

CE

heatmiser
Effective Temperature Control

**USER & ENGINEER
INSTRUCTION
MANUAL**

**HEATMISER
BOILERMAN**

Revision 1 - 01/06

USER INSTRUCTIONS

CONTENTS PAGE

SUBJECT	PAGE No.
Contents Pages	1
Language Option	2
Standard Terms	2
Normal RUN Mode	2
Override	3
Summer Mode	3
Time and Date View	3
Program Mode	3
Temperature setting	4
Programming the switching times	4
Setting the clock	5
Changing the user code	5
Viewing the Logging Information	5
Programming holiday periods	6
Engineers Setup	7
Maximum Override setup	7
Optimisation setup	7
Changing the user code	7
Configuring the Control	7
Configuration Setup	8
System Setup	9
Sensor Setup	9
Service Mode Setup	9
Resetting the Service Mode	9
Network Control	10
Programming the Service Mode	10
Network Setup	12
Specification	13
Wiring Diagrams	14

Language Option

To select the required language press PROG and enter the code 2305 and press Enter. Then select the required language from the selection.

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.

Preheat is the number of hours the control can come on before the programmed switching time (when in optimising mode) This is setup 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 by 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 - 17.00 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.

Normal RUN Mode is when the control is operating normally and is not being programmed (ie showing the time and date screen). It is important to remember that when any alterations have been made to the Heatmiser's program, the RUN button is pressed to return the control to the RUN mode.

Normal RUN Mode

There is one main Normal (Run) mode screen, and one Info screen on the Heatmiser Boilerman. These are explained below;

On/Off RUN mode screen

FRI 07.58 23°C HEAT OFF

This screen shows the time, actual temperature and the heat relay status (On or Off)

Pressing the Information button followed by option 1 will show the following display:

This display shows the target temperature along with the switching period status.

TARGET TEMP : 21°C TIME CLOCK: DAY

Override

The Heatmiser Boilerman can be overridden into a day or night condition to allow for any unscheduled operation of the system. The maximum time that the unit can be overridden will have been set by the installer.

To program an override period

- From the Normal RUN mode
Press the Override button and enter your security code if required.

Mon 13.06 20°C
Time Clock: DAY

- Then choose 1) to enter the override mode

1 > OVERRIDE MODE
2 > SUMMER MODE

- Then select either 1 or 2 to override the zone
ON(1) or OFF(2)

OVERRIDE TO
1 > ON or 2 > OFF

- You are now prompted to enter the length of the override period.

OVERRIDE SETTING
MAXIMUM (04) :03

- Should the zone be above temperature, the control will show the following screen. Remember that the override function only overrides time and not temperature. This error message will also appear if the override time programmed exceeds the maximum override setting

** WARNING**
INVALID DATA

- The status screen then indicates the zone has been put into an override condition.

Mon 13.06 20°C
Status: OVERRIDE



To cancel an override period repeat the steps above, choosing 2 for OFF and then reduce the length of the override period to 00

Summer Mode

To enable the Summer mode facility press the Override/Summer button and select 2 for summer.

The control is then put in to the summer mode, which means that the temperature is controlled to the Night setback setting.

To cancel repeat the above operation.

1 > Override Mode
2 > Summer Mode

Date

To display the current time and date:

- Press INFO
- Press 2 for date.
- To cancel, repeat the above operation.

12.13.49
SAT 11-12-02

Program Mode

From the Normal (RUN) mode screen, pressing the PROG button will display the following screen.

** WARNING **
ENTRY CODE: ????

Before you can access the Heatmiser you must enter the passcode. This passcode is set to 0000 as a factory default but may be changed at any time by the user to ensure security. This process is explained under section 4 (code).

