INSTALLATION GUIDE

Contents

PRE-INSTALLATION CHECKLIST

SOLID / SCREED FLOORS

1. Insulation fitted neatly and stable with all gaps and joints taped.

2. If using liquid screed, a membrane of between 500 and 1000 gauge must be laid as crease / fold free as possible with all joints taped and no gaps. The membrane should lap up the wall by approx 100mm - paying attention to corners and joins will give a neater edge to the screed.

3. If pipe is to be routed through walls, there should be a suitably sized hole(s) for this with conduit around the pipe to protect it.

4. Perimeter insulation should be fitted around all walls (also over the 500 gauge membrane if applicable). Pull the plastic skirt out and if using liquid screen, tape the skirt to the membrane along all edges, see picture.

JOISTED FLOORS

1. Insulation fitted neatly in between joists

2. If pipe is to be routed through walls, there should be a suitably sized hole for this.

3. Notching of the joists as per building and insurance regulation

RECOMMENDED FOR ALL INSTALLATIONS

1. A mains water supply with a suitable tap connection (Hozelock or bib tap etc) should be available within 20m of the manifold(s)

2. A solid provision for the manifold(s) to be fitted to should be available

3. All areas free of other trades, water and debris etc

4. Electricity supply for power tools and lighting

5. Our CAD design (if applicable) should be approved before the installation date

EQUIPMENT / DESIGN

1. Before commencing with installing materials check the equipment is complete, correct, undamaged and matches the delivery note / invoice Check that the CAD design (if applicable) is present and correct to your property etc.

Check you have the appropriate fixings for the floor construction

The installation of this equipment should be carried out by a competent person
and in accordance with the relevant, Building Regulations, Model Water By laws and the
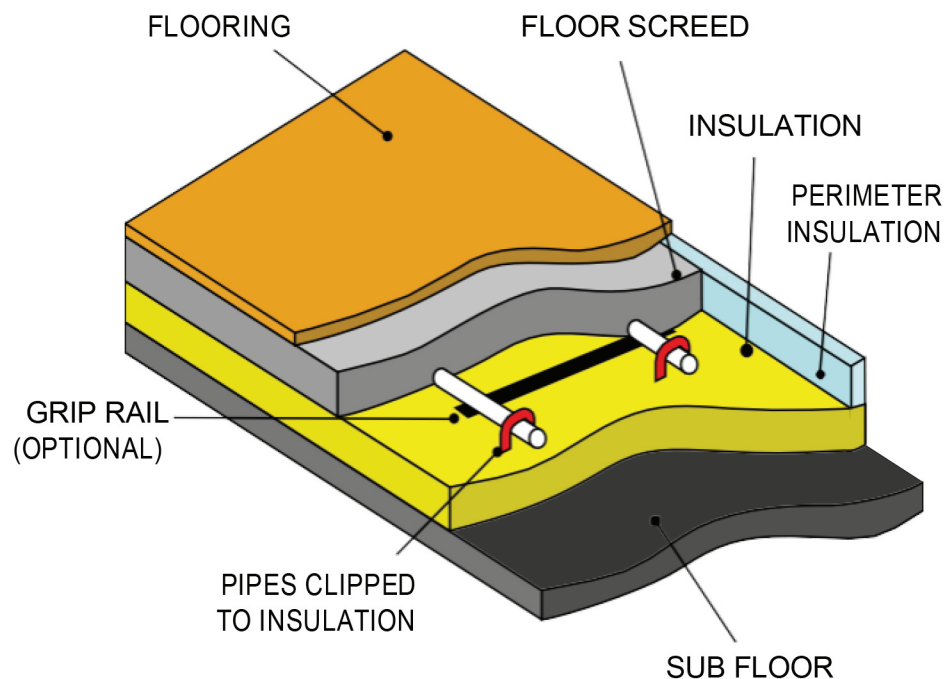Building Standards (Scotland) Regulations.

Underfloorheating1 shall not be responsible for any damage or loss resulting from failure to carefully observe the instructions given. Installers should read this manual carefully. Responsibility for finished system function and operation rests with the installer. Please pay attention to the following points.

1. Please check you have been delivered all components to complete installation in accordance with these instructions. If you have any doubts please call the Underfloorheating1 despatch department on 01302 727182. All queries must be notified within 48 hours of delivery or subsequent items may be charged.

2. Where pipes pass through walls they must be sleeved with flexible conduit.

3. The CAD drawing supplied contains information on pipe spacing and pipe lengths, this must be observed.

4. Please ensure all timber joist notching complies with building regulations and the building insurers.

5. The software use for the CAD design calculates the total amount of pipe required to complete the installation. The system allows for 5 metres per circuit contingency. Please make sure you optimise pipe supplied by calculating (or read the pipe schedule), before cutting, the optimum lengths required to be cut from each particular roll. Underfloor Heating 1 accept no responsibility for pipe shortages as a result of mistakes of failure to optimise pipe cutting.

6. Make sure you understand the design and pay careful attention to pipe spacing.
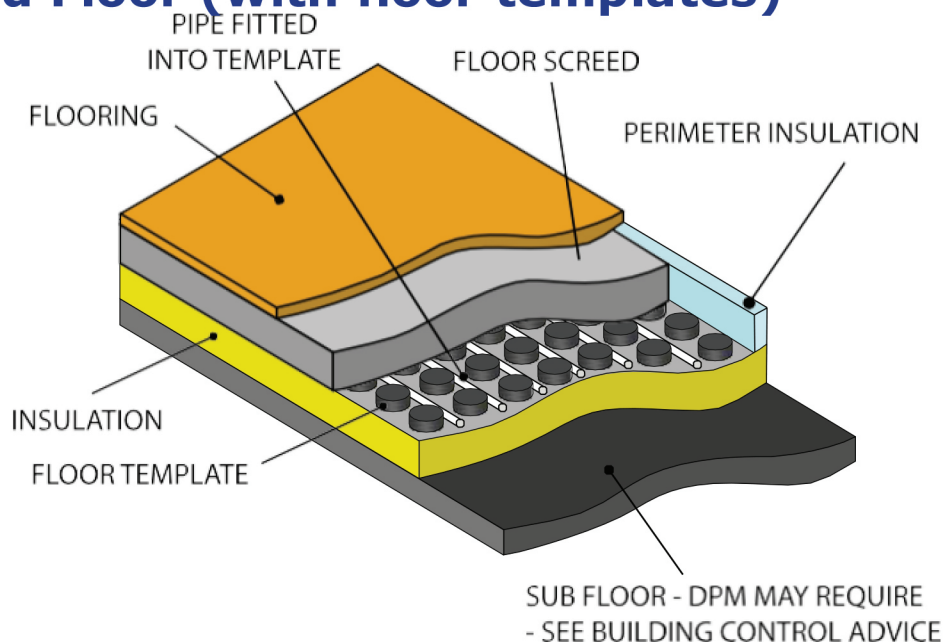
FLOOR CONSTRUCTIONS

Screed Floor

FLOORING   FLOOR SCREED

INSULATION

PERIMETER
INSULATION

GRIP RAIL
(OPTIONAL)

PIPES CLIPPED
TO INSULATION

SUB FLOOR

◊ Insulation - refer to building regulations for size.

