

GS UNDERFLOOR
HEATING



Model: UH8-RF



UH8-RF – Installation Manual

Description

The UH8-RF is an 8 Zone central wiring centre for use with Heatmiser RF thermostats.

The UH8-RF can be used to control any actuator or valve which requires a 230v AC signal. At the same time the UH8-RF offers the ability to operate a boiler or other heat source through a volt free output with changeover contacts, which gives you both a heat on signal and a heat off signal.

Additional outputs designed for use with hot water or underfloor heating systems, are also included as standard. These are the pump and valve outputs which would normally operate a manifold pump or a manifold valve, and the H/W output which is used to send a hot water on and hot water off signal.

Any output which is not needed can be ignored.

99 channel numbers are available allowing up to 99 different UH8-RF wiring centres to be operated in close proximity. With 8 thermostats per wiring centre this gives you up to 792 distinct heating zones.

When wiring directly to the heat source is not possible, a radio link is provided to remotely enable a separate receiver, the RF-Switch.

Test switches are included for the installation engineer and further options include creepage protection and pump delay.

Operation

Each RF thermostat used on this system can be configured as a thermostat for either a radiator zone, underfloor heating zone or in combination mode, hot water and heating zone.

When the thermostat sends a signal for heating, the UH8-RF will provide a 230v AC output on the paired zone and also bring on the boiler/other heat source output. At the same time the UH8-RF can send a radio signal to the RF-Switch. If the thermostat is configured as

an underfloor heating zone, the UH8-RF will also start the pump and valve outputs.

If an enable signal is received from a hot water time clock on the system, only the H/W output will become active. This is a timed output, which is normally fed to a cylinder thermostat, then to a valve, but could also be used for towel rails. In either case the valve auxiliary switch would operate the boiler/other heat source.

Other functions

Creepage

During hot weather the heating is not normally needed as often, this means that valves and pumps that are not being used can seize and refuse to operate. To prevent this, it is good practice to operate the valve or pump once a day, the creepage function does this for you.

Once enabled the UH8-RF will operate each valve or pump for 1 minute, only if the outputs have not been operated by a thermostat, within the preceding 24 hours. This function does not operate the boiler output.

Pump Delay

Some valves or actuators can take more than a minute to open, if the boiler and pump operate before the valve is open it can force a boiler to go to lockout and stop operating. This function delays the operation of the pump and boiler for 2 minutes to give the actuators and valves time to open.

Engineers Test Switches

These switches allow the installation engineer to test the operation of the valves, actuators, pumps hot water or boiler, without having to install the thermostats.



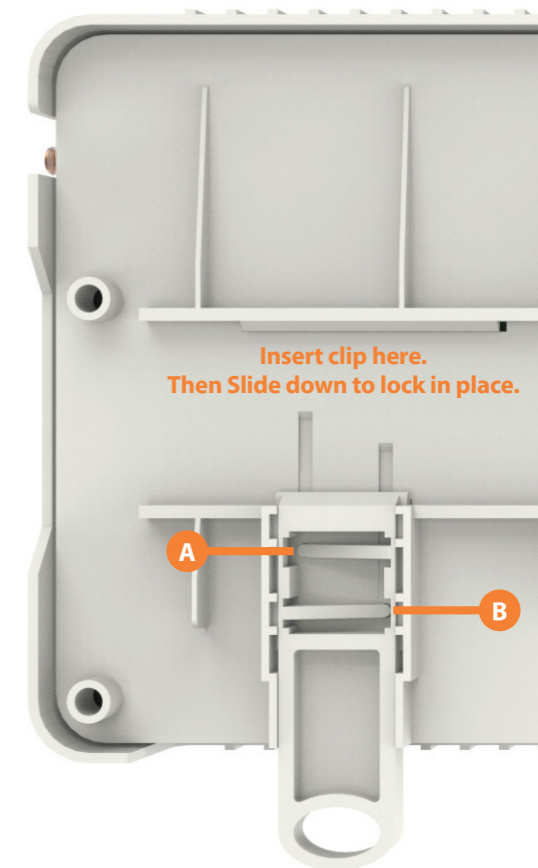
Installation

The UH8-RF can be mounted directly to a wall using four screws or alternatively, the unit can be DIN rail mounted.

