



Models WL, PE and LMD

**Microvap Alpha-Numeric Display
Operating Instructions
(Edition 6)**



**THIS MANUAL CONTAINS IMPORTANT "HELP"
ADVICE ON PAGES 30 & 31 RELATING TO FAULT
CONDITIONS – AND GIVES PROCEDURES FOR
CORRECTIVE ACTION.**

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Contents	Page
Index.	3
Set-Up Information	4
Set-Up Procedure - Language Selection	5
Set-Up Procedure - Single Cylinder WL and PE Units	6/7
Set-Up Procedure - Twin Cylinder WL and PE Units	8/9/10
Set-Up procedure - LMD Units	11/12
Set-Up Procedure - Master/Slave Systems	13/14/15/16
Microvap Default Menu	17
Status Menu	18/19
Service Menu	20
Adjust Menu	21/22/23
Information Menu	24/25/26
Engineer's Menu	27/28/29
Help Messages	30/31

Vapac Humidity Control Limited reserve the right to change the design or specification of the equipment described in this manual without prior notice.

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Microvap Alpha-Numeric Display - Models WL, PE and LMD

Set-Up Information

The Microvap alpha-numeric display provides system operating information and enables certain parameters to be changed to suit specific requirements. The initial display sequence covers the Set-Up Procedure for the unit or the number of units on the system.

Preliminary Information Required

Before commencing the Set-Up Procedure, the user needs to know the following details about the installation.

The type of unit:

If it is a twin cylinder unit:- is it an '**LMD**' unit?

If it is a '**Master/Slave**' system:-how many cylinders on the system(including the Master)?

The number of power **electrodes in each cylinder?** - count the red caps.

Whether the control involves a **Vapac humidity/temperature sensor?**

If an external control system is being used, what **control signal** is being connected to the unit/system:- **D.C. 0-5V, 0-10V, 0-20V, 2-10V, 1-18V, 4-20mA, or potentiometric?**

The power supply **Voltage** being used on each unit?

Models WL90, PE90 and all LMD two-cylinder cabinet units:

These include two Microvap controllers mounted one behind the other which are interconnected by a short 4-wire connector.

The PCB immediately behind the facia panel is the Master controller and controls the left-hand cylinder.

The Vapac humidity/temperature sensor must be connected to the Master controller.

The second PCB (right-hand cylinder) carries the single CSP resistor plug required for a WL, PE or LMD two cylinder unit.

The left-hand On/Off switch operates the left-hand Master cylinder.

Master/Slave Systems

For **Master and Slave** multi-cylinder combinations:

- decide which of the units is to be the Master (this should be a PE model).
- make sure the control signal is connected to the Master PE unit.
- start the Set Up Procedure on the Master with all the Slaves switched on.

Important Design Note for use of twin cylinder units in Master/Slave systems:

Twin cylinder units can only be used in Master/Slave systems if :-

- the Master cylinder for the system is the same as the twin unit cylinders (same in size, Voltage and number of electrodes).
- a twin unit is the Master for the system.

System Initialisation

When a Microvap is switched on for the first time, press a key and the display will automatically guide you through the Set-Up Procedure that prepares the unit for operation. (The green LED on the facia panel shows that the board is connected to its 8V supply.)

Microvap Set-Up Procedure for Models WL, PE and LMD

Initialisation:

When the unit is switched on this message will be displayed. Press a key to start the Set-Up Procedure.

Language Selection:

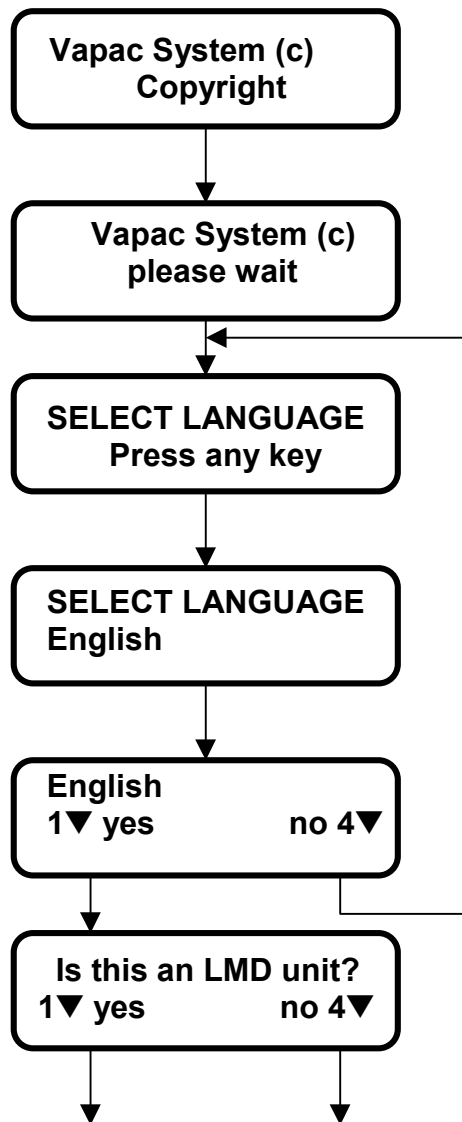
Standard European language options:

English
Spanish
German
French
Italian

Alternative European language options:

English
German
Dutch
Finnish
Scandinavian

Language Selection



For **LMD models** answer 'yes' and go to the **LMD Set-Up** instructions.

For **single cylinder WL and PE models** answer 'no' and go to the **Single Cylinder Set-Up** instructions.

For **two cylinder WL and PE models** answer 'no' and go to the **Twin Cylinder Set-Up** instructions.

For **Master and Slave combinations of PE and WL models** answer 'no' and go to the **Master/Slave Set-Up** instructions..

Microvap Set-Up Procedure for Models WL and PE

Single Cylinder Units

Give answer 'NO'.

Is this an LMD unit?
1▼ yes no 4▼

Give answer 'YES'.

Is this a single cylinder unit?
1▼ yes no 4▼

Number of Electrodes:

It is important that the correct number of electrodes in each cylinder is entered to have correct unit operation and displayed information.

Display will show 2,3,6 and 12 in sequence for the choice to be made.

SELECT ELECTRODES
Press any key

SELECT NUMBER OF
ELECTRODES 3

ELECTRODES 3
1▼ yes no 4▼

Control System Selection:

'R/H Head Fitted'

Press 2 for Vapac sensor SH2 then select control signal option 0-5V.

Press 2 for other make of sensor using the set-point facility of the Microvap PCB. Then select relevant control signal option.

Important: The power supply of this sensor **must** be completely independent of the Microvap unit !

Press 4 for proprietary humidity controllers with their own set-point facility.

Control Signal Options:

Test + POT,
0-5V D.C. 2-10V D.C.
0-10V D.C. 1-18V D.C.
0-20V D.C. 4-20mA D.C.
POT.

R/H Head Fitted
2▼ no 4▼

SELECT CONTROL
Press any key

SELECT CONTROL
0-10V

0-10V
1▼ yes no 4▼

To 'kg/h' window

Note:
'Test+POT' is for factory test purposes using a potentiometer or by selecting 'Full Output' in the Service Menu.
If 'Test+POT' is selected, the Set-Up will not be retained in the memory when the unit is switched off and, when in use, only English text will be displayed.

Microvap Set-Up Procedure for Models WL and PE

Single Cylinder Units (Continuation)

Steam Output Units:

Option to display kg/h or lbs/hr in the Status Menu.

Voltage Nomination:

Enter the operating Voltage and the unit will automatically adjust the maximum operating current to suit, based on 4 Voltage bands with default Voltages:

240V, 415V, 480V and 600V

Use keys 1 and 4 to adjust one Volt at a time up or down.

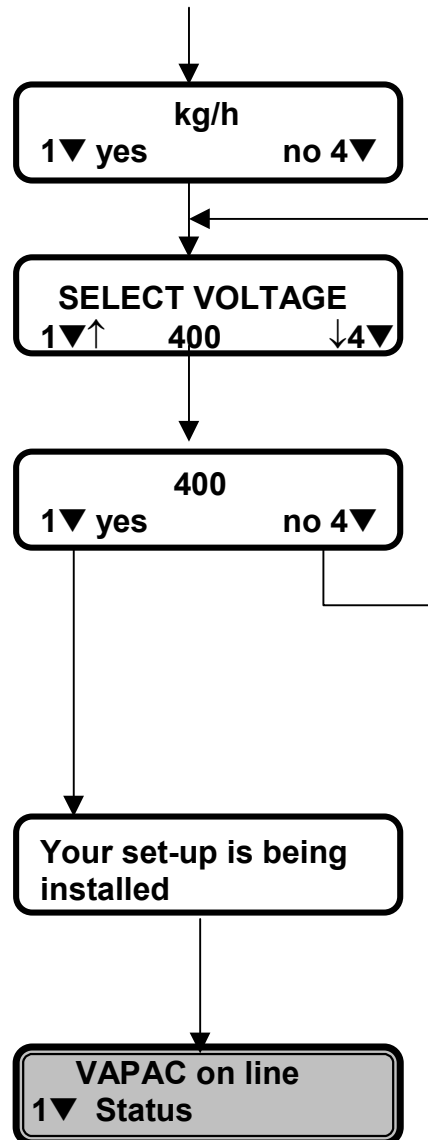
Use keys 2 and 3 to change to a different band.

Once the Voltage is confirmed the Set-Up installation will commence

While the Set-Up information is being installed in the memory, the LED on the fascia will flicker red and green.

The LED will revert to green when the Set-Up has been installed. The unit will switch on if a demand signal is present and the display will show the Default Menu - Status, Service, Adjust and Information.

If the Set-Up Procedure is started but not completed, this message will be displayed. Pressing a key will allow the Set-Up to be started again.



Alternatively it will read **Vapac on standby** if a control signal is not present.

Set-Up Message 6:
Set-Up failed. Press any key to try again.

Twin Cylinder Units

Give answer 'NO'

Is this an LMD unit?
1▼ yes no 4▼

Give answer 'NO'

Is this a single cylinder unit?
1▼ yes no 4▼

Press a key to continue.

