PUMP[Pump Functions]     PUMP --&gt; FLOW[Max flow rate P100%]     FLOW --&gt; ALARM[Alarm Relay N.Open]     ALARM --&gt; LANG[Language English]     LANG -- enter --&gt; NAV[up/down arrows]     NAV -- enter --&gt; MAIN[ ]     style MAIN fill:none,stroke-dasharray: 5 5 </pre>	<p>Makes it possible to select the language. The pump is set in English in the factory.</p> <p>Changes can be made by pressing the  key, then using the   keys to set the new value. Press  to confirm and return to the main menu</p>

## Paragraph 1 – Manual Dosage

Programming	Operation
<pre> graph TD     PROG[PROG] --&gt; CONFIG[Configuration]     CONFIG --&gt; PUMP[Pump Functions]     PUMP --&gt; MAN[Manuel]     MAN -- enter --&gt; MAIN[ ]     style MAIN fill:none,stroke-dasharray: 5 5 </pre>	<p>The pump operates in constant mode. The flow can be manually regulated by pressing the   keys at the same time to increase the flow, or the   keys to decrease it.</p>

Display during Operation	Display during Setting (MODE key)
<div> <div> <p><u>Operating mode</u></p> <ul style="list-style-type: none"> <li>Man = Manuel</li> </ul> </div> <div> <p><u>FLOW sensor status</u></p> <p>MAN <b>F</b> Stop P100%</p> </div> <div> <p><u>Current dosage value</u> (depends on the selected unit of measurement)</p> <ul style="list-style-type: none"> <li>Percentage, Frequency, l/h, Gph, ml/m</li> </ul> </div> <div> <p><u>Alarms and statuses</u></p> <ul style="list-style-type: none"> <li>Liv = Level alarm</li> <li>Fls = Debit alarm</li> </ul> </div> <div> <p><u>Pump status</u></p> <ul style="list-style-type: none"> <li>Empty = pump in start</li> <li>Stop = pump stationary</li> <li>Paus = pump in pause</li> </ul> </div> </div>	<div> <div> <p><u>Operating mode</u></p> <ul style="list-style-type: none"> <li>Displays the corresponding frequency value</li> </ul> </div> <div> <p>F320s/m P100%</p> </div> <div> <p><u>Current dosage value</u></p> <ul style="list-style-type: none"> <li>The maximum flow can be modified by pressing the + or – keys at the same time</li> </ul> </div> </div>

## Paragrafo 2 – Dosaggio Proporzionale alla misura del pH (impostazione di fabbrica)

Programming	Operation
<p>           PROG            Configuration            enter            Configuration            Pump Functions            enter            Pump Functions            pH Measure            enter            Setpoint 7.00 pH enter            Setpoint Type Acid enter            Prop. Band 0.50 pH enter            Alarm Band 2.00 pH enter            O.F. Alarm 0m enter            Resolution 0.01 enter            Probe Calib. On enter            Temperature Man. 25 °C enter            Temperature Man. 25 °C &lt;- enter            Temperature Man. 77 °F enter         </p>	<p>The pump measures and controls the pH of a solution, programming in sequence: set-point, set-point type, proportional band and alarm band</p> <p>Set-point type: acid</p> <p>Set-point type: alkaline</p> <p>It is also possible to programme:</p> <ul style="list-style-type: none"> <li>- the O.F.A. (Over Feed Alarm) time in minutes, or rather a time beyond which an alarm signal is triggered if the pH value does not reach the set-point.</li> <li>- The measurement resolution (1 or 2 decimal points)</li> <li>- Deactivation/activation of the calibration procedure</li> <li>- Manual temperature value in °C (default) or °F</li> </ul> <p>The maximum frequency can be modified during operation, by pressing the <b>mode</b> <b>enter</b> <b>mode</b> keys at the same time to increase the flow, or the <b>mode</b> <b>enter</b> <b>mode</b> keys to decrease it.</p>

Display during Operation	Display during Setting (MODE key)
<p>           • Setpoint type; Acid/Alka            Flow sensor status            pH measurement value            Alca <b>F</b> 7.00pH            Lev Stop P100%            Current dosage value (depends on the selected unit of measurement)            • Percentage, Frequency, l/h, Gph, ml/m            Pump status            • Empty = pump in start            • Stop = pump stationary            • Paus = pump in pause            Alarms and statuses            • Cal = calibration not completed            • Flw = Flow alarm            • Alm = Measurement outside Alarm Band            • OFA = O.F.A. alarm         </p>	<p>           Displays in sequence            • SP = Setpoint value            • BP = Proportional band value            • BA = Alarm band value            • OFA = O.F.A. value            • Temp = Temperature value            SP 7.00pH            4.50pH P100%            Measurement value            Maximum set dosage value (depends on the selected unit of measurement)            • Percentage, Frequency, l/h, Gph, ml/m         </p>