◊ Screed - We recommend 50 - 75mm liquid or 65 - 75mm traditional screed

◊ Seek building control advice on the position and use of damp proof membrane

◊ 500 gauge screed membrane above the insulation before pipe is required for liquid screed

Screed Floor (with floor templates)

PIPE FITTED
INTO TEMPLATE   FLOOR SCREED

FLOORING

PERIMETER INSULATION

INSULATION

FLOOR TEMPLATE

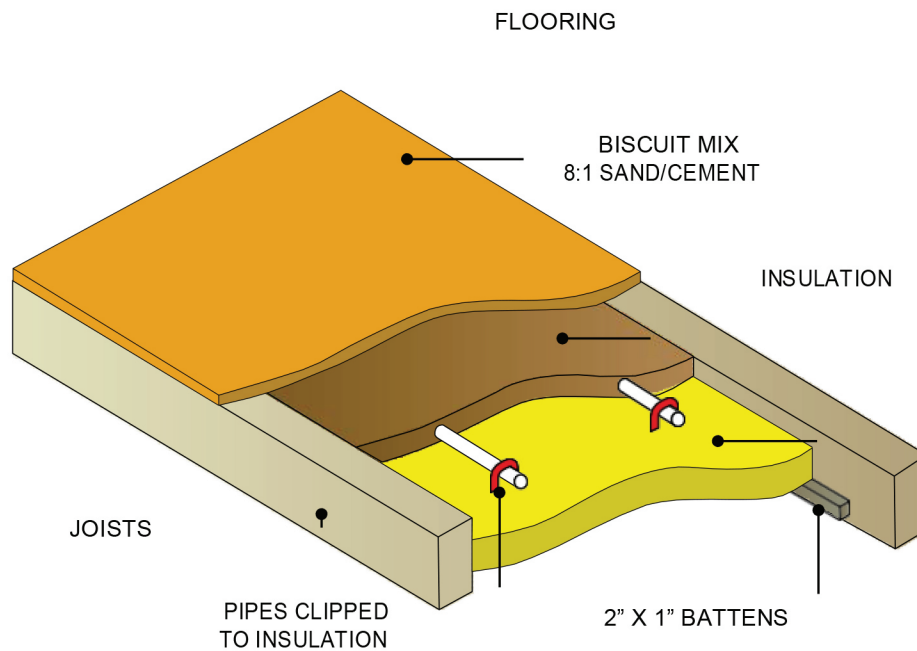SUB FLOOR - DPM MAY REQUIRE
- SEE BUILDING CONTROL ADVICE

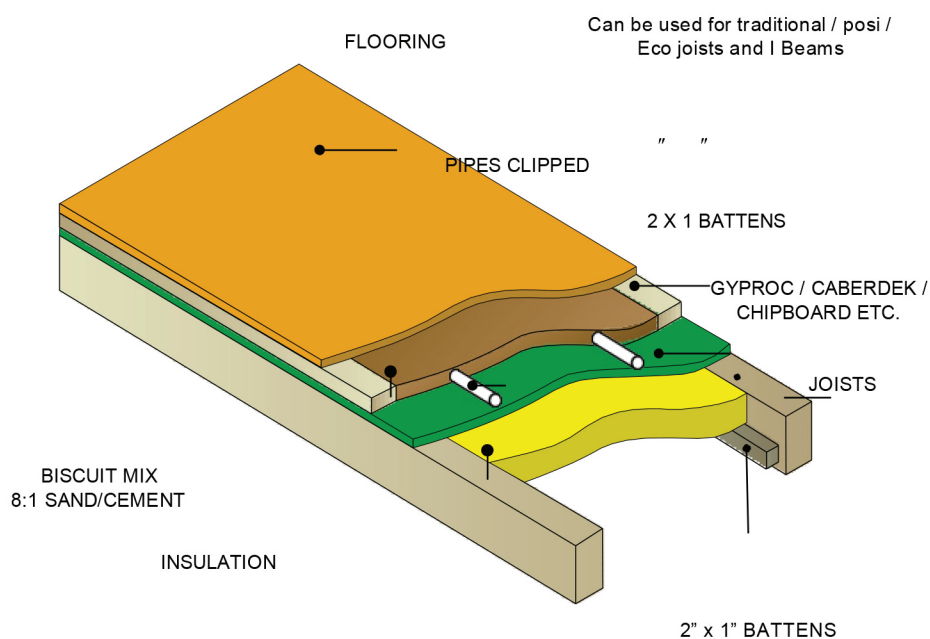◊ Insulation - refer to building regulations for size.

◊ Screed - We recommend 65 - 75mm traditional screed

◊ Seek building control advice on the position and use of damp proof membrane

Joisted Floor (using 'biscuit mix')

FLOORING

BISCUIT MIX
8:1 SAND/CEMENT

INSULATION

JOISTS

PIPES CLIPPED
TO INSULATION

2" X 1" BATTENS

- ◊ Insulation - refer to building regulations for size.
- ◊ Flooring - Plywood/chipboard flooring may be required before floor covering. Contact us if unsure
- ◊ Biscuit Mix - we recommend 20 - 25mm thickness

Joisted Floor (Cross Battening)

FLOORING

Can be used for traditional / posi /
Eco joists and I Beams

PIPES CLIPPED

"   "

2 X 1 BATTENS

GYPROC / CABERDEK /
CHIPBOARD ETC.