SET-UP MESSAGE 1
Ensure any slaves are ...

Set-Up Message 1:
Ensure any slaves are switched off then press any key to continue.

Press a key to continue.

SET-UP MESSAGE 2
How many cylinders ...

Set-Up Message 2:
How many cylinders on this system? Press any key to continue.

Number of Cylinders:

Display will show 2,3,4,5,6 and 7 in sequence for the choice to be made - 2 cylinders in this case so 2 must be entered.

CYLINDERS 2
Press any key

Window to confirm the choice.

CONFIRM 2
1▼ yes no 4▼

Full Message:
Are there any twin cylinder units?

Give answer 'YES'

Are there any twin ...
1▼ yes no 4▼

Number of Electrodes:

It is important that the correct number of electrodes is entered to have correct unit operation and displayed information.

SELECT ELECTRODES
Press any key

Display will show 2,3,6 and 12 in sequence for the choice to be made - 6 electrode cylinders are used as standard in twin cylinder WL and PE units.

SELECT NUMBER OF
ELECTRODES 6

Microvap Set-Up Procedure for Models WL and PE

Twin Cylinders Units (continuation 1)

Control System Selection:

'R/H Head fitted'

Press 2 for Vapac sensor SH2 then select control signal option 0-5V.

Press 2 for other make of sensor using the set-point facility of the Microvap PCB then select relevant control signal option.

Important: The power supply of this sensor **must** be completely independent of the Microvap unit!

Press 4 for proprietary humidity controllers with their own set-point facility.

Control Signal options:

Test+POT
 0- 5V D.C. 2-10V D.C.
 0-10V D.C. 1-18V D.C.
 0-20V D.C. 4-20mA D.C.
 POT.

Steam Output Units:

Option to display kg/h or lbs/hr in the Status Menu.

Earth Leakage Protection:

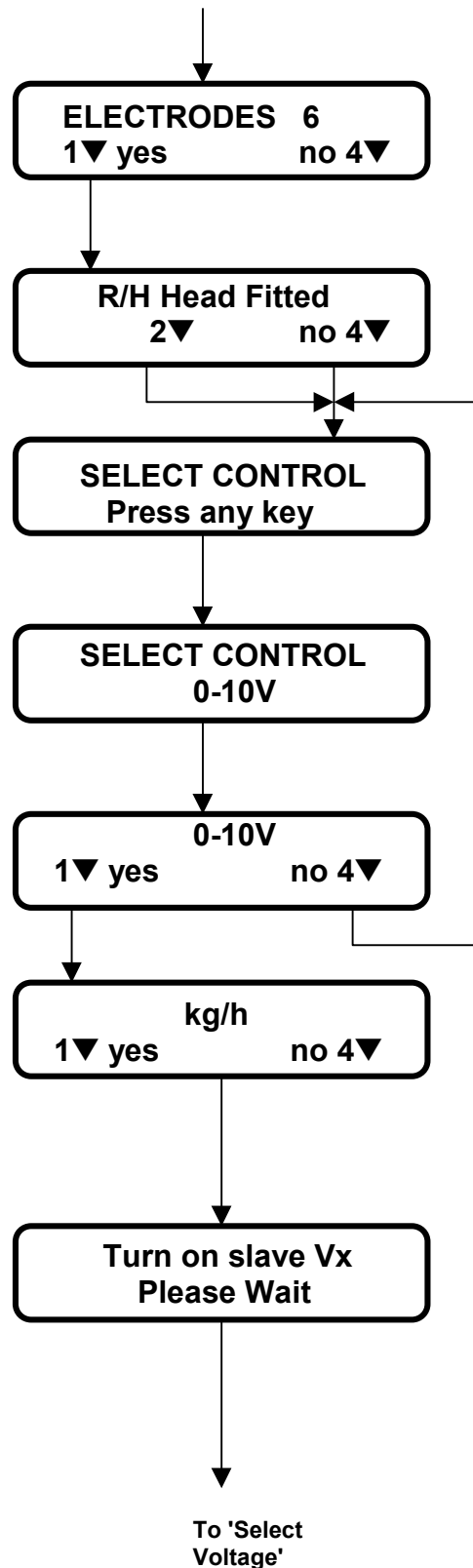
This window relates to the operation of the Microvap contactor.

With answer 'yes':

For minimal earth leakage (microAmps), the power is disconnected from the electrodes whenever the unit is draining water.

With answer 'no':

The power is disconnected for corrective drainages in response to a fault condition but the contactor remains closed for normal operational drainages.



Note:
 'Test+POT' is for factory test purposes using a potentiometer or by setting 'Full Output' in the Service Menu.

If 'Test+POT' is selected, the Set-Up will not be retained in the memory once the unit is switched off and, when in use, only English text will be displayed.

Microvap Set-Up Procedure for Models WL and PE

Twin Cylinder units (continuation 2)

Voltage Nomination:

Enter the operating Voltage and the unit will automatically adjust the maximum operating current to suit, based on 4 Voltage bands with default Voltages:

240V, 415V, 480V and 600V

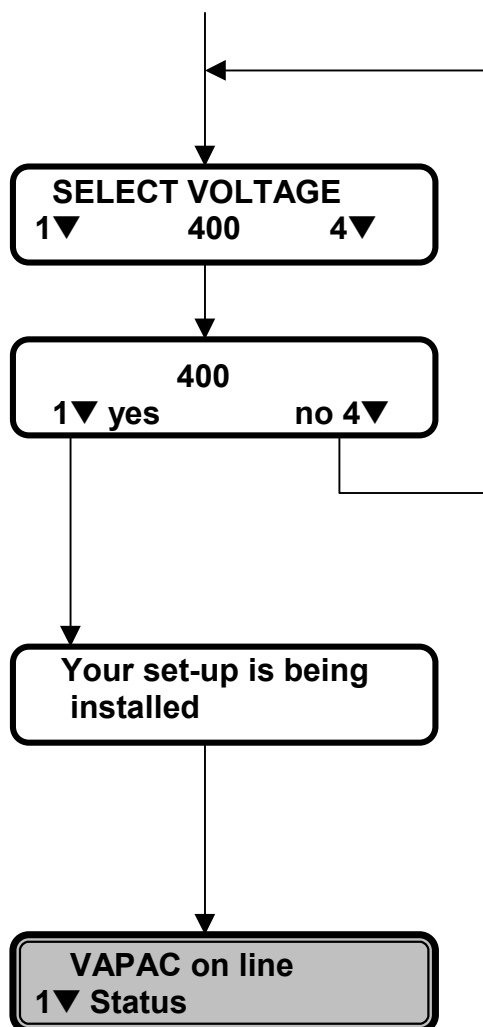
Use keys 1 and 4 to adjust one Volt at a time up or down.
Use keys 2 and 3 to change to a different Voltage band.

Once the Voltage is confirmed the Set-Up installation will commence.

While the Set-Up information is being installed in the memory, the LED on the fascia will flicker red and green.

The LED will revert to green when the Set-Up has been installed. The unit will switch on if a demand signal is present and the display will show the Default Menu - Status, Service, Adjust and Information.

If the Set-Up Procedure is started but not completed, this message will be displayed. Pressing a key will allow the Set-Up to be started again.



Alternatively it will read **Vapac on standby** if a control signal is not present.

Set-Up Message 6:
Set-Up failed. Press a key to try again.

SET-UP MESSAGE 6
Set-Up failed. Press...

Microvap Set-Up Procedure

LMD Models

Note: If the Set-Up for an LMD is to be revised after the unit has been in operation, empty both cylinders first.

Give answer 'YES'

During the check the unit will fill from empty until the water reaches the electrodes when it will test for 'communications' and the presence of SSRs for both cylinders.

This message will be scrolled across the display if the LMD interconnection is incomplete, if there is a defective component in the LMD or if the check is applied to a non-LMD unit.

Number of Electrodes:

It is important that the correct number of electrodes in each cylinder is entered to have correct unit operation and displayed information.

Display will show 2,3,6 and 12 in sequence for the choice to be made.

Control System Selection:

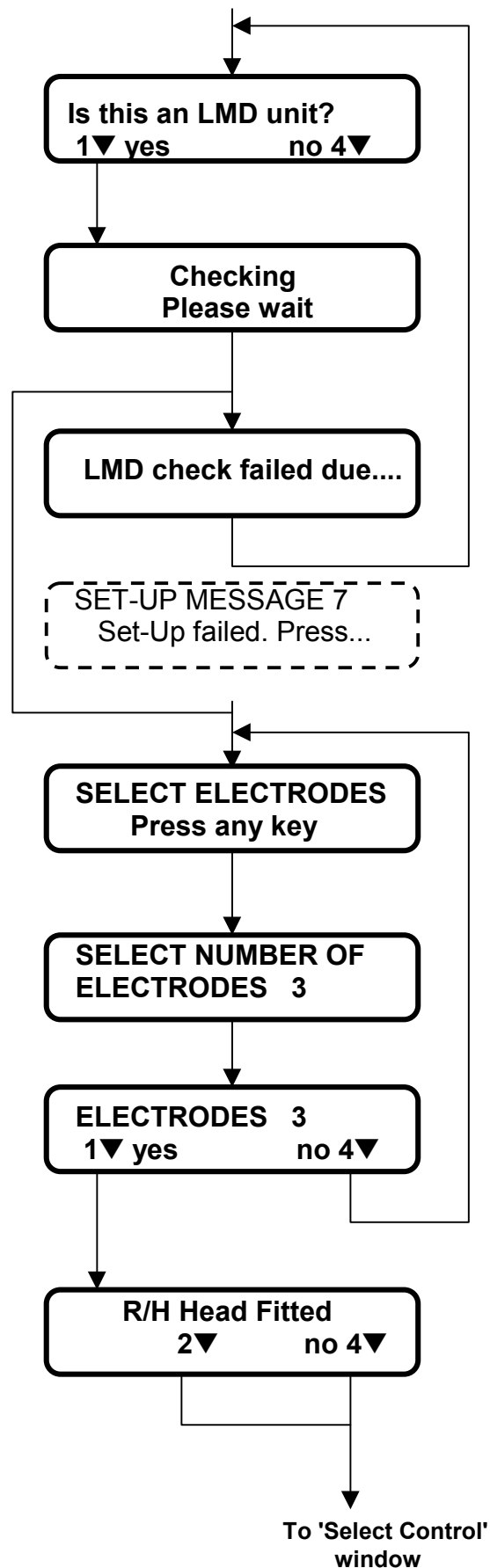
'R/H Head Fitted'

Press 2 for Vapac sensor SH2 then select control signal option 0-5V.