### Paragraph 3 – Dosage Proportional to the Potential Redox Measurement (O.R.P.)

Programming	Operation
	<p>The pump measures and controls the pH of a solution, programming in sequence: set-point, set-point type, proportional band and alarm band</p> <p>Set-point type: maximum</p> <p>Set-point type: minimum</p> <p>It is also possible to programme:</p> <ul style="list-style-type: none"> <li>- the O.F.A. (Over Feed Alarm) time in minutes, or rather a time beyond which an alarm signal is triggered if the pH value does not reach the set-point.</li> <li>- The measurement resolution (1 or 2 decimal points)</li> <li>- Deactivation/activation of the calibration procedure</li> </ul> <p>The maximum frequency can be modified during operation, by pressing the   keys at the same time to increase the flow, or the   keys to decrease it.</p>

Display during Operation	Display during Setting (MODE key)
	<p>Displays in sequence</p> <ul style="list-style-type: none"> <li>• SP = Setpoint value</li> <li>• BP = Proportional band value</li> <li>• BA = Alarm band value</li> <li>• OFA = O.F.A. value</li> </ul> <p>Maximum set dosage value (depends on the selected unit of measurement)</p> <ul style="list-style-type: none"> <li>• Percentage, Frequency, l/h, Gph, ml/m</li> </ul>

### Paragraph 4 – Setting the Maximum Flow

Programming	Operation
	<p>This makes it possible to set the maximum flow offered by the pump, and the programmed mode (% or frequency) is used as the standard unit of measurement when displaying the flow. Changes can be made by pressing the  key, then using the   keys to set the new value. Press  to confirm and return to the main menu</p>

## Paragraph 5 – Setting the Alarm Relay

Programming	Operation
<pre> graph TD     PROG[PROG] --&gt; PROG_Config[PROG Configuration]     PROG_Config -- enter --&gt; Config_Pump[Configuration Pump Functions]     Config_Pump --&gt; Max_Flow[Max flow rate P100%]     Max_Flow --&gt; Alarm_Relay[Alarm Relay N.Open]     Alarm_Relay -- enter --&gt; Main_Menu[ ]     style Main_Menu stroke-dasharray: 5 5     </pre>	<p>This is used to set the alarm relay in the absence of an alarm situation, if open (default) or closed.</p> <p>Changes can be made by pressing the  key, then using the  keys to set the new value. Press  to confirm and return to the main menu</p>

## Paragraph 6 – Flow Calibration

Programming	Operation
<pre> graph TD     PROG[PROG] --&gt; PROG_Config[PROG Configuration]     PROG_Config --&gt; Pump_Calib[Pump Calibration 0,23 cc/stroke]     Pump_Calib -- enter --&gt; Pump_Calib_Manual[Pump Calibration Manual]     Pump_Calib_Manual -- enter --&gt; Pump_Calib_Automatic[Pump Calibration Automatic]     Pump_Calib_Automatic -- enter --&gt; Auto_Cal_Start[Automatic Cal. Start 100 strok.]     Auto_Cal_Start -- enter --&gt; Auto_Cal_Strokes[Automatic Cal. Strokes 100]     Auto_Cal_Strokes -- enter --&gt; Auto_Cal_ml[Automatic Cal. ml 20]     Auto_Cal_ml -- enter --&gt; Main_Menu[ ]     style Main_Menu stroke-dasharray: 5 5     </pre>	<p>The memorised cc value per strike appears in the main menu. It can be calibrated in two different ways:</p> <p><b>MANUAL</b> – manually enter the cc value per strike using the  keys and confirm by pressing the  key</p> <p><b>AUTOMATIC</b> – the pump makes 100 strikes, which are started by pressing the  key. At the end of this process, enter the quantity sucked up by the pump using the  keys and confirm by pressing the  key.</p> <p>The entered figure will be used in flow calculations.</p>