Temp

This section is used to changed the temperature settings.

```
1>TEMP 2>DATA
3>SYSTEM 4>HOLS
```

Pressing 1 for Temp displays the following screen:

- You are now prompted to enter the required temperature for the DAY periods (EG:22). This must be entered as two digits.
- When complete, press Enter
- You are now able to select whether you require frost protection. Selecting ON enables you to set a NIGHT setback temperature.
- Press Enter when you have set the required night temperature.

```
SET DAY PERIOD
TEMP: 22°C
```

```
FROST PROTECTION
1>ON or 2>OFF
```

```
SET NIGHT PERIOD
TEMP: 05°C
```

Data

The DATA section is where you are able to set the daily switching periods. There are 3 switching periods per day available.

- Press PROG and enter the security code
- Now select 2 to enter the DATA menu.

```
1>TEMP 2>DATA
3>SYSTEM 4>HOLS
```

You can see on screen now that we are prompted to enter the switching period 1 for Monday. So using 24 hour clock notation, enter the required start time. (EG: 08.00)

```
MON PERIOD 1
S:HH:MM E:HH:MM
```

Now press enter to accept the Start time and to move the cursor to the end time setting.

We are able to program the required End time, for example 17.00. Don't forget to use 24 hour clock notation. When complete, press Enter to accept the programmed switching time and to move onto period 2 Monday.

Programming further periods

You are now able to program period 2 Monday in just the same way. Press Enter when complete.

```
MON PERIOD 2
S: HH:MM E:HH:MM
```

Should you not require all three switching periods, simply leave the times at HH:MM and this period will be ignored.

```
MON PERIOD 3
S: HH:MM E:HH:MM
```

At this point press the Enter key to move onto Tuesday's switching periods.

You are able to enter the switching periods for Tuesday in just the same way.

```
TUE PERIOD : 1
S:HH:MM E:HH:MM
```

Should the switching periods be the same on Tuesday, you can press the COPY button and this copies all of the switching times from the previous day. So, for example, if you were to press the COPY button on Tuesday period 1 all of the switching times from Monday would be copied, and then the Heatmiser would move onto Wednesday.

A screen is displayed to indicate the time have been copied.

```
COPYING ALL DATA
MON to TUE
```



To correct any mistakes made, use the DEL Key. If Enter is pressed at any time then the current settings will be retained.

System

This section allows you to set the system time/date and the security codes for the system.

System Time

- From the Normal RUN mode press PROG and enter the user security code.
- Press PROG and enter the user code
- Now press 3 for System
- Now press 1 for System time
- You are now prompted to enter the new time (Enter this in 24 hour clock notation)
- When you have entered the new time, press the Enter key.
- You are now prompted to enter the System date. (Date format is DD:MM:YY)
- When you have entered the new date, press the Enter key.
- You are now prompted to enter the day of week.
- When you have entered the new day, press Enter. The control will revert back to the menu screen. Press RUN to return to the normal RUN mode.

1>TIME 2>CODE
3>LOGGING

TIME NOW: 13.07
NEW TIME: HH:MM

DATE IS: 19-05-03
NEW DATE: DD:MM:YY

SET DAY OF WEEK
1==MON- 7==SUN

System Code

- Press Prog and enter the security code.
- Pressing 3 for System
- Pressing 4 for Code prompts you to select the code you wish to alter.

1> Manager Code - This code gives access to all data settings.
2> Override Code - This code gives access to the Override and Summer functions.

1 > MANAGER CODE
2 > OPERATORS CODE

To change the code, simply enter the new code when prompted.

CODE NOW: 0000
NEW CODE:????

Press RUN to return to the Normal RUN mode.



Setting the Manager and Operators code to the same disables the Operators code.
(ie. No code is required to access the operators section)

Logging

The Heatmiser Boilerman records hours run and temperature and burner history. Hours run is a weekly total and is stored for the previous 12 months. The temperature and burner history is recorded every 15 minutes and is also stored for 12 months.

Pressing 1 shows you this weeks hours run total. Pressing the left arrow allows you to scroll through the previous weeks. Using the right arrow allows you to scroll back up to the present date.

1 > HOURS RUN
2 > TEMP & BURNER

Pressing 2 shows you the last recorded temperature and burner status. Pressing the left arrow allows you to scroll through the records (15 minute intervals). Using the right arrow allows you to scroll back up to the last record.

