

These instructions contain operating information and should be left with the unit.

**Vapac**<sup>®</sup>

**Gas Fired Steam Humidifier**  
**Alpha-Numeric Display Operating manual**  
**Edition 2**

**VapaNet**



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## Introduction

### Alpha-Numeric Display

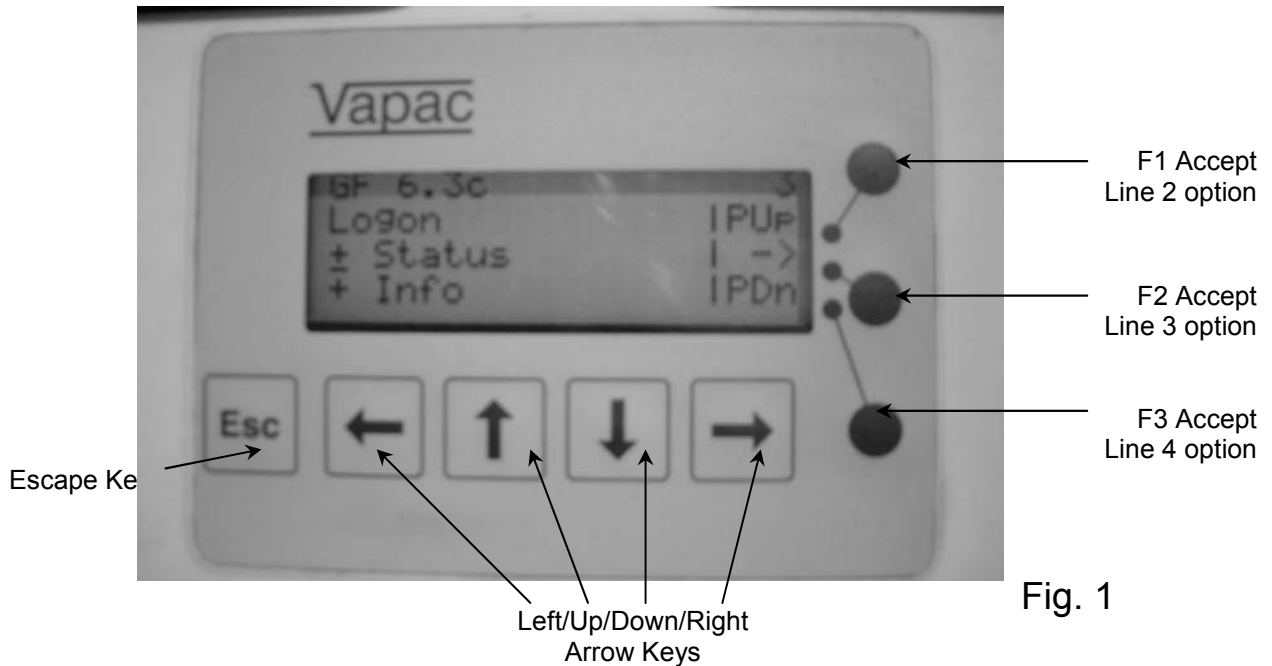


Fig. 1

Figure 1 above shows the Alphanumeric keypad and display. This gives four lines of information, with each line having a maximum of twenty characters. The Arrow keys are used to navigate through the menus and the round buttons, on the right hand side, are used to action the associated options :

In the menu tree the up/down arrow keys are used to navigate through the menu's one option at a time (NB pressing the down arrow in the example above will take you to the "Status" line & the up arrow to the "Setup" line. Pressing F1 or F3 will move up or down three lines at a time

[page up or page down]. F2 will take you to the "Logon" screen. Pressing the "Escape" key at any time will move you back one level in the menu, repeated presses will take you back to the default screen shown in Fig. 1.

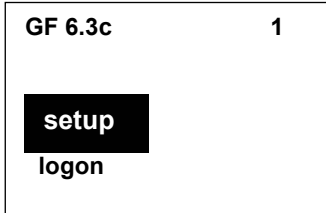
Fig 1A shows the "unit status" menu tree screen. From here it is possible to view the status of the unit parameters.

