

V16 Controller Instruction Manual



Checking that the Vickers controller is working, and identifying the information displayed!

FRI 05/11/04
13:24

The normal display shows the day, time and date, with the colon between the hours and minutes pulsing. If the mains supply is interrupted the display will be blank and the controller will, of course, be inoperable. However, when the power is restored the controller will recover to the correct date and time and all programs will have been saved.

To check the status of a Zone, press the Zone button.
The display will show:

QUERY ZONE
CHOOSE ZONE 1

The shaded rectangle represents the cursor, which is pulsing next to the number 1. Choose the number of the zone to be inspected and press **enter**. To select a zone number, enter a number on the keypad or by using the up or down cursor.



After pressing **enter** the display will show the Zone selected and its name.

Using the arrow keys scrolls through zone information easily and quickly, for instance the up and down keys scroll through zone information, whilst the left and right arrow keys scroll across zones on that line, i.e all temps.

ZONE 1 NAME
HTR (1.2)

Press **enter** again.

The display will show something like:

ZONE 1 S/P
T1 18° A 18.1°

T1 represents the Target temperature for time period 1.
A represents the Actual temperature.
Ignore **S/P 1** which is an engineering code.

If the heating is NOT programmed to be on in that area at the time a zone is being inspected, the display will show **T5** instead of **T1** :

ZONE 1 S/P 1
T5 04° A 15.4°

T5 represents the night set-back (frost protection) temperature. This will normally be in the range **04°C** to **05°C**.

T1, T2, T3, and **T4** are used in situations where there is a different temperature requirement for separate time periods during the course of a day.

T5, T6, T7, and **T8** are fall back (frost) temperatures in between the above TARGET TEMPS.

ZONE 1 O/P 1
HEATER OFF

Press **enter** again and the heater status will be displayed.

In either of the two examples above the heater would be OFF because the actual temperature A is higher than the target temperature (T1 or T5).

At any stage of the Zone query the **enter** key will advance one step forward and the **esc** key one step back except when entering an over-ride code in which case it will exit.

NB! Where S/P, I/P, or O/P appears on the screen they can be ignored. These are for Vickers engineer's information only.

To check temperatures press the **esc** key once to step back and select the next zone or press the **esc** key twice to return to the date and time display. If the unit is left with the Zone query still displayed, it will automatically revert to the normal date and time display after four or five minutes.

If you wish to check the control operation further..

Pressing **enter** advances the display for the selected zone.

ZONE 1 O/P 1
HEATER ON

This display shows the status of the Relay controlling the heater.

ZONE 1 O/P 1
HEATER ON 114

When Synchronous Burner is in operation the actual countdown In seconds will appear.

In normal circumstances the heater will be ON. To check further, press the **enter** key again. The display will now show the status of the power supply to the heater.

ZONE 1 I/P 1
POWER ON

If the display shows the word CLOCK instead of POWER, (this occurs in TRIAL mode only) it simply means that the old clock is still in circuit.

Press the **enter** key again.

ZONE 1 I/P 1
BURNER ON

This display shows the status of the heater burner, is it ON or OFF?

Fault Example:

An example of a simple problem is outlined below.

ZONE 1 O/P 1 HEATER ON

The V16 is asking the heater to turn ON.

ZONE 1 I/P 1 POWER OFF

There is no power to the heater.

ZONE 1 I/P 1 BURNER OFF

Therefore the burner cannot turn ON.

In this example the V16 is trying to turn the heater on, but the mains supply to the heater is interrupted - perhaps the mains switch is OFF or a fuse has blown.

Using the Over-ride

The Vickers V16 is equipped with a flexible range of over-rides, which can be set up to suit the particular requirements of customers.

In general over-ride is intended to allow limited access to the unit for people who, on occasion, may need heating outside normal working hours. When over-ride is activated the display will change periodically to indicate that it is working and show the unexpired time left for the over-ride.

O/R LEFT 03:27
ON 15:02 Z3

Over-ride (O/R) is ON in Zone 3 (Z3) and has 3 hours 27 minutes left to run. The current time is 15:02.

NB! The Zone Query will show just OR instead of T1 to T5.

ZONE 1 S/P 1
OR 18° A 18.1°

There are three main types of over-ride available:

SIMPLE OVER-RIDE

As the name suggests, the use of "Simple Over-ride" is easy to understand and to use. The controller is pre-set to give a fixed time period and temperature when "Simple Over-ride" is activated.