JOISTS

BISCUIT MIX
8:1 SAND/CEMENT

INSULATION

2" x 1" BATTENS

- ◊ Insulation - refer to building regulations for size.
- ◊ Flooring - Plywood/chipboard flooring may be required before floor covering. Contact us if unsure

Joisted Floor
(using aluminium spreader plates)
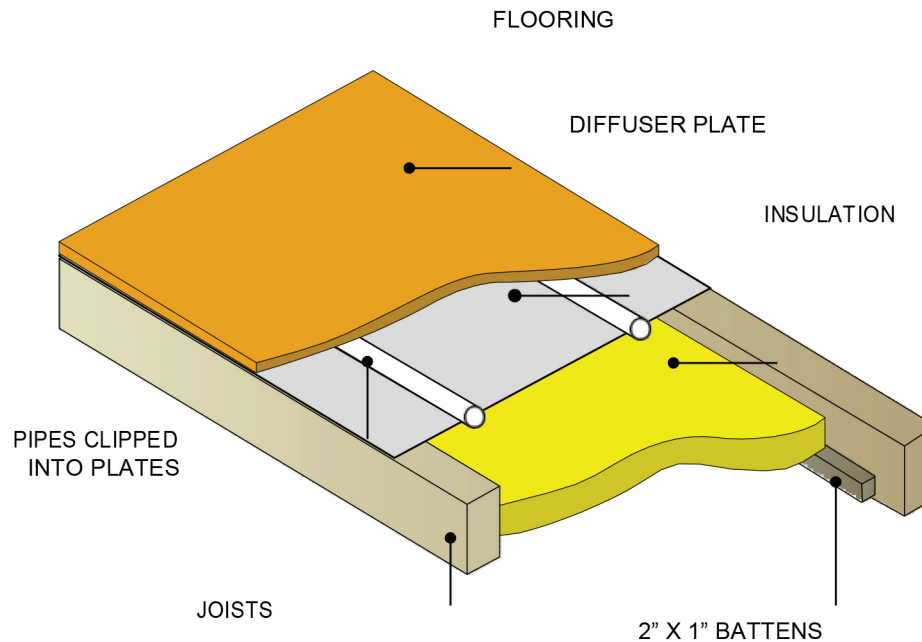
FLOORING

DIFFUSER PLATE

INSULATION

PIPES CLIPPED
INTO PLATES

JOISTS

2" X 1" BATTENS

◊ Insulation - refer to building regulations for size.
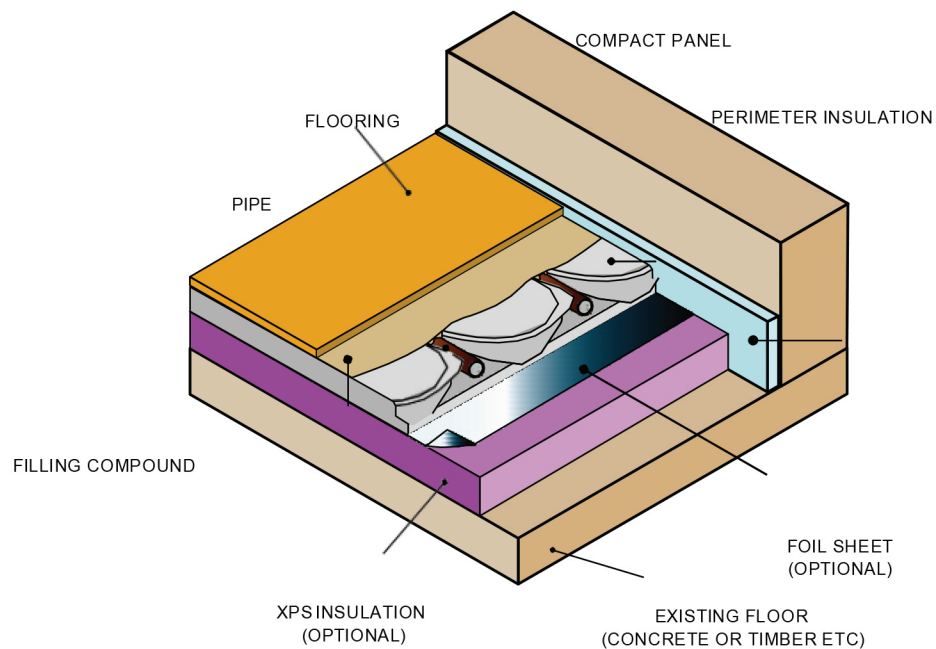◊ Flooring - Plywood/chipboard flooring may be required before floor covering. Contact us if unsure
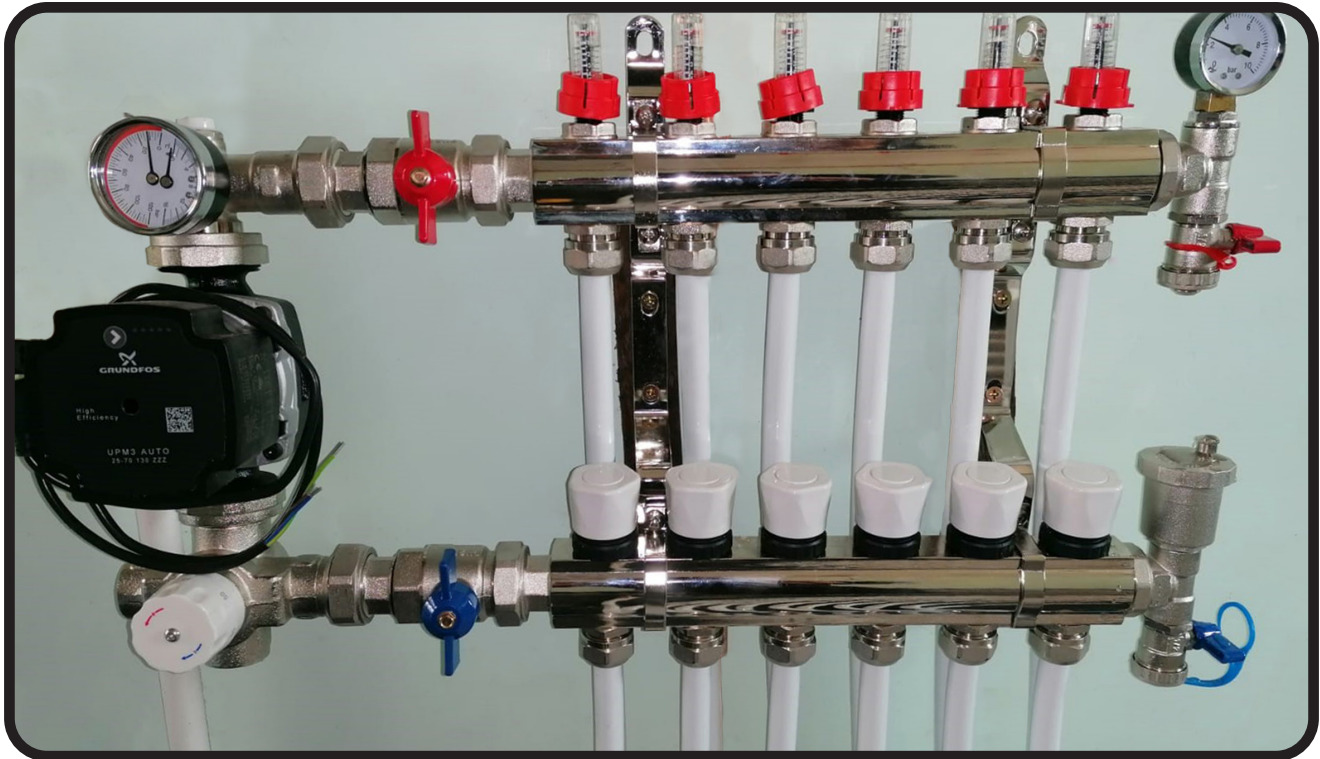
Variotherm Compact Floor Retrofit system