If you report a fault to Vapac Humidity Control Ltd, you may be asked to provide this information to enable the problem to be diagnosed

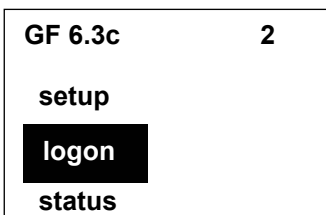


Fig. 1A

## Non Password Protected Menu Options



1-1	Languages	Used to select the displayed language: Languages available: Software –A English, French & German Software –B English, Dutch & German Software –C USA/Canadian (English/French)
1-2	attach to unit	Used to link the display to the motherboard, Select this option, then confirm by pressing “ok”, then press the “network pin” on the motherboard. This is already done if the display is factory fitted, but will need to be done if either PCB is changed, or if the display is “field fitted”.
1-3	setup unit	This option is used to set the site controlled parameters: <b>Control type:</b> (0-5V; 0-10V; 2-10V; 1-18V; 0-20V; 4-20mA; Pot; Full output; Network; or Sensing Head [with any of the following control options – 0-5V; 0-10V, 0-20V, 4-20mA; pot]. <b>Water type:</b> (Pot[table] high; Pot. med; Pot. low; De-ionised; De-mineralised. See operating manual for more information. <b>Steam output units:</b> (kg/h or lbs/h)
1-4	network setup	Used to set-up master/slave systems: Password protected (Password 1111). Select this option (from the master unit), confirm by pressing “ok” then press the service pin (this is referred to as the network button in the operating manual) on the motherboard that is fitted to the first slave unit (please ensure that this is the next largest unit). What while the slave unit is “configured” then press “ok” to finish the network set-up or proceed to the next slave unit and press its service pin. Once all the units are configured press “ok” to confirm that the set-up is complete.
1-5		not available at this level
1-6	reset display	Used to re-synchronize the information between the motherboard and display



2-1	Logon	Used to gain access to protected menu trees. Passwords are entered via the arrow keys. Digits are incremented or decremented using the up/down arrows and digit being entered changed using the left/right arrows. Once the correct password is displayed it must be entered by pressing “ok”. These levels are described later in the manual.
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GF 6.3c

3

logon

status

info

3-1	master Vapac	Used to select the “master” Vapac status parameters to be displayed
3-1-1	unit	Used to select “unit” parameters.
3-1-2	cylinder 1	Used to select “cylinder 1” parameters.
3-1-1-1	state	Displays the operational state of the unit either “Shutdown” (“switched off”; “EPO/security circuit” open circuit or no 24 Vac supply to PCB); “Stand by” (unit awaiting control signal demand) or “On” (unit operating – if the unit is on it will also display the percentage demand i.e On/50% means the unit has a demand level of 50%.
3-1-1-2	demand	Displays the unit demand level as a percentage.
3-1-1-3	temperature	Only visible if control is from a sensing head or if “Frost protection is selected”.
3-1-1-4	rel. humidity	Only visible if control is from a sensing head when it will display the space RH.
3-1-1-5	LRO status	This displays the status of Vapanet Reverse Osmosis water treatment plant if fitted to the unit – not fitted / shutdown / standby / sys ready / online / fault / no response.
3-1-1-6	sys. steam output	Displays the current system steam output (only visible if master / slave system has been set up)
3-1-1-7	analogue input	This displays each of the four analogue inputs (Ai1 – Ai4) as a 4 digit number.
3-1-1-8	resistive input	This displays each of the 4 resistive inputs (Ai5 – Ai8) as a 4 digit number
3-1-1-9	digital I.O.	This will display each of the 9 Digital Inputs (DI1-9) and the 24 V input as a row of 10 binary digits (0 or 1) above another similar row representing the 10 Digital Outputs (DO1-10). This can be used to ascertain if any input or output is made, and is useful in diagnosing any problem.
3-1-2-1	mode	Displays the cylinder mode (Shutdown/Standby/Online/Constant output/Frost Protection/High temp cutout/LRO shutdown/LRO no response/LRO fault/Feed Fault/Drain Fault/ Service complete/Period drain complete/Period drain in prog/Man drain complete/Man drain in prog/Period flush in prog/Auto flush in prog/Standby drain in prog).
3-1-2-2	demand	Displays the cylinder demand (for single cylinder units this will equal unit demand.
3-1-2-3	hours run	Displays the length of time the cylinder has been on-line.
3-1-2-4	steam output	Displays the current volume of steam being produced.
3-1-2-5	Fan Set Point	Displays the current fan set point
3-1-2-6	Fan Speed	Displays the actual fan speed
3-1-2-7	fault totals	Displays the total number of faults that has occurred.
3-2 to 3-10-2-7		Unit & cylinder status options repeated for slave units 1 to 9 as applicable (maximum number of cylinders on a system is 10)