To activate Simple Over-Ride in Zone Three (for example) press the number **3** on the keypad. The Simple Over-Ride will then override on Zone 3 during an off period or would override off Zone 3 during an on period. The Simple Over-Ride will last for the pre-set period and at the end of that time will revert to normal operation. The over-ride can be cancelled by pressing the number **3** again.(this setting is enabled/disabled in the site menu)

STANDARD OVER-RIDE

This is more comprehensive and allows for variable temperature and time settings. It is protected with an Override code that can be added in the Manager menu with the code being held by a responsible person.

Press the **over ride** key.



The display will show:

OVERRIDE
CHOOSE ZONE 1

Enter the number of the required Zone, for example **5** for Zone 5.

The display will show:

OVERRIDE
ZONE 5 ON/OFF

Select ON or OFF by using the cursor, either the left/right or up/down cursor may be used and press **enter**.

The display will show:

MAX ON	24:00
O/R REQD	00:00

Enter the required over-ride time which must not exceed the Maximum On that has been pre-set in the site menu and is shown on the display and press **enter**.

The display will show:

MAX TEMP	20.0°
TEMP REQD	19.0°

Enter the desired temperature at which the over-ride is to be set at.

Note: This temperature cannot exceed the max temp which has been pre-set in the site menu.

The over-ride control can be used to over-ride **OFF** or over-ride **ON**. An over-ride can be cancelled using the same procedure but entering zero as the time required.

OVER-RIDE CODE

Where there is a possibility of misuse of the over-ride it can be protected by an access code. If this has been enabled an extra step will be added to the above procedure. When **Over-ride**, **Zone**, **Enter** and **On** have been selected the following display will show:

OVERVERRIDE CODE

The code must be entered before the controller will accept an over-ride On.

If the correct code is entered, the display will prompt for the override time & temperature as detailed at the top of this page.

REMOTE SIMPLE OVER-RIDE

This third type of override gives the same operation as Simple-Override, but with the added benefit that a button can be placed in the actual zone being controlled.

This can be beneficial in situations where the V16 is locked up or out of bounds for staff.

First Aid Codes

The Vickers V16 Energy Management system is programmed with a number of *once only codes* which are designed to cope promptly with unexpected situations. These codes can be obtained, together with advice on how to use them, from the Vickers Help Desk which is available FREE to customers under WARRANTY or who have subscribed to an ANNUAL SERVICE AGREEMENT.

Help Desk

The HELPDESK number is:

0870 742 0808

MANAGERS ACCESS

The following operations require the use of the manager's security access code.

Press the **code** key. The display will show:

ACCESS CODE



Enter the Managers code
and press **enter**.



The display will now show the four options available in the MGR menu:

SETUP MGR CODE
HOLIDAYS PRINT

The cursor will be observed initially pulsing on the “S” of SETUP MGR. Use the arrows on the diamond shaped cursor control to move the cursor up or down or left or right. The cursor will jump to the initial letter of each selection.

SETUP Allows the times and temperatures for each zone to be set. It also allows the correct time and date to be set and to select the mode - Heating for winter, Summer Fan for cooling, or Auto, which will allow the controller to switch from one mode to the other depending on the programmed temperature requirements.(see page 8, “Set up”).

CODE View or change the Manager's code and / or the over- ride code.

HOLIDAYS Option allowing pre-programming of up to 5 holiday periods per zone for shut downs, or public holidays.(see page 14 ,”Holidays”).

PRINT Where a printer has been supplied with the V16 controller, there is an option to print out the time / temperature settings for an individual zone or the whole site. (see page 15 “Print”)

All zones can be programmed with different time and temperatures or holidays. However, as many sites tend to have numbers of zones that work the same hours and require the same temperatures, when programming there is an option of copying the entries made in one zone to another.

The same applies to daily work patterns which, when repeated, can be copied from day to day.

SETUP

In the Manager's menu the cursor should be flashing on the "S" of SETUP. If not then move the cursor using the arrow keys.

SETUP MGR CODE
HOLIDAYS PRINT

Press **enter**.

The display will now show:

SETUP ON TIMES
MODE TIME/DATE

From this sub menu move the cursor to one of the three options shown then press **enter**.

ON TIMES

Sets the on/off times for individual zones and allows changes to be made to any of the target temperatures.(see below for details)

MODE

Specifies the type of heating mode that can be applied to individual zones and allows for the heater or summer fan to be used exclusively or together for a heat / cooling combination. There is also an option here to switch off the heater and into 24 hour Frost protection (see page 11, " Mode").

TIME/DATE

Change the time and date if it is incorrect.
(see page 12, "Time / date")

On Times

SETUP ON TIMES
MODE TIME/DATE

Move the cursor to On Times
Press **enter**.

