

AMBIFLEX *focus* - SERVICE MANUAL

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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.

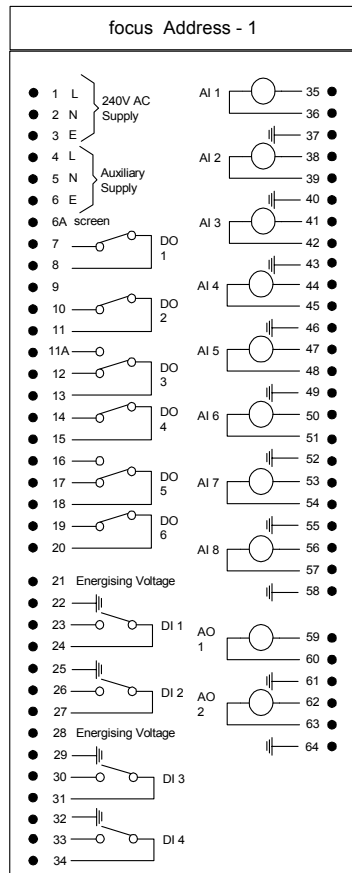
The *focus* incorporates a separate PSU board with field connection terminals which connects to the front panel/CPU via a ribbon cable. This means site installation can be carried out without the risk of damaging the front panel/CPU which can be fitted at the commissioning stage.

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.

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.

This guide concerns the Service level of access to the controller, which is the lower of the two engineer levels. This booklet should be used when servicing and maintaining the *focus*.

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

TECHNICAL SPECIFICATION

fOCUS **Inputs**

- 8 - Analog Inputs (Temperature Sensors).
- 4 - Digital inputs for remote overrides and plant fault.
- 4 - Dedicated Inputs on front panel for setting extension timers, summer/winter selection and holiday operation selection.
- 1 - Dedicated Alarm Mute input on front panel.

fOCUS **Outputs**

- 6 - Digital outputs.
- 2 - 0...10V dc analog outputs.

The 0...10V outputs can be used for control of a mixing valve and also a boiler sequencer.

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

Energy Management

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

fixed start/stop time

optimum start/stop time - heating

each day of the week independently programmable

Pre-programmed minimum on/off/step time delays for boiler control.

Integrated demand boiler control.

Control

Setpoint generators for weather compensation, cascade control etc.

4 P + I control output loops

Loops 1 & 2 via on board relays

Loops 3 & 4 via 0 ... 10V onboard outputs

Boiler sequencing of up to 2 boilers with optional equalised run time (ERT)

Monitoring

3 Data logs (trend logs)

one energy log with degree days.

two temperature logs, 8 temperatures/calculated temperatures
plus time/date

Event (alarm) recording

UNLOCKING AND LOCKING THE *fOCUS*

TO UNLOCK

Press ***** to make sure the *fOCUS* is in the standby display mode.

+ ***** 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 '?'

SERVICE LEVEL UNLOCK

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

1 **2** **3** **1** **2** **3**

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:

Access	Unlock
??????	open, service

***** to return to standby display, or key **1** then **5** to get to Time Scheduling, the first menu heading.

LOCKING THE *fOCUS*

The *fOCUS* will lock itself automatically 20 minutes after the last keystroke.
To lock it before this (starting from the standby display).

+ ***** then **3** **9** **5** then **#** + **0**

***** to revert to standby display.

STATUS DISPLAY MODE

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

- 0** : Measured temperatures **#** to view
- 5** goes to : Time channel info. **#** to view
- 5** again to : What is happening now? **#** to view
- 5** again to : Any problems? **#** to view
- 5** again to : Info for engineers. **#** to view
- 5** again to : Accumulator values **#** to view
- 5** again to : Measured temperatures **#** to view

DISPLAY MENUS

A wider range of information regarding the status of the *fOCUS* can be displayed in more detail whilst the machine is unlocked as follows:

0 The display will change to:

User	Display	Measured temperatures
[#] = view	[5] = Channel info.	[*] = escape

The first status display concerns the measured temperatures allocated on the controller and targets - repeatedly pressing [#] will show all of these. The second menu concerns Time channel information, ie. information concerning the current status of the heating, hot water etc. repeatedly pressing [#] will show all current information. The 'What is happening now?', 'Any problems?', 'Info for engineers.' and 'Accumulator values' menus show current status readings, faults, problems and any other details eg. run hours for boilers. When a section has been chosen repeatedly pressing [#] shows all the values/information within that menu.