Holidays

This is the section used to set the known holiday periods for the year when heating in the zone will not be required.

Five holiday periods can be set. Follow the steps below for instructions on how to set the holiday periods.

- Press the program key and select option 4.
- You are now prompted to enter the holiday period 1. You must enter the start date in the DD-MM-YY format. When you have programmed the start date of the holiday press enter.

HOLIDAY PERIOD 1 S:00-00-00 L:00

- You should now program the length of the holiday. You should calculate the number of days you want the heating off by counting from the first day of your holiday until the last. Now enter the length.
- When the first holiday period is set press the enter key.
- Holiday period 2 will now be displayed.

You should program the remaining holiday periods in the same way. When all of the holiday periods have been programmed the control will revert back to the Data menu.

Important Note:

1. If enter is pressed at any time then the current setting will be retained.
2. To cancel the holiday, put the date to 00.00.00 and length to 00. The holiday will then be cancelled

Engineers Setup

To enter the engineers section, press the program button and enter the Engineers code. (This will be found on a label inside the Heatmiser.)

A display like the one shown will now be displayed.

1 > OVERRUN 2 > OPTI
3 > CODE 4 > SETUP

OVER (Override)

This section allows you to enter a limit for the override. Enter two digits (eg:08 hours) and then press enter to accept the setting.

OVERRIDE SETTING
MAXIMUM TIME:08

OPTI (Optimisation)

With the Heatmiser Boilerman you are able to set whether optimisation is required (Refer to Terms for further information).

Should you require optimisation select 1 or 0 to disable it.

OPTIMISATION ?
N<O> Y<1> : 1

Selecting NO will return you to the Setup Menu and turns off optimisation. This means the control will switch the heating ON at the programmed switching time and will not allow for any warm up period.

This is the amount of time the heating system takes to raise the building temperature by 1°C. An average starting point would be 20 minutes but because the unit is self learning, it will alter itself by 1 minute per day to adjust to the correct setting.

RATE OF CHANGE
MINUTES /°C: 20

This is the maximum number of hours before the entered switching time that the unit could come on to raise the temperature. The maximum setting is 8 hours but an average setting is 3 hours.

SET PRE-HEAT
MAXIMUM TIME: 03

CODE

The code section will work as normal and is used to set the User's code.

SETUP

This section allows us to configure the control, enable or disable the internal sensor and set-up the service mode.

1 > CONFIGURATION
2 > SENSOR 3 > EXTRA

CONFIG (Configuring the Heatmiser Boilerman)

During the configuration process you will be asked to select the functionality required for the system being controlled.

- Press PROG
- Enter the Engineer code
- Select 4 for Setup
- Select 1 for Config

CONFIGURING THE HEATMISER BOILERMAN

PUMP OVERRUN

You are now prompted to enter the required pump overrun.

PUMP OVERRUN
MINS :

UP/DOWN TEMPERATURE LIMIT

You are now prompted to enter the limit for the Up/Down temperature keys. With a limit set to 02, you can increase/decrease the set temperature by 2°C

USER TEMP LIMIT
TEMP: 00°C

SYSTEM WIDE SETUP

SENSOR

The Heatmiser Boilerman has an internal sensor which is disabled as a factory default. To enable it, select 1 for Yes when prompted.

INTERNAL SENSOR
N<0> Y<1> : 0

The Heatmiser Boilerman has averaging facility. The system will automatically calculate and display the average reading when any two sensors (internal or remote) are detected.

You are now prompted to calibrate the first sensor, if you have enabled the internal sensor you will calibrate this first followed by 1 remote sensor.

CALIBRATE (20)
INTERNAL : 23

If you have not enabled the internal sensor you are prompted to calibrate the first and then second remote sensor.

CALIBRATE (19)
REMOTE 1 : 20

To calibrate, simply enter the new sensor reading after the colon.