## Paragraph 7 - Statistics

Programming	Operation
<pre> graph TD     PROG[PROG] --&gt; PROG_Config[PROG Configuration]     PROG_Config --&gt; Stat_Hours[Statistic Hours 10]     Stat_Hours -- enter --&gt; Stat_Strokes[Statistic Strokes 1000]     Stat_Strokes -- enter --&gt; Stat_Qty[Statistic Q.ty(L) 100]     Stat_Qty -- enter --&gt; Stat_Power[Statistic Power 10]     Stat_Power -- enter --&gt; Stat_Reset[Statistic Reset]     Stat_Reset -- enter --&gt; Stat_Reset_NO[Statistic Reset NO]     Stat_Reset_NO -- enter --&gt; ESC[ESC]     ESC --&gt; Stat_Hours_2[Statistic Hours 10]     Stat_Hours_2 -- enter --&gt; Main_Menu[ ]     style Main_Menu stroke-dasharray: 5 5     </pre>	<p>The main menu displays the pump operation times. By pressing the  key you can access other statistics:</p> <ul style="list-style-type: none"> <li>- Strokes = number of strokes made by the pump</li> <li>- Q.ty (L) = quantity dosed by the pump in litres; this figure is calculated on the basis of the memorised cc/stroke value</li> <li>- Power = number of pump starts</li> <li>- Reset = use the  to reset the counters (YES) or otherwise (NO), then confirm by pressing the  key.</li> </ul> <p>Pressing the  key will take you back to the main menu.</p>

## Paragraph 8 - Password

Programming	Operation
	<p>By entering the password, you can enter the programming menu and see all the set values. The password will be requested whenever you seek to modify them. The flashing line indicates the number than can be modified.</p> <p>Use the  key to select the number (from 1 to 9), and the  key to select the number to be modified. Confirm by pressing the  key. By setting “0000” (default), the password is eliminated.</p>

## Paragraph 9 – Flow Alarm

Programming	Operation
	<p>This makes it possible to activate (deactivate) the flow sensor.</p> <p>When activated (On), press the  key to access the request for the number of signals that the pump waits for before an alarm is triggered. The number flashes when you press the  key, and you can then use the   keys to set the value. Confirm by pressing the  key. Press  to return to the main menu</p>

## Paragraph 10 – Level Alarm

Programming	Operation
	<p>This makes it possible to set the pump when the level sensor alarm is activated. In other words you can decide whether to stop dosage (Stop) or simply activate the alarm signal without stopping dosage.</p> <p>Changes can be made by pressing the  key, then using the   keys to set the alarm type. Confirm by pressing the  key. Press  to return to the main menu</p>

## Paragraph 11 – Flow Display Unit

Programming	Operation
	<p>This makes it possible to set the dosage unit of measurement on the display.</p> <p>Changes can be made by pressing the  key, then using the   keys to set the unit of measurement, choosing between L/h (litres/hour), Gph (Gallons/hour), ml/m (millilitres/minute) or standard (% or frequency, depending on settings). Press  to confirm and return to the main menu</p>