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.

Name	Level	Max	Min	Default
Room day target	Free	30	16	21
Room night target	Free	30	16	21
Hot water target	Free	60	35	55
Off above - outdr temp	User	36	-10	35
Outdoor @ high VT temp	Installer	Not available at this level - see Installer manual		
Normal high VT temp	Installer			
Outdoor @ low VT temp	Installer			
Normal low VT temp	Installer			
VT parallel shift	Service	20	-25	0
VT night shift	Service	0	-25	-10
Max VT flow limit	Service	83	50	80
Min VT flow limit	Service	80	15	30
Maximum boiler flow	Service	87	50	83
Minimum boiler flow	Service	87	35	50
Room FROST cut in	Installer	Not available at this level - see Installer manual		
Outdoor FROST cut in	Installer			
Boiler FROST cut in	Installer			
OFF above room-SP	User	5	0	2

The user adjusts earmarked for Free, User, and Service can be accessed at this level, this allows the Service engineer to trim the program installed to suit the client and building.

The room day and night targets can be used for optimisation and room reset. The hot water target is used for temperature control of hot water services. The outdoor setpoint is an economy feature to switch off the heating at a high outside air temperature. The VT day and night parallel shifts can be used to trim the compensated slope set up when the system was installed. The maximum and minimum VT and boiler settings can also be altered at this level. Finally there is a high limit setpoint which can be altered, this is the number of degrees to be added to the room target.

EVENTLST


Press and hold the **#** and the **0** together to get to the User Adjust display then move the cursor over Adjust by pressing **1** then key **5** and this display appears:

User	Eventlst
[#] = view	[5] = U/Optims

Press **#** to view the alarms and events on this list. The name of the alarm appears along with the time that the alarm occurred and the time that it cleared.

Key **5** to view the next menu heading 'Optimes'.

OPTIMES

The Optimises menu shows all optimised start and stop times for the heating channel up to 50 events  to view the events.

User	Optimes	Channel 1
0]	Opt start 07:18	Thu 13th

If there is no event line for a day this means that there has been no optimised start for that day ie. the system only started up when the programmed occupancy begins.

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 - Heating Extend, Hotwater Extend, Summer Switch and Holiday Switch.

If however, it is necessary to modify time switching commands programmed at the commissioning stage, this can be done by the service engineer when the *fOCUS* has been unlocked. This procedure was explained earlier (see Page 7).

SERVICE LEVEL

At this level the service engineer is allowed access to:

1. Change any existing switching times for days already programmed.
2. Add new switching times.
3. Delete existing time switching commands.

MAKING TIME TABLE CHANGES

From SERVICE 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 **5** and the TimeTabl menu will be reached. Alternatively, from the standby display position press **#** + **2** together and the display changes to:

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

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

```
Timsched [time ch: Heating]
Chn 1 Opsrt 12345.. 08:30 xcpt LG1
```


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.

See chart on next page.

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 repeatedly pressing until the line to be changed appears on the bottom line of the display.

Move the cursor over the current switching time by pressing key then:

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

to enter the new switching time.

e.g. 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 pressing + together once. Then to move to the next command line.

To make changes to other time channels, select the required channel by scrolling (or) whilst the cursor is on the top line next to 'chnl'.

Changing Existing Time Command Lines

Once the required channel has been reviewed, and the first command line to be edited has been selected

TimeTabl	[command: Optimised START]	
Chn 1 Opsrt	12345__	07:30	xcept LG 1

Command Days Viewed Time Except Link Group
1 Holiday Dates

9 and the cursor will move to the time command type on the left hand side of the bottom line of the display.

If the command type is to be changed, scroll using 5 or 2 until the new command type has been selected.

The command type may be chosen from the list below:

'Start' This means switch on at the time set for the days programmed.

'Opsrt' Which means an optimised start to reach the target temperature at the time displayed.

'Stop' This means switch off at the time set for the days programmed.

'Opstp' This means switch off before or at the time set providing the target end temperature will be met.

'Cycle' This is a start command which means go into proportional load cycle mode at the time set (not used with this set of applications).

'Pulse' Currently this command is not in use.

Then back to **Start**.

Then + and the cursor will move to the 'day' selections.

To add a day which is not already programmed, enter the day key number,

e.g. adds day 1 (Monday).