GF 6.3c

4

status

info

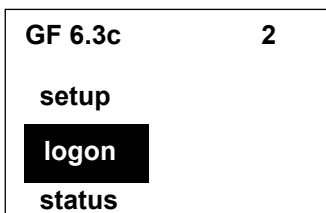
4-1	master vapac	Selects the "Master" Vapac
4-1-1	unit	Selects the "Unit" parameters for display
4-1-2	cylinder 1	Selects the "Cylinder" parameters for cylinder 1 for display
4-1-1-1	unit model	Displays the model reference.
4-1-1-2	gas type	Displays the gas type – this is factory set for the unit.
4-1-1-3	sw version	Displays the version of software fitted in the control PCB.
4-1-1-4	slaves attached	Displays the number of slave units attached to the system.
4-1-1-5	num. cylinders	Displays the total number of cylinders attached to the system
4-1-1-6	control sig type	Displays the control signal selected during initial unit set-up.
4-1-1-7	water type	Displays the water type selected during initial unit set-up.
4-1-1-8	domain id	Displays the domain identity – which is set during network set-up, the default value will need to be changed only if two or more Vapanet Reverse Osmosis units are connected to one network – See LRO Documentation for more details.
4-1-1-9	base address	Displays the base address – which is also set during network set-up see above.
4-1-1-10	steam units	Displays whether the steam output is measured in lbs/h or kg/h.
4-1-1-11	standby drain int	Displays the time after which the cylinder will drain completely, if the unit is in the stand-by state.
4-1-2-1	period drain int.	Displays the time interval between periodic drains
4-1-2-2	period flush int	Displays the time interval between periodic flushes – "0" indicates that periodic flushes have not been selected. Periodic flushes can be set to completely drain the cylinder then re-fill with fresh water and then finally drain the cylinder again to flush the cylinder at timed intervals. This can assist unit operation under certain conditions.
4-1-2-3	flush options	Displays whether the unit is set to stop or resume automatic operation once the periodic flush cycle is complete.
4-2 to 4-9-2-3		Unit & Cylinder options repeated for Slave units 1 to 9 (if applicable)

## Password Protected Menu Options

### User Level Password “4602”



- |     |                |  |
|-----|----------------|--|
| 1-1 | Languages      | Used to select the displayed language:<br>Languages available:<br>Software –A     English, French & German<br>Software –B     English, Dutch & German<br>Software –C     USA/Canadian (English/French)   |
| 1-2 | attach to unit | Used to link the display to the motherboard, Select this option, then confirm by pressing “ok”, then press the “network pin” on the motherboard. This is already done if the display is factory fitted, but will need to be done if either PCB is changed, or if the display is “field fitted”.  |
| 1-3 | setup unit     | This option is used to set the site controlled parameters:<br><b>Control type:</b> (0-5V; 0-10V; 2-10V; 1-18V; 0-20V; 4-20mA; Pot; Full output; Network; or Sensing Head [with any of the following control options – 0-5V; 0-10V, 0-20V, 4-20mA; pot]. <b>Water type:</b> (Pot[able] high; Pot. med; Pot. low; De-ionised; De-mineralised. See operating manual for more information. <b>Steam output units:</b> (kg/h or lbs/h)  |
| 1-4 | network setup  | Used to set-up master/slave systems: Password protected (Password 1111). Select this option (from the master unit), confirm by pressing “ok” then press the service pin (this is referred to as the network button in the operating manual) on the motherboard that is fitted to the first slave unit (please ensure that this is the next largest unit). What while the slave unit is “configured” then press “ok” to finish the network set-up or proceed to the next slave unit and press its service pin. Once all the units are configured press “ok” to confirm that the set-up is complete. |
| 1-5 |                | not available at this level  |
| 1-6 | reset display  | Used to re-synchronize the information between the motherboard and display   |



