AMBIFLEX focus - USER GUIDE

CONTENTS

focus **PRODUCT OVERVIEW**

The focus is an intelligent standalone or networking building management system with features normally available only in much more expensive systems.

It has been designed with override and adjustment facilities for the non technical user.

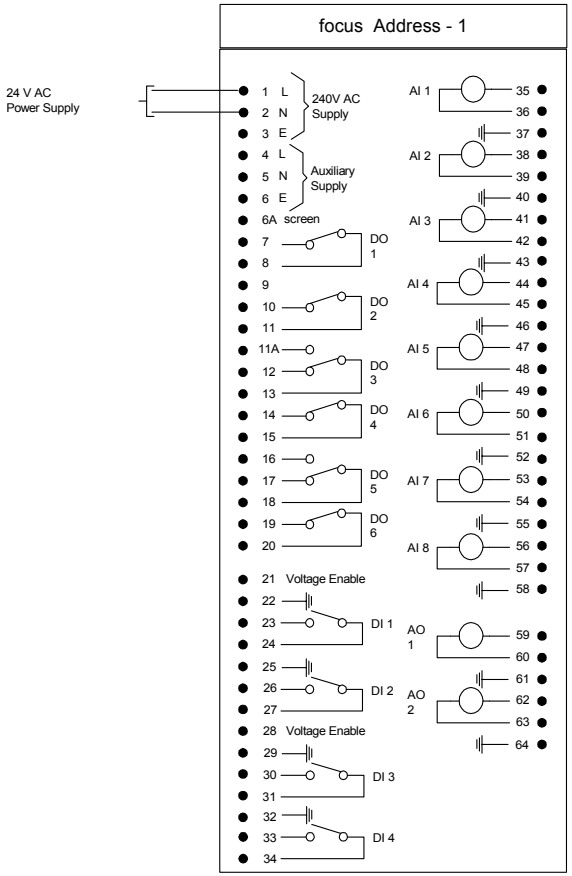
The front panel has a Keypad/LCD display which can show temperatures, alarms and generally what is happening with the system at the two ‘User’ levels and can be used for commissioning at the two ‘Engineer’ levels. All levels except the lowest user level are password protected. This guide introduces the two User levels

A modem may be plugged directly into the RS232 port of the PSU allowing automatic dial-out of alarm messages to a PC or standard off the shelf fax machine.

The focus has: 8 Analog Inputs for temperature sensors; 4 digital inputs for remote overrides and plant fault; 4 black pushbuttons for local extensions and overrides; 1 alarm / event review pushbutton; 6 digital outputs for control of heating and hot water services; 2 analog outputs for optional control of a boiler sequencer and a mixing valve.

For systems requiring greater input/output capacity than that provided by the focus, the MF820 from Ambiflex offers a fully expandable system.

focus CONNECTION DETAILS



Ambiflex Ltd 5 Vale View Vicarage Lane Bowdon, Cheshire WA14 3BD Tel : 0161 941 1122 Fax : 0161 941 1188	**Project**	**Rev**	**Description**	**Date**
	Customer			
			focus	**Sheet No 1 of 1**

focus **FEATURES**

3 Time Channels for heating, an independent time channel and hot water.

- fixed start/stop time
- optimum start/stop time - heating
- each day of the week independently programmable

Weather compensation available through boiler control and valve control, room influenced control if required. Sophisticated boiler control through strategies including: pre-programmed minimum on/off/step time delays, integrated demand, variable minimum off time, equalised run time.

Pump run on and pump/valve exercise.

Multiple stage frost protection, economy settings including high limits for room and outside air temperature.

4 Logs

- one energy log with degree days.
- two temperature logs, 8 temperatures/calculated temperatures plus time/date
- one optimised start/stop log

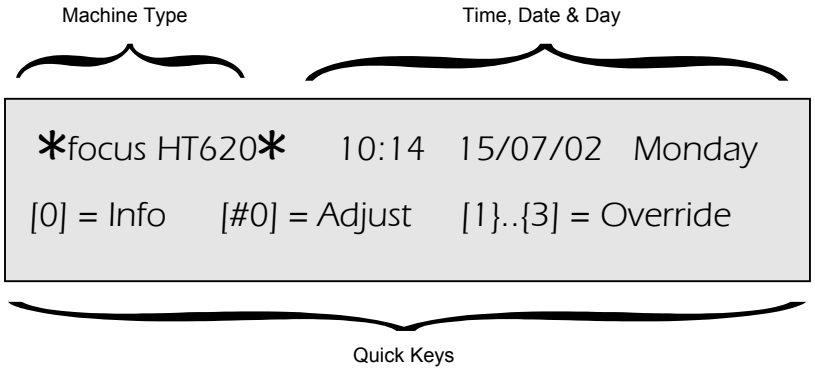
Event (alarm) recording, including optional plant fault and sensor faults.