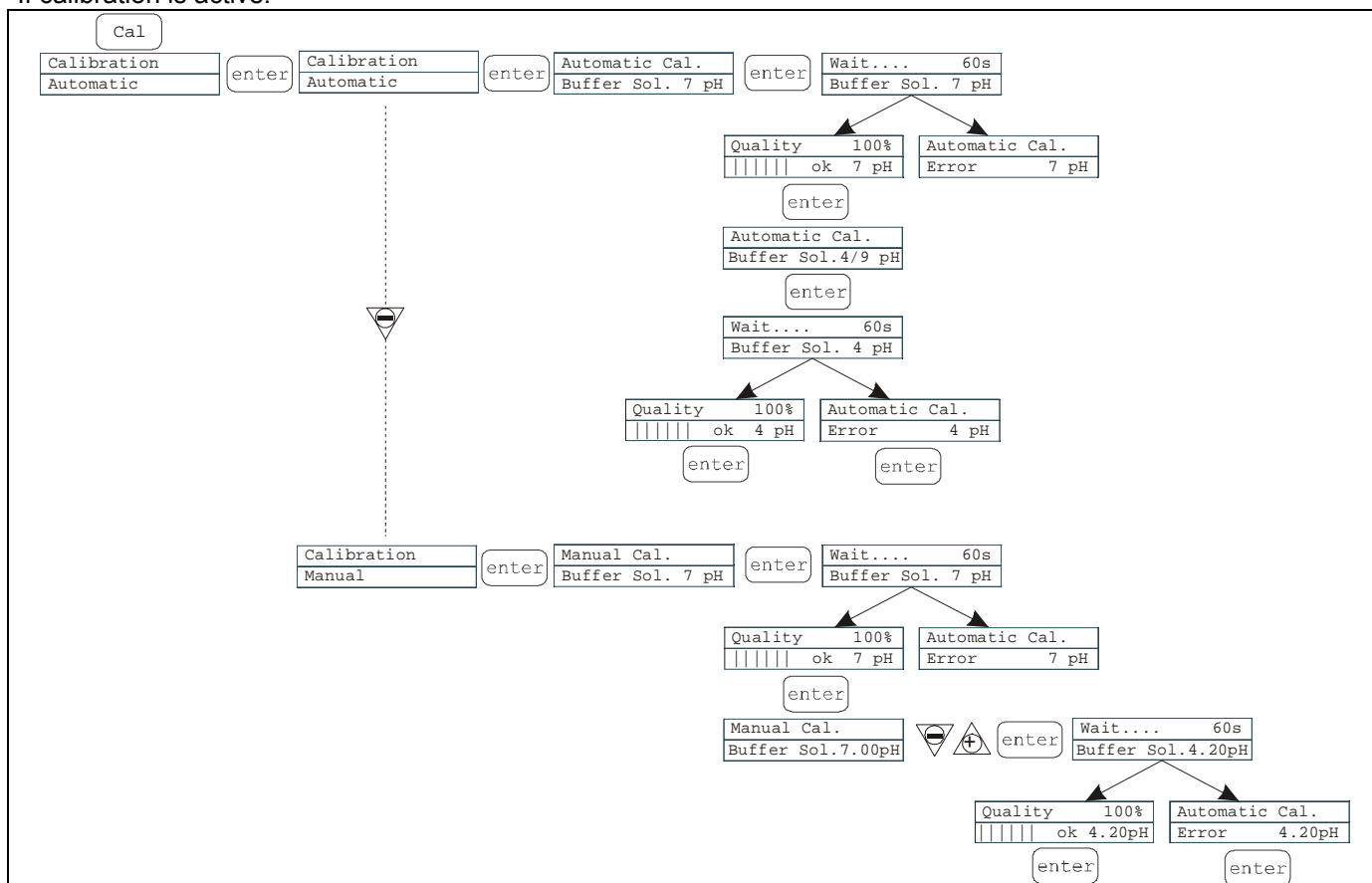


## pH Calibration Menu

Pressing the CAL key for 3 seconds takes you into the calibration menu. If calibration was excluded during programming, the following appears on the display:




Calibration
Off

If calibration is active:








It is possible to select automatic or manual mode. In both cases, it is automatically calibrated to pH 7.

- Automatic calibration:

The buffer solution value appears on the display. Enter the probe in the bottle and press the  key. A 60 second countdown necessary to complete calibration will appear on the display. If the alignment quality is below 50%, an error message appears on the display and you should press  to exit calibration (the pump exits automatically after 4 seconds). If the quality is above 50%, the value is shown on the display and, after pressing the  key, the buffer solution at pH 4 or 9 will be requested. At this point the procedure is the same as above.

- Manual calibration:

when the buffer solution value appears on the display, insert the probe in the bottle and press the  key. A 60 second countdown necessary to complete calibration will appear on the display. If the alignment quality is below 50%, an error message appears on the display and you should press  to exit calibration (the pump exits automatically after 4 seconds). If the quality is above 50%, the value is shown on the display and, after pressing the  key, the value of pH 7.00 flashes on the display. Use the  keys to enter the value of the solution in your possession, then press  to confirm and start the calibration procedure as before.

