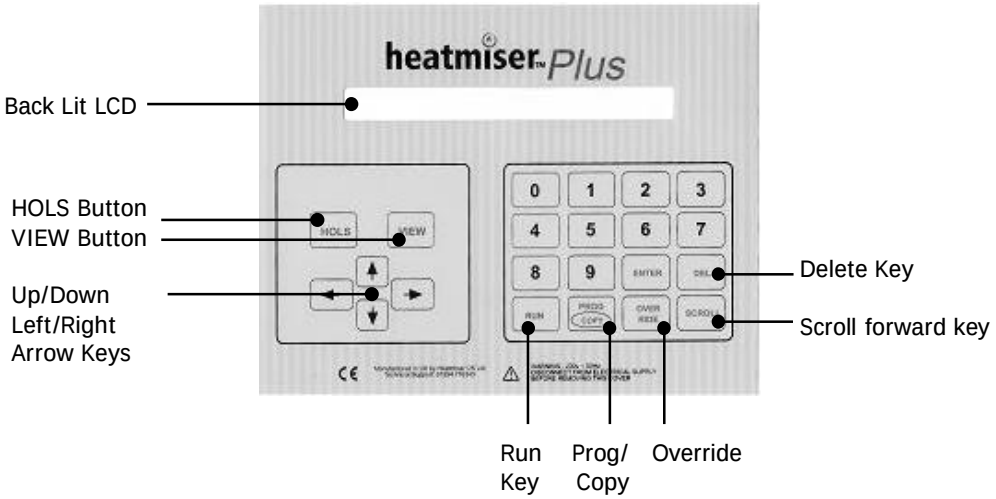
heatmiser
Effective Temperature Control

HEATMISER PLUS
INSTRUCTION & SETUP MANAUL

Features in this manual are only available on the Heatmiser Plus with the software version 5.4

Revision 2
18/08/2002

Keypad Layout



Back Lit LCD - The Heatmiser Plus has a 40*2 character back lit LCD. The back light is activated when any key is pressed and remains active for 5 minutes after the last key press.

HOLS Button - The Heatmiser Plus features a HOLS button which allows the user to put the control in to a holiday condition. This will put all zones in to a night setback condition. To switch the Holiday condition off repeat the process.

VIEW Button - Pressing the VIEW button on the Heatmiser Plus allows the user to see the following information per zone. Day Maximum/Minimum Temperature, Night Minimum Temperature, Occupancy On Time, Reached Set Point, Maximum Preheat, Rate Of Change, Hours Run.

Up/Down Arrow Keys - The Up/Down arrow keys allow the user to increase/decrease the temperature temporarily for the current switching period only. At the start of the next switching period, the temperature will revert back to the programmed Day temperature.

Up/Down Arrow Keys - The Left/Right arrow keys allow the user to scroll left or right through the different zones on the system.

Run Key - The Run key is used at the end of programming to put the control in to the normal RUN mode.

Program / Copy - The program/copy button is a dual purpose button and is used to enter the programming section of the control and to copy the switching times from one day to the next.

Override - Used to override the heating on/off. Used in conditions where the building is being used outside of the programmed switching times.

Delete - The Delete key is used to correct any mistakes made during programming.

Scroll - The scroll key is used to scroll between the different zones screens. The zone screen shows the relevant information for the particular zone, including actual and required temperature and relay status.

Standard Terms

Self Learning Optimisation is a system whereby the Heatmiser control will automatically calculate the start up time to ensure the building is up to temperature for the programmed switching time. It does this by monitoring the internal temperature readings, so that for example in milder weather conditions heat up times are reduced - thus saving energy.

Compensation is a system whereby the Heatmiser monitors the Internal and External temperatures and regulates the flow temperature according to the preset slope setting in the control. By monitoring the internal and external temperatures the Heatmiser can calculate the flow temperature needed to maintain the programmed room temperatures.

Pump Overrun To help dissipate the heat from the boiler, a pump overrun time can be set in the Heatmiser Plus. When enabled, the pump will run on for a number of minutes (programmable) after the zone has switched off.

Boiler Sequencing The Heatmiser Plus can sequence up to 6 modular boilers providing the most efficient way of heating a building.

Alarm/Override Inputs The Heatmiser Plus has 8 inputs which can be used as zone overrides or alarm inputs. When set as an override, the zone will override on/off when the input is made or broken. The alarm input mode allows the Heatmiser to flash on screen an alarm message when the input is made.

Preheat is the number of hours the control can come on before the programmed switching time (when in optimising mode) This is set under the Engineers code and can be set to no more than 8 hours.

Rate of change is the time it takes to raise the building 1'C. The factory default for this setting is 20 minutes but the control will automatically adjust this according to the fabric of the building.

Override Using the override button on the Heatmiser Keypad allows the user to override the zone for a selected number of hours, to allow for unscheduled use of the system. A maximum can be set to stop users entering long override periods.

Switching period status:

- **Day** is when the control is being controlled to an actual switching time. (For example Between 07.00—18.00 the control would be in a DAY condition. Outside of these hours the control would be in a NIGHT condition.

- **Night** is when no switching times have been programmed. At these times the control is set back to the NIGHT temperature.

heatmiser
Effective Temperature Control

THE HEATMISER PLUS TECHNICAL SHEET

Opening the Heatmiser

①

To open the Heatmiser, firstly release the clips from the four corners of the enclosure.

This will reveal four posi screws.

②

When you open the Heatmiser, remove the end panel first. You will notice a ribbon cable connecting the LCD board to the bottom circuit board.

Carefully, unplug the ribbon from the bottom board and put the LCD to one side.

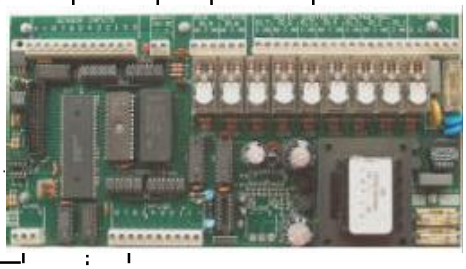
Fitting the Heatmiser

① The Heatmiser is fitted to the wall using the four mounting holes, one in each corner of the enclosure.

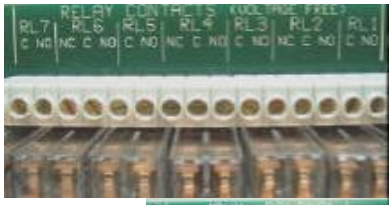
Sensor Inputs

The Heatmiser Plus has 8 sensor inputs. The S and + terminal are common to all sensor inputs. 1-8 denotes the zone.

12v Output



Relay Outputs



RS485 Connection

The Heatmiser Plus has the networking capability.

By connecting a communications box to the RS485 terminal the Heatmiser Plus can be linked via a modem to a remote site, or can be wired back to a Windows 95/98 PC to allow central control of the entire heating system. A communications chip is also required, this is plugged into the socket marked IC16. When fitting the chip, the notch on the socket should be aligned with that on the chip.

Inputs The Heatmiser Plus has 8 Volt free inputs and can be used as follows.

Inputs 1-6 are for zones 1-6 remote override, 7 is for Summer Mode and 8 is for Holiday mode.

The Heatmiser Plus has two banks of output relay terminals. In total there are 9 voltage free relays. Relays 8&9 are Auxiliary relays and are both changeover relays.

There are 5 Normally Open/Normally Closed relays and 4 Normally Open Relays

All rated at 3 amps.

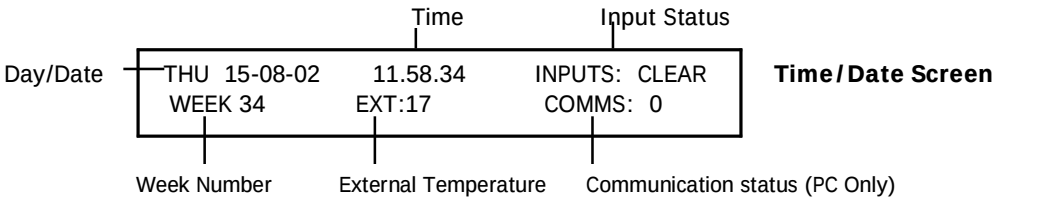
Technical Specification

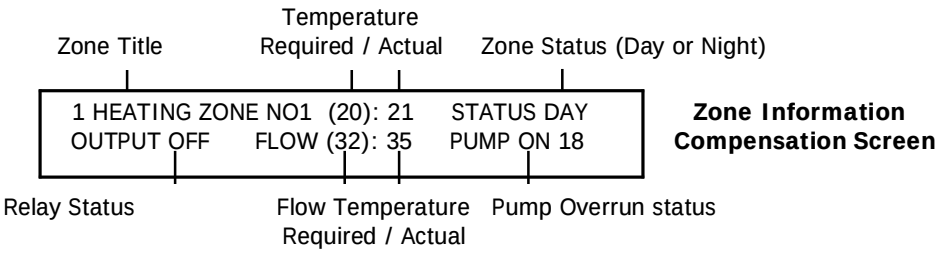
Enclosure Material - ABS **Weight** - 1.7kg **Supply** - 220-240v AC ± 10% 50Hz **Dimensions** - 158 x 62 x 260 mm

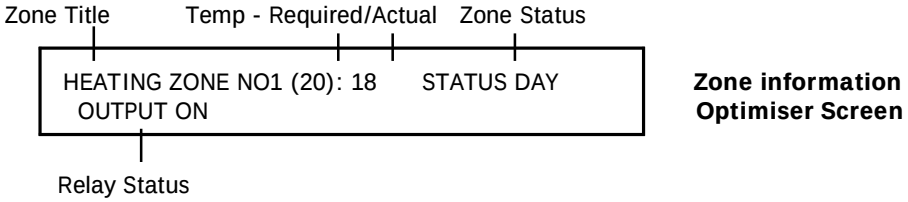
Battery back-up - 10 year battery back-up **Relay Outputs** - 9 Voltage Free Relays. 3 amp 250v AC (Resistive)
Relays 2,4,6,8,9 have changeover contacts. The others are Normally Open

Normal RUN Mode

The Heatmiser Plus has two different types of RUN mode screens. The first is the Time/Date screen and the other is the Zone information screen. The Zone information screen layout will change depending on how the zone is setup.





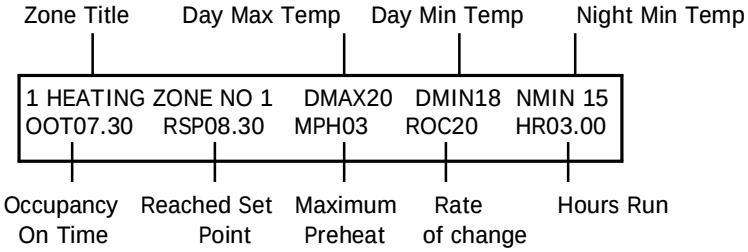


These are the functions available to you in the Normal RUN Mode.