Automatic BST/GMT changeover.

Capable of communications to a remote P.C. and networking.

STANDBY DISPLAY

With the focus in its normal 'locked' mode, the display reverts to standby mode whenever the 'escape' key is pressed [*] or approximately 20 minutes after the last keystroke by the user. The following information is shown in the standby mode.



Machine Type Machine type and revision number.

Time, Date, Day Time is in 24 hour format.
The date is always displayed in the Day/Month/Year format.

Quick Keys The keys to press (shown in brackets) which will take the user directly to that part of the program.

USER FACILITIES

In addition to the standby display three additional facilities are available to the focus User in the locked mode. These are:

Display Where temperature values and system status conditions may be displayed.

User Adjusts Where preprogrammed controlled temperature adjustments may be made.

Override Actions Where pre-programmed override actions may be selectively implemented.

These are carried out by pressing any of the four black user override buttons:
① ② ③ ④
Or by pressing the Quick Keys 1, 2 or 3 from the Standby Display.

Words describing the specific override function will appear in the display window.

STATUS DISPLAY MODE

With the focus locked [0] takes the user into **User Display** mode.

The user can go directly to any of the status display pages from the standby display, in the locked mode by pressing [0] which goes to the first page, i.e.

: Measured temperatures

[5] goes to : Time channel info.

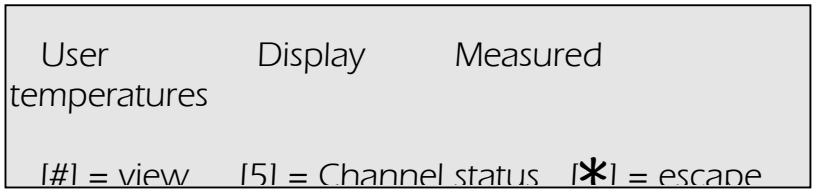
[5] again to: What is happening now?

[5] again to : Any problems?

[5] again to: Measured temperatures

MEASURED TEMPERATURES

A wider range of information regarding the status of the focus can be displayed in more detail whilst the machine is locked. Press [0] from the standby display and the screen below will appear.



From here each of the measured temperatures in °C can be displayed by repeatedly pressing [#]

These appear on the bottom line with the name on the left, and the value on the right, e.g.:

Room 1 21.3

With the cursor flashing on 'M' of Measured temperatures, other status information can be selected for display by pressing [5]

Alternatively, to escape to the default display press [*]

TIME CHANNEL INFORMATION

Key [5] and the display will change to:

User	Display	Time channel info
[#] = view	*[5] = Current status*	*[*] = escape*

From here information concerning each of the time channels can be displayed by repeatedly pressing [#]

These appear on the display and tell the user which time channel it is, whether it is on or off and whether it is in an occupancy period. Eg:

Heating On Occupancy
[#]=nxtChn

With the cursor flashing on 'T' of Time channel info., other status information can be selected for display by pressing [5]. Alternatively, to escape to the default display press [*].

WHAT IS HAPPENING NOW?

5 The display will change to:

From here the user can see anything which may be affecting the normal control status by repeatedly pressing #.

These appear on the bottom line e.g:

Heating OFF hi room

If there is nothing happening the display reads ‘no news’.

With the cursor flashing on ‘W’ of What is happening now?, other status information can be selected for display by pressing 5. Alternatively, to escape to the default display press *

ANY PROBLEMS?

5 The display will change to:

User	Display	Any problems?
[#] = view	[5] = Temperatures	[*] = escape

From here the user can see whether there are any problems that should be reported by repeatedly pressing #.

These appear on the bottom line e.g.:

Room 1 sensor FAULT

If there is nothing within this menu the display reads ‘no probs’.