Press 2 for other make of sensor using the set-point facility of the Microvap PCB then select relevant control signal option.

Important: The power supply of this sensor **must** be completely independent of the Microvap unit!

Press 4 for proprietary humidity controllers with their own set-point facility.



Full Message:
LMD check failed due to communication errors or an attempt to run the LMD check with a normal unit. Press any key to continue.

Set-Up Message 7:
Set-Up failed. Press a key to try again.

Microvap Set-Up Procedure

LMD Models (continuation)

Control Signal Options:

Test + POT

0-5V D.C. 2-10V D.C.
0-10V D.C. 1-18V D.C.
0-20V D.C. 4-20mA D.C.
POT.

Note:

'Test+POT' is for factory test purposes using a potentiometer or by selecting 'Full Output' in the Service Menu.

If 'Test+POT' is selected, the Set-Up will not be retained in the memory once the unit is switched off and, when in use, only English text will be displayed.

Steam Output Units:

Option to display kg/h or lbs/hr in the Status Menu.

Voltage Nomination:

Enter the operating Voltage and the unit will automatically adjust the maximum operating current to suit, based on 4 Voltage bands with default Voltages:

240V, 415V, 480V and 600V

Use keys 1 and 4 to adjust one Volt at a time up or down.

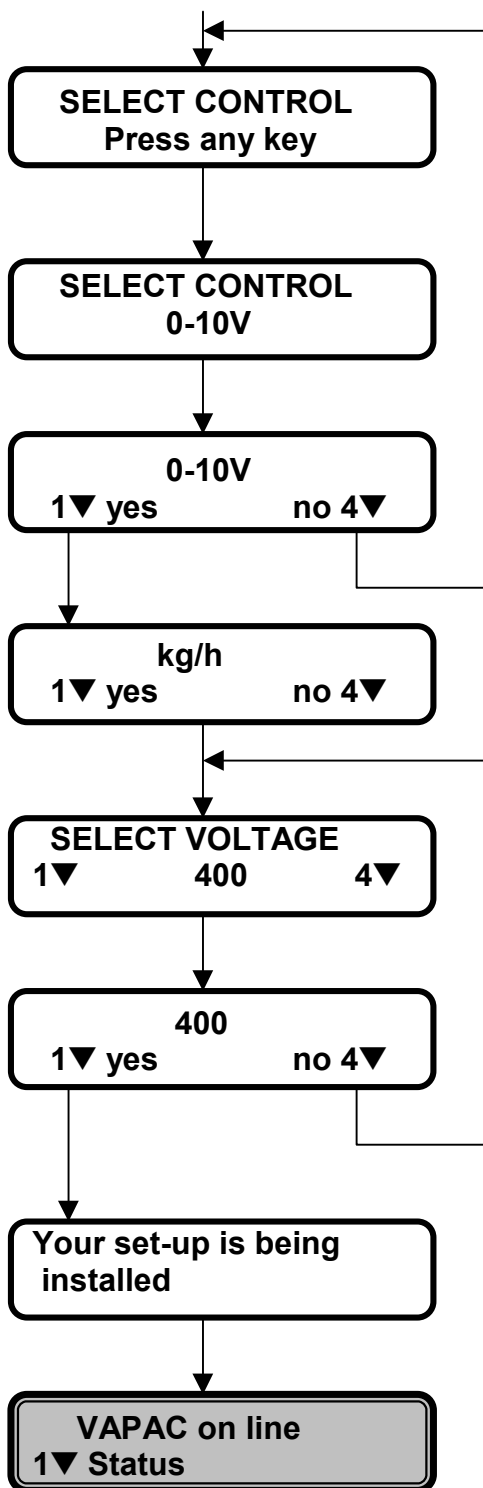
Use keys 2 and 3 to change to a different Voltage band.

Once the Voltage is confirmed the Set-Up installation will commence.

While the Set-Up information is being installed in the memory, the LED on the fascia will flicker red and green.

The LED will revert to green when the Set-Up has been installed. The unit will switch on if a demand signal is present and the display will show the default menu - Status, Service, Adjust and Information.

If the Set-Up Procedure is not completed, this message will be displayed. Pressing a key will



Alternatively it will read **Vapac on standby** if a control signal is not present.

Set-Up Message 6:
Set-Up failed. Press a key to try again.

SET-UP MESSAGE 6
Set-Up failed. Press...

Microvap Set-Up Procedure for Models PE and WL

Master/ Slave Systems

Important: The Set-Up Procedure for Master/Slave systems should commence with all Slave units switched on.

Give answer 'NO'

Give answer 'NO'

Master/Slave Connections:

This instruction must be observed for combinations of 2 or more cabinets connected as Master + Slave(s).

Press a key to continue.

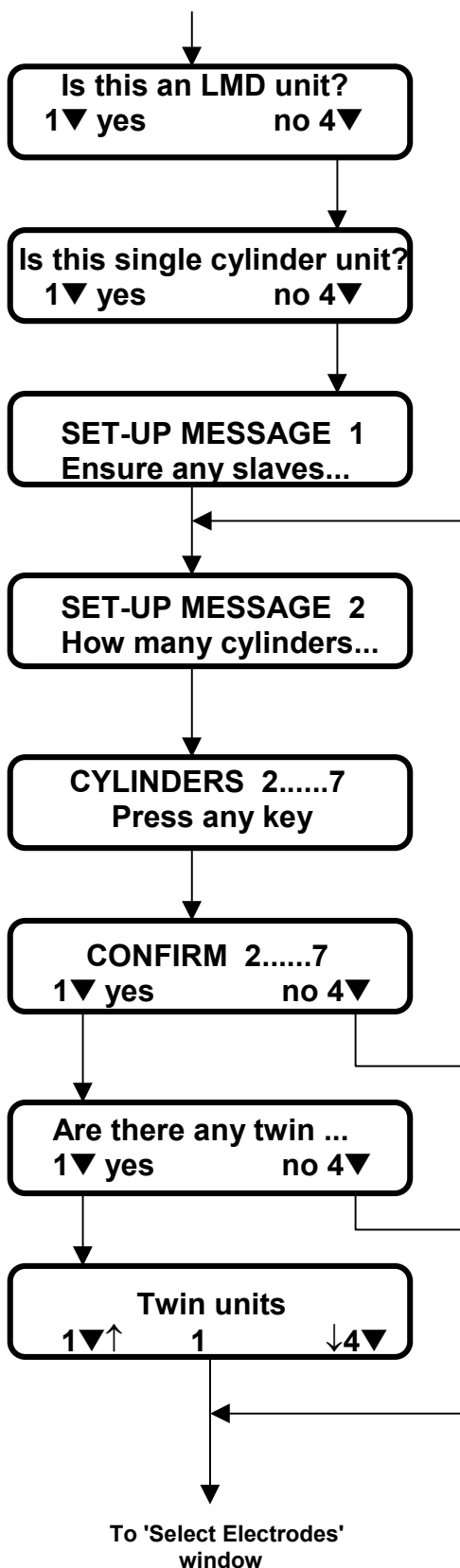
Number of cylinders:

Display will show 2,3,4,5,6 and 7 in sequence for the choice to be made so that the number of cylinders on the system can be entered.

Window to confirm the choice.

Answer 'YES' if the system includes units which have 2 cylinders.

Use keys 1 and 4 to enter the number of twin cylinder units in the system.



Set-Up Message 1:
Ensure any slaves are switched off then press any key to continue.

Set-Up Message 2:
How many cylinders on this system? Press any key to continue.

Full message:
Are there any twin cylinder units?

Microvap Set-Up Procedure for Models PE and WL

Master/Slave Systems (continuation 1)

Number of Electrodes:

It is important that the correct number of electrodes in each cylinder is entered to have the correct unit operation and displayed information.

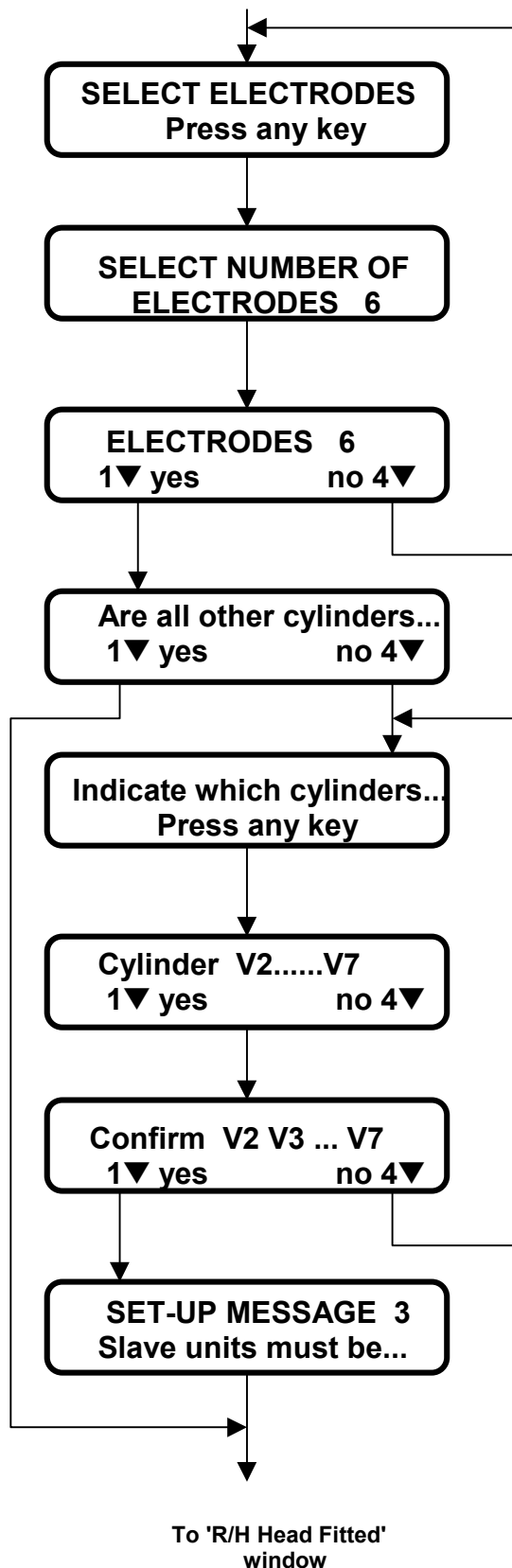
Display will show 2,3,6 and 12 in sequence for the choice to be made.