Scroll Screens Using the scroll key you are able to scroll through the scroll screens from zones 1 through to 7. Using the left or right arrow keys you are able to cycle through the Zone information screens in any order.

Increasing/Decreasing the room temperature temporarily
To alter the required temperature temporarily you can use the Up and Down arrow keys.

Viewing technical screen
Pressing the VIEW button on the zone you want more information will present the following screen.



Service Mode

Pressing the program button and then pressing the override button four times will put the Heatmiser Plus into Service Mode. This activates all relay outputs for 1 hour. Pressing the same sequence again will cancel this function.

Important Note: When you are using power open/power closed valves it is important that you observe the wiring instructions at the back of this manual. Failure to observe these instructions may result in damage to the valve when using the Service mode.

Override

The Heatmiser Plus has an override function. This allows the user to override the programmed switching times to allow for unscheduled use of the system.

To override the system first make a note of the zone you wish to override.

- Press OVERRIDE and select the zone you wish to override.

PLEASE ENTER THE NUMBER OF
YOU WISH TO OVERRIDE (1-7): 01

- Now you are prompted to select whether you wish to override the zone On or Off.

Do you want to override the zone
1> ON (Day Temp) or 2 OFF (Night Temp)

- You must now program the the number of hours you wish to override the system.

PLEASE ENTER THE REQUIRED OVERRIDE
PERIOD (08 HOURS MAXIMUM) : 00

- When you have finished programming the override, you will see on an indication on the display. In this case the display shows STATUS OR D01, which means the system has been overridden to a DAY condition for 1 hour. N01 would be shown to indicate the system has been overridden to a night condition.

1 HEATING ZONE NO1 (20):18 STATUS OR D01
OUTPUT ON

<u>To cancel an override.</u> Repeat the steps outlined above, reducing the number of hours to 00.

Holiday Function (On the keypad)

The Heatmiser Plus has a holiday button on the keypad which can be used to shut the entire system off.

- Pressing the HOLS button will display the screen shown.

ARE YOU SURE YOU WANT TO SWITCH ON
HOLIDAY MODE < PRESS ENTER FOR YES>

Pressing ENTER will activate the holiday function and will put all zones enabled to accept the holiday function in to a Night setback condition.

- Pressing any other key will cancel this operation.
- To cancel the Holiday condition repeat the steps outlined above.

Normal RUN Mode Screen

DATA - Programming the DAY temperatures and Switching times.

From the Normal Run mode screen pressing the PROG key will display the screen below.

- At this point you are prompted to enter your user code. This will be a 4 digit code.

A SECURITY CODE IS REQUIRED TO PROGRAM THIS UNIT. PLEASE ENTER THE CODE:

You must press enter when you have entered your four digit code.

As a factory default the User code is set to 0000. It is recommended that you change this code after installation.

- Should you have mis-typed or forgotten your user code an error screen will be displayed for 5 seconds. You should contact your installer where you have forgotten your user code.

** THE CODE YOU ENTERED ** ** WAS INCORRECT**

- After entering your user code you will be prompted with the following screen. You should select option 1 for DATA to program the switching times and temperatures.

1> DATA 2>TIME 3> CODE 4>HOLIDAYS Press <1-4> for required option.

- As the Heatmiser Plus is multi-zone, you are first prompted to enter the number of the zone you wish to alter.

PLEASE ENTER THE NUMBER OF THE ZONE YOU WISH TO ALTER. <1-7>

- We are now prompted to enter the required DAY temperature.

ENTER THE REQUIRED 'DAY' TEMPERATURE (OCCUPANCY PERIOD E.G 20 C) : 20

This is the temperature the control will maintain during the programmed switching times. Use the number keys to enter the required DAY temperature.

- We are now prompted to enter the required NIGHT temperature. This is the temperature the control will maintain outside of the programmed switching time. This setting is normally used to give frost protection.

ENTER THE REQUIRED NIGHT TEMPERATURE (SETBACK OR FROST E.G 04 C) :04

Note ! - At any time when programming the Heatmiser, you are able to use the ENTER key to accept the programmed setting and continue or the RUN Key to accept the programmed setting and return to the DATA menu.

DATA - Programming the DAY temperatures and Switching times. (Continued)

The Heatmiser Plus has 4 switching periods available per day per zone. It is important to use 24 hour clock notation when programming the Heatmiser Plus. You do not need to program all of the 4 switching periods simply leave the unused periods at 00.00.

When you have programmed the DAY and NIGHT temperature settings you are prompted to program the required switching times for the selected zone.

- You will be prompted with the following screen.
  At this screen you should enter the required Start time, for example 08.00 and then press Enter. Then you should enter the End time, eg 17.00.

Enter switching times for period 1 Mon
START: 08.00 END 17.00

- When you are happy with the programmed switching time press Enter to accept it and to continue programming.

- You are able to program the times for period 2 Monday.
  Enter the required time in the same way as you programmed the switching time for period 1.

Enter switching times for period 2 Mon
START: 22.00 END 23.50

- Repeat for periods 3-4

- You are now prompted to enter the switching times for Tuesday.

Enter switching times for period 1 Tue
START : 08.00 END 17.00

- At this point you can enter the switching times in the same way as for Monday, or you may press the COPY button which will copy all of the switching times from Monday to Tuesday. The control will then display Wednesday Period 1.

- Repeat for the week.

Setting the current Time/Date

The Heatmiser Plus has an internal timer which is extremely accurate. Furthermore, the Heatmiser Plus features automatic GMT (Greenwich Mean Time) correction.

To correct the TIME/DATE setting follow the steps outlined below;

- Press the PROG key and Enter the USER code.
- Select option 2 for TIME.
- You will be presented with the the following screen.

The clock is now set at : 13.37
PLEASE ENTER A NEW TIME:

- Enter the correct time using 24 hour clock notation.

Setting the current Time/Date (Continued)

- We are now prompted to enter the date in DD-MM-YY format.

The date is now set at : 19-08-02 PLEASE ENTER A NEW DATE:

- Enter a new date and press ENTER when you are happy with the programmed setting.
- Press RUN to return to the Normal RUN Mode.

Changing the USER code

- To change the USER Code, press PROG and enter the user security code.
- Then press ENTER
- Select 3 for code.
- Now enter a new 4 digit code and press ENTER when complete.

The old USER security code was : 0000 PLEASE ENTER A NEW CODE (4 DIGITS) :

- Press RUN to return to the Normal RUN mode.

Programming the Holiday periods.

The Heatmiser has 5 holiday periods available which can be used to program the holiday periods for the year.

- To program a holiday period press PROG and enter the USER code.
- Then select 4 for holidays.
- You are now presented with the screen for holiday period 1

PLEASE ENTER HOLIDAY PERIOD NUMBER 1 START DATE : 00-00-00 LENGTH : 00

- To program the holiday period enter the start date followed by the number of days the heating should be off for.

Important Notes

1. The holiday period should be entered in DD-MM-YY format.
2. In holiday mode, the Heatmiser Plus will maintain the NIGHT setback temperature.
3. When programming holiday periods you must program forthcoming holidays. You cannot enter a holiday date which has passed. If you do this the control will not recognise the holiday and the Heatmiser will work to the programmed switching times.
3. Should you wish to delete a holiday period which is currently running, you will need to perform the following steps;

- Press the HOLS button on the Heatmiser Plus front panel.
- Press the ENTER key to turn the holiday function ON
- Press the HOLS button on the Heatmiser Plus front panel again.
- Press the HOLS button to turn the holiday function OFF.

Configuring the system

The Heatmiser Plus is our multipurpose control and has a wide number of configurations available. This section aims to guide you through the configuration process.

To configure the Heatmiser Plus follow the steps below;

- Press PROG and enter the configuration code which will be located on the reverse side of the Heatmiser keypad or alternatively on the Heatmiser enclosure back box.
- When you have entered the code you will be presented with the following screen.

- At this point you are able to begin the configuration process or you are able to reset the system back to the factory defaults.

```
1) SYSTEM CONFIG          2) SYSTEM RESET
   !! WARNING!!  Read instructions first !!
```

SYSTEM CONFIG.

- Press 1 for Config
- You are now presented with 5 possible zone types for Zone 1. These zone types are explained as follows.

```
<1> OPT  <02> COMP  <03> HILO  <04> BS FIXED
<05>BS VARIABLE  ZONE 1 TYPE ? :
```

1. OPT = Optimiser. The control will automatically calculate the start up time to ensure the building is warm by the start of the programmed switching time. It does this by monitoring the internal temperature and adjusting the amount of preheat required.

2. COMP = Compensator. The control will automatically calculate the flow temperature required to maintain room temperature. By monitoring the internal and external sensor temperatures, the flow temperature can be increased or decreased to suit demand. This calculation is worked from a slope factor which can be altered on-screen. The slope factor is set to 06 as a factory default. In this setting for every 1 degree rise in external temperature the flow temperature will be decreased by 3 degrees. If the slope factor is increased to 07 - for every 1 degree rise in external the flow will be decreased by 4 degrees.

3. HILO = This setting gives control over high/low heaters. A high/low differential setting can be set which is the number of degrees below the required temperature that the high flame will switch off.

4. BS FIXED = This option is used when you are sequencing boilers and you have a hot water cylinder or more than one heating zone on the boiler circuit. The control allows you to enter a fixed flow temperature.

5. BS (VARIABLE) = This option is used when you have only one heating zone on the boiler circuit and no hot water cylinder. This option gives you the setting to control the minimum and maximum flow settings as well as the slope factor which is mentioned under Compensation above.

Configuring the system (Continued)

- We must now select the zone type for zone 1.

```
<1> OPT  <02> COMP  <03> HILO  <04> BS FIXED
<05>BS VARIABLE  ZONE 1 TYPE ? :
```

Note: If compensation or boiler sequencing is required on the system these must be setup before any optimised zones.

The Heatmiser Plus has 9 relays which can be used for various applications depending on the configuration selected. To calculate the number of relays required for your system observe the following table.

	Number of Zones/boilers	X	No of relays Required	—	Total relays Required
Boiler Sequencing			1		
Compensated zones			3		
Optimised zones Including hot water, any timed zones etc			1		
HiLo Zones			2		
Pump Overrun			1		
			Total =		

Example System = Total number of relays: 9
For a two boiler sequencer with pump overrun and 2 compensated zones.

Once you have selected the zone type for each zone you will be prompted to answer the following questions.

Entering the number of zones.
You should now enter the total number of zones on the system.

Entering the functions for the OUTS.
This section can only be used if relays 8&9 are not already used
You are now able to program how relays 8&9 will operate. You have three options as described below;
<00> This uses the Aux. Relays as RL8 & RL9 and they are therefore configured as for relays 1-7.