EXTRA

SERVICE MODE

From the Normal Run Mode, enter the engineers code and press 4 for Setup, 4 for Extras followed by 1 for Service mode.

You are now prompted to:

- 1 > Configure the service mode or
- 2 > Reset the current hours run total held in the unit

1 > CONFIGURATION
2 > RESET DATA

Pressing 1 to configure the unit will display the following screen and will ask you to turn the service mode on of off.

SERVICE MODE
N<0> Y<1> : 0

You are now required to enter the number of hours the system may run before the service mode should be Activated. Press Enter to accept the programmed setting.

SERVICE MODE
HOURS RUN: 0000

You should now enter the phone number that you want displayed when a service

SERVICE MODE
CALL : 0000000000

SERVICE ALARM ACTIVATED

When a service alarm has been activated a warning screen will be displayed for 5 seconds every minute. You are able to cancel this warning by pressing RESET whilst the warning display is on screen.

Remember that you will not receive further service alarms until the control has been reset by an engineer.

RESETTING THE SERVICE ALARM

After a service alarm has been activated you are able to reset the hours setting without the need to reprogram the telephone number by selecting Reset from the Configuration/Reset screen.

SYSTEM RESET

This function resets the Heatmiser Boilerman's settings back to the factory default.

To put the control through a reset:

- Press 4 for Setup
- Press 4 for Extra
- Press 2 for Reset

RESET ALL DATA?
ENTER TO CONFIRM

- Pressing ENTER at this point will erase all data. To abort press the DELETE Key.

HEATMISER BOILERMAN

Network User Section

System explanation:

- Up to 30 Boilermans can be connected together to allow for central control of the heating system.
- The communication link is only used when copying/viewing data from a networked Boilerman. This means that should the communication link fail, the heating system will continue to work as normal.
- The design of the Boilerman network systems means that there is no "Master keypad" Each Boilerman can be setup to allow full network access, only local access or no access at all (keypad locked)
- Only 1 Boilerman can be programmed over the network at any one time.

Operating Normal RUN Mode functions on a networked Boilerman

Normal RUN mode functions are:

1. Fan
2. Override
3. Summer mode
4. View set-point and time-clock status
5. View current time and date
6. Reset a lockout status

- Use the left/right arrow keys to scroll around the network. The title of each Boilerman will be displayed as you scroll the network.
- Press Prog
- The display will inform the user that the control is entering REMOTE MODE
- The user can now perform any Normal Run mode operation as described on pages 2-4 of this manual

NB: In Normal Run mode, the following applies.

After 4 minutes of inactivity, the remote connection will time-out.

You can disconnect from the networked Boilerman by pressing the PROG key. To close the network connection, press RUN.

Programming a networked Boilerman

To begin programming a networked Boilerman, follow the steps below;

- Press Program and enter the "Network Access Code".
The network code can be found on the data label inside the product.
- You are now presented with two options.

"1 USE LOCAL DATA"
"2 USE NW DATA "

Use Local Data: You should use this option if you want to program the local Boilerman and want the ability to copy the data to a networked Boilerman.

You are now prompted with this menu.

1)TEMP 2)DATA
3)SYSTEM 4)HOLS

1) TEMP

This section is used to change the temperature settings.

- You are now prompted to enter the required temperature for the DAY period (EG:22) This must be entered as two digits.
- When complete, press Enter
Selecting ON enables you to set a NIGHT setback temperature.
- Press Enter when you have set the required night temperature.

SET DAY PERIOD TEMP: 22°C

FROST PROTECTION 1 > ON or 2 > OFF

SET NIGHT PERIOD TEMP: 05°C

2) DATA

This section is where you are able to set the daily switching periods. There are 3 switching periods per day available.

When you select DATA, you are presented with an additional screen over the standard programming mode. This screen gives you the ability to copy the switching time data to other Boilermans on the network.

Select 1 to program the switching times.
Select 2 to begin copying the times

"SWITCH TIMES" 1 > SET 2 > COPY

When you press 2 for Copy,
you are prompted with this screen.