If the day is already programmed, entering the day number will remove it.

e.g. if display shows '1 2 3 4 5 _ _'

4 removes day 4 (Thursday) and display becomes '1 2 3 _ 5 _ _'

4 again restores day 4.

0 removes all days which if accepted deletes that command line.

9 adds all days.

+ **0** to accept the required day combination and the cursor moves onto 'time'.

Enter new time, if required, as in Low Level.

+ **0** to accept the new time and the cursor moves to the Link Group column, this is to link in the time schedule to the holiday dates entered.

The selections here are:

Ignore LG1 – generally used for Stop and OpStop commands.

Only LG1 – used only for times which are set in during a holiday.

Except LG1 – generally used for Start and OpStart commands.

To select use **5** or **2** key.

Adding (Inserting) A New Command Line

This may be required if an additional time period, e.g. 'Evening Use' or 'Saturday Working' is to be provided.

The procedure is very similar to the editing process but to add a new time command line:

7 and the display will change to:

```
TimeTabl [command: START as scheduled]
1 Start 1234567 00:00 ignoreLG
```

From here the process is the same as if 9 had been pressed except it is creating a new additional command line.

Once all changes have been made, review to confirm they have been correctly entered.

CALENDAR SCHEDULING - DIARY

At SERVICE level existing dates for suspending and restoring daily time schedules may be changed.

CHANGING EXISTING CALENDAR 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 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 [7]=add

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 CAN ROLL ON CONTINUOUSLY OR BE YEAR SPECIFIC.

Inserting new calendar dates follows exactly the procedure above with one exception - instead of using key **9**, key **7** is pressed.

TIME (CLOCKTIME) SETTING

Clock Adjustment

Changing clock times can be done at the SERVICE Level of access (see Page 7 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 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 in some years when the time change takes place on the Sunday before the last Sunday in the month.

Specific dates can be set within the controller, key **9** to edit and key in the date in the day/month format then press **#** and **0** together to update the controller.

SYSCONFG

From the stand-by display press **#** and **6** together to access the following display:



```
Sysconfg  ConfigSw  DHW-plant setup
          ON - with DHW
```

Within this menu the application configuration switches can be accessed; these switches should be checked for the application installed and the current building usage.

Be aware that choice of switch position determines how the controller will operate and may limit access, for example, if the first switch DHW-plant setup is set to the OFF position, the next three switches will be automatically turned OFF and shown 'Not currently in use'.

Not all switches are relevant in all of the applications, so there are pre-set settings for switches which are not required. In the following tables this is shown:-

'H-F' - OFF and hidden by the application, **'H-N'** - ON and hidden by the application.

Switches

Switch:	Name:	On/Off Name:	If SET to:	Applications:
Cg 01	DHW-plant setup	-no DHW	Off	1,2,3,4,5,6
		-with DHW	On	
Cg 02	DHW-control	-with time only	Off	1,2,3,4,5,6
		-with time & temp	On	
Cg 03	DHW-heat source	-independent heater	Off	1,2,3,4,5,6
		-with link to boiler	On	
Cg 04	DHW-secondary pump	-no pump	Off	H-N,H-N,H-N, H-N,5,6
		-slaved with R6	On	
Cg 05	Sensor-room sensor 1	-not required	Off	1,2,3,4,5,6
		-included	On	
Cg 06	Sensor-room sensor 2	-not required	Off	1,2,3,4,5,6
		-included	On	
Cg 07	Sensor-room sensor 3	-not required	Off	1,2,3,4,5,6
		-included	On	
Cg 08	Sensor-averaging		Off	1,2,3,4,5,6
			On	
Cg 09	Sensor-boiler return	-not required	Off	1,2,3,4,5,6
		-included	On	
Cg 10	Heating-MV override	-not required	Off	H-F,H-F,3,4, 5,6
		-included	On	
Cg 11	Heating-setback		Off	1,2,3,4,5,6
			On	
Cg 12	Heating-optimisation		Off	1,2,3,4,5,6
			On	

The first four switches deal with DHW services – requirement, control, whether linked to the boiler and pump control. The next five switches concern the sensors, for example up to three room sensors can be used on a *FOCUS* controller. The mixing valve override, will force the valve closed should the boiler circuit temperature be too low, if included. The last two of this set of switches deal with the options of night setback and optimisation.