Cylinder identification:

When each cylinder identification reference appears, answer 'yes' **only** if that cylinder is the same as the Master in respect of size, number of electrodes and power supply Voltage.

Display will show each slave cylinder in turn as a V reference V2, V3, up to a maximum V7.

All cylinders which have been entered as being different from the Master cylinder will be displayed here for confirmation.



Full message:
Are all other
Cylinders the
same?

Full message:
Indicate which
cylinders are
different from
the Master.

Set-Up Message 3:
Slave units must
be set-up from
their own keypad:
Press any key to
continue.

To 'R/H Head Fitted'
window

Microvap Set-Up Procedure for Models PE and WL

Master/Slave Systems (continuation 2)

Control System Selection:

'R/H Head Fitted'

Press 2 for Vapac sensor SH2 then select control signal option 0-5V.

Press 2 for other make of sensor using the set-point facility of the Microvap PCB then select relevant control signal option.

Important: The power supply of this sensor **must** be completely independent of the Microvap unit!

Press 4 for proprietary humidity controllers with their own set-point facility.

Control Signal Options:

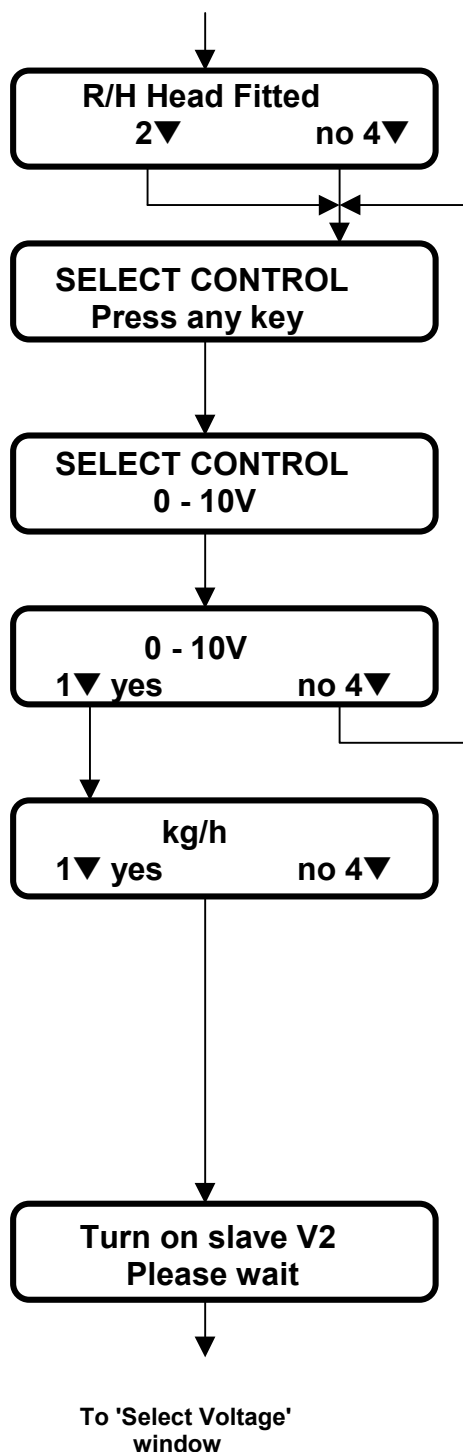
Test+POT,
 0-5V D.C. 2-10V D.C.
 0-10V D.C. 1-18V D.C.
 0-20V D.C. 4-20mA D.C.
 POT.

Steam Output Units:

Option to display kg/h or lbs/hr in the Status Menu.

Slave sequence:

When this window is displayed, switch the Slave cylinders on in the sequence in which they are to be operated by the system. The display will ask for the number of electrodes to be entered for each cylinder as it is switched on - except those entered previously as being the same as the Master cylinder.



Test+POT is for factory purposes using a potentiometer or by selecting 'Full Output' in the Service Menu.

If Test+POT is selected, it will not be retained in the memory once the unit is switched off and, when in use, only English text will be displayed.

While 'Please wait' is shown, the Master unit is communicating with the Slave that has the reference indicated. If communication is not made, the **Set-Up Failed** message will be displayed.

Microvap Set-Up Procedure for Models WL and PE

Master/Slave Systems (continuation 3)

Voltage Nomination:

Enter the operating Voltage and the unit will automatically adjust the maximum operating current to suit this Voltage, based on 4 Voltage bands with default Voltages:

240V, 415V, 480V and 600V.

Use keys 1 and 4 to adjust in 1Volt steps (up and down).
Use keys 2 and 3 to change to a different Voltage band.

Once the Voltage is confirmed the Set-Up installation will commence.

While the Set-Up information is being installed in the memory, the LED on the facia will flicker red and green.

The LED will revert to green when the Set-Up has been installed. The system will switch on if a demand signal is present and the display will scroll the default menu -

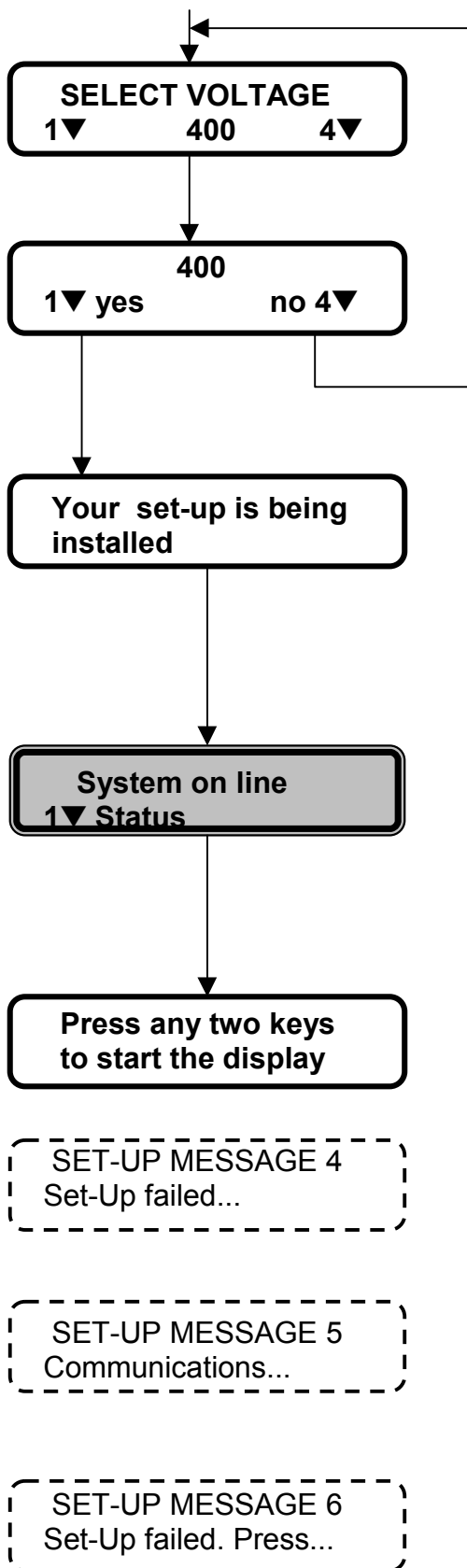
Status, Service, Adjust and Information.

This window will only be displayed on the Slave unit(s).

If the Set-Up cannot be completed because of a faulty or missing connection, this message will be displayed.

If further Set-Up attempts are made without resolving the problem, this message will be displayed.

If the Set-Up Procedure is started but not completed, this message will be displayed. Pressing a key will allow the Set-Up to be started again.



Set-Up Message 4:
Set-Up failed due to communication error. Press any key to try again.

Set-Up Message 5:
Communications problem between Master and Slaves set-up functioning units and seek assistance. Press any key to continue.

Set-Up Message 6:
Set-Up failed. Press a key to try again.