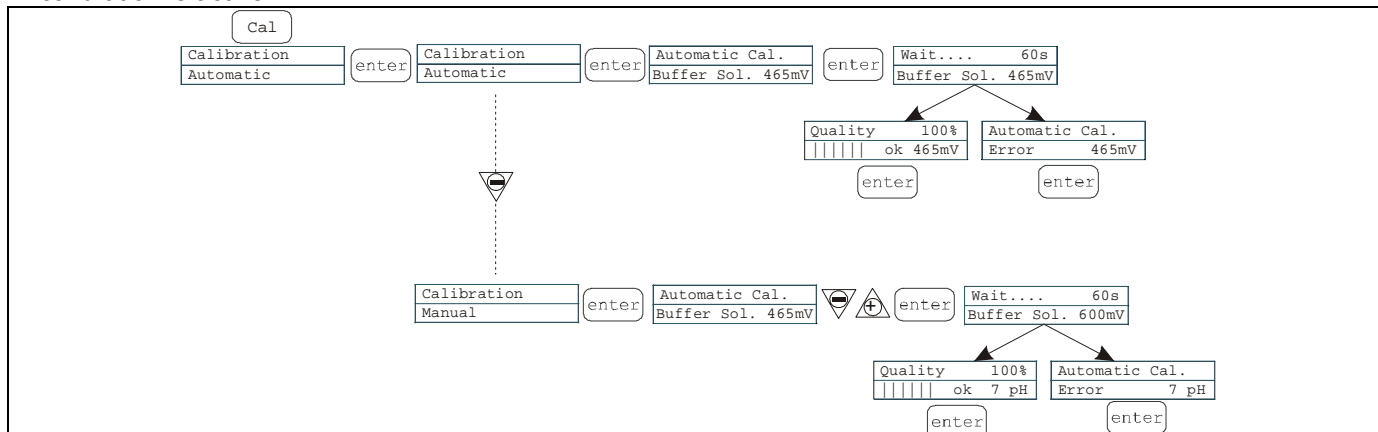


## Potential Redox Calibration Menu (O.R.P.)

Pressing the CAL key for 3 seconds takes you into the calibration menu. If calibration was excluded during programming, the following appears on the display:




Calibration
Off

If calibration is active:







It is possible to select automatic or manual mode.





- Automatic calibration:

The buffer solution value appears on the display. Insert the probe in the bottle and press the  key. A 60 second countdown necessary to complete calibration will appear on the display. If the alignment quality is below 50%, an error message appears on the display and you should press  to exit calibration (the pump exits automatically after 4 seconds). If the quality is above 50%, the value is shown on the display and you should press the  key to complete the procedure.

- Manual calibration:

The buffer solution value appears on the display. Insert the probe in the bottle and press the  key. The value of 465 mV should now flash on the display. Insert the probe in your solution and use the   keys to display the value of the solution in your possession, then confirm by pressing the  key and begin the calibration procedure as before

## Alarms

Alarms	Display	Cause	Interruption				
	Fixed alarm LED Flashing word "Lev" I.e. <table><tr><td>Man</td><td></td></tr><tr><td>Lev</td><td>P100%</td></tr></table>	Man		Lev	P100%	End of level alarm, without interrupting pump operation	Restore the liquid level.
Man							
Lev	P100%						
	Fixed alarm LED Flashing words "Lev" and "stop" I.e. <table><tr><td>Man</td><td></td></tr><tr><td>Lev Stop</td><td>P100%</td></tr></table>	Man		Lev Stop	P100%	End of level alarm, with interruption to pump operation	Restore the liquid level.
Man							
Lev Stop	P100%						
	Flashing word "Mem" I.e. <table><tr><td>1:n</td><td>6</td></tr><tr><td>Mem</td><td></td></tr></table>	1:n	6	Mem		The pump receives one or more impulses during dosage with memory function on Off	Press the  key
1:n	6						
Mem							
	Flashing word "Mem" I.e. <table><tr><td>1:n</td><td><b>M</b> 6</td></tr><tr><td>Mem</td><td></td></tr></table>	1:n	<b>M</b> 6	Mem		The pump receives one or more impulses during dosage with memory function on On	When the pump finishes receiving external impulses, it returns the memorised strokes
1:n	<b>M</b> 6						
Mem							
	Fixed alarm LED Flashing word "Flw" I.e. <table><tr><td>Man</td><td><b>F</b></td></tr><tr><td>Flw</td><td>P100%</td></tr></table>	Man	<b>F</b>	Flw	P100%	Active flow alarm. The pump has not received the programmed number of signals from the flow sensor.	Press the  key
Man	<b>F</b>						
Flw	P100%						
	I.e. <table><tr><td>Parameter Error</td><td>PROG</td></tr><tr><td>to default</td><td></td></tr></table>	Parameter Error	PROG	to default		Communication error with the eeprom.	Press the  key to restore the default parameters.
Parameter Error	PROG						
to default							
	Flashing word "OFA" Flashing word "stop" I.e. <table><tr><td>High</td><td>475 mV OFA</td></tr><tr><td>Stop</td><td>P 75%</td></tr></table>	High	475 mV OFA	Stop	P 75%	O.F.A. alarm	Press the  key to stop the flashing word "stop". Press the key again to start up the pump again.
High	475 mV OFA						
Stop	P 75%						
	Flashing word "Alm" I.e. <table><tr><td>High</td><td>475 mV Alm</td></tr><tr><td>P 75%</td><td></td></tr></table>	High	475 mV Alm	P 75%		The probe reading is outside the set alarm band range	Make sure that the "Alarm Band" parameter is set correctly in the programme
High	475 mV Alm						
P 75%							
	Flashing word "Cal" I.e. <table><tr><td>High</td><td>475 mV Cal</td></tr><tr><td>P 75%</td><td></td></tr></table>	High	475 mV Cal	P 75%		Probe not calibrated alarm	Calibrate the probe
High	475 mV Cal						
P 75%							