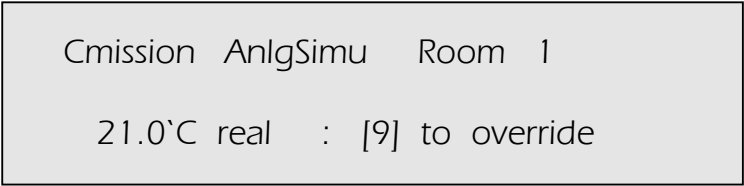
Switches continued

Switch:	Name:	On/Off Name:	If SET to:	Applications:
Cg 13	Heating-flow target	-no room reset	Off	1,2,3,4,5,6
		-With room reset	On	
Cg 14	Heating-reset ratio	-room:flow ratio 3:1	Off	1,2,3,4,5,6
		-room:flow ratio 2:1	On	
Cg 15	Ch 2-Ind. timer		Off	1,H-F,3,H-F, 5,H-F
			On	
Cg 16	Ch 2-link to heating	-No link	Off	1,H-F,3,H-F, 5,H-F
		-works with heating	On	
Cg 17	Ch 2-link to DHW	-No link	Off	1,H-F,3,H-F, 5,H-F
		-works with DHW	On	
Cg 18	Boiler-control setup	-Single boiler	Off	1,H-F,3,H-F, 5,H-F
		-0..10v sequencer	On	
Cg 19	Boiler-firing	-Fixed firing	Off	H-F,2,H-F, 4,H-F,6
		-Sequence rotates	On	
Cg 20	Boiler-rotation	-equal run time	Off	H-F,2,H-F, 4,H-F,6
		-weekly rotation	On	
Cg 21	DHW-cylinder control	-no control valve	Off	1,2,H-F,H-F, H-F,H-F
		-with control valve	On	
Cg 22	DHW-htg primary pump	-no pump control	Off	1,2,H-F,H-F, H-F,H-F
		-with pump control	On	
Cg 23	Not currently in use	Not currently in use	Off	1,2,3,4,5,6
		Not currently in use	On	
Cg 24	Sensor-monitoring		Off	1,2,3,4,5,6
			On	

The first two switches deal with room reset - the influence the room temperature has on the heating. The next three concern the Independent Time Channel (ITC), the ITC can be linked to the heating, the DHW, both or neither – this is generally for extensions etc. The next three switches are to do with boiler control, on the single boiler applications and the multiple boiler applications. With fixed firing the lead boiler will always be Boiler 1, if sequencing is chosen there is the option for equalised run time on the boilers or weekly rotation of the lead boiler. The two DHW switches concern temperature control and how that is achieved, through the control valve or through pump control. The last switch concerns monitoring of the sensors picked up on the system, if this is left ON the controller will record sensor failure.

CMISSION

Within this menu all inputs (temperatures, remote override fault) and outputs (boilers, DHW, pumps) etc real status can be viewed and also simulated to test different conditions. There is also a fast clock which can be initiated for test purposes. To reach this menu press **#** and **8** together from the standby display.



Cmission AnlgSimu Room 1
21.0`C real : [9] to override

Use the cursor keys to choose which point to simulate then key **9** to override; a test value can then be entered. Negative values can be entered by keying all **9**, positive values from negative can be achieved by keying all **0**. Then **#** and **0** together to accept the new value. The test value can be altered to suit as described above or **7** will cancel the test.

The AnlgSimu menu contains the Analog Inputs (Measured Temperatures); BininSim contains the binary/digital inputs (remote overrides, faults etc); RelaySim contains the relays/digital outputs (boilers, pumps, etc); AnoutSim contains the analog outputs (VT valve, boiler sequencer etc).

The BininSim and RelaySim menus which deal with the digital points show the condition of the point as either 'Set' or 'Clear'. 'Set' equates to energized/closed contact and 'Clear' to de-energised/open contact i.e. if Boiler 1 condition is set then it is energized off. Therefore on controller failure the boilers will fail on.

Lastly the commissioning section contains a test clock feature to enable the Service/Commissioning engineer to test out time schedules and calendar schedules.



The testclok can be run in:

- mins+ 1
- mins+ 5
- mins+ 10
- mins+ 30
- Date+ 1

N.B. Remember to reset the above features when testing is concluded.