<01> This uses Aux. Relays as auto pump changeover outputs in conjunction with inputs 4 & 6. These inputs are used to give auto pump changeover on failure and by bringing the following terminals will changeover the pumps until midnight the next Sunday providing the fault has been cleared.
Making Input 4 gives pump changeover on relay 9.
Making Input 6 gives pump changeover on relay 8.

Important Note: When you are using the Pump changeover facility it disables the use of the remote overrides inputs for inputs 3 through to 6.

<**02>** Auxiliary relays are used as follows
Relay 8 - Any zone calling for heat will make this output active.

Configuring the system (Continued)

Sensor Averaging...
The Heatmiser Plus has the facility to average two temperature readings. For example you may have a large heating zone which would be controlled better if two temperature sensors were Installed in the zone and the average reading taken. To set this up follow the steps below;

- Enter the number of the sensor you wish to average with sensor 7. The default is 00 which disables this function. When you are using the averaging facility you calibrate each sensor as explained in the Calibration section. You will only see the averaged temperature reading on the zone screen.

Enter the number of the sensor you want to average with S7: (00=NONE) :00

Frost Setting for Holiday Switch...
This function allows you to set a temperature which will be used whenever the holiday switch is made. Setting this to 00 disables this function and the night setback temperature will be maintained.

Enter the Frost Setting for the external Holiday switch (00=Night Temp.) :00

Outstation Number
This setting is only used when the control is part of a computer network. In this case each control must have an individual outstation number. The factory default is 00 which disables the communications

Enter the Outstation Number for this unit (00= No communications) : 00

Resetting the system

- From the Config Menu screen select 2 for System Reset.

1) SYSTEM CONFIG 2) SYSTEM RESET !! WARNING!! Read instructions first !!

- You are then prompted to press DELETE to continue.

!!WARNING !! THIS OPTION WILL CLEAR ALL MEMORY. PRESS (DEL)ETE TO CONTINUE

- At this point you should press RUN where you will notice the relays will click in and then out which indicates the memory and all configurations have been cleared.

YOU SHOULD BE AWARE THAT THIS OPTION CLEARS THE MEMORY AND REVERTS THE HEATMISER BACK TO ALL FACTORY DEFAUT SETTINGS.

THIS OPTION SHOULD ONLY BE USED BY EXPERIENCED USERS AND BY THOSE WHO ARE FAMILIAR WITH CONFIGURING THE HEATMISER.

Engineer Setup

! What you need prior to starting the setup procedure !

- The configuration and Engineers code
  (These will be found stuck to the reverse side of the keypad)
- The type of zone and total number of zones on the system.
- The total number of alarms/override inputs on the system.
- An accurate reading of the actual temperature in each zone taken from a digital thermometer.
- The zone title for each zone if needed.
- The switching times for each zone.
- The required DAY and NIGHT temperatures for each zone.

- Press PROG
- Enter the engineer code and press ENTER. (The engineers code can be found inside the control either on the reverse side of the keypad or on the back panel above the circuit board.

A SECURITY CODE IS REQUIRED TO PROGRAM
THIS UNIT. Please enter the code:

- When you have gained access to the engineer section you will be presented with the following screen.

1> SETUP 2> TITLES 3>CODE 4> MONITOR
5> HOURS RUN 6> CLEAR MONITOR 7> INPUTS

1. **SETUP =** Under this section you are able to do the following.
- Calibrate the sensors.
- Set the maximum override time.
- Enter the temperature offset “upper” limit.
- Enter the temperature offset “lower” limit.
- Individual zone configuration.

2. **TITLES =** Under this section you are able to do the following.
- Program the zone titles.
- Program the alarm titles.
- Program the relay titles.

3. **CODE** = Under this section you are able to do the following.
- Change the USER code.

4. **MONITOR =** Under this section you can view the following.
- The temperature log for the past 24 hours.

5. **HOURS RUN** = Under this section you can view the following.
- The hours run log for the past 4 weeks.

6. **CLEAR MONITOR** = Under this section you can do the following.
- Clear the logging and alarm memory.

7. **INPUTS =** Under this section you can do the following.
- Enable/Disable the Holiday/Summer input function
- Enter the type of inputs required, Pulse or Fixed.
- Select the number of zone override required on the system.

Engineer Setup

1. Setup > Calibration

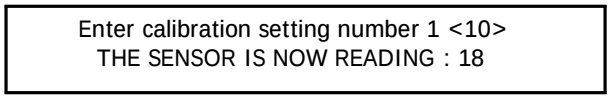
The Heatmiser Plus has eight sensor inputs and these should be calibrated after installation of the system.

To calibrate the Heatmiser sensors you firstly need a temperature reading from a digital thermometer, for each zone or pipe being monitored.

From this reading we are now able to calibrate each sensor on the system.

To calibrate the sensors, follow the steps below;

- Take the actual reading from your thermometer and the reading from the Heatmiser sensor.



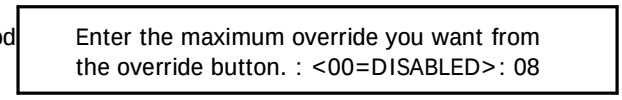
- As an example, your thermometer reading is 20 and the Heatmiser sensor is 18 with a calibration of 10. (The calibration figure is the two digits in the brackets in the above screen) In this example there is an error of 02 degrees, however as the Heatmiser works in 1/2 degree steps the calibration needs to be increased by 04. Therefore the calibration figure in this example should be 14.

- The process outlined above should be repeated for all sensors on the system. Use the ENTER key to advance through the different calibration screens.

1. Setup > Maximum override time

To avoid excessive use of the Override button it is recommended that a maximum override time is programmed in to the control.

- Enter the maximum override period here.

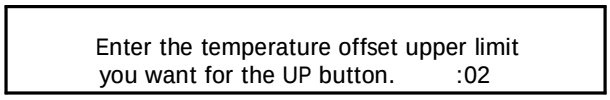


- The factory default setting is 08. Should you wish to disable the use of the override button enter 00 as the override time.

1. Setup > Offset UPPER limit

As the Heatmiser Plus has Up/Down arrow keys for increasing or decreasing the required temperature for the current programmed switching time. It is recommended that limitations are set on the use of these buttons.

- Enter the maximum number of degrees you want the user to be able to increase the temperature by use of the UP arrow key.



Engineer Setup

1. Setup > Offset LOWER limit

- Enter the number of maximum degrees you want the user to be able to decrease the temperature by use of the DOWN arrow key.

Enter the temperature offset lower limit you want for the DOWN button. :02

After you have configured the system wide settings, you are then prompted to program the individual zones settings as described below. You first need to select the zone you wish to setup.

Setup > Individual zone setup

ZONE TYPE = BOILER SEQUENCER FIXED)

- You must now select the summer input function for this zone. If you want to disable the summer input (number 7) for this zone enter 01 here.

SUMMER FUNCTION. (03)NONE (02)EXTERNAL (01) INTERNAL (00)INT.EXT :00

- Enter the required temperature that you would like the heating off at. Should the external temperature rise above the setting programmed the system will switch to night setback temperature.

Enter the external temperature that you would like the heating off at: 19

- We now need to select the zone type for zone 1.

<00> OPT(LEARNING) <01>TIMER <02> OPT FIX <03> OPT-TIME <04> VENT OPTION? :00

00 = Optimiser mode only
Automatically adjusts the start up time so that the building is warm for the start of the programmed switching period. The Heatmiser will adjust the rate of change and preheat as the Heatmiser learns the system.

01 = Timer mode only.
The zone works to the switching times only.

02 = Opt (Fixed)
This is a fixed optimiser. Working from the programmed rate of change and preheat the control will calculate the start-up time. The rate of change and preheat is not altered by the system.

03 = Opt (Time)
This is the optimiser timer function. The control will use the internal sensor only to calculate the start-up time, based on the preheat and rate of change.

The internal sensor is ignored once the switching time has been reached.

Engineer Setup

Setup > Individual zone setup (BOILER SEQUENCER FIXED).... Continued

04 = VENT. Not used on this type of system.

Fixed flow...

- We must now program the fixed flow temperature for the boiler sequencer. The recommended flow temperature is between 70C - 80C.

> Enter the FIXED FLOW temperature for the boiler sequencer. (eg. 75) : 00

Maximum preheat... (This screen will not be displayed on timer zones)

- We must now program the maximum preheat allowed for this zone. The factory default is 03.
  This is the maximum number of hours the control may come on before the programmed switching time.

> Enter the MAXIMUM PREHEAT HOURS you want for the optimiser (eg. 03 hours) : 03

Rate of change... (This screen will not be displayed on timer zones)

- We must now program the rate of change for this zone.
  This is the number of minutes it takes to raise the building by 1 degree.

> Enter the RATE OF CHANGE setting for the Optimiser(00 = No optimiser) : 20

If the zone is setup as a Opt or an Opt-Time this figure will automatically change as the control learns the system. If the zone is setup as an Opt-Fixed zone this setting will not change.

Flow frost protection...

- We must now program the flow frost protection setting for this zone. This setting is only used when there is a flow sensor on the system. The default setting for this is 08.

> Enter the flow frost protection setting for this zone (e.g. 08 c) :08

Pump Overrun...

- A pump overrun time can now be programmed in to the system. The recommended time for the pump overrun is 20 minutes.

  A pump overrun is not set when each boiler has its own pump.

> Enter the PUMP OVERRUN TIME required : 00

Engineer Setup

Setup > Individual zone setup <u>(BOILER SEQUENCER FIXED).... Continued</u>

Boiler On Delay...

- This is the time delay between boilers switching ON when the flow is under temperature.

ENTER THE BOILER ON TIME DELAY REQUIRED FOR THE BOILER SEQUENCER: 48

Every 1 entered gives a delay of 5 seconds. Therefore entering 48 will give a delay of 4 minutes.

Boiler Off Delay...

- This is the time delay between boilers switching OFF when the flow is above temperature.

ENTER THE BOILER OFF TIME DELAY REQUIRED FOR THE BOILER SEQUENCER: 20

Every 1 entered gives a delay of 5 seconds. Therefore entering 20 will give a delay of 1 minute.

Reverse the lead and lag boilers...

- To even the wear between the boilers installed, you are able to program whether the boilers should rotate the lead and lag boiler every 7 days.

Do you want the boilers to reverse every 7 days <01> or fixed <00> : 00

00 disables this feature. 01 activates this feature.

- At this point you are returned to the Setup menu where you can continue to configure the other zones or you may press RUN to put the control in to the Normal RUN mode.

Setup > Individual zone setup

<u>ZONE TYPE = BOILER SEQUENCER VARIABLE)</u>

- You must now select the summer input function for this zone. If you want to disable the summer input (number 7) for this zone enter 01 here.