The display will now show:

MANAGER SETUP
CHOOSE ZONE 3

Enter the number of the Zone to be programmed say **3**.
Press **enter**.

The display may show:

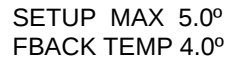
SETUP COOLING
MOD DIFF 3.0°

If the zone selected has been setup as a heating zone with summer fan to be additionally controlled, this display will appear.

COOLING MOD DIFF -- This is the temperature difference at which the summer fan will switch on at above the target temperature of the heating.

Example...If your target temperature for the heating is 18.0°C, and you select 3.0°C for 'MOD DIFF'...The heating will switch off at 18.0°C and at 21.0°C degrees the summer fans will switch on.

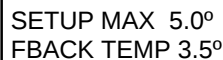
The display will now show:



SETUP MAX 5.0°
FBACK TEMP 4.0°

This shows the fallback or frost protection setting which is for periods outside normal working hours - **NB! If there is a night shift, this is not the place to enter the temperature.** Normally this setting is 4°C or 5°C, but where there is a sensitive product or equipment that must be maintained at a higher temperature at all times a higher value can be entered. This may be appropriate, for example, to protect bright metal from condensation.

No cursor shows on this screen. To change the setting enter the value required. Decimals can be entered and if **3.5** is entered the display will show:

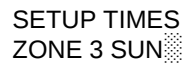


SETUP MAX 5.0°
FBACK TEMP 3.5°

This is the zones fall-back temperature which is always in operation during out of hours times. Enter a value and press **enter**.

N.B. Where frost protection is required it is normal to have a fall-back temperature of approximately 3 – 4 °C.

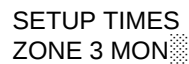
The display will now show:



SETUP TIMES
ZONE 3 SUN

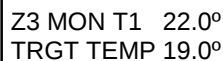
Now there is the option of entering the times for Sunday or selecting a different day.

The up or down cursor can be used to scroll backwards or forwards through the days of the week. The display changes as the cursor is used to show the day that has been selected. Use the down cursor to select Monday. The display will now show:



SETUP TIMES
ZONE 3 MON

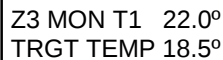
Press **enter**.
The display will now show:



Z3 MON T1 22.0°
TRGT TEMP 19.0°

The top row of the display shows the Zone, the day of the week, and MAXIMUM allowed temperature that is pre-set for this Zone.

To lower the temperature to 18.5°C, enter **18.5** the display will now show:



Z3 MON T1 22.0°
TRGT TEMP 18.5°

Press **enter**.

The controller now advances to the part of the program where operating hours are entered.

Z3 MON T1
TIME ON 07:30

No cursor shows on this display.

There are four different acceptable ways of entering **07.30**, i.e. **7.30** remembering to type in the point after the seven, also the following types **0730** or **07.30** or finally **07.3** can be used. Press **enter** after inputting the time - the **del** key can be used if a mistype occurs part way through an entry.

The display will now show:

Z3 MON T1
TIME OFF 17:30

NB! The controller uses a **24** hour clock so **17:30** needs to be entered for **5:30** p.m.

Once the required ON and OFF times have been inserted and the **enter** button pressed, the times for the first shift on Monday will have been stored. If multiple shifts are required per day, continue and enter the times and temperatures for the other shifts in the same way. Once that is done, or if a single shift is in operation, press **esc**. An opportunity will now be presented to copy the same entries *en bloc* to another day.

NB! Time periods cannot span midnight. An over-night shift from 10 p.m. to 6 a.m. should be entered 22:00 to 23:59 on one day and 00:01 to 06:00 on the next.

COPY DAY
(Y/N)?

This option provides the opportunity to copy the times and temperatures which have just been entered to another day for the same zone. To do so, select Yes by pressing the **yes** key.

COPY MON TO
WED (Y/N)?

Press **Yes** or **No** to copy the program.

If a day requires different times, select No and the system will revert to the day select screen, where a day can be chosen and times input again.

Once complete, the next option provides the opportunity of copying the programs for that zone **for the whole week** into another zone.

COPY ZONE
(Y/N)?

To select this option, press **yes**.

COPY ZONE 3 TO
ZONE 4 (Y/N)?

To miss a zone that is different in some respect, **no** should be selected; it is still possible to copy into other zones. When this procedure is completed, pressing the **esc** key will advance back through the program, and return to the normal time and date display.

If a zone is only slightly different to the standard, it can save time to copy the standard zone and edit it individually later.

MODE

If a zone has been configured to use a summer-fan facility it will then be possible to select the "MODE" option from the SETUP menu. When selected the following menu will be displayed.