- |     |       |  |
|-----|-------|--|
| 2-2 | Logon | Used to gain access to protected menu trees. Passwords are entered via the arrow keys. Digits are incremented or decremented using the up/down arrows and digit being entered changed using the left/right arrows. Once the correct password is displayed it must be entered by pressing “ok”. These levels are described later in the manual. |
|-----|-------|--|

<b>GF 6.3c</b>	<b>3</b>
<b>logon</b>	
<b>status</b>	
<b>info</b>	

3-1	master Vapac	Used to select the “master” Vapac status parameters to be displayed
3-1-1	unit	Used to select “unit” parameters.
3-1-2	cylinder 1	Used to select “cylinder 1” parameters.
3-1-1-1	state	Displays the operational state of the unit either “Shutdown” (“switched off”; “EPO/security circuit” open circuit or no 24 Vac supply to PCB); “Stand by” (unit awaiting control signal demand) or “On” (unit operating – if the unit is on it will also display the percentage demand i.e On/50% means the unit has a demand level of 50%.
3-1-1-2	demand	Displays the unit demand level as a percentage.
3-1-1-3	temperature	Only visible if control is from a sensing head or if “Frost protection is selected”.
3-1-1-4	rel. humidity	Only visible if control is from a sensing head when it will display the space RH.
3-1-1-5	LRO status	This displays the status of Vapanet Reverse Osmosis water treatment plant if fitted to the unit – not fitted / shutdown / standby / sys ready / online / fault / no response.
3-1-1-10	sys. steam output	Displays the current system steam output (only visible if master / slave system has been set up)
3-1-1-11	analogue input	This displays each of the four analogue inputs (Ai1 – Ai4) as a 4 digit number.
3-1-1-12	resistive input	This displays each of the 4 resistive inputs (Ai5 – Ai8) as a 4 digit number
3-1-1-13	digital I.O.	This will display each of the 9 Digital Inputs (DI1-9) and the 24 V input as a row of 10 binary digits (0 or 1) above another similar row representing the 10 Digital Outputs (DO1-10). This can be used to ascertain if any input or output is made, and is useful in diagnosing any problem.
3-1-2-3	mode	Displays the cylinder mode (Shutdown/Standby/Online/Constant output/Frost Protection/High temp cutout/LRO shutdown/LRO no response/LRO fault/Feed Fault/Drain Fault/ Service complete/Period drain complete/Period drain in prog/Man drain complete/Man drain in prog/Period flush in prog/Auto flush in prog/Standby drain in prog).
3-1-2-4	demand	Displays the cylinder demand (for single cylinder units this will equal unit demand.
3-1-2-3	hours run	Displays the length of time the cylinder has been on-line.
3-1-2-4	steam output	Displays the current volume of steam being produced.
3-1-2-5	Fan Set Point	Displays the current fan set point
3-1-2-6	Fan Speed	Displays the actual fan speed
3-1-2-7	fault totals	Displays the total number of faults that has occurred.
3-2 to 3-10-2-7		Unit & cylinder status options repeated for slave units 1 to 9 as applicable (maximum number of cylinders on a system is 10)