SUMMER FUNCTION. (03)NONE (02)EXTERNAL (01) INTERNAL (00)INT.EXT :00

- Enter the required temperature that you would like the heating off at. Should the external temperature rise above the setting programmed, the system will switch to the night set back temperature.

Enter the external temperature that you would like the heating off at: 19

- We now need to select the zone type for zone 1.

<00> OPT(LEARNING) <01>TIMER <02> OPT FIX <03> OPT-TIME <04> VENT OPTION? :00

See options on page ??. Only options 00, 01, 02, 03 apply to this type of configuration

Engineer Setup

Setup > Individual zone setup

(BOILER SEQUENCER VARIABLE) Continued

Maximum preheat... (This screen will not be displayed on timer zones)

- We must now program the maximum preheat allowed for this zone. The factory default is 03.

Enter the MAXIMUM PREHEAT HOURS you want for the optimiser (eg. 03 hours) : 03

This is the maximum number of hours the control may come on before the programmed switching time.

Rate of change... (This screen will not be displayed on timer zones)

- We must now program the rate of change for this zone. This is the number of minutes it takes to raise the building by 1 degree.

Enter the RATE OF CHANGE setting for the Optimiser(00 = No optimiser) : 20

If the zone is setup as a Opt or an Opt-Time this figure will automatically change as the control learns the system. If the zone is setup as an Opt-Fixed zone this setting will not change.

Flow frost protection...

- We must now program the flow frost protection setting for this zone. This setting is only used when there is a flow sensor on the system. The default setting for this is 08.

Enter the flow frost protection setting for this zone (e.g. 08 c) :08

Compensation slope...

- We are now prompted to enter the slope factor. The slope factor determines how the flow temperature changes in relation to the external temperature. The normal setting is 06 which means that for every 1 degree rise in external temperature the flow temperature will be decreased by 3 degrees. A slope of 7 means for every 1 degree rise in external temperature the flow will be reduced by 4 degrees.

Enter the COMPENSATION SLOPE FACTOR (06 = Normal) :06

Minimum flow temperature ...

- We are now able to set the minimum flow temperature.

Enter the MINIMUM FLOW temperature for this zone: 00

Compensating direct on the boiler = You should contact the boiler manufacturer for this setting.
Compensating via a valve = You should enter 00 as no minimum flow temp is required.

Engineer Setup

Setup > Individual zone setup
(BOILER SEQUENCER VARIABLE) Continued

Maximum flow temperature ...

- We are now able to set the maximum flow temperature.

Enter the MAXIMUM FLOW temperature for this zone: 00

Compensating direct on the boiler = You should contact the boiler manufacturer for this setting.
Compensating via a valve = You should enter 00 as no minimum flow temp is required.

Pump Overrun...

- A pump overrun time can now be programmed in to the system. The recommended time for the pump overrun is 20 minutes.

Enter the PUMP OVERRUN TIME required : 00

A pump overrun is not set when each boiler has its own pump.

Boiler On Delay...

- This is the time delay between boilers switching ON when the flow is under temperature.

ENTER THE BOILER ON TIME DELAY REQUIRED FOR THE BOILER SEQUENCER: 48

Every 1 entered gives a delay of 5 seconds. Therefore entering 48 will give a delay of 4 minutes.

Boiler Off Delay...

- This is the time delay between boilers switching OFF when the flow is above temperature.

ENTER THE BOILER OFF TIME DELAY REQUIRED FOR THE BOILER SEQUENCER: 20

Every 1 entered gives a delay of 5 seconds. Therefore entering 20 will give a delay of 1 minute.

Reverse the lead and lag boilers...

- To even the wear between the boilers installed, you are able to program whether the boilers should rotate the lead and lag boiler every 7 days.

Do you want the boilers to reverse every 7 days <01> or fixed <00> : 00

00 disables this feature. 01 activates this feature.

- At this point you are returned to the Setup menu where you can continue to configure the other zones or you may press RUN to put the control in to the Normal RUN mode.

Engineer Setup

Setup > Individual zone setup

COMPENSATOR

You are able to select whether you want this zone to put zone 1 in to a DAY condition.

DO YOU WANT THIS ZONE TO PUT ZONE 1 IN TO A DAY CONDITION. <00> NO <01> :00

Will be displayed when configuring zones 2-7 only

This is used when zone 1 is a boiler so when any zone calls for heat the boiler fires.

- You must now select the summer input function for this zone. If you want to disable the summer input (number 7) for this zone enter 01 here.

SUMMER FUNCTION. (03)NONE (02)EXTERNAL (01) INTERNAL (00)INT.EXT :00

- Enter the required temperature that you would like the heating off at. Should the external temperature rise above the setting programmed, the system will switch to night setback temperature.

Enter the external temperature that you would like the heating off at: 19

- We now need to select the zone type for zone 1.

<00> OPT(LEARNING) <01>TIMER <02> OPT FIX <03> OPT-TIME <04> VENT OPTION? :00

See options on page ??. Only options 00, 01, 02, 03 apply to this type of configuration

Maximum preheat... (This screen will not be displayed on timer zones)

- We must now program the maximum preheat allowed for this zone. The factory default is 03.
  This is the maximum number of hours the control may come on before the programmed switching time.

Enter the MAXIMUM PREHEAT HOURS you want for the optimiser (eg. 03 hours) : 03

Rate of change... (This screen will not be displayed on timer zones)

- We must now program the rate of change for this zone.
  This is the number of minutes it takes the zone to raise the building by 1 degree.

Enter the RATE OF CHANGE setting for the Optimiser(00 = No optimiser) : 20

If the zone is setup as a Opt or an Opt-Time this figure will automatically change as the control learns the system. If the zone is setup as an Opt-Fixed zone this setting will not change.

Engineer Setup

Setup > Individual zone setup

COMPENSATOR Continued

Compensation slope...

- We are now prompted to enter the slope factor. The slope factor determines how the flow temperature changes in relation to the external temperature. The normal setting is 06 which means that for every 1 degree rise in external temperature the flow temperature will be decreased by 3 degrees. A slope of 7 means for every 1 degree rise in external temperature the flow will be reduced by 4 degrees.

Enter the COMPENSATION SLOPE FACTOR
(06 = Normal) :06

Minimum flow temperature ...

- We are now able to set the minimum flow temperature.

Enter the MINIMUM FLOW temperature
for this zone: 00

Maximum flow temperature ...

- We are now able to set the minimum flow temperature.

Enter the MAXIMUM FLOW temperature
for this zone: 00

ON/OFF or Modulating ...

- We are now able to set how the zone will work, either ON/OFF or modulating.

IS THIS ZONE GOING TO BE WORKING ON/OFF
CONTROL<00> OR MODULATING <01> :00

Pulse Time ... (ONLY APPLICABLE WHEN THE ZONE IS SET UP TO MODULATE)

- This is the length of the pulse that the valve will get. As a guide this can be set to 1/10 the valves total travel time.

Enter the PULSE TIME that you want to
work the valve (1=5 seconds) : 00

The recommended pulse time is 03 which is 15 seconds .

Delay Time ... (ONLY APPLICABLE WHEN THE ZONE IS SET UP TO MODULATE)

- This is the time between pulses and as a guide can set to the total travel time of the valve.

Enter the DELAY TIME that you want to
work the valve. (1=5 SECONDS) : 00

The recommended delay time is 30 which is 2.5 minutes.

Engineer Setup

Setup > Individual zone setup

COMPENSATOR Continued

Hysterysis Value ...

- We are now able to set the hysterysis value.

Enter the HYSTERYSIS VALUE for the compensation: 04

This is number of degrees between the load switching in and out for the compensator. For example, with a setting of 04 and a required flow temperature of 50'C, the load will be switched in until a flow temperature of 52'C is reached and will then remain off until it drops down to 48'C when it will switch back on.

Pump Overrun...

- A pump overrun time can now be programmed in to the system. The recommended time for the pump overrun is 20 minutes.

Enter the PUMP OVERRUN TIME required : 00

- At this point you are returned to the Setup menu where you can continue to configure the other zones or you may press RUN to put the control in to the Normal RUN mode.

Engineer Setup **Setup > Individual zone setup OPTIMISER**

- You are able to select whether you want this zone to put zone 1 in to a DAY condition.

DO YOU WANT THIS ZONE TO PUT ZONE 1 IN this TO A DAY CONDITION. <00> NO <01> :00

This screen will only be displayed when configuring zones 2-7.

- You must now select the summer input function for this zone. If you want to disable the summer input (number 7) for this zone enter 01 here.

SUMMER FUNCTION. (03)NONE (02)EXTERNAL (01) INTERNAL (00)INT.EXT :00

- Enter the required temperature that you would like the heating off at. Should the external temperature rise above the setting programmed, the system will switch to night setback temperature.

Enter the external temperature that you would like the heating off at: 19

- We now need to select the zone type for zone 1.

<00> OPT(LEARNING) <01>TIMER <02> OPT FIX <03OPT-TIME <04> VENT OPTION? :02

See options on page ?? Options 0 - 4 can be used on this type of configuration.
Maximum preheat... (This screen will not be displayed on timer zones)

- We must now program the maximum preheat allowed for this zone. The factory default is 03.
  This is the maximum number of hours the control may come on before the programmed switching time.

Enter the MAXIMUM PREHEAT HOURS you want for the optimiser (eg. 03 hours) : 03

Rate of change... (This screen will not be displayed on timer zones)

- We must now program the rate of change for this zone.
  This is the number of minutes it takes the zone to raise the building by 1 degree.

Enter the RATE OF CHANGE setting for the Optimiser(00 = No optimiser) : 20

If the zone is setup as a Opt or an Opt-Time this figure will automatically change as the control learns the system. If the zone is setup as an Opt-Fixed zone this setting will not change.

Hot Water Boost...

If this zone is controlling a hot water cylinder, setting this to <01> will boost the temperature to 70'c at midnight Sunday. If the cylinder does not achieve this temperature within 2 hours, the unit will return to normal operation.

DO YOU WANT THIS ZONE TO BOOST TO 70'C MIDNIGHT SUNDAY <01> TIMER <O2>OPT FIX: 00

Note: Using the VIEW button on Monday morning will give information on the temperature the cylinder achieved and the time it took to get to the maximum temperature.

Engineer Setup

Setup > Individual zone setup <u>OPTIMISER continued...</u>

Pump Overrun...

- A pump overrun time can now be programmed in to the system. The recommended time for the pump overrun is 20 minutes.

Enter the PUMP OVERRUN TIME required : 00

- At this point you are returned to the Setup menu where you can continue to configure the other zones or you may press RUN to put the control in to the Normal RUN mode.

Setup > Individual zone setup <u>HILO</u>

You are able to select whether you want this zone to put zone 1 in to a DAY condition.