SETUP MODE
CHOOSE ZONE 1

Enter the number of the zone to set the mode for.
Then press **enter**.

Display will now show :

OFF ZONE 1 HTG
SUMFAN AUTO

From this menu there is the choice of selecting 4 different options. Move the cursor over the desired option and press **enter**.

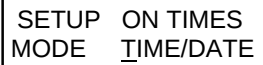
OFF Select this option to switch off the heating and fans regardless of any times or temperatures which may have already been set.(Zone frost protection will still be active)

HTG Select this option to allow the zone to bring on just the heating without the summer fans operation.

SUMFAN Select this option to allow the zone to bring on just the summer fan without the heating operation. (Zone frost protection will still be active)

AUTO Select this option to use the heating and the summer fan facility together, this is the most used option because it brings on the heating until the target temperature has been reached, then depending on the COOLING MOD DIFF setting the fans will then switch on.

TIME/ DATE



SETUP ON TIMES
MODE TIME/DATE

Move the cursor to TIME/DATE and press **enter**.

The display will now show:

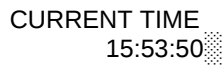


CURRENT DATE
MON 27/07/04

The cursor should be next to the day of the week. Use the arrow keys to scroll through the days and then press **enter**.

A correct date can now be inputted by using the digits and pressing enter, if they are already correct press enter to go to the next step.

The display will now show:



CURRENT TIME
15:53:50

If the time is not correct simply type in the correct time and press **enter**.

CODE

From the Managers menu use the arrow keys to move the cursor to the “C” of CODE.



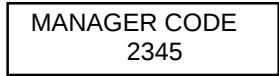
SETUP MGR CODE
HOLIDAYS PRINT

Press **enter**.
The menu will change to:



CHNG CODE MGR
OVERRIDE

As before the cursor is used to select the required option, **MGR** or **OVERRIDE**. Press **enter**.



MANAGER CODE
2345

A code of up to 5 digits can be entered.
Press **enter** after making a change or leaving the same code.

NB! If a mistype has occurred while entering a code press **del** and enter the whole code again.

HOLIDAYS

To automatically switch OFF the heating at the start of the holiday period, and automatically switch ON at the end, the following procedure should be followed.

SETUP MGR CODE
HOLIDAYS PRINT

To access the holiday menu move the cursor to holidays in the manager menu and press **enter**.

The display will now show:

HOLIDAYS SETUP
PRINT

To set a holiday period move the cursor to Setup and press **enter**.

The display will now show:

SETUP HOLIDAYS
CHOOSE ZONE 1

Enter the number of the zone required then press **enter**.

The display will now show a display similar to the one below:

1 08:30 28/07/04
22:00 28/08/04

This screen identifies holiday period number 1...Which starts at 08:30 on 28/07/04 and finishes at 22:00 on 28/08/04.

To set a holiday period:

- 1) Press the right arrow key.....The cursor will now flash next to the start time.
- 2) Type in the start time of the holiday period (i.e 22:00 for 10PM).....Then press **enter**.
- 3) Type In the start date of the holiday periodThen press **enter**.
- 4) Type in the end time of the holiday periodThen press **enter**.
- 5) Type in the end date of the holiday periodThen press **enter**.

The display will then change to holiday period number 2, if an additional holiday period is required repeat the above procedure. If another holiday period is not required press **esc**, the following display will appear.

COPY ZONE
<Y/N>

To apply the same holiday period to a different zone, press the **Yes** key.

The display will show:

COPY ZONE 1 TO
ZONE 2 <Y/N>

Select **Yes** or **No** as appropriate.

Note: If a printer has been supplied, it is possible to print out details of all holidays programmed in the controller. Connect the printer to the V16 and select the PRINT option from the holiday menu.

PRINT

The print option is found in the manager's menu as shown below...

SETUP	MGR	CODE
HOLIDAYS		<u>P</u> rint

Once a printer is connected to the V16 controller, select the PRINT option and press **enter**.

The display will show:

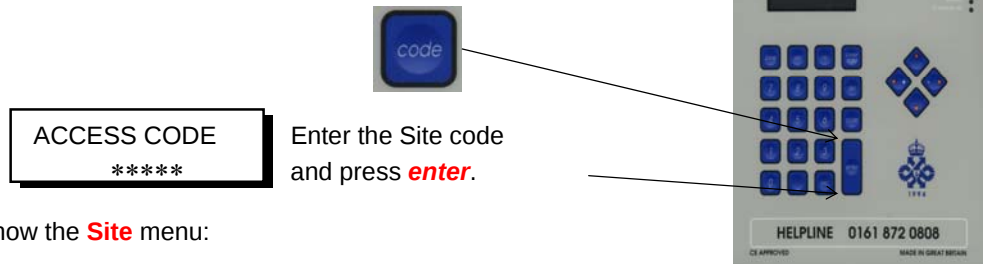
MAN PRNT	ZONE
	ALL

If it is necessary to print all the information for all the zones select ALL but if a certain zone is required select the ZONE option and pick a zone then press **enter**.