With the cursor flashing on ‘A’ of Any problems?, other status information can be selected for display by pressing 5. Alternatively, to escape to the default display press *.

USER ADJUSTS

From the default display press [#] hold and press [0]. These keys pressed together will take the user directly to this screen.

User	Adjust	Room day target
21.0	[9]=change	{5}=nxtAdj

To change this [9] and the bottom line of the display changes to:

21.0 [2=Up 5=Down 0=Reset #ok]

[2] takes the temperature up by half a degree.

[5] takes the temperature down by half degree.

[0] takes the temperature to the default programmed in.

[#] accepts the changes made.

[#] again to return to normal display.

When the cursor is flashing over Room day target, [5] will move the cursor to the next setpoint.

OVERRIDE ACTIONS – DEDICATED PUSHBUTTONS

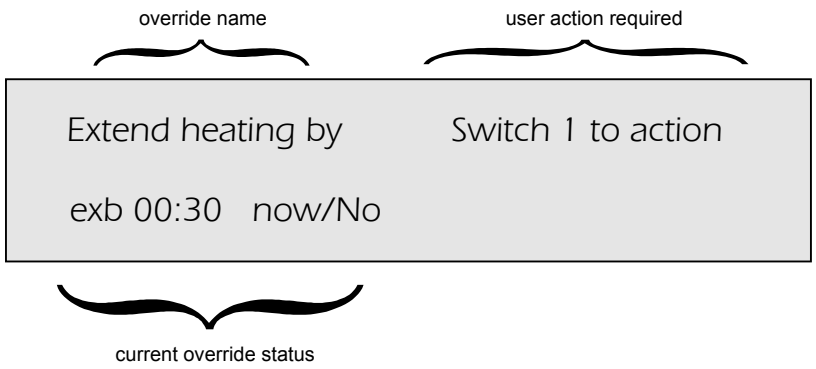
These override actions are accessed via black pushbuttons. The four pushbuttons are normally used for:

Heating day extension	PB Switch ①
Hot water day extension	PB Switch ②
Summer mode	PB Switch ③
Holiday mode	PB Switch ④

The name of the programmed override function will be shown in the top left hand side of the display screen.

Assuming the four buttons have been programmed as printed, they will work as follows; at any time when the *focus* is locked (* does not need to be pushed first).

① The display will show:



Where ‘Switch 1 to action’ means press pushbutton ① to increment day heating extension times by 30 min.

When ① is pressed once, **‘now No’** will change to **‘now Yes’**

and **‘Switch 1 to action’** changes to **‘Switch 1 steptime’**

① again and **‘+00:30’** changes to **‘+01:00’**

① again and **‘+01:00’** changes to **‘+01:30’**

Once the extension has been programmed the green LED will come on, this will then start to flash when the timer has started to ‘run back’ at the end of normal occupancy.

Repeatedly pressing ① increases the extension time until the preprogrammed limit is reached and with the next press, the display changes to **’00:30 now No’** and the LED stops flashing, i.e. the override action has been cancelled.

Alternatively, the override action can be cancelled at any time by holding ① down for a minimum of 3 seconds.

The maximum extension time available is four and a half hours and the timer is programmed to time out after the end of the current time channel ON time.

② Is normally used to extend the Hot Water On time and the operation is identical to ①.

③ The display will normally show:

Summer - heating OFF	Switch 3 to action
now NO	

③ Again and **'nowNO'** changes to **'nowYES'** and the green light alongside flashes. All heating will be switched off but not hot water.

③ Again will cancel the summer condition and the display bottom line will change to **'nowNO'**.

④ Is normally used as a Holiday – all OFF switch and the operation is identical to ③.

N.B. During summer and holiday shutdown frost protection remains active. Also the other pushbutton switches will remain functional; i.e. it is possible to bring the heating and/or hot water on for whatever extension time has been set at the same time.

OVERRIDE ACTIONS – KEYPAD

Holiday Shutdown

From the standby display press key [1]. The following display appears:

User	Action	Shutdown til dd/mm
(#=Yes	9=date)	end26/11 now NO

Follow the instructions on the screen: if the default date is required simply press [#] to accept, if a different end date is required key to change [9] the date which is entered in a DD/MM format.
Press [#] to accept. To cancel the override press [#]

Heating Off

From the standby display press key [2]. This override works identically to the one described above except the hot water will continue to work on its usual times.