Microvap Alpha-Numeric Display: Models WL, PE and LMD

Default Menu

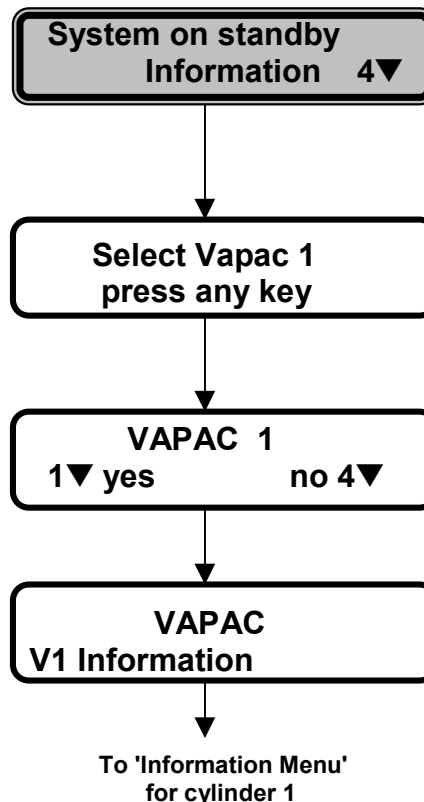
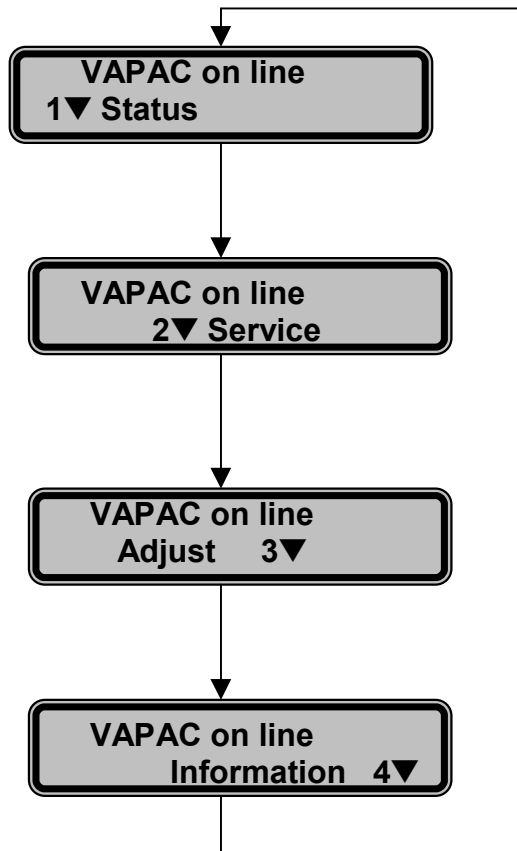
Pressing the appropriate key will select the required Menu. Once a Menu has been selected and is being displayed, just press any two keys to exit and the display will revert to the Default Menu.

The one exception to this is the Engineer's Menu which, once selected, has to be viewed in full.

When there is no demand signal present, the default message will scroll indicating Vapac or System on standby as in this example.

When the connection involves two or more cylinders and one of the Default Menu keys is pressed, the identity number of each cylinder present will be shown in sequence - press a key when the identity reference of the required cylinder is displayed. Once the selection has been made, the chosen Menu will follow for that cylinder.

In the case of Twin Cylinder units, the LMD models and Master/Slave systems the Default Menu will show **'System on line'**



Microvap Alpha-Numeric Display: Models WL, PE and LMD Status Menu

1

Press key 1

Status Menu:

Basic **data** is displayed when unit is on-line or on standby.

Space condition windows only appear if a Vapac humidity / temperature sensor is in use either as a humidity controller or as a temperature controller.

'Hours run': This indicates the time the unit has been operating on demand since the last occasion when the 'hours run' clock was reset.

Status Menu:

Operational **'Status'** and **'data'** is displayed when unit is on-line and a control signal is present.

To be able to watch changes in the data displayed e.g. electrode current, when the relevant message appears, press a key and the information will be held on view for an extended time (provided the control signal is present).

Top line of the display:

Shows Status of the water management system.

Bottom line of the display:

Shows operational system data.

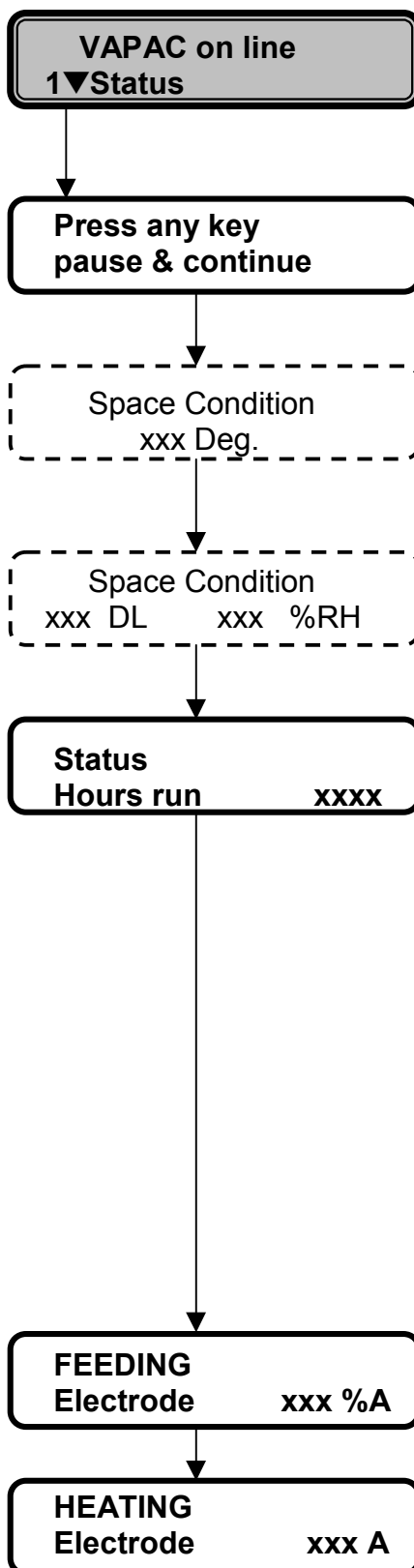
Note: Top and Bottom lines display independently.

FEEDING: Cold water entering cylinder.

'Electrode % A': Percentage of electrode current.

HEATING: Water being heated.

'Electrode A': Individual electrode current with maximum



Microvap Alpha-Numeric Display: Models WL, PE and LMD

Status Menu (continued)

BOILING: Steam generation

'Supply A': Full line Amps.

DRAINING: Normal dilution drainage.

'Steam kg/h': Instantaneous steam output based on current level.

CORRECTIVE DRAIN: Water being drained from the cylinder to adjust the mineral concentration.

'Demand' : The demand level of the unit.

Note: This will not be the same as the signal demand level.

'sft/count':

'sft' value is a calculated time (in minutes) that the water is allowed to be in contact with the water level electrode.

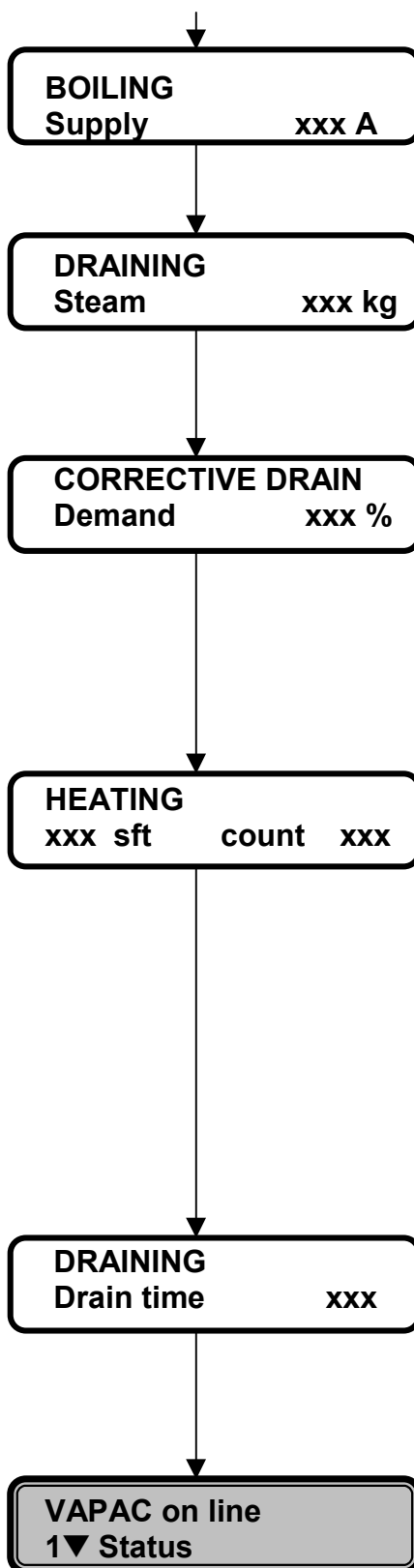
'count' value is the actual time lapse in minutes of contact, by the water, with the water level electrode.

When the 'slow foaming' routine is functioning, if the 'count' exceeds the calculated 'sft' value, a corrective drain will occur.

'Drain time' is the prevailing drain time in seconds.

The initial drain time is decided by the details entered in the Set-Up procedure; thereafter the drain time will be periodically adjusted.

On completion of the **Status Menu** the display will revert to the Default Menu.



Microvap Alpha-Numeric Display: Models WL, PE and LMD

Service Menu

Press key 2

This window offers choice between a menu of **service options** and the **Engineer's Menu** for which there is restricted access to avoid unauthorised changes of important parameters.

Service Options

Reset Hours run:

Service engineer may wish to reset the logged hours of operation when a new cylinder is fitted.

Periodic Drain:

This facility allows a cylinder to be drained completely at set intervals.

Note: If Periodic Flush is selected in the Engineer's, this window will show Periodic Flush instead of Periodic Drain.

Period:

Keys 2 and 3 will move the period up and down 1 hour at a time.

Keys 1 and 4 will move the period up and down 50 hours at a time.

Default is zero, maximum is 999h.

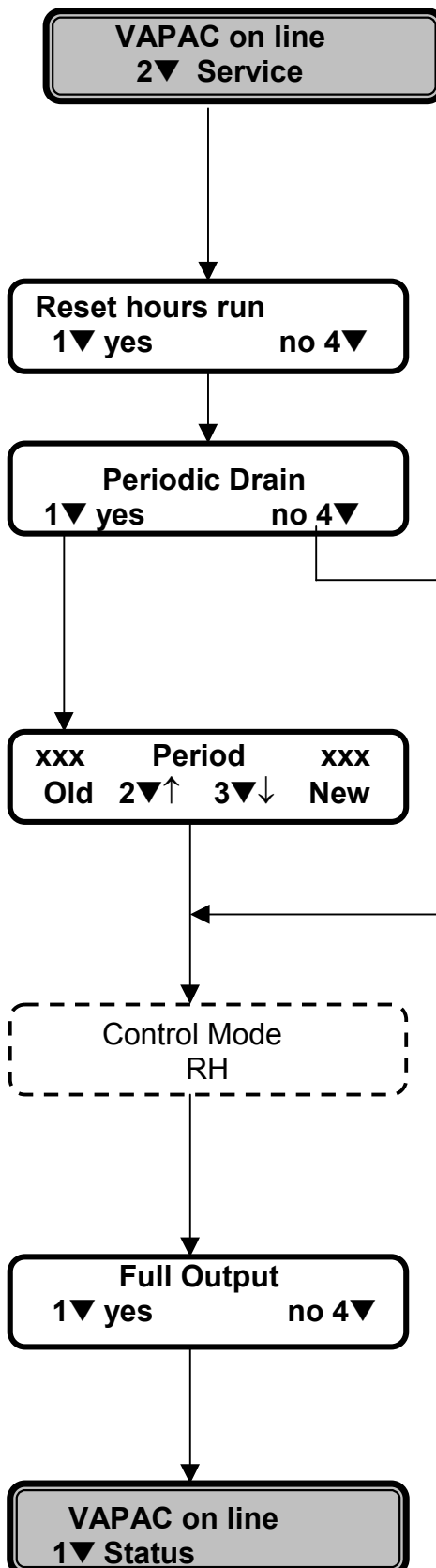
Control Mode:

This window will only appear if the Vapac humidity/temperature sensor is installed. Options are Humidity (RH) or Temperature (Temp).