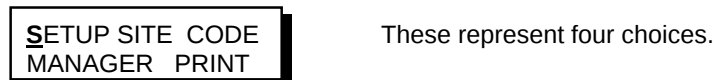
NB! Make sure the printer is connected before pressing the **enter** key.

SITE MANAGER ACCESS

The Site code allows the user additional features which are used to set limits and personal preferences as to how the system works. Press the **code** key the display will show:



The display will now show the **Site** menu:



The cursor will be observed initially pulsing on the “S” of SETUP. Use the arrows on the diamond shaped cursor control to move the cursor up or down or left or right. The cursor will jump to the initial letter of each selection.

- SETUP** Allows the limits/preferences for individual zones to be configured, such as maximum day temperatures or maximum Override Times/Temps.
- CODE** Allows you to view or change the Site code and or the Manager’s code.
- MANAGER** Allows full access to the **Managers Level**. (See pages 7-15)
- PRINT** If a printer has been supplied with the V16 controller, it is possible to print out the configuration settings of any or all zones.

SETUP

From the Site menu move the cursor to the "S" of SETUP .

SETUP SITE CODE
MANAGER PRINT

Press **enter**.

This display will now show:

SITE SETUP
CHOSE ZONE 1

Press the number of the zone to set and press **enter**.

This display will now show:

SITE SETUP MAX
O/R OFF 12:00

If Override OFF is going to be required on a zone this setting is the maximum OFF time limit. Enter a limit and then press **enter**. (to disable this feature enter '0' and press **enter**.

This display will now show:

SITE SETUP MAX
O/R ON 02:00

If Override ON is going to be required on a zone this setting is the maximum ON time limit. Enter a limit and then press **enter**. (to disable this feature enter '0' and press **enter**.

This display will now show:

SITE SETUP MAX
SMPL O/R 00:00

If simple override is going to be required on a zone this setting is the maximum override time. Enter a limit and then press **enter**. (to disable this feature enter '0' and press **enter**.

N.B. Any number other than 00:00 will activate the simple O/R for this zone.

This display will now show:

SITE SETUP MAX
O/R TEMP 19.0°

In this display enter a maximum override temperature, then press **enter**.

This display will now show:

SITE SETUP MAX
DAY TEMP 18°

In this display enter a maximum day temperature, then press **enter**.

This display will now show:

SITE SETUP MAX
F/BCK TMP 5.0 °

In this display enter a maximum fall back temperature, then press **enter**.

This display will now show:

SITE SETUP
OPTIMUM ON (Y/N)

To enable the optimum on function move the cursor over the Y and then press **enter**, or press the **yes** key.

The Optimum On function is a feature of the V16 Controller which if selected can allow for improved savings.

IMPORTANT It is recommended that 'Appendix 3' on page 27 should be read before altering any settings.

This display will now show :

SITE SETUP
MAX PREHT 1:00

In this display enter the maximum pre-heat time then press **enter**.

This display will now show :

SITE SETUP
CHNG RATE 0:20

In this display enter the change rate (Approximate if self- learning is to be enabled). Then press **enter**.

The change rate is the time it takes to raise the temperature by 1 ° C, we usually recommend a time of about 20 minutes, as a starting point.

This display will now show :

SITE SETUP
LEARNING (Y/N)

In order to enable the self-learning function it is necessary to move the cursor over the Y and then press **enter**, or press the **yes** key.

This display will now show :

SITE SETUP
OPTUMUM OF (Y/N)

In order to enable the optimum off function it is necessary to move the cursor over the N and then press **enter**, or press the **yes** key.

If selected, this function gradually reduces the target temperature over the last hour of the heating period. It does this by dropping the temperature by 0.5 ° C every 15 minutes for the first 45 minutes then by 5.0 ° C for the last 15 minutes.

This display will now show :

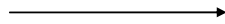
SITE SETUP
STOP MODE (Y/N)

In order to enable the stop mode it is necessary to move the cursor over the Y and then press **enter**. Or press the **yes** key.

If selected, this function takes into consideration both the External & Internal temperatures.