SERVICE TICK SHEET

Client:	
Site Address:	

SERVICE CHECKS (<i>tick as applicable</i>)	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5
CONTROLLER - Check door seals and ingress of dirt/moisture into the panel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Test door interlocks, switch operations and indicators	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check controller power supply route; fuses, MCB's, earth connection and any special supply detail such as RFI filter, voltage transformer, isolating transformer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check display and keypad, key actions and backlight settings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check tightness of terminations and cable security	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check network (RS232) and sub-network (RS485) communications buses for error free operation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
INPUTS/OUTPUTS - Check temperature sensors for mechanical damage, integrity of wiring. Confirm correct sensor allocation against programmed reference point	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SERVICE CHECKS (tick as applicable)	Visit 1	Visit 2	Visit 3	Visit 4	Visit 5
Check correct operation of controlled devices.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check digital inputs for correct operation and interlocking action with controlled devices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check digital output relays for correct operation and interlocking action with controlled devices (boilers, pumps, valves etc)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SOFTWARE/PROGRAM FUNCTIONS - Check time/calendar schedules, step through days/weekend operation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check operation of local/remote override switches and remote indication	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check system software, application, configuration switches set correctly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check clock setting, day and date	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check data logs and event list for reporting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Down load temperature data logs and review for performance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Copy latest settings for program back-up	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Consult with client for any operational changes required to system parameters/adjustments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SERVICE RECORD

Client:	
Site Address:	

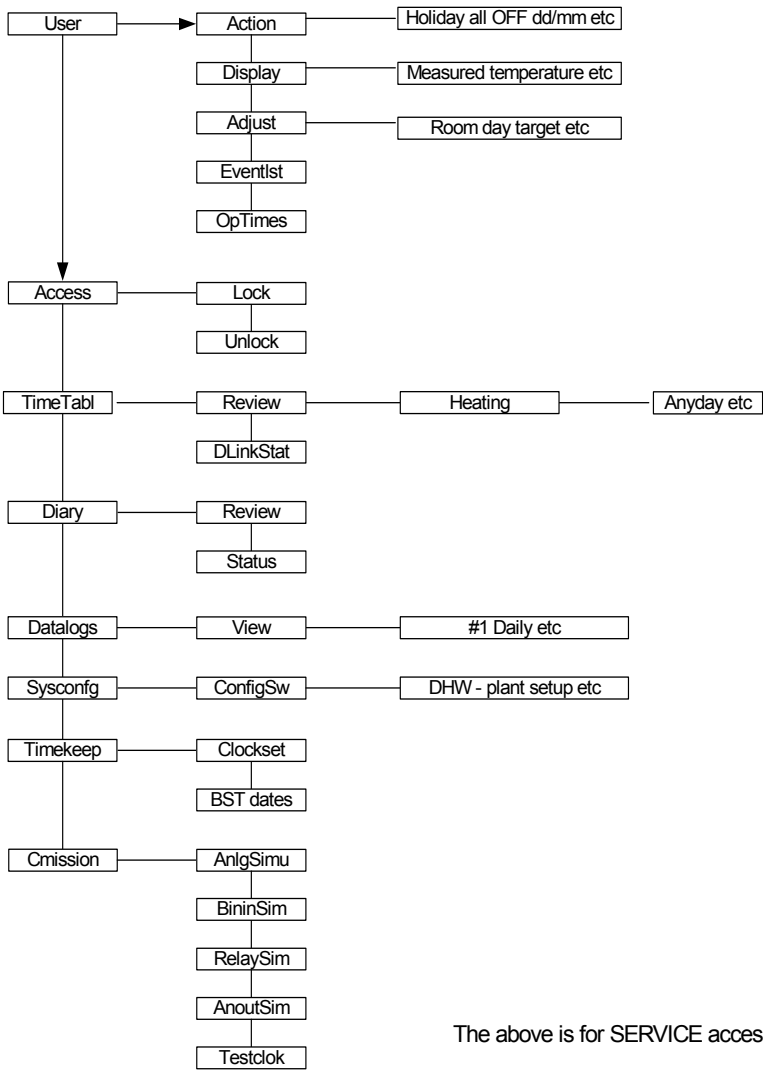
Visit	Job Reference No:	Customer Order No:
1		
2		
3		
4		
5		

Visit	Reason for visit:
1	
2	
3	
4	
5	

Visit	Recommendations:
1	
2	
3	
4	
5	

Visit	Client Signature:	Engineer Signature:	Date:
1			
2			
3			
4			
5			

Focus Menu Map



The above is for SERVICE access.