Maintenance Override

Key [3] is for emergency maintenance use – when activated the controller will force everything on for a maximum of thirty minutes as a default setting.

ALARMS/EVENT LIST

If critical alarms are being monitored by the focus they may either:

Bring on the alarm red light
Operate the inbuilt sounder
Send out an alarm message via a modem built into the focus

or any combination of all three.

To silence the alarm sounder, or stop the red light flashing:

Ⓐ Press the red alarm push button. The display will show the current alarm or event, for example:

```
1]  Node # 35  General Plant fault
A  _  on @  09:12   16/03
```

A maximum of 24 alarms/events can be stored on the list.

Node # nn is the internal condition number assigned to that alarm, for Ambiflex engineering use only.

If the alarm condition had cleared, the bottom line would read:

A _ on @ 11:15 21/07 clr @ 14:10 23/07

Where **clr @ hh:mm dd/mm** indicates the time and date at which the alarm condition cleared.

Repeat Ⓐ and the display will step through the alarm list until the last event has been displayed and the screen will show:

Alarm review – No more incidents
Press [Alarm] to accept

You **must** now Ⓐ again to accept and return to the default display. Once accepted the sounder will mute and the red flashing light will become steady. The red light itself will not disappear until the alarm has not only been reviewed but has also cleared.

UNLOCKING AND LOCKING THE focus

TO UNLOCK

Press [*] to make sure the focus is in standby display mode.

Press [#] + [*] together and the focus display will change to:

Access	Unlock	
??????	locked	Key [9] to open

[9] and the cursor moves to the bottom line over the leftmost '?'

USER LEVEL UNLOCK

Enter the user level password. If left at its default setting enter display as follows:

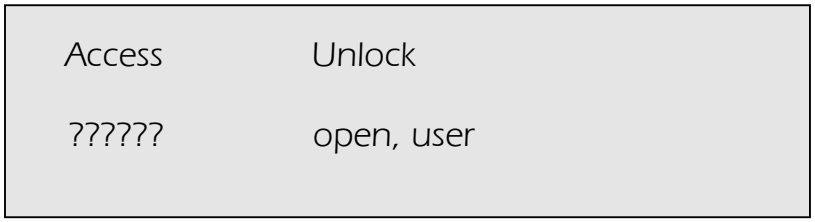
[1] [2] [1] [2] [1] [2]

or appropriate password if this has been changed.

As each key entry is made, the '?' changes starting with the rightmost '?' to #.

When all six digits have been entered: # + 0 twice to accept.

If entered correctly, the display will change to:



* to return to standby display, or key 1 then 5 to get to Time Scheduling.

LOCKING THE focus

The focus will lock itself automatically 20 minutes after the last keystroke.

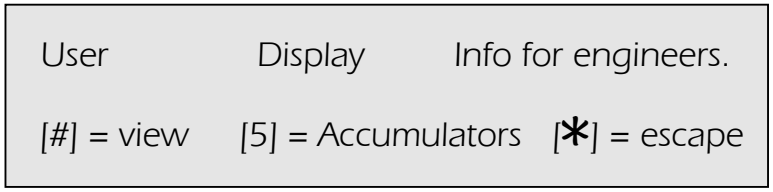
To lock it before this from the standby display:

+ * then 3 9 5 then # + 0

* to revert to standby display.

FURTHER USER INFORMATION

When the controller has been unlocked to the User level there is more information available in the User Display menu. From the standby display key 0 to reach User Display Measured temperatures, from there use the down cursor key 5 to see the options available. After the 'Any problems?' menu there are two new menus: 'Info for engineers.' and 'Accumulator values'.



From here the user can see whether there is any information for engineers by repeatedly pressing #. These appear on the bottom line.
If there is nothing within this menu the display reads 'no info'.

The 'Accumulator values' menu can be reached by pressing key 5 from the 'Info for engineers.' menu. This menu shows the accumulated run hours for each boiler and pump.

There is also another menu available, this is 'Optimes' and can be found by pressing 0 from the standby display to reach the 'Measured temperatures' menu, keying 1 to move the cursor to Display and then keying 5 twice. This menu shows a log of when the controller optimised the heating on and off.