**GF 6.3c****4****status****info**

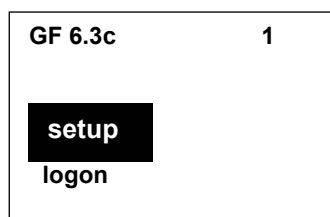
4-1	master vapac	Selects the "Master" Vapac
4-1-1	unit	Selects the "Unit" parameters for display
4-1-2	cylinder 1	Selects the "Cylinder" parameters for cylinder 1 for display
4-1-1-1	unit model	Displays the model reference.
4-1-1-2	gas type	Displays the gas type – this is factory set for the unit.
4-1-1-3	sw version	Displays the version of software fitted in the control PCB.
4-1-1-4	slaves attached	Displays the number of slave units attached to the system.
4-1-1-5	num. cylinders	Displays the total number of cylinders attached to the system
4-1-1-6	control sig type	Displays the control signal selected during initial unit set-up.
4-1-1-7	water type	Displays the water type selected during initial unit set-up.
4-1-1-8	domain id	Displays the domain identity – which is set during network set-up, the default value will need to be changed only if two or more Vapanet Reverse Osmosis units are connected to one network – See LRO Documentation for more details.
4-1-1-9	base address	Displays the base address – which is also set during network set-up see above.
4-1-1-10	steam units	Displays whether the steam output is measured in lbs/h or kg/h.
4-1-1-11	standby drain int	Displays the time after which the cylinder will drain completely, if the unit is in the stand-by state.
4-1-2-1	period drain int.	Displays the time interval between periodic drains
4-1-2-2	period flush int	Displays the time interval between periodic flushes – "0" indicates that periodic flushes have not been selected. Periodic flushes can be set to completely drain the cylinder then re-fill with fresh water and then finally drain the cylinder again to flush the cylinder at timed intervals. This can assist unit operation under certain conditions.
4-1-2-3	flush options	Displays whether the unit is set to stop or resume automatic operation once the periodic flush cycle is complete.
4-2 to 4-9-2-3		Unit & Cylinder options repeated for Slave units 1 to 9 (if applicable)

**GF 6.3c****5****info****adjust**

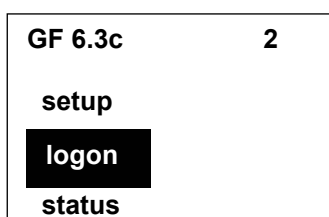
5-1	master vapac	Selects the "Master" Vapac
5-1-1	unit	Selects the "Unit" parameters for adjustment
5-1-1-1	Set point	Selects the "set point", use the up/down keys to adjust the controller set point up or down.

## Password Protected Menu Options

### Service Engineer Level Password “5699”



- |     |                |  |
|-----|----------------|--|
| 1-1 | Languages      | Used to select the displayed language:<br>Languages available:<br>Software –A     English, French & German<br>Software –B     English, Dutch & German<br>Software –C     USA/Canadian (English/French)   |
| 1-2 | attach to unit | Used to link the display to the motherboard, Select this option, then confirm by pressing “ok”, then press the “network pin” on the motherboard. This is already done if the display is factory fitted, but will need to be done if either PCB is changed, or if the display is “field fitted”.  |
| 1-3 | setup unit     | This option is used to set the site controlled parameters:<br><b>Control type:</b> (0-5V; 0-10V; 2-10V; 1-18V; 0-20V; 4-20mA; Pot; Full output; Network; or Sensing Head [with any of the following control options – 0-5V; 0-10V, 0-20V, 4-20mA; pot]. <b>Water type:</b> (Pot[able] high; Pot. med; Pot. low; De-ionised; De-mineralised. See operating manual for more information. <b>Steam output units:</b> (kg/h or lbs/h)  |
| 1-4 | network setup  | Used to set-up master/slave systems: Password protected (Password 1111). Select this option (from the master unit), confirm by pressing “ok” then press the service pin (this is referred to as the network button in the operating manual) on the motherboard that is fitted to the first slave unit (please ensure that this is the next largest unit). What while the slave unit is “configured” then press “ok” to finish the network set-up or proceed to the next slave unit and press its service pin. Once all the units are configured press “ok” to confirm that the set-up is complete. |
| 1-5 |                | not available at this level  |
| 1-6 | reset display  | Used to re-synchronize the information between the motherboard and display   |



- |     |       |  |
|-----|-------|--|
| 2-3 | Logon | Used to gain access to protected menu trees. Passwords are entered via the arrow keys. Digits are incremented or decremented using the up/down arrows and digit being entered changed using the left/right arrows. Once the correct password is displayed it must be entered by pressing “ok”. These levels are described later in the manual. |
|-----|-------|--|