"COPY TIMES" 1 > ZONE 2 > ALL

1 > Zone. This allows you to select a zone by using the left/right arrow keys.

When you have selected the zone you wish to copy the times to, press Copy

2 > All. Selecting this allows you to copy the times to all Boilermans on the network.

3) SYSTEM

This section allows you to set the system Time/Date and the security codes for the system.

System Time

- From the Normal RUN mode press PROG and enter the user security code
- Press Prog and enter the user code
- Now press 3 for System
- Now press 1 for System time
- You are now prompted to enter the new time (Enter this in 24hr clock notation)
- When you have entered the new time, press the Enter key
- You are now prompted to enter the new date, press the Enter key
- When you have entered the new date, press the Enter key
- You are now prompted to enter the day of the week.
- When you have entered the new day, press Enter
The control will revert back to the menu screen.
Press Run to return to the normal RUN mode.

1 > SYSTEM TIME 2 > SYSTEM CODE

TIME NOW: 13.07 NEW TIME: HH:MM

DATE IS: 19-05-04 NEW DATE: DD:MM:YY

SET DAY OF WEEK 1 = Mon 7 = Sun

System Code

- Press Prog and enter the security code
- Pressing 3 for System
- Pressing 4 for Code prompts you to select the code you wish to alter

1 > Manager - This code gives access to all data settings

2 > Operator - This code gives access to Override, Fan, Summer functions.

4) HOLS

When you select HOLS, you are presented with an additional screen over the standard programming mode. This screen gives you the ability to copy holiday periods to other Boilerman controls on the network. Select 1 to program the holiday periods. Select 2 to begin copying the holidays

```
"HOLIDAYS"  
1 > SET 2 > COPY
```

When you press 2 for Copy, you are prompted with this screen.

```
"COPY HOLS"  
1 > ZONE 2 > ALL
```

1 > Zone. This allows you to select a zone by using the left/right arrow keys.

When you have selected the zone you wish to copy the Hols to, press Copy

2 > All. Selecting this allows you to copy the times to all Boilermans on the network.

Use NW Data: This allows the user to select and program a networked Boilerman. Under this mode you cannot program the Local Boilerman and the global copy function will not copy the data to the local Boilerman controls.

- Pressing the Back and Forward arrows keys will display the name of the Boilerman available on the system.
- When you have identified the Boilerman you wish to program, wait 5 seconds and the Boilerman will automatically display the following display.
- Follow the instructions on 2-3 for programming details in this mode.

```
"!SELECT CONTROL!"  
" BACK FWD "
```

```
"1 > TEMP DATA"  
"3 > SYSTEM HOLS"
```

Network Setup Section

In order to setup the Boilerman on the network, follow the steps outlined below. You should repeat these steps for each Boilerman on the network.

Important: Setup outstation 1 last.

- Press Program and enter the *network setup code*. (The *network setup code* can be found on the data label inside the product)
- You are now prompted to enter the station number. You should enter a two digit number for each Boilerman on the network. One Boilerman must be given the ID number 01
- You are now prompted to enter a title for this Boilerman. You are able to set a title up-to 11 characters long. Enter the title by using the alphabet keys to select the required letter, and enter to accept.

```
" ** WARNING **"  
"ENTRY CODE:???"
```

```
"NETWORK ID NO "  
"FOR THIS UNIT: XX"
```

```
"CONTROL NAME?"  
"XXXXXXXXXX "
```

- You are now prompted to select whether you require "Local" "Lock" or "Full" access.

```
"ACCESS? LOCAL<0>"
"LOCK<1> FULL<2> "
```

"Local" = This means that the Boilerman can be used locally, but cannot be used to access other Boilermans on the network.

"Lock" = This means that the Boilerman will be locked and cannot be used

"Full" = This means that the Boilerman can be used locally, and can also be used to access other Boilermans on the network.