DO YOU WANT THIS ZONE TO PUT ZONE 1 IN TO A DAY CONDITION. <00> NO <01> :00

Will be displayed when configuring zones 2-7 only

This is used when zone 1 is a boiler so when any zone calls for heat the boiler fires. However in this configuration this is not required.

- You must now select the summer input function for this zone. If you want to disable the summer input (number 7) for this zone enter 01 here.

SUMMER FUNCTION. (03)NONE (02)EXTERNAL (01) INTERNAL (00)INT.EXT :00

- Enter the required temperature that you would like the heating off at. Should the external temperature rise above the setting programmed, the system will switch to night setback temperature.

Enter the external temperature that you would like the heating off at: 19

- We now need to select the zone type for zone 1.

<00> OPT(LEARNING) <01>TIMER <02> OPT FIX <03> OPT-TIME <04> VENT OPTION? :00

Maximum preheat... (This screen will not be displayed on timer zones)

- We must now program the maximum preheat allowed for this zone. The factory default is 03. This is the maximum number of hours the control may come on before the programmed switching time.

Enter the MAXIMUM PREHEAT HOURS you want for the optimiser (eg. 03 hours) : 03

Engineer Setup

Setup > Individual zone setup HILO continued...

Rate of change... (This screen will not be displayed on timer zones)

- We must now program the rate of change for this zone. This is the number of minutes it takes the zone to raise the building by 1 degree.

```
Enter the RATE OF CHANGE setting for the
Optimiser( 00 = No optimiser ) : 20
```

If the zone is setup as a Opt or an Opt-Time this figure will automatically change as the control learns the system. If the zone is setup as an Opt-Fixed zone this setting will not change.

- We are now prompted to enter the High/Low differential setting.

```
PLEASE ENTER THE DIFFERENTIAL BETWEEN
HI OUTPUT AND LOW OUTPUT:  04
```

- This setting is calculated in 1/2 degree steps. Therefore a high/low differential setting of 4 means that the high relay will switch off 2 degrees below the required temperature.
- At this point you are returned to the Setup menu where you can continue to configure the other zones or you may press RUN to put the control in to the Normal RUN mode.

2. TITLES

- Press the PROG button and enter the Engineers code.
- From the SETUP menu select 2 for TITLES.
- You are now prompted to select the title to alter:

Select the Required option

```
1. ZONE TITLE   2. ALARM   3. RELAY TITLE
      Press <1-3> for required option
```

Zone selection

```
PLEASE ENTER THE NUMBER OF THE ZONE
     YOU WISH TO ALTER (1-7) : 00
```

Enter the required characters

```
0123456789:;<=>?ABCDEFGHIJKLMNOPQRSTUVW
XYZ     ENTER THE TITLE HEATING ZONE NO 1
```

- By using the Left/Right arrow keys to select the required character you can then create the title required. To advance to the next character use the Enter key.
- To enter a space or to delete a character, select the “space” character to the right of the letter Z.
- To accept the programmed title press the RUN key.
- Press the RUN key to put the control in to the Normal RUN mode.

3. CHANGING THE USER CODE

Should the USER code be forgotten you are able to reset it by accessing the engineers section.

Press PROG, enter the engineers passcode and select 3 for CODE.

```
THE OLD USER SECURITY CODE WAS : 0000
PLEASE ENTER A NEW CODE(4 DIGITS):
```

At this point you are able to enter a four digit code. When the code entered is correct press ENTER.

4. MONITOR

This section logs the temperature and relay status every 15 minutes for the last 24 hours.

TIME	RL	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
00.00	SEN	??	62	21	19	26	??	??	??

Pressing ENTER will move you on to the next reading, pressing RUN will return you to the main menu.

5. HOURS RUN

This section gives the hours run for each relay for the last 4 weeks. The reading on the left is the current week.

WEEK	04	03	02	01
HOURS RUN	01.14	05.43	06.23	05.21

6. CLEAR MONITOR

This section clears all logging memory.

7. OVERRIDE/ALARM INPUTS

On the Heatmiser Plus there are two uses of the inputs. You are able to use them as alarm inputs or override switches.

- To configure the inputs first press PROG and enter the engineers code.
- Press 7 for inputs
- You must first set whether you would like to disable the holiday and summer inputs. Disabling them allows you to make use of input 7&8 for further alarm/override inputs.

```
DO YOU WANT TO DISABLE THE HOLS AND
SUMMER INPUTS:  <00> =NO <01> YES: 00
```

- You must now select whether you wish to use a pulse or fixed override switch. Fixed means that for as long as the input is made, the zone will be overridden. Pulse means that when a pulse is given to the input the zone will be overridden on. To override the zone off a further pulse must be given.

```
ENTER FUNCTION FOR OVERRIDE INPUTS
  FIXED <00>  PULSE <01>  :00
```

- You must now set how many remote overrides you want to use on the system. If you have not disabled the summer and holiday function you are able to use up to 6 remote overrides. If however you enter only 4, the remaining unused inputs are allocated as alarm inputs and as such will display an alarm message should the input be made.

```
ENTER THE NUMBER OF INPUTS TO USE
FOR THE EXTERNAL ZONE OVERRIDES  : 00
```

Input configuration - Summer and holiday input enabled.

Inputs 1 - 6 Alarm / Remote override switches
(Configure during setup the number of zone overrides)
Alarm = A message will be displayed on all displays indicating the alarm. The alarm text can be changed as described under the TITLE heading.

Input 7 - Summer Mode
When the Summer mode input is made, all zones (except those that have the Summer input disabled. i.e for Hot water zones) will shut down and will be controlled to the Night setback temperature.

Input 8 - Holiday Mode.
When the Holiday mode input is made, all zones will shut down and will be controlled to the Night Setback temperature until the holiday input is broken.

WIRING INSTRUCTIONS

RELAY BANK for Boiler Sequencer (Fixed or Variable) With Pump Overrun.

Relay 1 = Pump
Relay 2 = Boiler 1
Relay 3 = Boiler 2
Relay 4 = Boiler 3

Continue if more boilers are required ...

RELAY BANK configuration for Boiler Sequencer (Fixed or Variable) No Pump Overrun.

Relay 1 = Boiler 1
Relay 2 = Boiler 2
Relay 3 = Boiler 3
Relay 4 = Boiler 4

Continue if more boilers are required.....

RELAY BANK configuration for a Compensated zone.

Relay 1 = Pump
Relay 2 = Valve Open
Relay 3 = Valve Closed

RELAY BANK configuration for an Optimised zone.

Relay 1 = Valve

RELAY BANK configuration for an Optimised zone with pump overrun.

Relay 1 = Pump
Relay 2 = Valve

RELAY BANK configuration for a HILO zone.