TIME SCHEDULING

For most day to day operations it is not necessary to make changes to the Time Schedule settings. This is because override facilities are provided by the 4 black pushbuttons.

For details of what override facilities have been provided for use when the focus is 'locked' see Page 13-16 of this Guide.

If however, it is necessary to modify time switching commands programmed at the commissioning stage, this can be done by the user, but first the focus has to be unlocked by entering a password. This procedure was explained earlier (see Page 19-20).

USER LEVEL

At this level the user is allowed access to:

1. Change any existing switching times for days already programmed.

It **does not allow** the user to:

a. Add new switching times.
b. Delete existing time switching commands.

Please ask your service engineer about adding and deleting time commands.

MAKING TIME TABLE CHANGES

From USER Level Access

Reviewing Existing Time Tables

Unlock focus as explained in 'focus Lock/Unlock'. The time table menu is one below the Access menu. Therefore with the cursor flashing over the A for Access key and the TimeTabl menu will be reached. Alternatively, from the standby display position press + together and the display changes to:

TimeTabl Review	chnl 1 Any day
Heating	[#] = view [5] = nxt chn

View the time table for channel 1 on for every day of the week e.g.

TimeTabl	[time ch: Channel 1	]
Chn 1	Opsrt 12345 . .	08:30

A cursor appears on the bottom line and this can be moved by using the cursor keys on the keypad, [2] is up, [5] is down, [1] is left and [3] is right. As the cursor is moved an expanded description appears on the top line. For example, if the cursor is under the command section Opsrt, the upper line will read:

TimeTabl [command: Optimised START]

Where a dot '.' appears it means that the same command is set for the same time for the day where the dot is positioned, i.e. a dot in position 3 would mean the same command is set for Wednesday. A dash '_' means the command is not set for that day.

Repeat pressing [#] to view all command lines for channel 1.

Then [5] to move the cursor from Chnl 1 to Chnl 2 to view other existing time channels.

The focus has three channels, i.e. Heating, an Independent Channel and Hot Water but the number used will vary for different applications.

To change the day on which the time schedule is viewed move the cursor from Chnl 1 to Anyday by pressing [3]. Then [5] to change this value i.e:

		Any Day
[5]	Goes to:	Week Days
[5]	Goes to:	Weekend
[5]	Goes to:	Mon (1)
[5]	Goes to:	Tues (2)
[5]	Goes to:	Wed (3)
[5]	Goes to:	Thu (4)
[5]	Goes to:	Fri (5)
[5]	Goes to:	Sat (6)
[5]	Goes to:	Sun (7)

Changing Existing Switching Times

Once the required Time Channel has been selected, carry out the review procedure for that channel for ‘Any day’ by pressing [#] until the line to be changed appears on the bottom line of the display, move the cursor over the time by pressing key [3] then:

[9] And the cursor will move to the left hand digit of the time currently set.

[h] [h] [m] [m] to enter the new switching time.

e.g. [0] [7] [4] [5] would set a time of 07:45 (24 hour format).

Once the correct time has been set, it can be entered into the system by [#] + [0] once. Then [#] to move to the next command line.

To make changes to other time channels, select the required channel by scrolling ([5] or [2]) whilst the cursor is on the top line next to ‘chnl’.

CALENDAR SCHEDULING - DIARY

At USER level access, existing dates for suspending and restoring daily time schedules may be changed.

CHANGING EXISTING DIARY DATES

As a standard convention, all focus controllers are set where:

> Holiday makes all channels inactive i.e. suspend all daily time programmes **starting** on this date i.e. **the first day of holiday and the final date of the holiday i.e. normal operation resumes the day after.**

Return to the standby display by pressing [*] . Then by pressing:

[#] + [3] the display will show typically:

```
Diary  Review

  [#]=view    [5]=D.Logs
```

After reviewing existing dates, review again until the first date to be changed is displayed then:

[9] then select event required ie. Holiday

[#] + [0] to accept. Then key in the start date, this is in Date/Month/Year format. If only the Date and Month are entered then this event will occur every year, otherwise if a specific year is entered, the event will be deleted once it has occurred.

[#] + [0] to accept. Then key in the date for the last day of holiday operation.