If Yes is selected the following 2 displays will show :

SITE SETUP
EXT OFF 14.0°



SITE SETUP
INT ON 17.0°

This Is The External Temperature

This Is The Internal Temperature

Note: When the external temperature reaches 15°C and the internal temperature is 1°C below the target it is considered that heat is not required in the building. The system / respective heater will close down and will only restart when either temperature falls below the set parameter. This option is designed for Spring / Autumn use and prevents unnecessary early morning heating of buildings and subsequent wastage.

IMPORTANT When deciding what temperatures to put in, it is important that the following points are considered:-**N.B** These are only guide lines, whereas our trained engineers will assess each installation individually and may use different values dependant on several factors.

Point 1:- Consider the normal target temperature for that Zone, if it is typically 18 °C then a suitable Internal temperature should be about 1 degree below this. i.e 17 °C. Take into consideration the thermal constraints of the building.

Point 2:- The external temperature would be set at circa 15 °C.

N.B When Stop-Mode is currently active the zone query screen will change to show a screen with values similar to this.

ZONE 1 S/P 1
S.M 4.0° A 18°

The display will now show:

NO OF
SW/ING TIMES 1

The switching times are the number of time periods that are available to a zone. (maximum of 4).

This is the limit to the number of switching times available to the managers access area.

The display will then go back to the “choose zone” screen and allow these steps to be repeated again on a different zone.

CODE

From the Site menu move the cursor to the “C” of CODE.

```
SETUP SITE CODE
MANAGER PRINT
```

Press **enter**.

The menu will change to:

```
CHNG CODE SITE
MANAGER
```

As before the cursor is used to select the required option, **SITE** or **MANAGER**. Press **enter**.

```
SITE CODE
2345
```

A code of up to 5 digits can be entered.
Press **enter** after making a change or leaving the same code.

NB! If a mistyped code is entered press **del** and enter the whole code again.

Centralized Systems (Controller Communications)

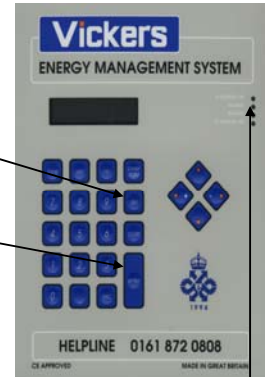
When more than one V16 controllers are linked to provide centralised control, any of the controllers can be used as the master control allowing any controller to be viewed or altered from a single position.

To gain access to Communications mode, press the **Code** key. The display will show:

ACCESS CODE



Enter 11000
and press **enter**.



The display will now briefly show:

** INTER UNIT **
*** COMMS ***

The display will then change to:

ENTER SLAVE
NUMBER X

Enter the number of the controller to
be viewed or programmed and press
enter.

The display will then change to:

ENTER SLAVE
* PLEASE WAIT *

The master controller waits for five seconds to ensure that no other controllers are talking. If the line is not clear the display will show the following display for two seconds before resetting:

UNIT X TALKING TO
UNIT Y

This is the equivalent to an engaged
line on the telephone.

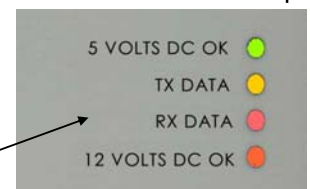
If the line is clear the display will show:

ENTER SLAVE
TALKING

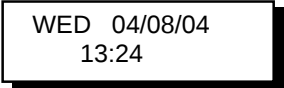
Once communication has been successfully started the display will show:

SLAVE X
SLAVE NAME HERE

The slave display will then be transmitted to the master for display.
The TX and RX LEDs now demonstrate that communication is taking place.



The display will then change to the normal day, date and time display which it has retrieved from the remote controller.



WED 04/08/04
13:24

The controller can now be used to view / modify the remote controller, the current display will be the same as on the remote controller. All functions and codes can now be accessed from this point. (RX LED will flash every 5 seconds, as it receives the update screen)

To EXIT communications mode, press the **code** key, type in 11000 and press **enter**. The display will revert to the normal day, date and time display. Communications are ended. (The RX LED should cease to flash every 5 seconds)

If communication is not successful the display will show:



** SLAVE NOT **
** RESPONDING **

The user is then prompted for the slave number again:



ENTER SLAVE
NUMBER X

By pressing **esc** the attempt to communicate will be abandoned.

If the attempt fails three successive times the display will show:



ABORT INTERCOMMS
(Y/N) ?

Press **yes** to return to the normal time and date screen or **no** to try again.

The 11000 code is only needed to exit communications mode if communication has already been successfully established.

What Are Outstations

If there is a heater or boiler connected to the Vickers control panel, it is more than likely that an 'Outstation' will be connected. The outstation is used to switch On or Off the device it is connected to and also to provide a visual display of the current status of the device.