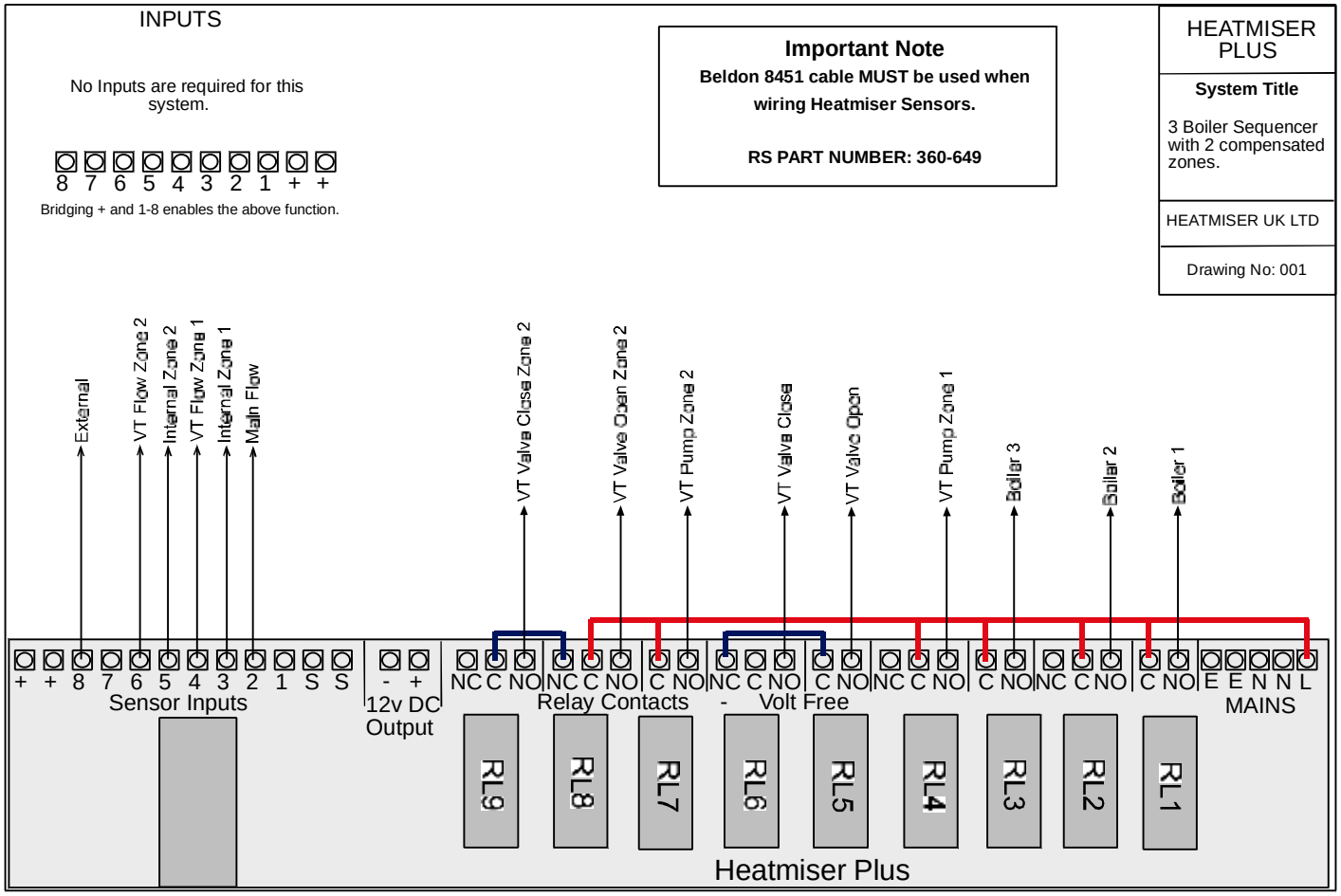
Relay 1 = Low fire
Relay 2 = High fire

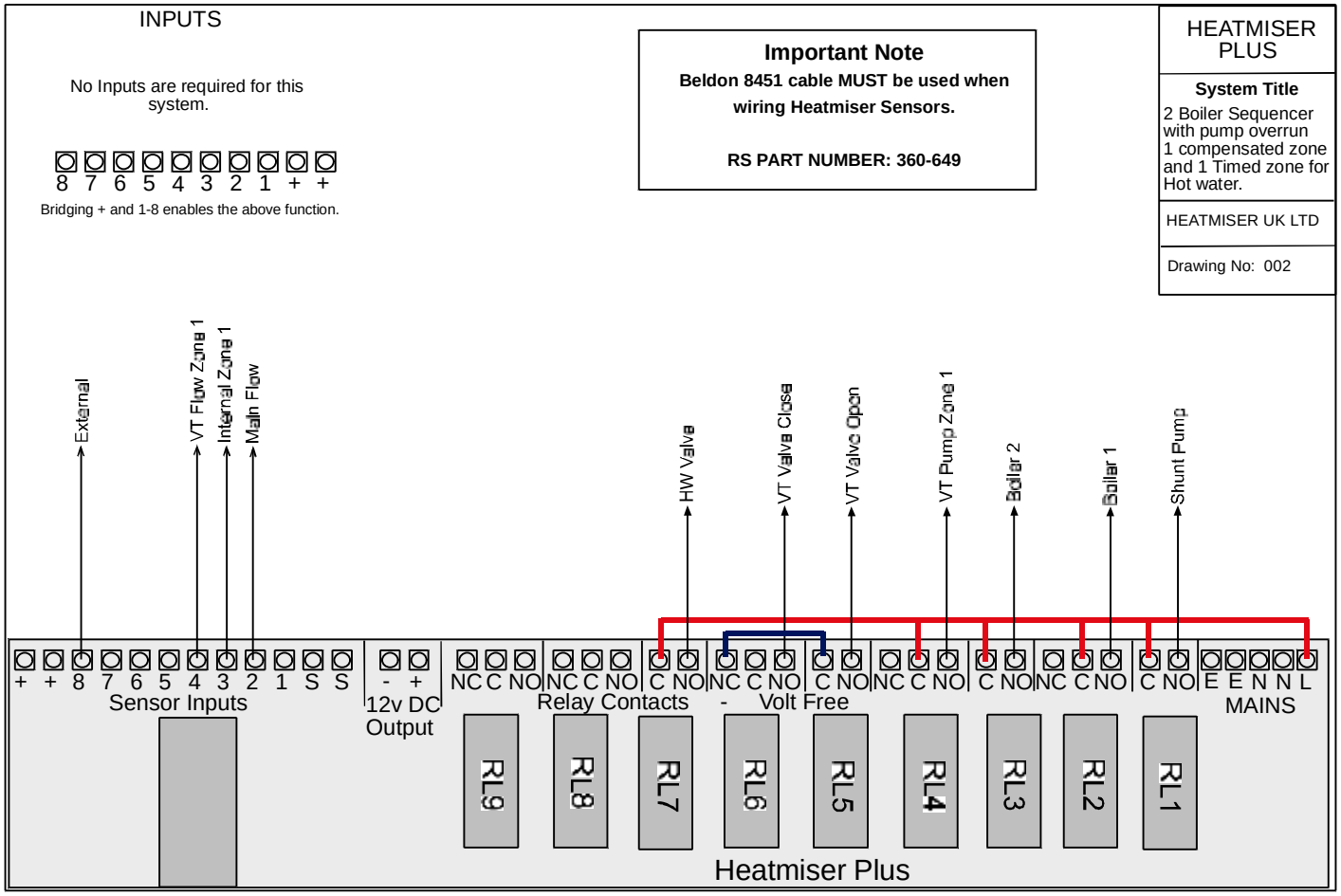
WHEN CONFIGURING ZONE TYPES FOR BOILER SYSTEMS, THIS IS THE ORDER THAT SHOULD BE OBSERVED.

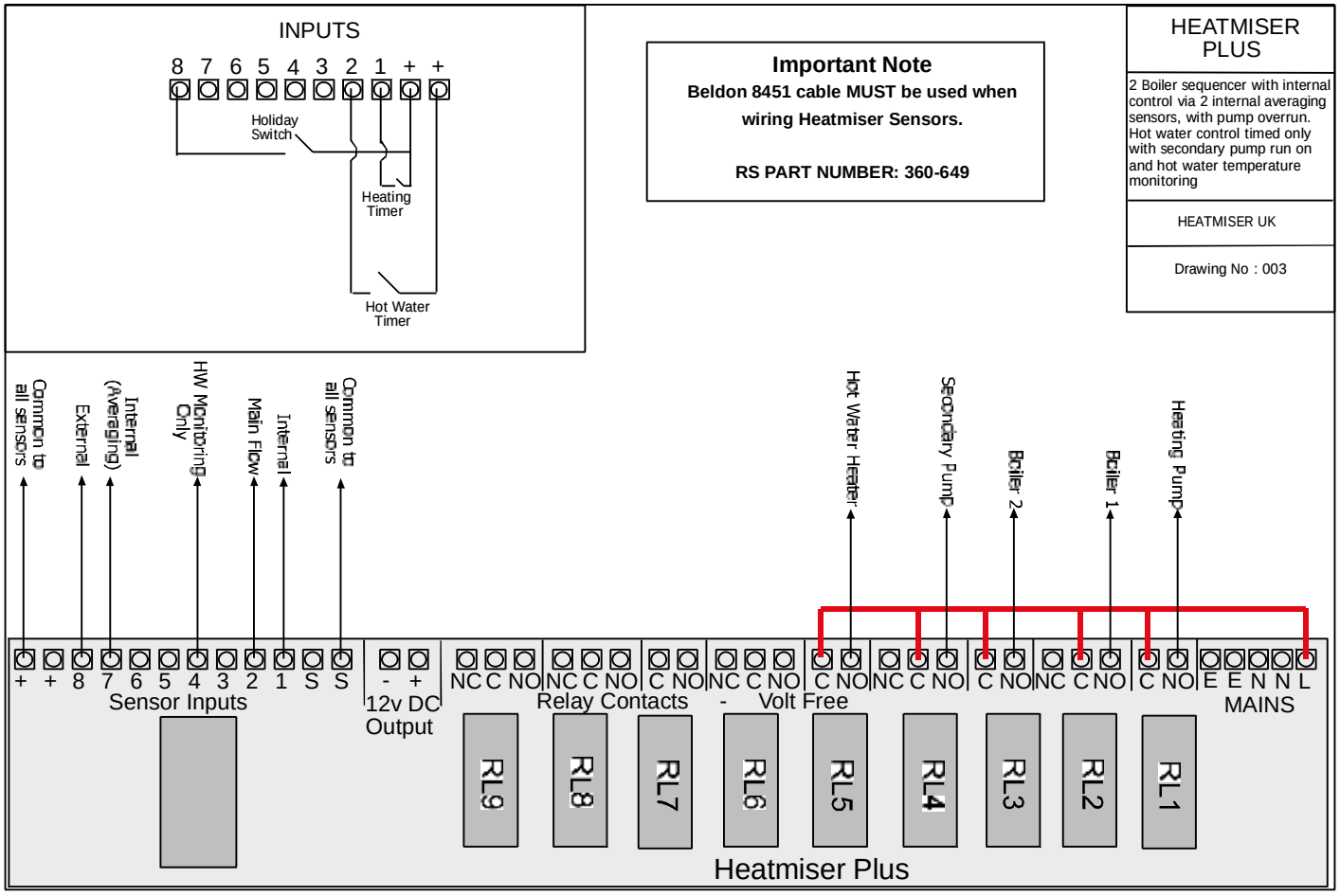
1. **BOILER SEQUENCER**
2. **COMPENSATED ZONE**
3. **OPTIMISED ZONES**

WHEN CONFIGURING ZONE TYPES FOR WARM AIR, THIS IS THE ORDER THAT SHOULD BE OBSERVED.

1. **HILO ZONES**
2. **OPTIMISED ZONES**


INPUTS
No Inputs are required for this system.
8 7 6 5 4 3 2 1 + +
Bridging + and 1-8 enables the above function.
Important Note
Beldon 8451 cable MUST be used when wiring Heatmiser Sensors.
RS PART NUMBER: 360-649
HEATMISER PLUS
System Title
3 Boiler Sequencer with 2 compensated zones.
HEATMISER UK LTD
Drawing No: 001
External
VT Flow Zone 2
Internal Zone 2
VT Flow Zone 1
Internal Zone 1
Main Flow
VT Valve Close Zone 2
VT Valve Open Zone 2
VT Pump Zone 2
VT Valve Close
VT Valve Open
VT Pump Zone 1
Boiler 3
Boiler 2
Boiler 1
+ + 8 7 6 5 4 3 2 1 S S
Sensor Inputs
- +
12v DC Output
NC C NO NC C NO C NO NC C NO C NO NC C NO C NO NC C NO C NO
Relay Contacts - Volt Free
E E N N L
MAINS
RL9
RL8
RL7
RL6
RL5
RL4
RL3
RL2
RL1
Heatmiser Plus


INPUTS
No Inputs are required for this system.
8 7 6 5 4 3 2 1 + +
Bridging + and 1-8 enables the above function.
Important Note
Beldon 8451 cable MUST be used when wiring Heatmiser Sensors.
RS PART NUMBER: 360-649
HEATMISER PLUS
System Title
2 Boiler Sequencer with pump overrun 1 compensated zone and 1 Timed zone for Hot water.
HEATMISER UK LTD
Drawing No: 002
External
VT Flow Zone 1
Internal Zone 1
Main Flow
HW Valve
VT Valve Close
VT Valve Open
VT Pump Zone 1
Boiler 2
Boiler 1
Shunt Pump
+ + 8 7 6 5 4 3 2 1 S S
Sensor Inputs
- +
12v DC Output
NC C NO NC C NO C NO NC C NO NC C NO C NO NC C NO C NO NC C NO C NO
Relay Contacts - Volt Free
E E N N L
MAINS
RL9 RL8 RL7 RL6 RL5 RL4 RL3 RL2 RL1
Heatmiser Plus


INPUTS
8 7 6 5 4 3 2 1 + +
Holiday Switch
Heating Timer
Hot Water Timer
Important Note
Beldon 8451 cable MUST be used when wiring Heatmiser Sensors.
RS PART NUMBER: 360-649
HEATMISER PLUS
2 Boiler sequencer with internal control via 2 internal averaging sensors, with pump overrun. Hot water control timed only with secondary pump run on and hot water temperature monitoring
HEATMISER UK
Drawing No : 003
Common to all sensors
External
Internal (Averaging)
HW Monitoring Only
Main Flow
Internal
Common to all sensors
Hot Water Heater
Secondary Pump
Boiler 2
Boiler 1
Heating Pump
+ + 8 7 6 5 4 3 2 1 S S
Sensor Inputs
- +
12v DC Output
NC C NO NC C NO C NO NC C NO C NO NC C NO C NO NC C NO C NO E E N N L
Relay Contacts - Volt Free
MAINS
RL9 RL8 RL7 RL6 RL5 RL4 RL3 RL2 RL1
Heatmiser Plus

INPUTS

No Inputs are required for this system.