E.g A holiday like Christmas Day and Boxing Day occurring every year could be entered as:

Holiday cal: all OFF 25/12/xx to 26/12

[#] + [0] to accept.

[#] to move to the next event to be edited.

Carry on until all dates have been reviewed, changed and accepted.

N.B. CALENDAR DATES IN THE DAIRY CAN ROLL ON CONTINOUSLY OR BE YEAR SPECIFIC.

Inserting and deleting calendar dates can only be done at Service and Installer levels of access, please see those guides for further information.

TIME (CLOCKTIME) SETTING

The focus controller is battery backed and will retain its settings even if power is lost.

Clock Adjustment

Changing clock times can be done at the USER Level of access (see Pages 19 and 20 for unlock instructions) in the Timekeep Clockset Menu. This menu can be reached by pressing [#] and [7] together from the default display.

[9] and the cursor moves to the time at the bottom left hand side of the display.

[h] [h] [m] [m] to enter correct time, then [#] + [0]

[d] [d] [m] [m] [y] [y] to enter date including year.

[#] + [0] and then the clock will update the ‘Day’ and ‘BST’ automatically.

BRITISH SUMMER TIME (BST)

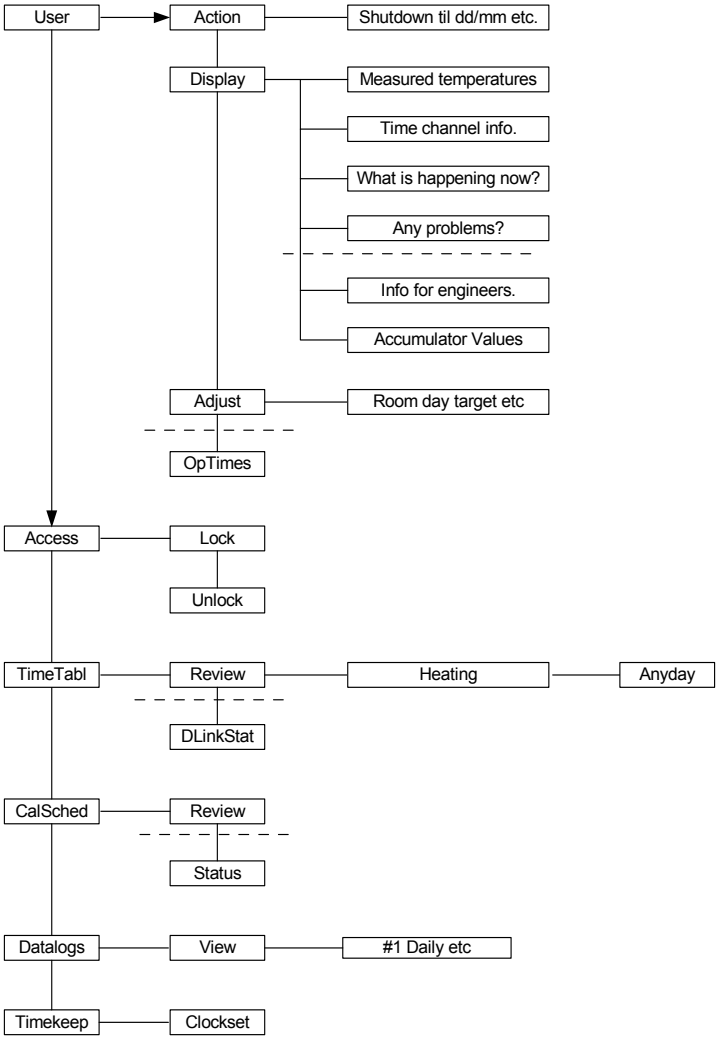
The default for the BST **start** date is set with the month only, e.g. 00/03 for March the focus will change from Winter to Summer Time automatically at 02:00 on the **last Sunday** in March, every year. The GMT **start** date is also set with the month only, e.g. 00/10

Occasionally this will be wrong for a period of 1 week only in some years when the time change takes place on the Sunday before the last Sunday in the month.

Specific dates can be entered into the controller if required from Service level access and above.

For further information please see the Service Manual and Installation Manual otherwise please contact us (contact details are on the back cover of this manual).

Focus Menu Map



The above is for free access and
USER level access.

USER NOTES