What do the lights mean?

POWER ON

This lamp should be lit at all times, (viewed on the V16 zone query as "POWER ON"). If this lamp is not lit then investigation is required.

CONTRL RELAY ON

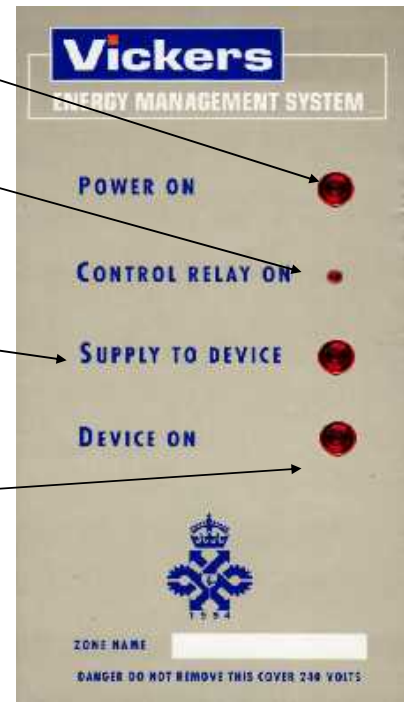
This lamp will only be lit when the zone is calling.(Viewed on the V16 zone query as HEATER ON)

SUPPLY TO DEVICE

If this lamp is lit, it indicates that the Outstation has successfully switched the "Power On" to the device.

DEVICE ON

When this lamp is lit, it indicates that the item being controlled has started. (viewed back on the V16 zone query as "BURNER ON" etc.)



By checking which lights are On and which lights are Off it is possible to identify whether there are any problems with the system i.e. a heater locked out or switched Off.

On the next page is a table explaining the possible combinations of lights on the outstation and what each type of combination could mean.

Table of Outstation light combinations:

	Type 1	Type 2	Type 3	Type 4	Type 5
POWER ON					
CONTROL RELAY ON					
SUPPLY TO DEVICE					
DEVICE ON					



This Symbol represents the lamp being lit.



This Symbol represents the lamp being Off.

TYPE 1 If only the top lamp is lit up, as in this example , it indicates that power is coming from the heater to the outstation and that the Vickers Control panel is not calling for that zone to be on. Everything is OK if the lights are like this.

TYPE 2 If all the lamps are lit up, as in this example , it indicates that power is coming from the heater to the outstation, that the Vickers Control panel is calling to switch on the device and that the device is currently On. Everything is OK if the lights are like this.

TYPE 3 If the lamps are like this, It means the relay light is on due to the Vickers control panel trying to switch on the device, but because there is no power coming from the device to the outstation the device will not switch on. In this case the problem is with the device i.e heater switched off at mains

TYPE 4 In this example there is power coming from the device to the outstation, the outstation is switching its relay to bring the device On, and the Outstation is sending power to the device but the device is not On. In this case the problem again is with the actual device. If it is a heater it is possible that it could be 'locked out', and may need resetting.

TYPE 5 If the top two lamps are lit but the bottom two are not, this would indicate that there is power coming from the device to the outstation. The Vickers Control panel is trying to switch on the heater but there is no power from the outstation to the device and for that reason the bottom light is also OFF. If the lights are lit up this way phone our HELP DESK for advice.(This is an Outstation Failure)

Remember that by checking the information displayed on the V16 Controller and comparing it with information on the outstation it is possible to check for any faults on the system and possibly determine what the fault is.

How to maximise savings

TEMPERATURES

One of the main areas of improvement is the selection and maintenance of appropriate temperature levels.

People make very poor thermometers and the same person at different times of the day, or when undertaking different activities, will perceive the temperature differently. This can be complicated further when more than one person is involved, one may be “hot” and another “cold” although the temperature is the same.

In many workplaces the level of temperature tends to be set by the loudest complainant rather than the management.

For every 1°C that the temperature is raised, the running costs are increased by about 8% .

When an individual complains of being “cold”, the problem is often not temperature but a draught. Raising the temperature could actually make the problem worse! A more appropriate response would be to eliminate the draught.

Changing temperatures are quickly noticed, and the accuracy of the Vickers sensors often allow comfort conditions to be achieved at slightly lower levels than is possible with less accurate and less responsive control.

A briefing on the legislation relating to temperature standards in the workplace is provided in Appendix 2 and should be used to provide a guide when making management decisions about the temperature level to be set. Clearly the maximum temperature is a guide for areas where the workforce is sedentary. Areas occupied by workers engaged in more mobile activities would normally be lower, and warehouse/storage areas lower still.