8 7 6 5 4 3 2 1 + +

Bridging + and 1-8 enables the above function.

Important Note

Beldon 8451 cable MUST be used when wiring Heatmiser Sensors.

RS PART NUMBER: 360-649

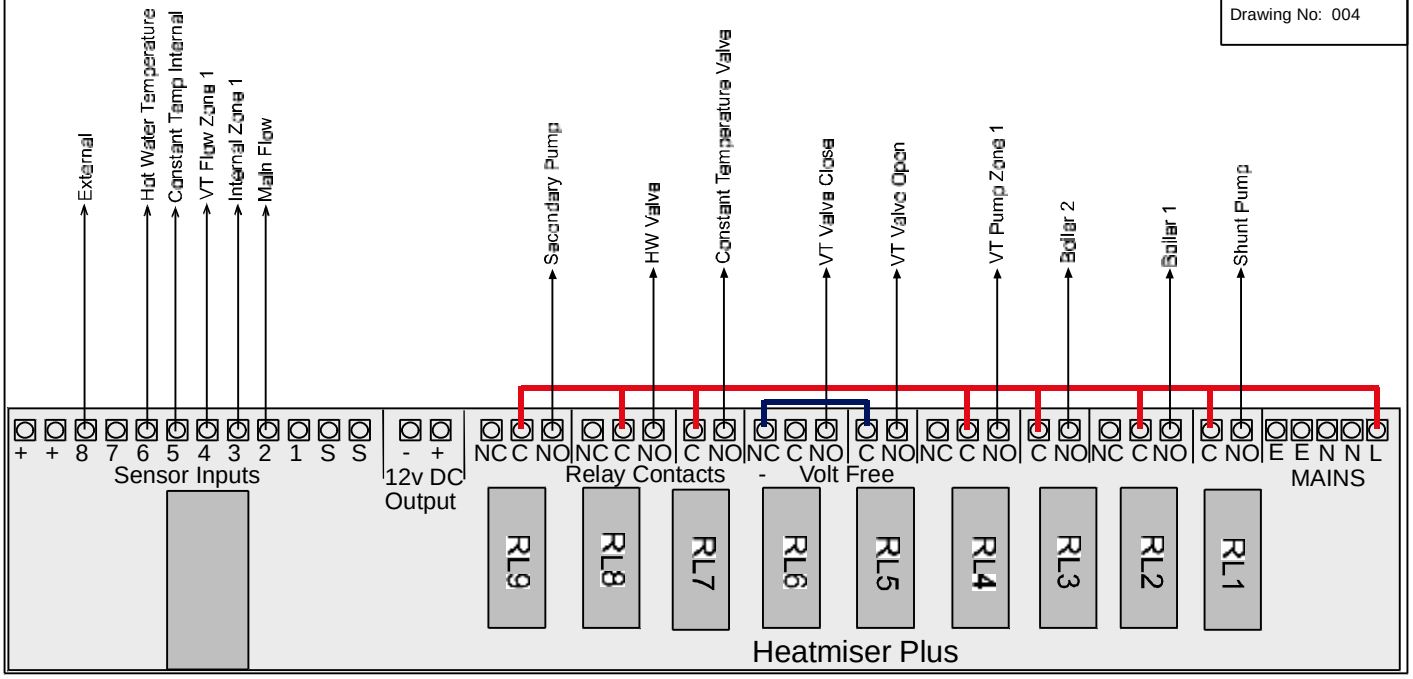
HEATMISER PLUS

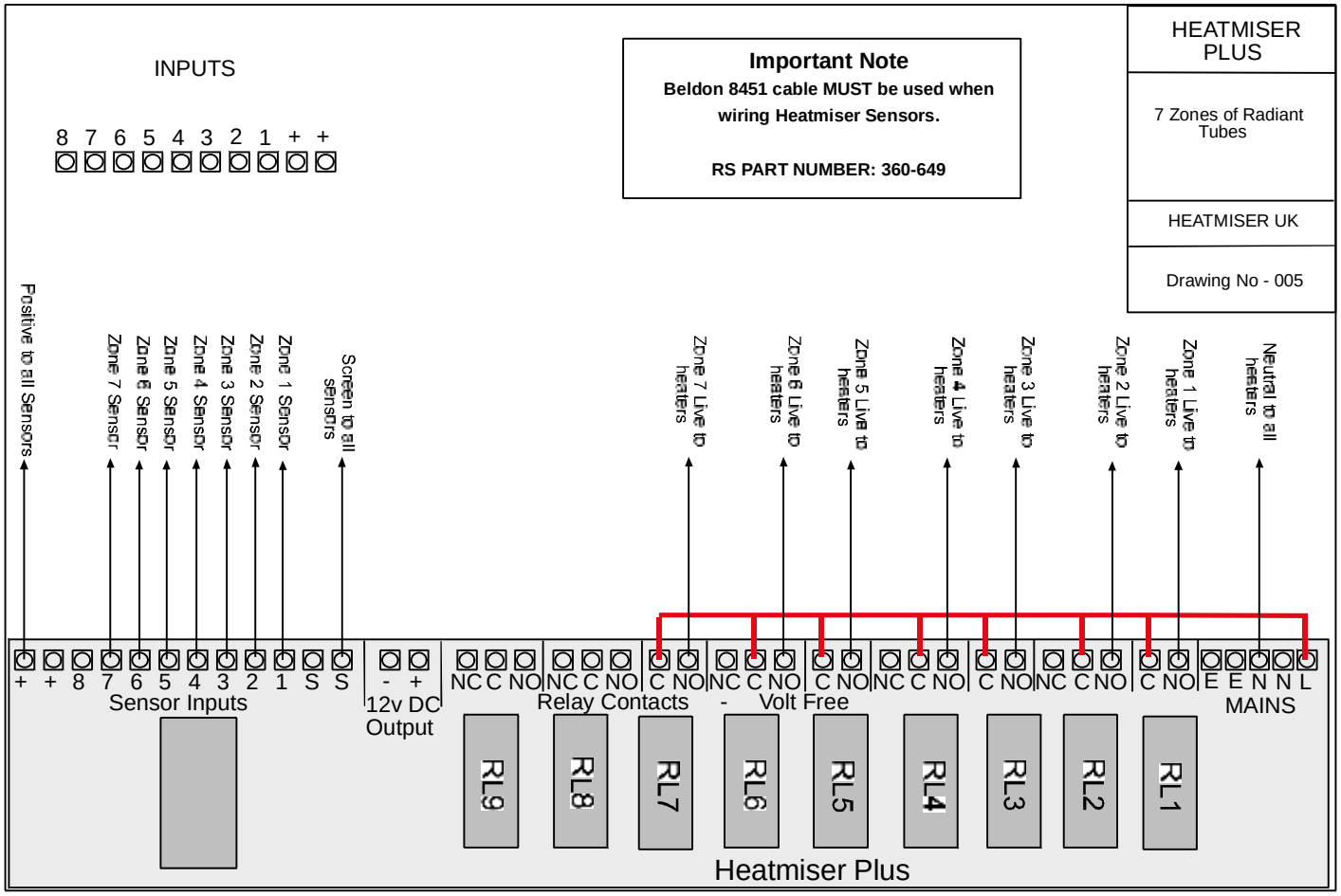
System Title

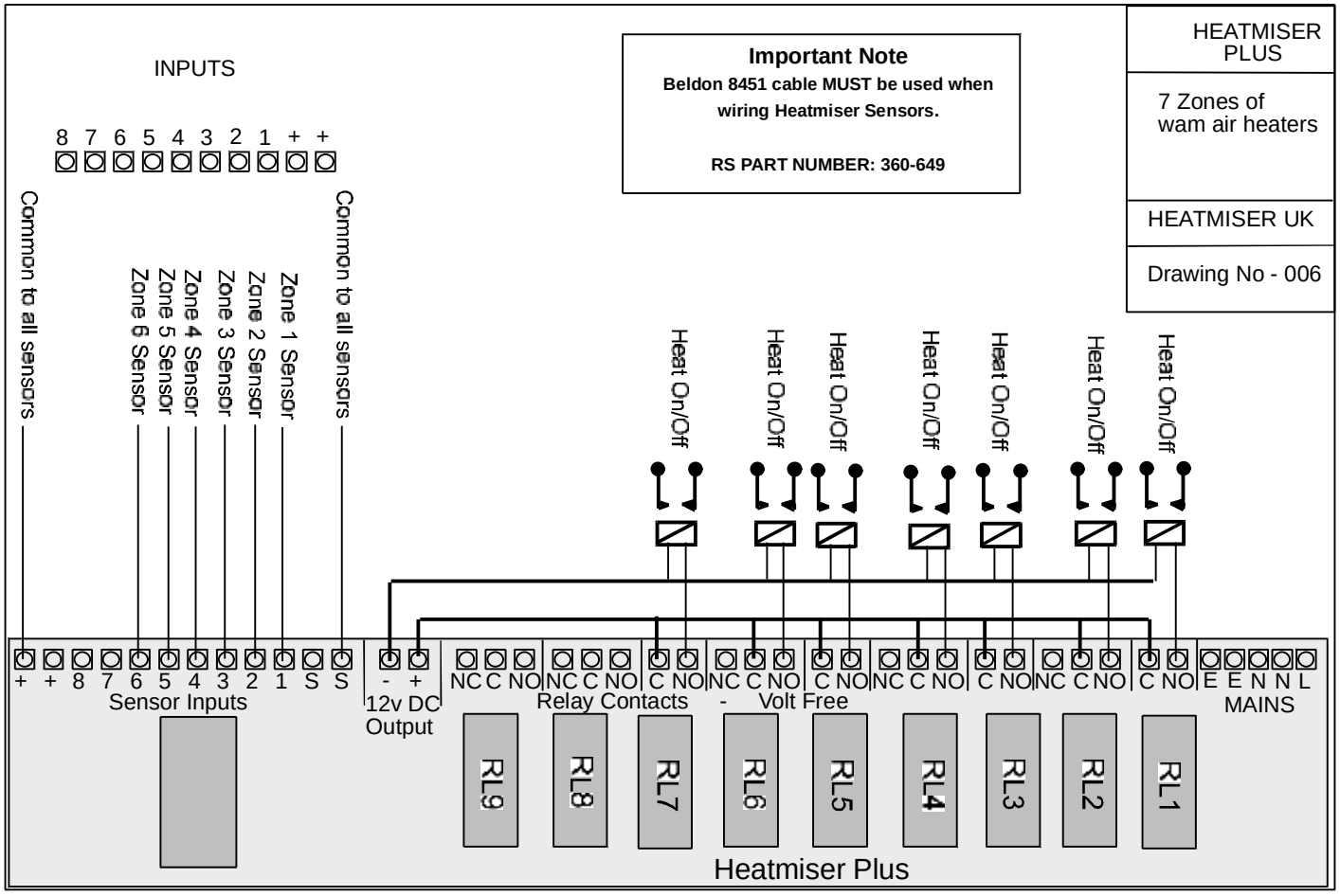
2 Boiler Sequencer with pump overrun. 1 compensated zone, 1 Constant temp heating zone, 1 Hot water zone and 1 secondary pump.