COMPACT PANEL

FLOORING

PERIMETER INSULATION

PIPE

FILLING COMPOUND

FOIL SHEET
(OPTIONAL)

XPS INSULATION
(OPTIONAL)

EXISTING FLOOR
(CONCRETE OR TIMBER ETC)

VARIOTHERM

INSTALLATION OF MANIFOLD

The manifold should be installed with the top rail of the manifold approximately 600mm from the floor. It should be securely fixed to a solid mounting point such as brick/blockwork etc. Modern UFH pumps are very quiet however we do not recommend installing the manifold on a timber stud wall due to noise transfer.

Although UFH systems are mostly maintenance free, there should be room around the manifold to access it.

The manifold is reversible so flow/return pipework can be at either side. If using the 'easy fit pump pack' (example pictured) see the item instructions for mounting it correctly.

ALTERNATIVE PUMP INSTALLATION
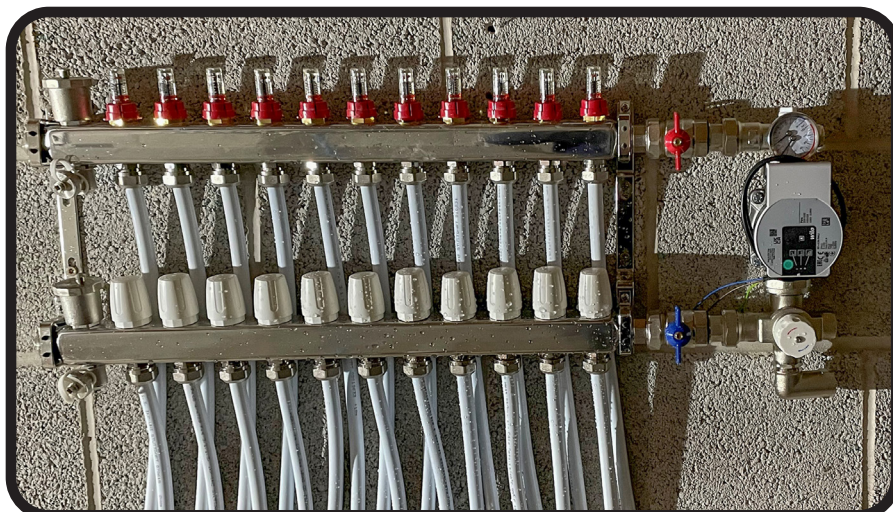
pump/blending valve can be mounted LH or RH as shown

Toplo mixing valve / pump pack information

LH / RH manifold mounting

The mixing valve/pump set can be mounted on either the left or ride hand side of the manifold. The components come as standard to fit on the left hand side.

To mount to the right hand side, firstly remove the brackets from the manifold and spin the manifold rails around so that isolation valves are on the right and then replace the mounting brackets. Fix the manifold to the wall before attaching the mixing/valve pump set (it's easier this way)

Take the mixing valve part of the set and remove the male threaded part as shown

Using the brass hex tool, remove the part from the mixing valve as shown. You may need another pair of grips to hold the body of the mixing valve. There are flats on the body to grip, be carefull not to damage any part.

Fit this part into the other side of the mixing valve and tighten using the brass hex tool

- Take the upper part (gauge housing) of the set and remove the temperature/pressure gauge (by hand)
- Remove the 10mm fitting from the other side and refit the temperature/pressure gauge here, refit the 10mm fitting where the temperature/pressure gauge was originally
- Fit the pump to the mixing valve ensuring the rubber O ring is in between, leave the nut slightly loose and ensuring the arrow on the casing is facing upwards
- Fit the upper part ensuring the rubber O ring is in between, leave the nut slightly loose
- Fit the two male thread connections to the manifold, we strongly recommend the use of PTFE tape or liquid despite there being a seal on this fitting.
- Fit the mixing valve/pump set to the manifold connections, tightening all of the joints by hand first
- Tighten all joints using correct spanners/adjustable wrenches

Elbow / joints to the manifold

We strongly recommend the use of PTFE tape or liquid on the elbow fitting, pipe connections and connections to the manifold (even where there is a seal). The elbow joint is an optional use fitting and it can be used on either the flow or return side of the mixing valve to assist with pipe connections.

Heating connections

The heating system should be connected with the flow in to the bottom connection and the return out of the side (irrespective of RH or LH mounting)
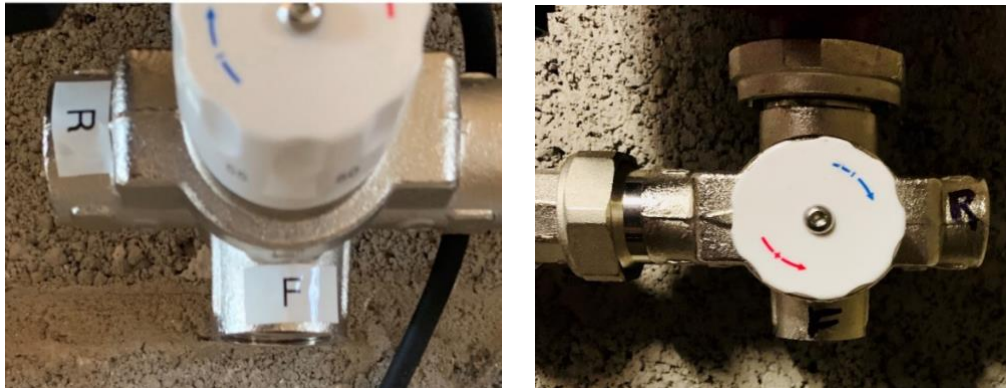
The female connections are ¾" BSP and fittings are widely available for 22mm and 28mm copper. These are often referred to as 'male/iron' or 'number 3' fittings. Please refer to our technical details in this document for the correct pipe size to use.