Default: RH

Full output is a facility for the service engineer. This will cancel after 1 hour to prevent unit being left on at full output and unit will revert to system control.

On completion of the **Service Menu** the display will revert to the Default Menu.



Microvap Alpha-Numeric Display: Models WL, PE and LMD

Adjust Menu

3

Press key 3

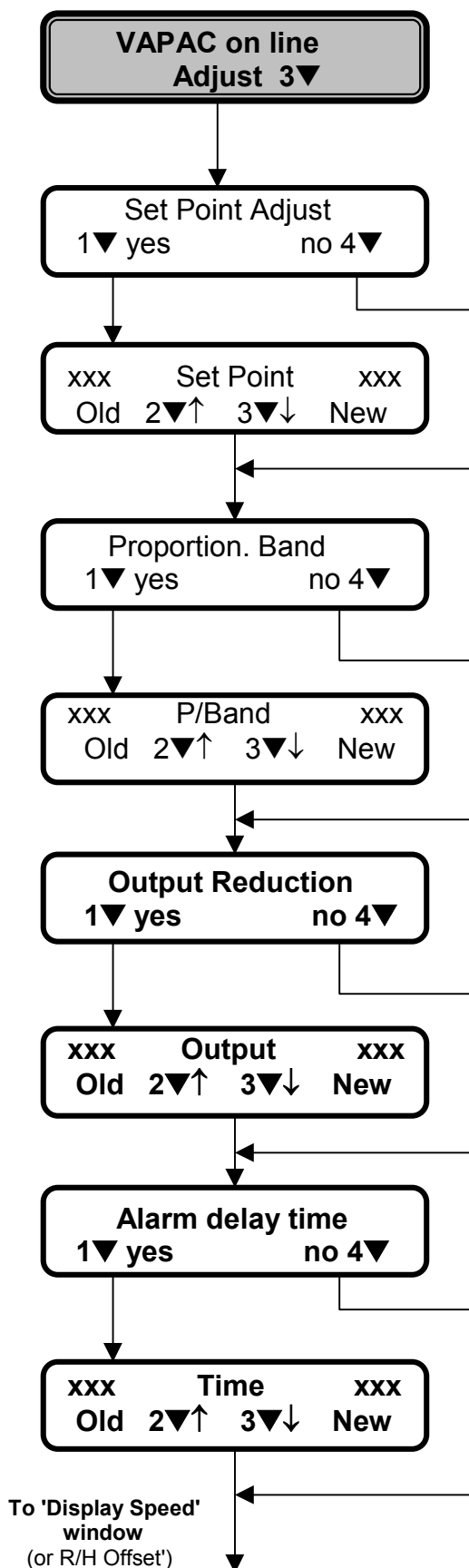
Windows shown with broken outline only appear if the **Vapac** humidity / temperature sensor is installed.

'Set Point Adjust' is used to set the set point for space condition.
Default value for RH: 50%
Limits of adjustment for RH: 5% to 100%
(Equivalent °C settings if used for temperature)

'Proportional Band'
Default value : 50
Limits of adjustment : 5 to 100

'Output Reduction' allows the maximum output to be reduced down to 50% of the output value displayed in the Information Menu for the 'Set-Up'.

'Alarm delay time' allows adjustment of the time delay before a low output warning signal is displayed.
Default time delay: 240 minutes
Range available: 0 - 240 minutes



Microvap Alpha-Numeric Display: Models WL, PE and LMD

Adjust Menu (continuation 1)

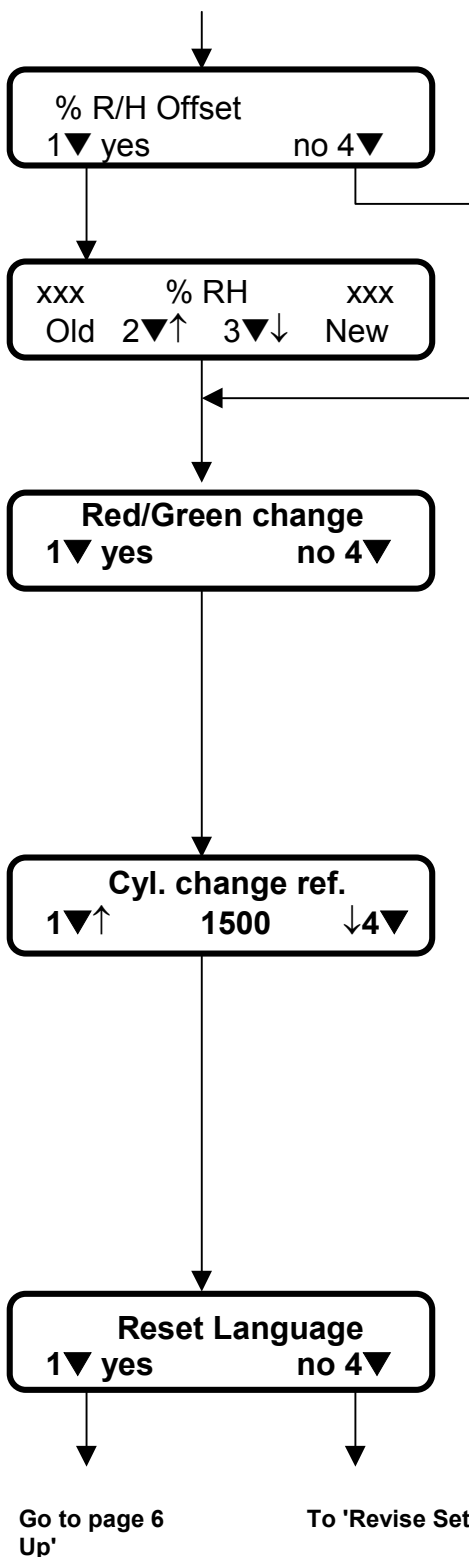
'%R/H Offset' allows adjustment of the calibration by a small amount (e.g. to compensate for a calibration discrepancy between the Vapac display and the reference measuring device in use on site). Maximum adjustment plus/minus 10%.

'Red / green change' When cylinder is of or on stand-by the led can be set to red which means the fault relay will be made or green no fault indicated

'Cylinder change reference' is a time in hours of unit operation that will elapse before a warning message is displayed suggesting that the cylinder needs changing. The reference entered should reflect the average cylinder life experienced on site for the unit involved.

To move quickly to the next window press either key 2 or 3.

'Reset Language' option allows the language used in the display to be changed after the Set-Up has been completed. When used, the language options will be scrolled as in the Set-Up Procedure on page 6.



Microvap Alpha-Numeric Display: Models WL, PE and LMD

Adjust Menu (continuation 2)

'Revise Set-Up' allows the Set-Up Procedure to be carried out again as would be necessary if the system was being revised.

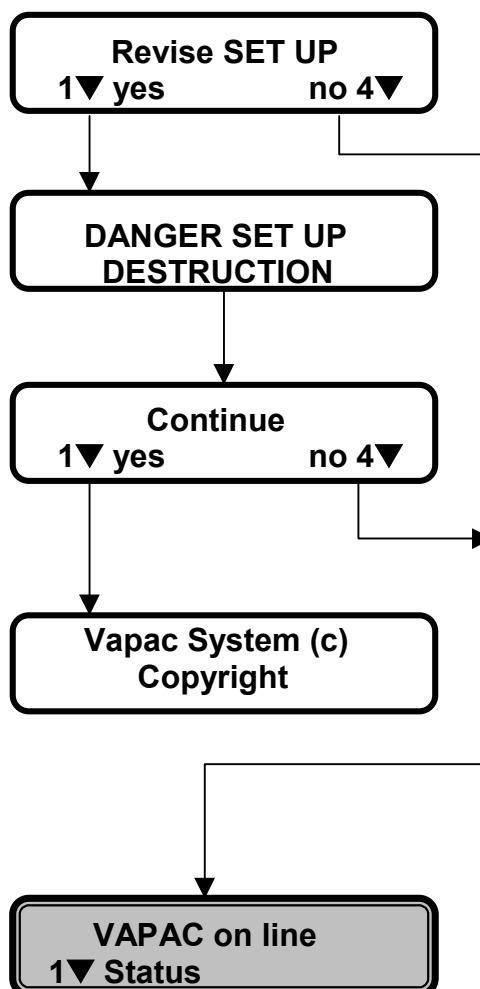
'DANGER SET-UP DESTRUCTION' is to warn the engineer that the existing Set-Up will be cancelled if he answers 'yes' to the next window.

Warning:

Once the Set-Up is destroyed, the system will not work until the system has been Set-Up again.

Press a key to start the Set-Up Procedure.

On completion of the **Adjust Menu** the display will revert to the Default Menu.



Microvap Alpha-Numeric Display: Models WL, PE and LMD

Information Menu

4

Press key 4

Windows shown with broken line only appear if appropriate to the Set-Up.

Selection of **DATA** will direct the display to show any data that has been logged.

Selection of **SET-UP** will give a full check of how the unit has been configured for operation and will then show any logged data.