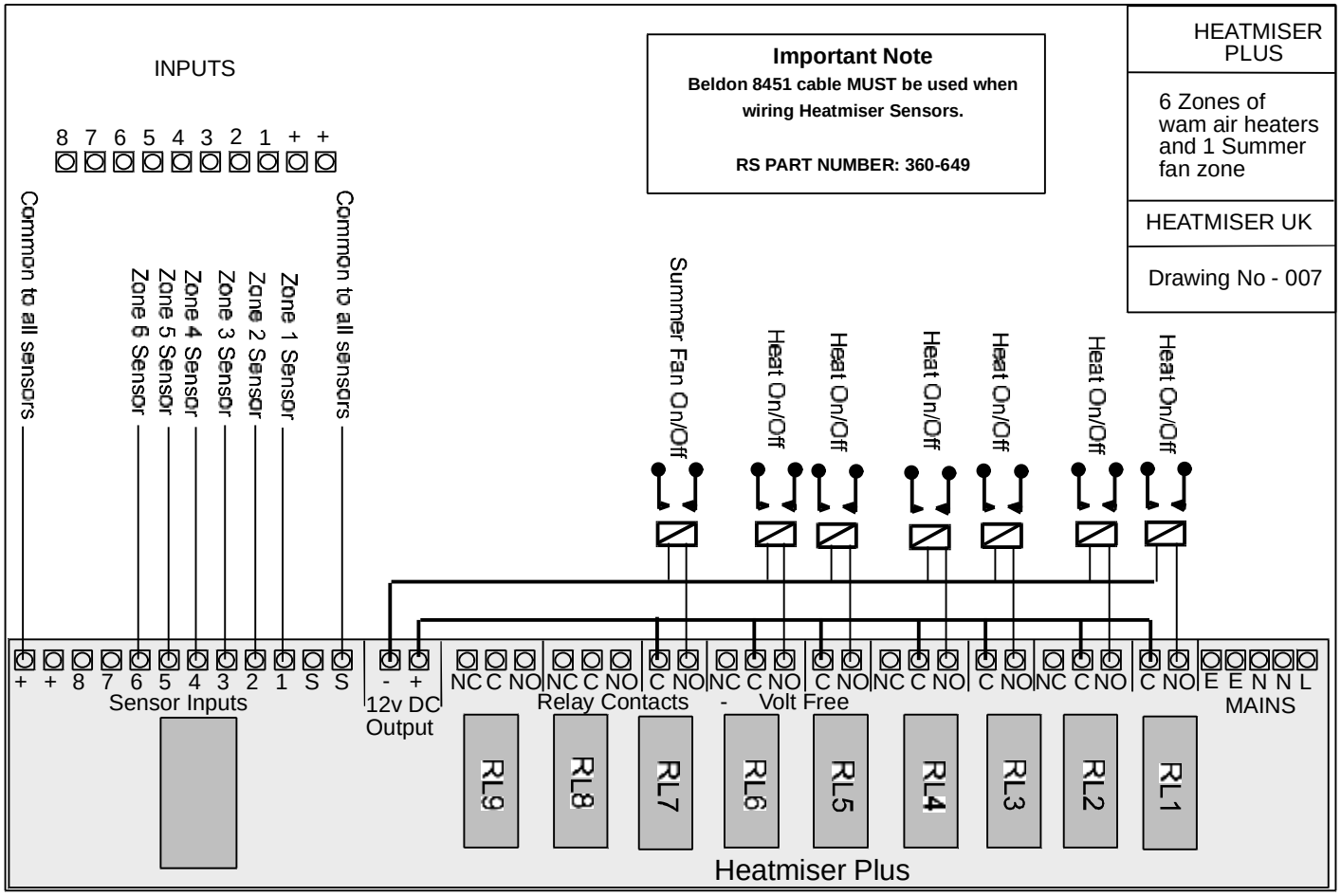
HEATMISER UK LTD

Drawing No: 004




HEATMISER PLUS
7 Zones of Radiant Tubes
HEATMISER UK
Drawing No - 005
INPUTS
8 7 6 5 4 3 2 1 + +
Important Note
Beldon 8451 cable MUST be used when wiring Heatmiser Sensors.
RS PART NUMBER: 360-649
Positive to all Sensors
Zone 7 Sensor
Zone 6 Sensor
Zone 5 Sensor
Zone 4 Sensor
Zone 3 Sensor
Zone 2 Sensor
Zone 1 Sensor
Screen to all sensors
Zone 7 Live to heaters
Zone 6 Live to heaters
Zone 5 Live to heaters
Zone 4 Live to heaters
Zone 3 Live to heaters
Zone 2 Live to heaters
Zone 1 Live to heaters
Neutral to all heaters
+ + 8 7 6 5 4 3 2 1 S S
Sensor Inputs
- +
12v DC Output
NC C NO
NC C NO
C NO
NC C NO
C NO
NC C NO
C NO
NC C NO
C NO
E E N N L
MAINS
Relay Contacts - Volt Free
RL9
RL8
RL7
RL6
RL5
RL4
RL3
RL2
RL1
Heatmiser Plus


HEATMISER PLUS
7 Zones of wam air heaters
HEATMISER UK
Drawing No - 006
Important Note
Beldon 8451 cable MUST be used when wiring Heatmiser Sensors.
RS PART NUMBER: 360-649
INPUTS
8 7 6 5 4 3 2 1 + +
Common to all sensors
Zone 6 Sensor
Zone 5 Sensor
Zone 4 Sensor
Zone 3 Sensor
Zone 2 Sensor
Zone 1 Sensor
Common to all sensors
Heat On/Off
Heat On/Off
Heat On/Off
Heat On/Off
Heat On/Off
Heat On/Off
Heat On/Off
+ + 8 7 6 5 4 3 2 1 S S
Sensor Inputs
- +
12v DC Output
NC C NO
NC C NO
C NO
NC C NO
C NO
NC C NO
C NO
NC C NO
C NO
E E N N L
MAINS
Relay Contacts - Volt Free
RL9
RL8
RL7
RL6
RL5
RL4
RL3
RL2
RL1
Heatmiser Plus


HEATMISER PLUS
6 Zones of wam air heaters and 1 Summer fan zone
HEATMISER UK
Drawing No - 007
Important Note
Beldon 8451 cable MUST be used when wiring Heatmiser Sensors.
RS PART NUMBER: 360-649
INPUTS
8 7 6 5 4 3 2 1 + +
Common to all sensors
Zone 6 Sensor
Zone 5 Sensor
Zone 4 Sensor
Zone 3 Sensor
Zone 2 Sensor
Zone 1 Sensor
Common to all sensors
Summer Fan On/Off
Heat On/Off
Heat On/Off
Heat On/Off
Heat On/Off
Heat On/Off
Heat On/Off
+ + 8 7 6 5 4 3 2 1 S S
Sensor Inputs
- +
12v DC Output
NC C NO
NC C NO
C NO
NC C NO
C NO
NC C NO
C NO
NC C NO
C NO
E E N N L
MAINS
Relay Contacts - Volt Free
RL9
RL8
RL7
RL6
RL5
RL4
RL3
RL2
RL1
Heatmiser Plus

HEATMISER SENSOR INFORMATION

Only Heatmiser sensors can be used with the Heatmiser controls.

There are 5 different types of sensors available each with a specific purpose.

Heatmiser Immersion.
The Heatmiser Immersion is used on boilers systems and is designed to measure flow Temperatures. The Immersion sensor is supplied with a 8.4cm brass pocket for inserting into the pipe-work.

Heatmiser Internal Sensors
Heatmiser Internal sensors should be fit about 5ft up and out of direct sunlight or other heat sources.

Heatmiser External Sensors
Heatmiser External sensors should be fit on North Facing walls out of direct sunlight.

Heatmiser Clamp On Flow Sensors
Heatmiser Clamp on flow sensors should be used on cylinders and on systems which cannot be drained down. Clamp on sensors should be fit 2/3 from the top of the cylinder or on compensating circuits 3-4 ft away from the pump.

Heatmiser Radiant Sensors
Heatmiser Radiant sensors should be fit about 5ft up and out of direct sunlight or other heat sources. They should be installed within the reflected area of the radiant tubes.

Cable required
You should use BELDON 8451 or equivalent. RS Part Number 360-649.
This cable is a twin, twisted screened cable.

How to claim

First check the Energy Technology List before investing in any new energy saving technology to establish that it qualifies for an ECA. You can find the list at **www.eca.gov.uk**

You can claim the allowance on the cost of the product, along with any costs directly associated with the provision of the product, such as installation costs. If the qualifying equipment is incorporated into a larger piece of equipment, the claim values shown at **www.eca.gov.uk** should be used.

Claim your ECA as part of your normal income/corporation tax return calculations – see your tax return form and accompanying notes.

Q Who can claim?

A. Businesses in the charge to income tax or corporation tax, apart from those who are leasing the assets i.e. the end-user, not the supplier or contractor. However, investments from 17 April 2002 in qualifying energy saving equipment for leasing, letting or hire can qualify for an ECA.

Q Can public organisations, for example local authorities, claim?

A No, public organisations cannot claim, because they do not pay income or corporation tax, but they can make use of the List to procure energy saving kit.

Q If I have a service contract, can I claim ECA's where new machinery is installed?

A The end-user can claim where the supplier is able to identify the investment in qualifying equipment and where the end-user has incurred capital expenditure on that equipment.

Q What if I pay for qualifying products in instalments?

A The normal tax rules apply, but generally you can claim the allowances as you incur the expenditure.

The **Enhanced** Capital Allowance

Enhance your energy efficiency
Enhance your cash flow

To find out more, visit **www.eca.gov.uk** or call Action Energy free on **0800 58 57 94**.

The scheme is being developed by the Inland Revenue and The Department for Environment, Food and Rural Affairs (DEFRA) and managed by the Carbon Trust.



CARBON TRUST
Making business sense of climate change

Action Energy is a Carbon Trust programme. The Carbon Trust is a company limited by guarantee.
Registered in England and Wales Number 4190230. Registered at: 9th Floor, 3 Clement's Inn, London WC2A 2AZ

Ref: FL112