Flow & return pipe work

Most UFH systems require 1.5-2.5 litres/min flow per circuit and therefore the supply pipework to the manifold (flow and return) should be sized by the heating system engineer/installer with lengths of pipe, bends and resistance calculated to cater for the total demand of the manifold. E.g. a 7 port manifold would require 10.5-17.5 l/min if all circuits are being used. The table below is a **guide only for boiler based systems** and we will not accept any responsibility for calculations of flow and return pipe. We recommend that heat pump flow & return pipe work is 28mm minimum but the heat pump installer may be best to advise on this.

Number of UFH circuits	Flow and return distance	Minimum pipe diameter
2 to 7	<14m	22mm
2 to 7	>14m	28mm
8 to 10	<4m	22mm
8 to 10	>4m	28mm
11 to 12	<15m	28mm

Isolation valves & drain off

We recommend that isolation valves are fitted to the flow and return of the mixing valve so that the UFH can be worked on without the need to drain down boilers etc.
We recommend that a drain off is fitted on the flow pipe to the mixing valve so that the pipework can be vented at initial commissioning and/or if any work is done on the overall boiler/heating system.
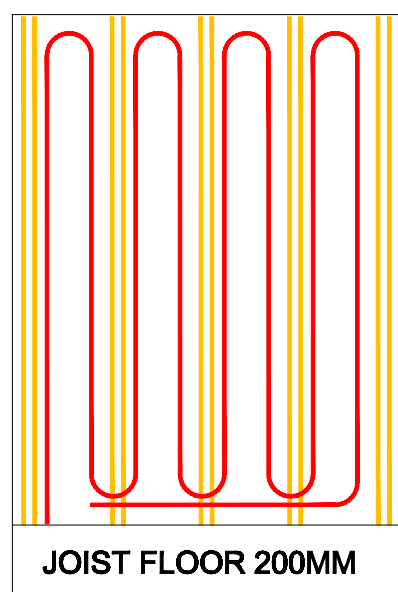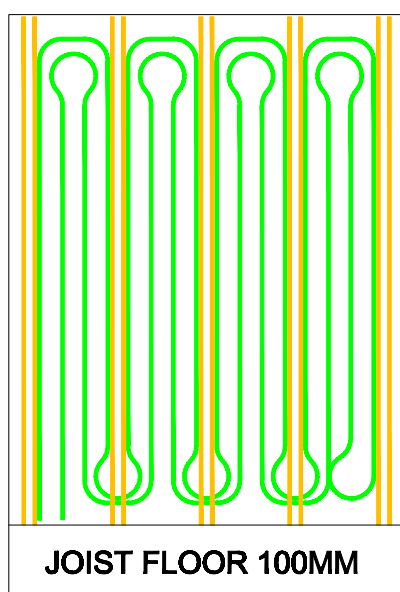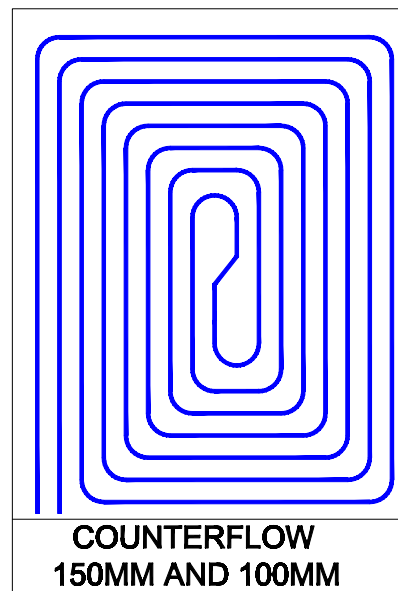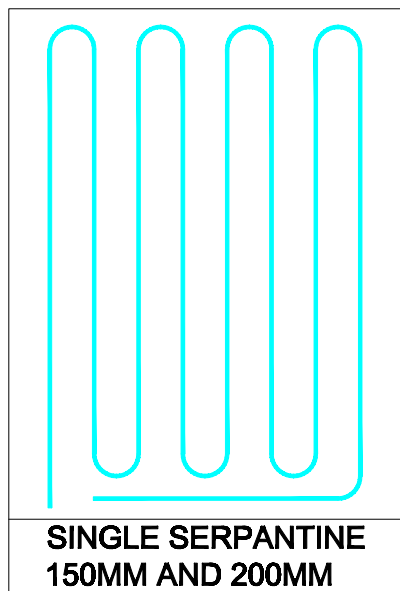
INSTALLATION OF PIPE

We supply pipe in rolls up to 500m in length. The pipe is marked in 1m increments.

The pipe should always be cut cleanly and straight using a pipe cutter, do not use a saw of any type. If installing in a screed floor, slide 300mm of conduit over the pipe if using screed (as per the above picture). The pipe connector is in 3 parts - nut, olive, nipple - fit the nut over the pipe and then the brass olive. Insert the nipple into the end of the pipe.

Starting at one end of the manifold, push the pipe to the port on the flow rail (red) and connect the nut. Keep pushing the pipe squarely into the port whilst tightening the nut, using a suitable grips or spanner - do not over tighten. Fit the pipe in accordance with the design (if applicable) making note of the pipe used as you lay it - as a rule of thumb we recommend not laying any single circuit more than 100m. We allow in our specifications for 2 clips per metre although more may be required if using low grade insulation such as EPS etc. Connect the other end of the pipe to the corresponding port on the return rail (blue). Repeat the process (as per CAD design if applicable) until all ports have been installed and connected to the manifold.

SINGLE SERPANTINE
150MM AND 200MM

COUNTERFLOW
150MM AND 100MM

JOIST FLOOR 100MM

JOIST FLOOR 200MM

FILLING & PRESSURISING THE
UFH SYSTEM

A test is performed at a pressure of 6 bar before flooring, screed or biscuit mix is laid to check for leaks and ensure the pipes are at their most expanded. This pressure is to be maintained until screed application is completed in order to ensure that any leaks are identified immediately and prevent the screed cracking later. 6 bar is a lot higher than a system would normally run.