LR 6.3c 3

logon

status

info

3-1	master Vapac	Used to select the “master” Vapac status parameters to be displayed
3-1-1	unit	Used to select “unit” parameters.
3-1-2	cylinder 1	Used to select “cylinder 1” parameters.
3-1-1-1	state	Displays the operational state of the unit either “Shutdown” (“switched off”; “EPO/security circuit” open circuit or no 24 Vac supply to PCB); “Stand by” (unit awaiting control signal demand) or “On” (unit operating – if the unit is on it will also display the percentage demand i.e On/50% means the unit has a demand level of 50%.
3-1-1-2	demand	Displays the unit demand level as a percentage.
3-1-1-3	temperature	Only visible if control is from a sensing head or if “Frost protection is selected”.
3-1-1-4	rel. humidity	Only visible if control is from a sensing head when it will display the space RH.
3-1-1-5	LRO status	This displays the status of Vapanet Reverse Osmosis water treatment plant if fitted to the unit – not fitted / shutdown / standby / sys ready / online / fault / no response.
3-1-1-14	steam output	Displays the current steam output of the unit
3-1-1-15	sys. steam output	Displays the current system steam output (only visible if master / slave system has been set up
3-1-1-16	analogue input	This displays each of the four analogue inputs (Ai1 – Ai4) as a 4 digit number.
3-1-1-17	resistive input	This displays each of the 4 resistive inputs (Ai5 – Ai8) as a 4 digit number
3-1-1-18	digital I.O.	This will display each of the 9 Digital Inputs (DI1-9) and the 24 V input as a row of 10 binary digits (0 or 1) above another similar row representing the 10 Digital Outputs (DO1-10). This can be used to ascertain if any input or output is made, and is useful in diagnosing any problem.
3-1-2-5	mode	Displays the cylinder mode (Shutdown/Standby/Online/Constant output/Frost Protection/High temp cutout/LRO shutdown/LRO no response/LRO fault/Feed Fault/Drain Fault/ Service complete/Period drain complete/Period drain in prog/Man drain complete/Man drain in prog/Period flush in prog/Auto flush in prog/Standby drain in prog).
3-1-2-6	demand	Displays the cylinder demand (for single cylinder units this will equal unit demand.
3-1-2-3	hours run	Displays the length of time the cylinder has been on-line.
3-1-2-4	steam output	Displays the current volume of steam being produced.
3-1-2-5	fault totals	Displays the total number of faults that has occurred.
3-1-3-1 to 3-1-3-5		Cylinder status options repeated for cylinder 2 (if fitted)
3-2 to 3-10-3-5		Unit & cylinder status options repeated for slave units 1 to 9 as applicable (maximum number of cylinders on a system is 10)

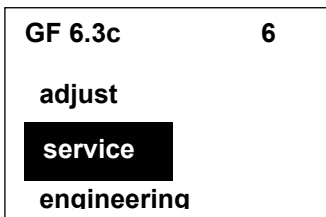
**GF 6.3c****4****status****info**

4-1	master vapac	Selects the "Master" Vapac
4-1-1	unit	Selects the "Unit" parameters for display
4-1-2	cylinder 1	Selects the "Cylinder" parameters for cylinder 1 for display
4-1-1-1	unit model	Displays the model reference.
4-1-1-2	gas type	Display the voltage applied to the elements – set during initial unit set-up.
4-1-1-3	sw version	Displays the version of software fitted in the control PCB.
4-1-1-4	slaves attached	Displays the number of slave units attached to the system.
4-1-1-5	num. cylinders	Displays the total number of cylinders attached to the system
4-1-1-6	control sig type	Displays the control signal selected during initial unit set-up.
4-1-1-7	water type	Displays the water type selected during initial unit set-up.
4-1-1-8	domain id	Displays the domain identity – which is set during network set-up, the default value will need to be changed only if two or more Vapanet Reverse Osmosis units are connected to one network – See LRO Documentation for more details.
4-1-1-9	base address	Displays the base address – which is also set during network set-up see above.
4-1-1-10	steam units	Displays whether the steam output is measured in lbs/h or kg/h.
4-1-1-11	standby drain int	Displays the time after which the cylinder will drain completely, if the unit is in the stand-by state.
4-1-2-1	period drain int.	Displays the time interval between periodic drains
4-1-2-2	period flush int	Displays the time interval between periodic flushes – "0" indicates that periodic flushes have not been selected. Periodic flushes can be set to completely drain the cylinder then re-fill with fresh water and then finally drain the cylinder again to flush the cylinder at timed intervals. This can assist unit operation under certain conditions.
4-1-2-3	flush options	Displays whether the unit is set to stop or resume automatic operation once the periodic flush cycle is complete.
4-2 to 4-9-2-3		Unit & Cylinder options repeated for Slave units 1 to 9 (if applicable)