- You are now prompted to select whether you want to give "Remote Reset" facility. If enabled, the user will be notified when any heater goes to lockout. This information will be displayed on the Boilermans that have been setup to offer "full" access. The user will also be able to send a reset signal via the network to reset the heater which is at lockout.

```
"ALLOW REMOTE RESET?"
" N<0> Y<1> :0 "
```

Setting up Station 1 (You should do this last)

- You will be prompted to enter a Network code when setting up Outstation 1. This is a 4 digit code that you will be able to use to gain access to all the other Boilermans on the network. When you enter this code, it will be sent to all Boilermans on the system.

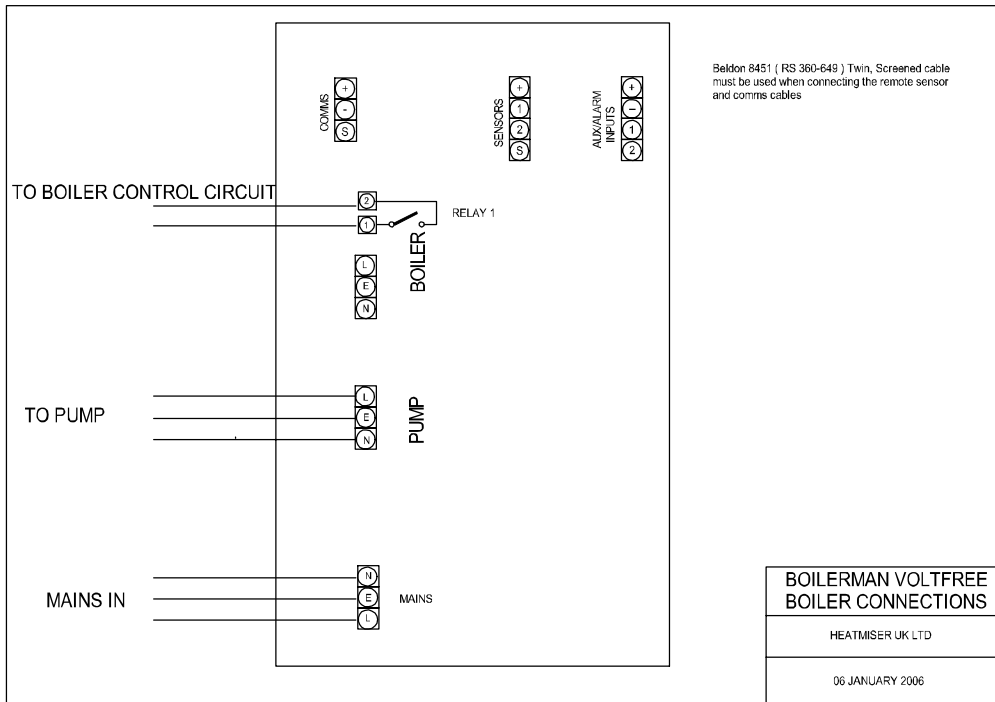
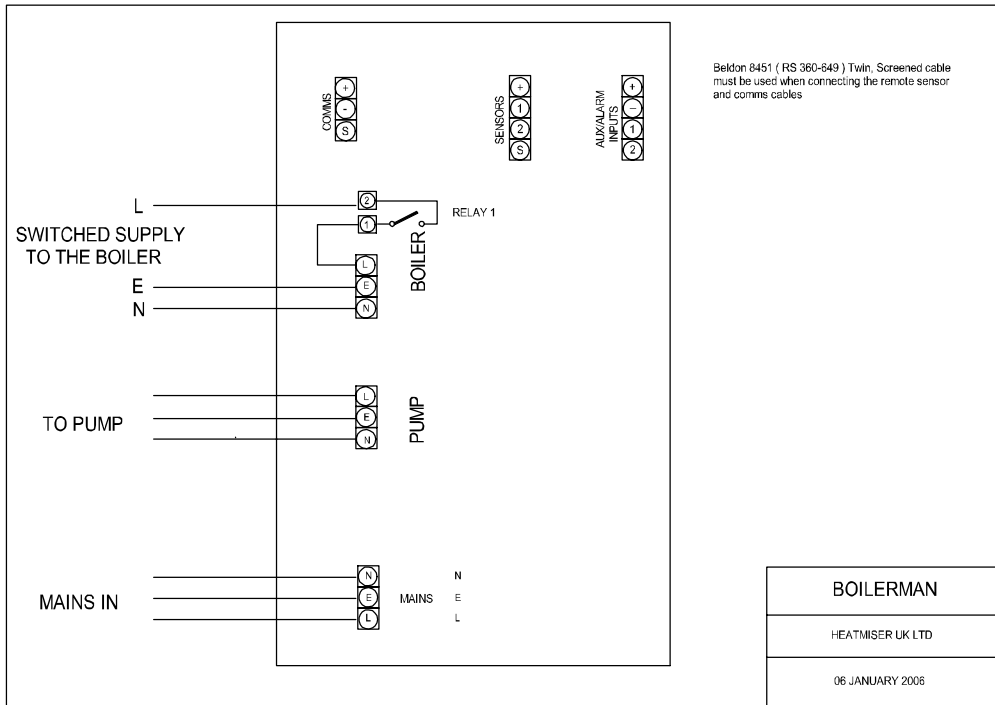
```
"SET NETWORK CODE"
" XXXX "
```