REMEMBER: You must be extremely careful to avoid frost unless anti freeze has been added to the water.
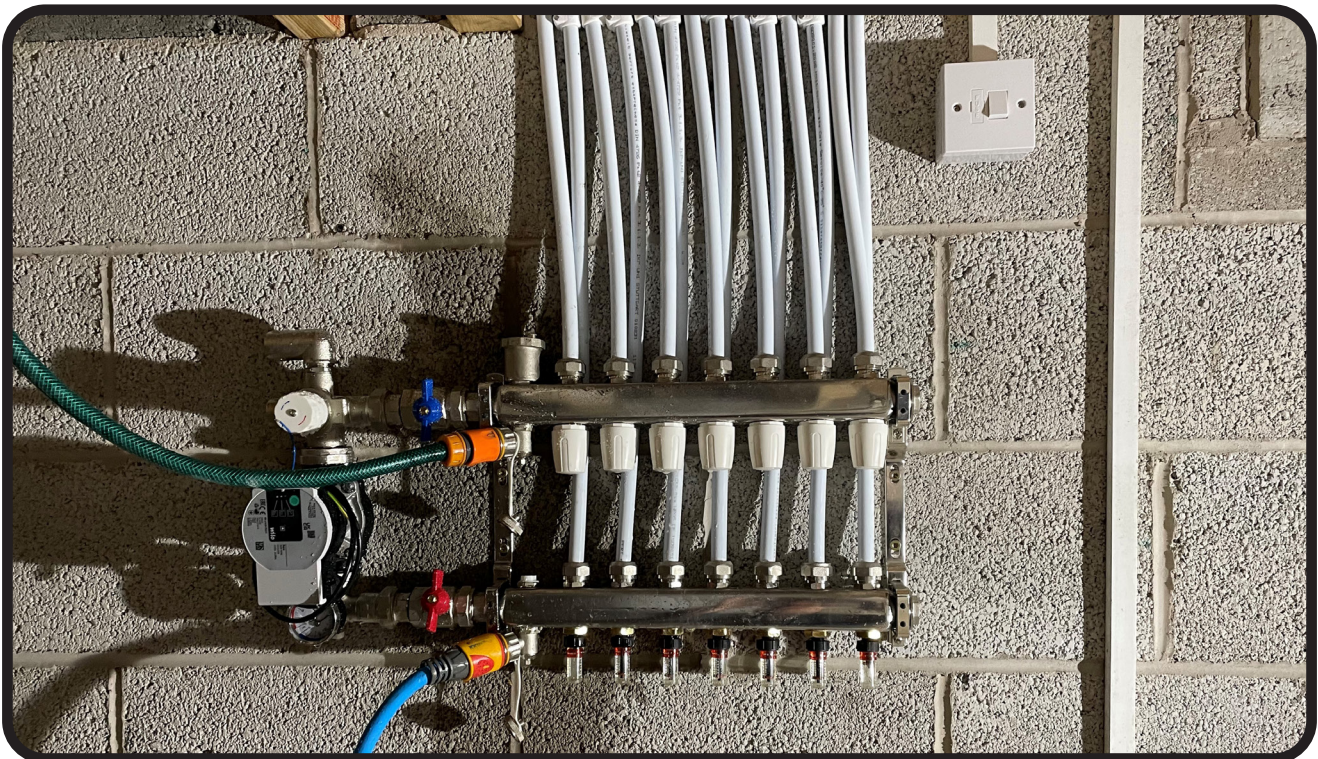
This picture shows how to connect the hose pipes to the manifold.

The flow from the mains tap to the filling point on the flow rail (red) of the manifold and the return / waste hose connected from the drain point of the return manifold (blue) to somewhere the return water can drain to.

Handy tip - putting the return hose into a bucket of water (that can overflow somewhere!) makes it easier to see any air bubbles

FILLING & PRESSURISING THE UFH SYSTEM

1. Close the isolating valves on the manifold (red and blue 'butterflies').

2. Connect suitable filling pipes to the fill and drain points on the relevant rail as per Figure 1.

3. Route the pipe connected to drain point on return rail of the manifold to a suitable discharge spot - secure the open end as it can whip about!

4. Connect pipe from the fill point on the flow rail of the manifold to a mains cold water supply.

5. All the caps (white or blue) on the return rail should be closed. They can be closed by turning them clockwise.

6. All flow meter valves (flow rail) should be closed. They can be closed by turning them clockwise.

See picture below:

Flow meter open (collar removed)

7. Open the first cap on the return rail (at one end) fully by turning anti - clockwise.

8. Open the flow meter valve above the cap opened (i.e. on the same circuit) as per Figure 2.

9. Open the filling and drain points (either a square key beneath the drain point or a small red/blue lever) fully by turning anti-clockwise or quarter turn if the small red/blue lever.

10. Turn on the mains cold water supply.

11. You should see the red indicator marker in the flow meter move to the bottom of the tube. This indicates correct flow of the water in and shows there isn't a blockage. The return hose will probably spit and will have an intermittent flow until the circuit has been purged of all air correctly.

12. When circuit is full and correctly purged, the flow from the return hose will be smooth. Open the next white cap and corresponding flow meter and close the circuit you've done by turning the white cap clockwise as far as it will go. The flow of water should stop immediately, if not, there is still air left in the pipe.

13. Repeat for the next circuit on manifold until all circuits are filled and vented.

14. Once all circuits are filled and vented individually, open all the white caps so that water is flowing through all circuits.

15. Close the drain valve on the return rail drain point and let pressure build for a minute before closing the valve on flow rail fill point.

16. Using a Rothenberger pump or similar (Figure 3), 'pump' the system up to 5 bar via the flow rail filling point (with the point open!) and then close the system off. Leave for 10 minutes. After this time pressure should have dropped by no more than 1 or 2 bar. If pressure drops significantly, check system for leaks and make sure all connections are tight but not over tightened.