Top left - the no. of electrodes entered in the Set-Up.

Top centre - the supply frequency registered in operation.

Note: Default frequency is 60Hz. This will show until the unit has operated.

Top right - the Voltage nominated.

Bottom left - the control system nominated.

Bottom right - the calculated maximum output for the cylinder based on the Set-Up information.

Version of software programme loaded and number of cylinders on the system.

Display shows '**System WL**' or 'System Vapac 6' for **WL** units.

Display shows '**System PE**' or 'System Varivap 6' for **PE** and **LMD** units.

Note: For PE units 'System WL' (or 'System Vapac 6') will be displayed until the unit has operated.

VAPAC on line
Information 4▼

DATA or SET-UP
1▼ INFO 4▼

E 6 50Hz 400V
0-10V 30 kg/h

Version 2.1
Cylinders 1

System Vapac 6
System WL

System Vapac 6
System PE

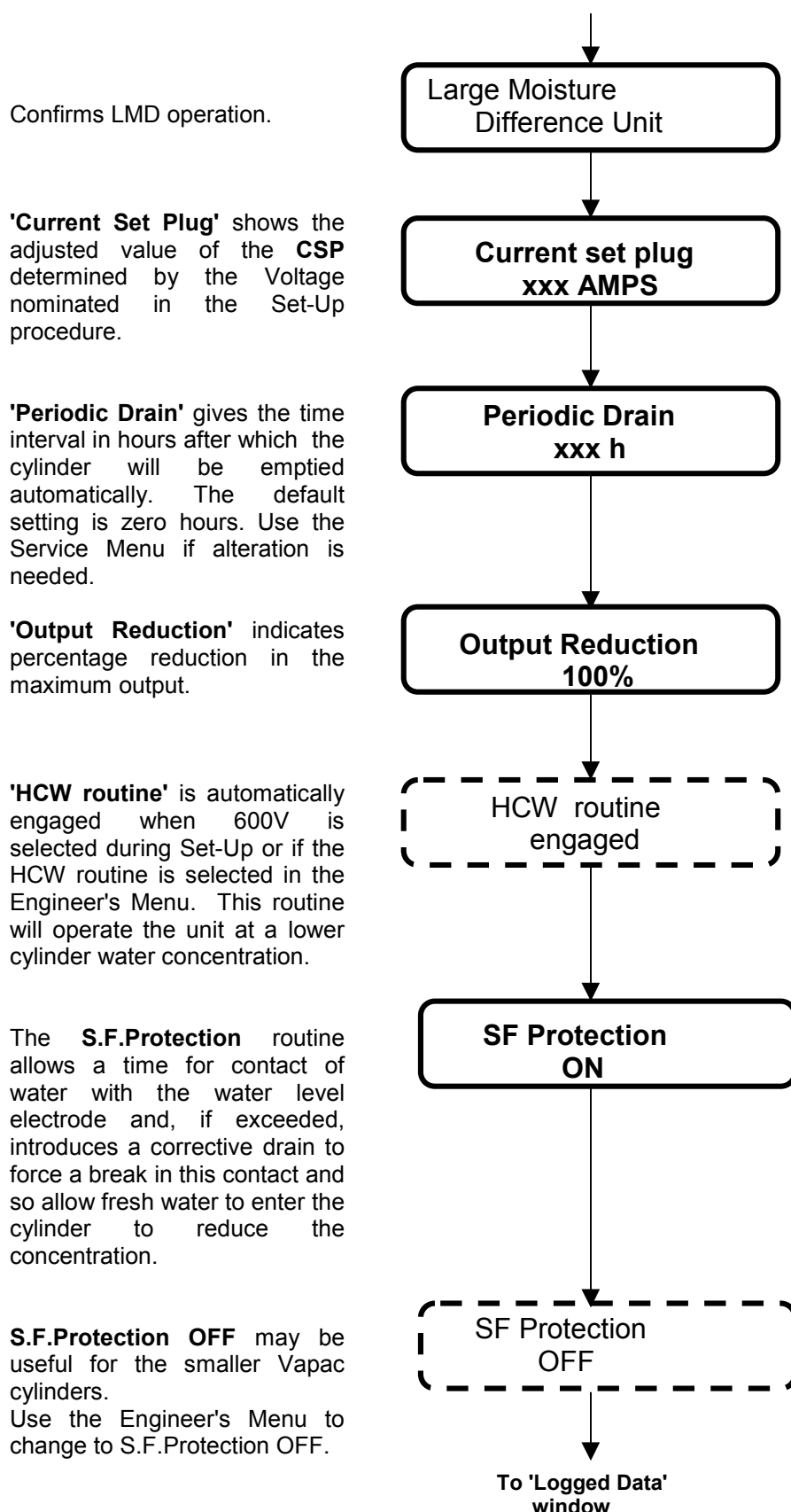
Sensor Head
Fitted

To 'Logged Data'
window

To 'Current Set Plug'
window
(or 'Large Moisture Difference Unit')

Microvap Alpha-Numeric Display: Models WL, PE and LMD

Information Menu (continuation 1)

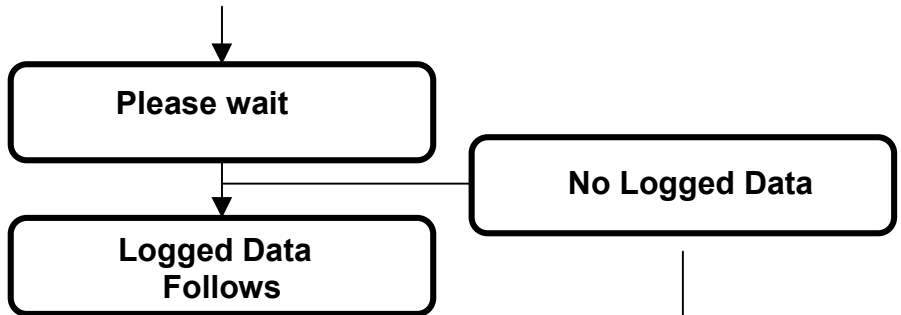


Microvap Alpha-Numeric Display: Models WL, PE and LMD

Information Menu (continuation 2)

Logged Data will list the record of STOP faults.

If no fault information has been recorded, the display will show '**No Logged Data**' and then revert to the Default Menu.



Drain Fault STOP will occur following drain system failure.



Feed Fault STOP will occur if the water has not been turned on, if there is a leak in the system, if there is insufficient water flow or if power is not reaching the electrodes.



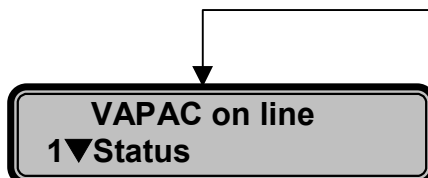
High Overcurrent STOP will occur if the corrective drain for high overcurrent fails to reduce the current.



Menu will be displayed again if the answer 'YES' is given.



On completion of the **Information Menu** the display will revert to the Default Menu.



Microvap Alpha-Numeric Display: Models WL, PE and LMD

Engineer's Menu

Press key 2

Because the Engineer's Menu includes important parameters controlling how the Microvap unit operates, it has a special entry procedure.

To access the Engineer's Menu proceed as follows:

Select the Service Menu and then select Engineer.

The word Engineer will appear on the display and after a few seconds will disappear leaving a blank screen.

Immediately the word Engineer reappears press any 2 keys at the same moment and hold for about 10 seconds before releasing.

If the above instruction is not done correctly this window will appear and after this the display will scroll the Default Menu options of Status, Service, Adjust and Information.

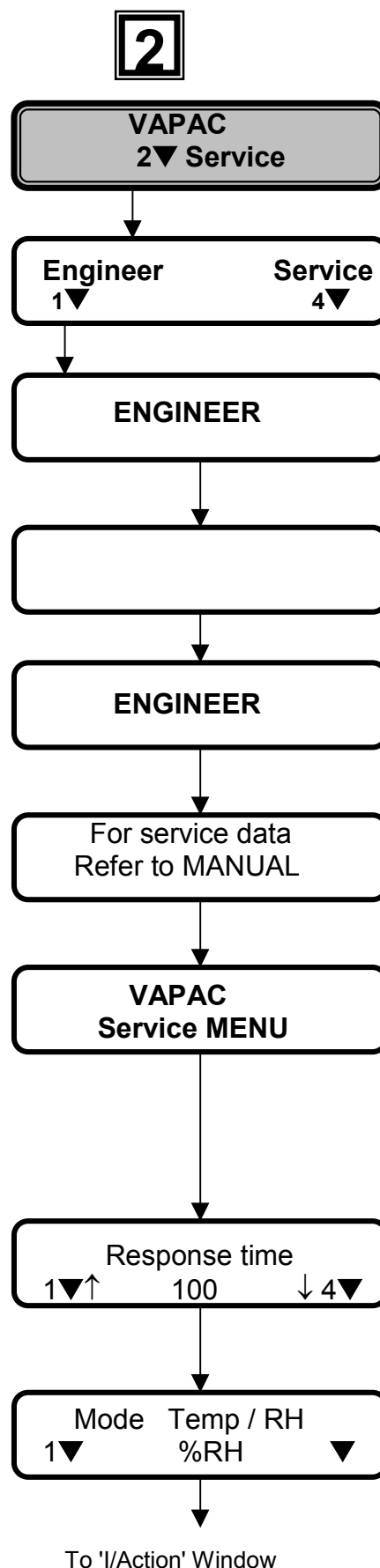
If it is done correctly the **Engineer's Service Menu** will run starting with this window.

If a **Vapac humidity / temperature sensor** is installed, the usual parameters will be displayed to allow settings to be made that are relevant to the installation's particular requirements.

'Response Time' (RT default value 100) is used for setting the integral action period. Actual time 200 secs.
(Resolution 2 secs.)

'Mode Temp/RH' (default RH) is used for setting the control mode to give a proportional response with either humidity or temperature.

The Vapac sensor can only be used to operate in one of these modes and only one Vapac sensor can be used with a unit or a Master/slave arrangement.