- You will be prompted to enter the number of controls on the system.

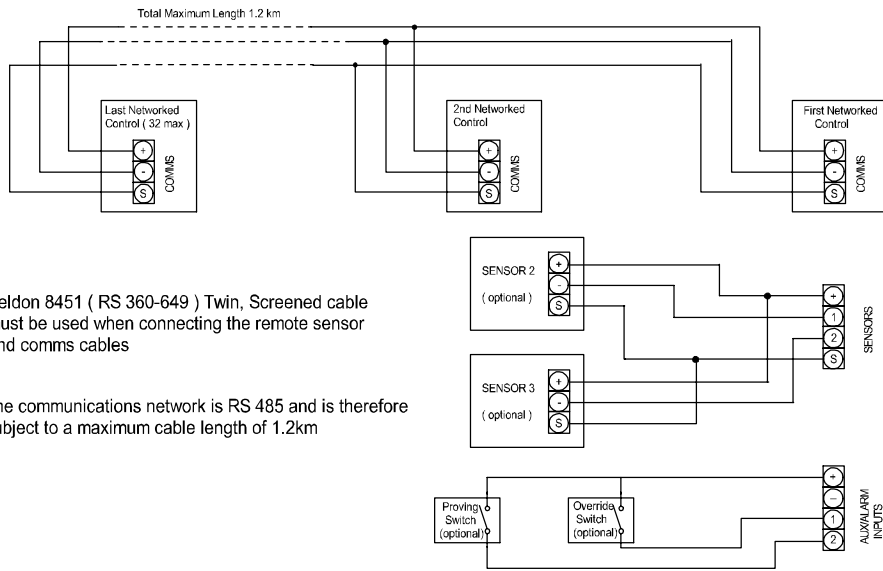
```
"ENTER NUM OF CTL"
"1 TO 30: "
```

SYSTEM SPECIFICATIONS

Enclosure:	ABS Fire Retardant
Dimensions:	222mm x 156mm x 61mm (Length, Height,Depth)
Weight:	1.3 kg
Relays:	Relay 1-2 230v Outputs
Supply:	230v AC ± 10% 50Hz
Sensors:	Only use Heatmiser Sensors. Twin screened cable (Beldon 8451)
Battery:	3 years (Replacement battery: CR2430)
Fuses:	FS1: 800mA Antisurge FS2: 315mA Quick blow FS3: 315mA Quick blow



SENSOR, COMMS AND AUX WIRING FOR THE ECLIPSE, BOILERMAN , ECONOMY AND MISTRAL 1



Beldon 8451 (RS 360-649) Twin, Screened cable must be used when connecting the remote sensor and comms cables

The communications network is RS 485 and is therefore subject to a maximum cable length of 1.2km