Figure 3 - using a test pump to pressurise the system to 5 bar

COMMISSIONING

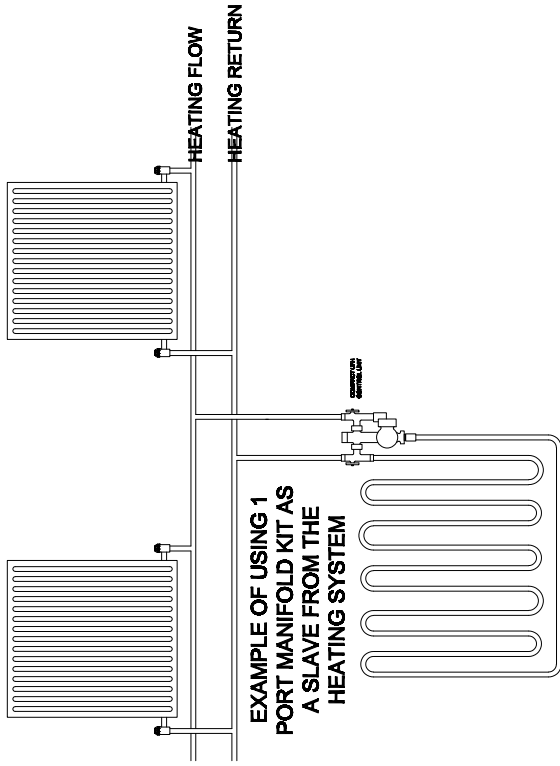**Check with screeding company (if applicable) the initial drying/warming up process**

Ensure that supply pipe work to the manifold is vented of all air before opening manifold isolation valves and before the rest of the commissioning process

1. Check that all flow meters are open. Turn them anti-clockwise a couple of turns from closed.

2. Switch the programmer for zone 1 so that it is calling for heat, you should see a flame signal.

3. There should be no actuators fitted on the manifold, the manifold pump should run and the zone valve should open (if one is fitted).

4. The boiler should fire up at this stage and the system should circulate water. Turn the flow meter on all circuits until the plastic indicator is around 1.5 (if using a boiler) or 1 for heat pump systems. The flow meter scale works down, so allowing more flow (like opening a tap) moves the red indicator down. As each are adjusted, some you may have already set may alter slightly. We find that it's best to alter in small increments.

5. Turn the zone 1 room stat up to it's highest temperature.

6. Within 5 minutes (some can take that long) the actuator should open there will be an indicator of sorts, usually either a viewing window with plastic indicator, plastic pin moves out of the top or a light within the unit.

7. Fit the actuator(s) to the appropriate valve(s) on the manifold (on large floor areas there may be more than 1 actuator, check the CAD).

8. Now turn off zone one and activate zone two. It is important to work methodically like this to ensure that the correct room stat is operating the appropriate actuator(s).

9. Repeat process until all actuators are checked.

10. Check system pressure is @ 1.5 bar & no further air is coming out of air vents.

11. Check that the temperature on the flow gauge reaches the required temperature - usually 50C for a screed floor and 55 - 60C for a suspended timber floor.

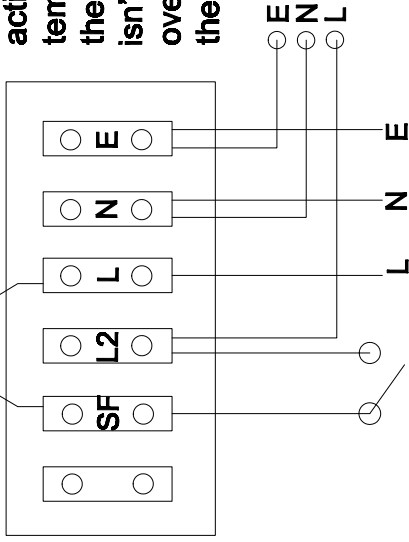12. Remember for a screed floor the initial heat up period can be up to 8 hours

TROUBLE SHOOTING

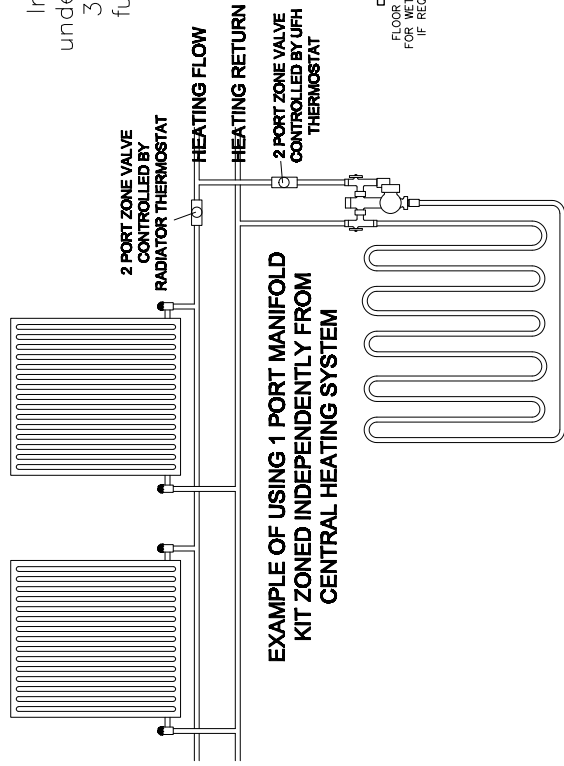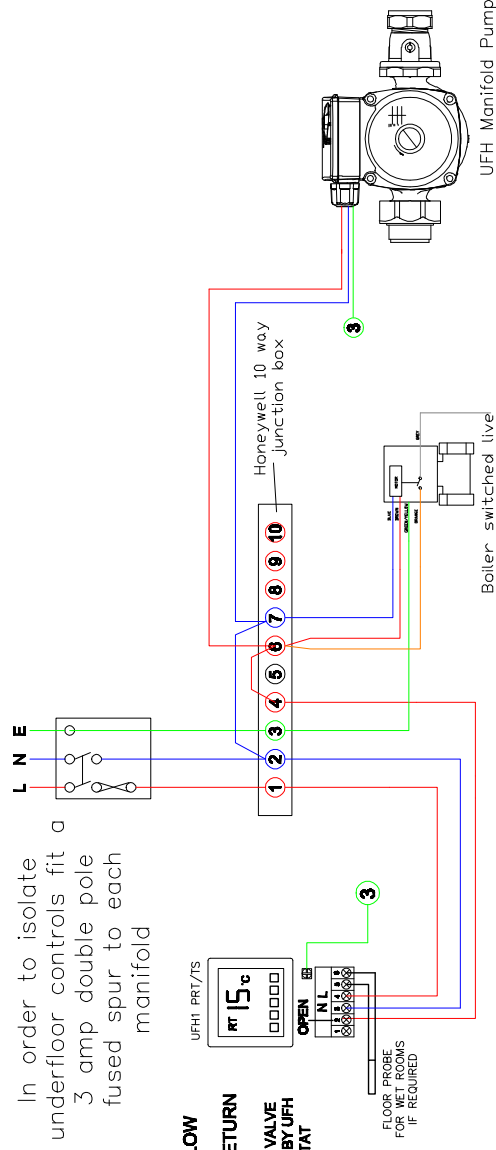| SYMPTOMS	CHECKS/REMEDIES
Flow pipe gets hot, return stays cool, even after many hours running, temperature on flow side not increasing.	Insufficient flow from boiler to manifold turn up speed of boiler or manifold pump.
Flow & Return pipes both hot, but temperature on floor low.	Flow & return to manifold wrong way round or manifold pump not running.
No rooms getting hot	Check flow meters (red indicator) have a flow running through and check all valves are open.
Room stat calling for heat, but no power to the pump.	Safety stat on the manifold locked out or faulty, electrical connection problems.
One room warm, other cold.	Check correct thermal heads on correct manifold ports.
One room not getting warm.	Air lock - flush through by repeating the filling up process.
Noise in system.	Manifold fitted on stub partition, acting like sound box. Tension on copper flow & return pipes. Air in system - due to wrong filling procedure
Room gets too warm.	No thermostatic control. Not connected to correct manifold port. Thermal head faulty/ broken. Room stat faulty/broken.