**GF 6.3c****5****info****adjust**

5-1	master vapac	Selects the "Master" Vapac
5-1-2	unit	Selects the "Unit" parameters for adjustment
5-1-1-1	Set point	Selects the "set point", use the up/down keys to adjust the controller set point up or down.

- 5-1-1-2 prop. Band Selects the “proportional band”, use the arrow keys to set the proportional band appropriate to the control system.
- 5-1-1-3 RH offset Selects RH Offset, allows the displayed “Space RH” & set point to be “offset” to “calibrate” the sensing head to external monitoring equipment.



- 6-1 master vapac Selects “Master” Vapac
- 6-1-1 unit Selects “Unit” parameters
- 6-1-2 cylinder 1 Selects “Cylinder 1” parameters
- 6-1-1-1 constant output Allows the unit to be run at an (adjustable) preset level independently from the control signal.
- 6-1-1-1-1 level Sets the level at which the unit will run.
- 6-1-1-1-2 duration Sets the length of time the unit will run before reverting to automatic control.
- 6-1-1-1-3 initiate Starts the constant output routine.
- 6-1-1-2 run output Allows the run relay to be switched “manually” to check external wiring to remote indications.
- 6-1-1-3 fault output Allows the fault relay to be switched “manually” to check external wiring to remote indications.
- 6-1-2-1 service now Initiates a service routine, cylinder will drain, then switch the elements on, then fill with water to thermally shock scale from the elements, finally the cylinder will drain again.
- 6-1-2-2 manual drain Instigates a drain, as if holding down the manual drain switch, it can be used to prove the automatic drain is functioning or to drain the cylinder without holding the drain switch down.
- 6-1-2-3 Auto flush Instigates an auto flush, where the cylinder is filled with water and then fully drained a number of times. This is particularly useful when initially commissioning a unit which has a long run of new copper pipe in the feed supply, to flush any impurities / flux from the water supply.
- 6-1-2-4 Reset hours run This sets the cylinder hours run to zero – usually done when the cylinder is serviced / replaced.
- 6-1-2-5 manual control Used to set auto or manual control of the feed valve or drain pump.
- 6-1-2-6 feed valve Used to manually switch the feed valve on when “manual control” above is enabled.
- 6-1-2-7 drain pump Used to manually switch the drain pump on when “manual control” above is enabled.
- 6-2-1 to 6-10-2-7 Unit & Cylinder options repeated for slave units 1 – 9 if fitted.

<b>GF 6.3c</b>	<b>7</b>
<b>service</b>	
<b>engineering</b>	

7-1	master vapac	Selects master vapac
7-1-1	unit	Selects unit parameters
7-1-1-1	fault output	Sets fault output as continuous or pulsed
7-1-1-2	fault/run scope	Sets the scope of the fault and run outputs as either "network" or "unit only".
7-1-1-5	p factor	Used to increase power uplift by a percentage 0 - 15 % when feed water valve is on
7-1-1-6	t factor	The time period 0 - 60 sec to derate the power uplift back down to demand power when water feed valve is switched OFF
7-1-1-7		Not Available at this level.
7-1-1-8		Not Available at this level.
7-1-1-9		Not Available at this level.
7-1-1-10	system on %	Used to set the minimum percentage of demand that a master slave system will react to.



Made in England by:  
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Vapac Humidity Control Ltd reserve the right to change the design or specification  
Of the equipment described in this manual without prior notice