TIMES

Make full use of the flexibility of the time and temperature control available.

HOLIDAYS

A company that only closes for Christmas day each year could program their holidays 5 years ahead. Taking a few minutes each year to pre-program the public holidays and shut down periods will clearly deliver savings.

OVER-RIDE

The maximum time and temperature parameters should be carefully set and the Over-ride code facility used in appropriate circumstances. Otherwise this feature could provide a licence to tamper and negate the savings otherwise achievable.

i.e. There are up to 4 time periods available per zone, each day, where each period can be controlled at a different temperature.

TEMPERATURE STANDARDS

Temperature standards in the workplace are covered by statute. The legislation involved is not widely understood so a brief resume follows covering those aspects that pertain to environmental heating.

MINIMUM TEMPERATURES are covered by the Workplace (Health, Safety and Welfare) Regulations 1992.

These regulations require that "The temperature in workrooms should normally be at least 16°C unless much of the work involves severe physical effort in which case the temperature should be at least 13°C."

They do not apply to "rooms or parts of rooms where it would be impractical to maintain those temperatures, for example in rooms which have to be open to the outside, or where food or other products have to be kept cold."

"Draughts should be excluded and self-closing doors installed where such measures are practical and would reduce discomfort."

"Where, despite the provision of local heating or cooling, workers are exposed to temperatures which do not give reasonable comfort, suitable protective clothing and rest facilities should be provided."

MAXIMUM TEMPERATURES are covered by The Fuel and Electricity (Heating) (Control) Amendment) Order 1980, Statutory Instrument 1980 No. 1013.

In this Order, The Secretary of State, using the powers conferred on him by the Energy Act 1976, revises the earlier 1974 Order by reducing the maximum of 20°C (68°F) to 19°C (66.2°F) as the temperature above which, subject to the provisions of the amended Order, premises must not be heated by the use of electricity or fuel.

This change was effected as "desirable for the purposes of conserving energy."

Buildings effected by this limit include public houses, offices, shops and industrial premises.

EXEMPTIONS: Those buildings used for living accommodation, for housing people over 60 or children under five years of age, or those who are ill, disabled, infirm or pregnant. Heating for certain industrial, agricultural and food preparation processes is also exempt. The Order also allows the temperature in one part of a building to exceed the maximum limit if this is a necessary consequence of ensuring that the temperature throughout the building exceeds the appropriate statutory minimum.

An Explanation of “Optimum- On”

The purpose of Optimum On is to make sure that the required temperature for any time period is reached as close to the start of the time period as possible, by switching on the heating before the start of the time period.

The time before the start of the actual time period is called the preheat time and, if required the maximum preheat time can be determined.

This is done by finding the difference between the current temperature and the required temperature, and then working out how long it will take to make up this difference with the heating fully on.

To do this, the rate of temperature rise due to the heating must be known and this value is entered as the Rate Of Change parameter in Site Menu.

This value represents the time taken to increase the room temperature by one degree.

If the learning option is enabled, the rate of change value is continually adjusted as a result of the actual temperature rise experienced during preheat.

Optimum On enables additional fuel savings to be made because the preheat time is automatically reduced on mild days to prevent the heating running longer than absolutely necessary.

Therefore if the self learning option is enabled in the site menu it will not be necessary to enter a change rate because the V16 will calculate it itself and bring on the heating at a pre-calculated time before the start of the time period.

The “Max PREHT” setting in site menu allows for a time restriction to be imposed and prevents extended early hours heating of buildings.

Index

Page

Access code	7,16
Actual temperature	2
Annual Service Agreement	6
Centralized Systems (Controller Communications)	21,22
Check temperature	2
Day, date & time	2,12
Display	2
Entering over-ride	5,6
Entering temperatures	7,8,9
Entering times	9,10
First aid codes	6
Frost protection	2
Heater status	2,3,4
Help Desk	6
Holidays	7,14 Appendix 1
Legislation	Appendix 2
Manager code	7,13
Midnight	10
Mode	8,11
Modulation difference	8
Night set back	2
On Times	8
Optimum Off	18 Appendix 3
Optimum On	18 Appendix 3
Outstations	23,24
Over-ride	5,6
Over-ride code	6
Print option	7,14
Query zone	2,3
Select zone	2
Simple over-ride	5
Site Code	16
Site Setup	17
Stop Mode	19
Summer Fan	11
Target temperature	2
Temperature Standards	Appendix 2
Temperatures – changing	9
Temperatures – inspecting	2
Temperatures – setting	9Appendix 1
Times	10 Appendix 1
Trial mode	3
Trouble shooting	2,3,23,24
Zone query	2,3,4