When DIN Rail mounting, you first need to insert the two clips provided on the back of the UH8-RF, as shown in the image;

- On the back of the UH8-RF, position the clip in the middle and slide down.
- Points A and B locate in the corresponding holes and lock into place.
- Locate the UH8-RF onto the DIN rail from the top.
- Pull the clip down and push the bottom of the UH8-RF onto the DIN rail.
- Releasing the clip will lock the UH8-RF in place on the DIN rail.

To remove the UH8-RF, pull both clips down and remove from the DIN rail.





UH8-RF Wiring

The UH8-RF should be fitted as close as possible to the equipment it is controlling, but never within a metal enclosure, if this cannot be avoided an extension antenna (EA1) must be fitted and placed outside the metal enclosure.

Connections

Mains Supply

Power supply into the UH8-RF which should be fused at 5 amps these connections are marked

L = live or phase 230v AC 50/60Hz

N = Neutral

E = Earth

Boiler

This is the main call for heat for the system, there are 3 connections;

C = common

NO = normally open

NC = normally closed

Electrically this is a two-way switch, whatever supply is placed on the C connection, is fed to the NC connection when there is no call for heat.

This is then switched to the NO connection when there is a call for heat.

Most systems will use the common (C) and normally open (NO) connections.

H/W

This output is used to control a hot water cylinder thermostat

C = common

NO = normally open

NC = normally closed

Electrically this is a two-way switch, whatever supply is placed on the common connection, is fed to the NC connection when there is no call for hot water. This is then switched to the NO connection when there is a call for hot water.

Normally the NO connection would be wired to the hot water cylinder thermostat, then from there to the hot water valve, the valve auxiliary switch will then start the boiler/other heat source.

Most systems will use the common and normally open connections.

Zones 1...8

Zones outputs are clearly marked

L = live out to actuator or valve

N = neutral to actuator or valve

There are two connections live (L) and neutral (N), both terminals marked L are the same and both terminals marked N are the same.

Each zone output is numbered, Zone 1 will respond to radio signals from the thermostat paired to zone 1, Zone 2 output will respond to thermostat numbered 2 etc.

Pump

Used for an underfloor heating manifold pump.

Connections are clearly marked

L = live or phase 230v ac 50/60Hz

N = Neutral

E = Earth

When a thermostat configured as an under-floor heating zone sends a call for heat to the UH8-RF, the live output will supply 230v to the manifold pump.

It is recommended that this is fed through a high limit switch placed on the heating manifold, to protect against mechanical failure of the manifolds temperature control.

Valve

Used for an underfloor heating manifold valve.

Connections are clearly marked

L = live or phase 230v ac 50/60Hz

N = Neutral

E = Earth

When a thermostat configured as an under-floor heating zone sends a call for heat to the UH8-RF, the live output will supply 230v to the manifold valve.

Fuses

Each UH8-RF is protected by 3 fuses

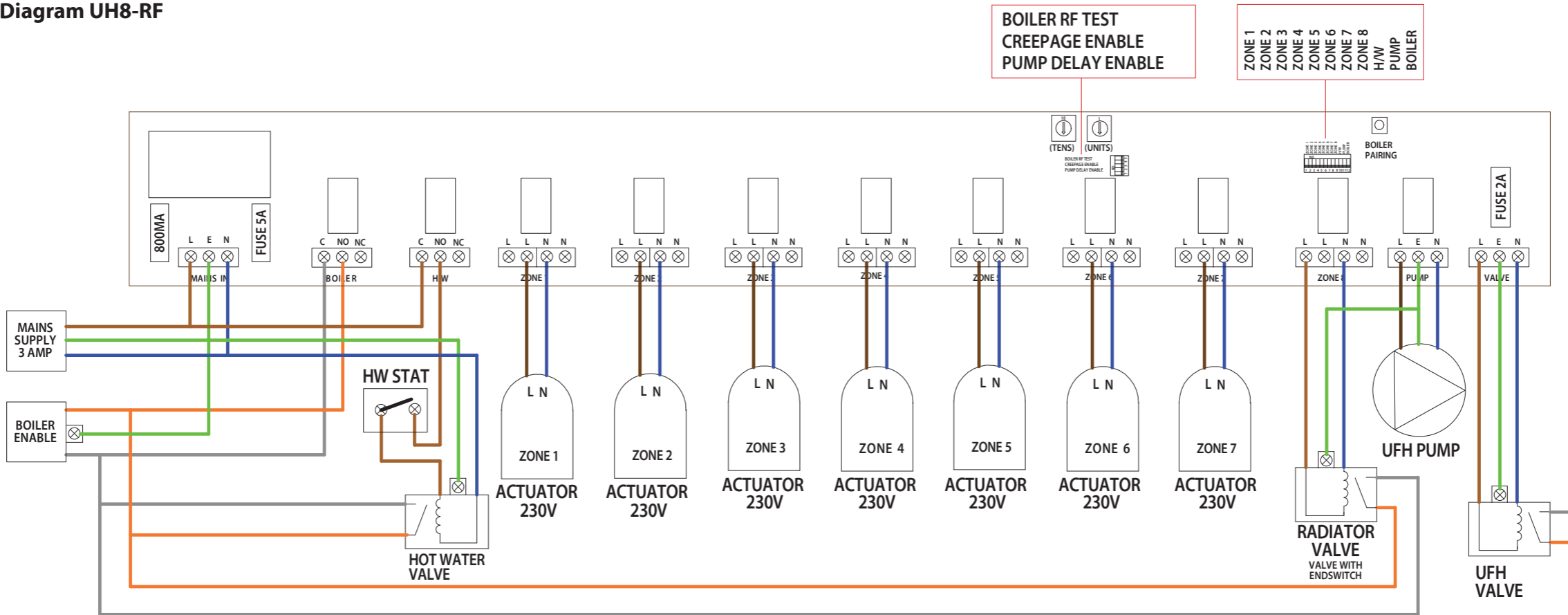
Fuse 1. 800mA, 20mm anti-surge fuse, this fuse supplies and protects the internal electronics.