Microvap Alpha-Numeric Display: Models WL, PE and LMD

Engineer's Menu (continuation 1)

'I/Action' (default Value 200) is used for setting the magnitude of the integral action.
(Limits of adjustment 10 to 200)

'Go To Set Point' will allow completion of the sensor set-up by taking you directly to the Adjust Menu where the Set Point and Proportional Band settings are made.

For a No answer the display will continue with the rest of the Engineer's Service Menu.

This window allows the engineer to view 4 aspects of the unit operation:

'Electrode current' in Amps.

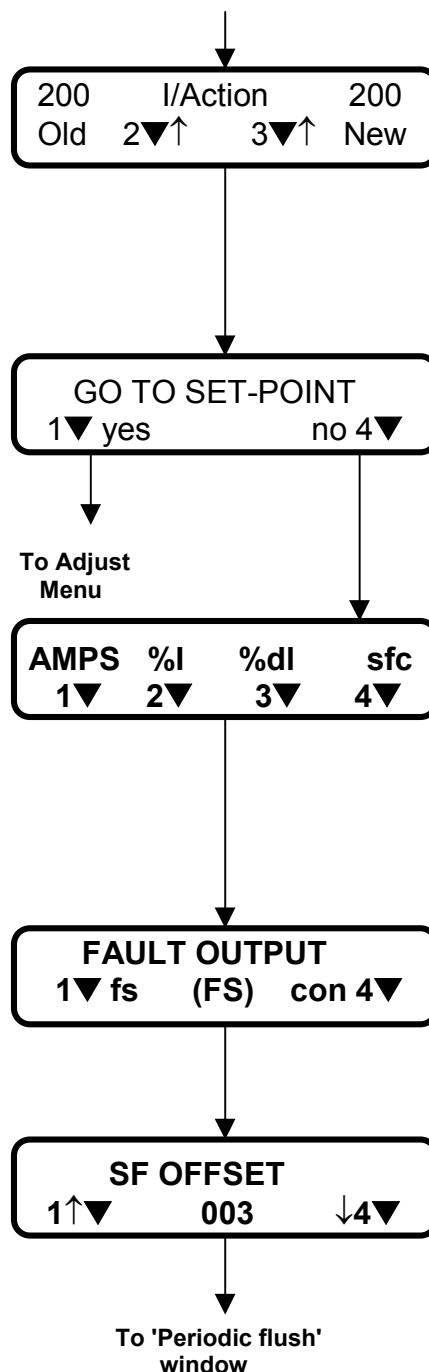
'Electrode current' as a % of maximum.

'Demand level' as a % of maximum.

'Sfc' is the 'slow foaming count' for the contact of water with the water level electrode.

'Fault Output' relates to the type of remote warning signal which is to give an immediate indication that the unit operation has been stopped by an Automatic STOP condition. This can be either a flashing signal (FS) or continuous signal (CON).

'SF Offset' (default 003) allows an adjustment to a time factor used to calculate the sft (slow foaming time). This is the time in minutes that the water can be in contact with the water level electrode before triggering a corrective drain response. (Count in the Status Menu indicates how many minutes have elapsed from initial contact.)



Microvap Alpha-Numeric Display: Models WL, PE and LMD

Engineer's Menu (continuation 2)

'Periodic Flush' (default OFF) converts the Periodic Drain to a Periodic Flush to provide a periodic rinsing of the cylinder. On completion, the unit continues with normal operation. If ON is selected, go to the Service Menu to nominate the time in hours this is to occur.

Note: *The Periodic Flush will not function unless a time is entered in the Service Menu.*

'HCW. routine' (default OFF for Voltages below 600V) is available for use with high conductivity waters at other Voltages.

'SF Protection' (default ON) allows the Slow Foaming response to be switched Off which may be useful with small cylinders.

'Low Output Timer' (default 30) sets a time in hours after which a warning message will be displayed if the full output current has not been reached.

'Standby Drain' will arrange for the unit to drain the cylinder if there has been no demand signal for the number of hours shown here.

Default value: 120 hours Range available: 0 - 240 hours

Keys 1 and 4 change display 1h at a time.

Keys 2 and 3 change display 10h at a time.

The next two windows only appear if an LMD unit has been entered in the Set-Up Procedure (these windows are not present in earlier programmes).

'P +' (default value 12%) This window allows the power input to be boosted in percentage terms to compensate for the effect of the cold water when the unit is refilling.

(Recommended max. setting 15%)

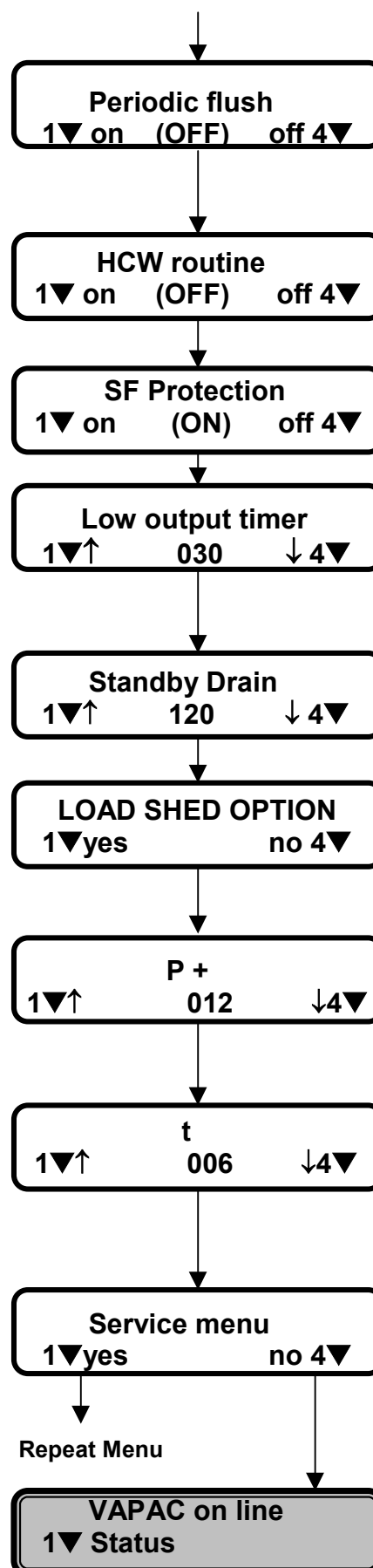
't' window (default value 6 secs.) This window sets the length of time during which the extra "P+" power is applied after the feed valve has closed.

(Limits of adjustment 0 - 50 secs.)

'Service menu' allows for the full Engineer's Service Menu to be displayed again.

If the answer 'no' is given, the display will revert to the Default Menu.

On completion of the **Engineer's Menu** the display will revert to the Default Menu.



Microvap Alpha-Numeric Display: Models WL, PE and LMD

Help Messages

'Feed Fault STOP' will occur if the water has not been turned on, if there is a leak in the system, if there is insufficient water flow or if power is not reaching the electrodes.

Example: Insufficient water flow could result if the supply to the Microvap is 'starved' of water because of high water demand water by other services/equipment.

Feed Fault STOP

Help Message
Check that the water.....

Full Help Message:

Check that the water supply is turned on: check feed hose connections inside the VAPAC unit: check that electrical power reaches the cylinder electrodes: Refer to MANUAL for service procedure.

'Drain Fault STOP' will occur following a drain system failure

Example: A drain system failure could result from non-operation of the pump or because the drain line is restricted by calcium deposit .

Drain Fault STOP

Help Message
Drain the cylinder and...

Full Help Message:

Drain cylinder and disconnect power: if the pump will not remove water from the cylinder refer to MANUAL for cylinder emptying instructions: remove and clean the pump: reassemble pump with spinner and test.

'High Overcurrent STOP' will occur if the corrective drain for high overcurrent fails to reduce the current.

High Overcurrent STOP

Help Message
Drain the cylinder and...

Full Help Message:

Drain cylinder and disconnect power: remove cylinder and inspect: shake out loose deposit and rinse: change cylinder if deposit is heavy: remove and clean pump: refer to MANUAL for service procedure.

'Cylinder Advice' will show if the output is still below 60% after the 'low output time' has elapsed.

The **'low output time'** is set in the Engineer's Menu and has default value 30 hours counted from the moment when the unit decides the output is lower than it should be.

Cylinder Advice
LOW STEAM OUTPUT

Help Message
Check cylinder type: feed...

Full Help Message:

Check cylinder type: feed water conductivity may be too low for the type of cylinder fitted: refer to MANUAL for service procedure.

Note: All **"Fault Stops"** can be reset (*once the fault has been identified & rectified*) by pressing **two keys simultaneously**, then **"Switching the unit Off & On"** – using the front panel switch. However **Twin cylinder units and multi-cylinder systems** it is also necessary to **switch all slave units Off & On** (via the **"Main Power Isolator"**) before they will resume normal operation.

Microvap Alpha-Numeric Display: Models WL, PE and LMD

Help Messages (continuation)

'Service Advice

Low Steam Output'

will be displayed after the time set for the Cylinder Change Ref. has elapsed. The count will start again when the 'hours run timer' is reset.

**Service Advice
LOW STEAM OUTPUT**

**Help Message
Drain cylinder and...**

Full Help Message:

Drain cylinder and disconnect power: remove cylinder and inspect: shake out loose deposit and rinse: change cylinder if deposit is heavy: remove and clean pump: refer to MANUAL for service procedure.

'Service Advice

Control Set-Up'

will be displayed if the Microvap controller calculates that the wrong signal connection has been made based upon its interpretation of the previous period of unit operation.

Note: It is possible that this could be an incorrect interpretation of the particular sequence of events so the message should be viewed as a suggestion only.

**Service Advice
CONTROL SETUP**

**Help Message
The Control Set-Up...**

Full Message:

The Control Set-Up may be wrong: check Set-Up Information.

Unit checking for CSP connection

Reading CSP

CSP (Current set Plug)

This message will be displayed if the CSP has a faulty resistor or if the CSP has been removed and not replaced.

**ATTENTION
CSP has not been fitted**

**press any 2 keys
to EXIT**

A general advice on how to close one Menu in order to choose another.