Fuse 2. 5amp, 20mm anti-surge fuse, this fuse supplies power to all 230v outputs from the board it protects the zone, pump and valve outputs.

Fuse 3. 2amp, 20mm anti-surge fuse, this fuse supplies power to the pump and valve outputs, it protects the board from overloads caused by jammed valves or seized pumps.



Wiring Diagram UH8-RF





System Setup

Step 1

Each UH8-RF board has 2 rotary switches labelled CHANNEL NUMBER, this number is used to identify the board and must be set to a unique number.

If you are only installing one UH8-RF, you would normally set the channel number to 01. On the rotary switches this would be 0 tens and 1 unit. If you were installing 15 UH8-RF units, you would number them 01 to 15, fifteen would be 1 tens and 5 Units.

You can choose any numbers you wish up to 99 but no 2 units within radio range can have the same number



Example: Rotary Switch showing ID No. 99.

DIP Switches

There is a 4 way dip switch responsible for 3 functions;

1. Pump Delay
2. Creepage Enable
3. Boiler RF test
4. Not used



In normal use these DIP switches can be ignored and should be left in the off position.

DIP Switch 1

To enable the pump delay, put switch 1 to the ON position.

DIP Switch 2

To enable creepage protection, put switch 2 to the ON position.

Pairing to the RF-Switch

On the RF-Switch, press and hold the Boiler pairing button for 5 seconds.

The Boiler status LED will switch on.

Press and release the pairing button on the UH8-RF.

When the RF-Switch detects the pairing signal from the UH8-RF, the Boiler LED will switch off, pairing complete.

DIP Switch 3

The Boiler RF test switch is used to test communications with the RF-Switch receiver, used for remotely enabling the boiler.

The UH8-RF sends a repeating on/off signal to the RF-Switch receiver, when installation is complete, switch number 3 MUST be in the OFF position.

Put switch 3 to the ON position, the UH8-RF will send a repeating on/off signal to the RF-Switch.

The Boiler LED on the RF-Switch will flash to indicate successful communication.

Engineers test switches

These are a block of 12 dip switches, used to test each zone, boiler, pump and HW outputs. To enable any output, put the switch in the ON position.

When installation is complete all switches **MUST** be in the OFF position.

Record the rooms names connected to each zone with the zone number and record the channel number you have selected, you will need this information when installing the thermostats.

That completes the setup process.

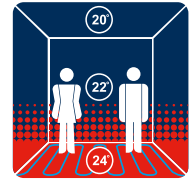
Step 2 is to configure the thermostats and will depend on which model you have, please refer to the thermostat instruction manual.

Ratings

Supply	230v AC 50Hz
Power consumption	7W
Max load on boiler output	3A 230v AC resistive.
Max load on H/W output	3A 230v AC resistive.
Max load for zone outputs	3A 230v AC resistive.
Max Total load	5 Amps

Optional Accessories

RF-Switch	(Remote Boiler enable)
Boost	(Repeater)
Extension Antenna	(EA1)



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