OPTION 1

The unit has a built in sensor which activates the pump once the input water temperature reaches 42°C and pumps the warm water around the circuit. There isn't any room temperature control, the overall temperature can be altered with the blending valve on the unit.

REMOVE LINK WIRE IF A STAT IS FITTED AND REFER TO OPTION 2 WIRING

E   N   L

E   N   L   L2   SF

E   N   L

HEATING FLOW
HEATING RETURN

EXAMPLE OF USING 1 PORT MANIFOLD KIT AS A SLAVE FROM THE HEATING SYSTEM

OPTION 2

UFH Manifold Pump

Honeywell 10 way junction box

Boiler switched live

L N E

1 2 3 4 5 6 7 8 9 10

3

In order to isolate underfloor controls fit a 3 amp double pole fused spur to each manifold

UFH1 PRT/TS

RT 15°C

OPEN
N L

3

FLOOR PROBE
FOR WET ROOMS
IF REQUIRED

2 PORT ZONE VALVE
CONTROLLED BY
RADIATOR THERMOSTAT

HEATING FLOW
HEATING RETURN

2 PORT ZONE VALVE
CONTROLLED BY UFH
THERMOSTAT

EXAMPLE OF USING 1 PORT MANIFOLD KIT ZONED INDEPENDENTLY FROM CENTRAL HEATING SYSTEM

UFH1 UNDERFLOORHEATING
01302 727182 | sales@underfloorheating1.co.uk

Underfloor heating electrical schematic

UFH1 PRT/PRT-TS
with actuators and Danfoss FH-WC
wiring centre

THIS IS ONLY A PROPOSED ELECTRICAL SCHEMATIC AND DOES NOT
NECESSARILY SHOW ALL REQUIRED COMPONENTS.
THIS SHOULD ALWAYS BE INSTALLED BY A QUALIFIED ELECTRICIAN.

TIP - Don't forget link wire(s)

230 Vac
Fused 4A
N L

Pump Relay
volt free
L

Optional 2 port zone valve.
Used when zoning UFH from
radiators. Radiator supply should
also have one fitted.

Manifold Pump

In order to isolate
underfloor controls
fit a 5 amp double pole
fused spur

230 Vac
Fused 4A
N L

Pump Relay
volt free

Boiler enable
volt free

If a 230v switch to boiler is
required, fit a link as shown

L N E

EARTH
TERMINAL
(NOT SUPPLIED)

UFH1 PRT/TS
OPEN
N L

FLOOR PROBE
FOR WET ROOMS
IF REQUIRED

CN 1.1
EXAMPLE OF 1
ACTUATOR

CN 1.2   CN 1.3
EXAMPLE OF 2
ACTUATOR

CN 1.4   CN 1.5   CN 1.6
EXAMPLE OF 3
ACTUATOR

CN 1.7   CN 1.8
CN 1.9   CN 1.10
EXAMPLE OF 4
ACTUATOR

TOPIO PRT & PRT TS Thermostat Instructions

Button description

NO.	signal	Description
1	⏻	on / off
2	↻	Mode key: switches auto/manual, time interval control
3	⊕	Time setting: hours,minutes,weeks
4	∧	Adjust value up
5	∨	Adjust vale down

Function and display

✍ Manual control (manual control of the heating time/temperatures, auto/program control when not displayed)

� Thermostat calling for heat ❄ Frost protection setting
☀ First time interval on, (morning) ⌂→ Second time interval (set back/off time period)
⌂→ Third time interval (on) ⌂→ Fourth time interval (set back/off time period)
⌂→ Fifth time interval (on) ☾ Sixth time interval (night/set back/off time period)

Operation diagram
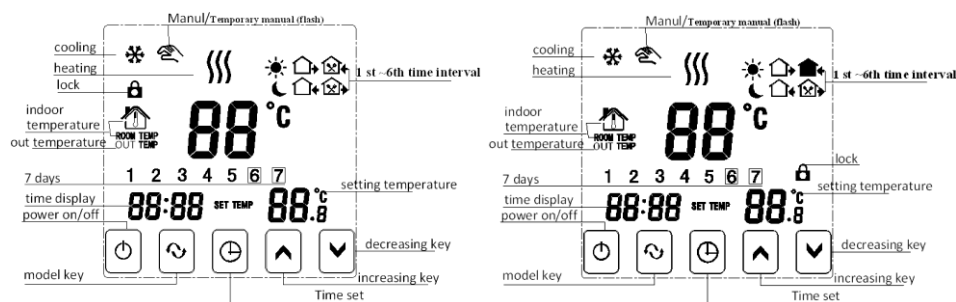
Time and programme setting

Time setting
Press the time key ⊕ the hour value will flash, use ∧ ∨ to adjust. Press ⊕ again, the minute value will flash, adjust accordingly. Press ⊕ again, the day value will flash (1 Monday….7 Sunday), adjust accordingly. Press ⊕ again to complete.

Heating programme setting
Press and hold ↻ until 'LooP' appears to enter into the setting of the weekly/daily programmes function
Select 5/6/7 days programming by pressing ∧. The display will show "12345" (Monday to Friday) press ∧ again to display "123456"(Monday to Saturday control mode) and ∧ again for "123456、7" (Monday to Sunday). Please note if using 5+2 or 6+1 days, the weekend setting will only have on and off once programming.
Once your preference of 5/6/7 days is selected, press ↻ again and the temperature will flash for the first (on/morning ☀ programme). Use ∧ ∨ to adjust accordingly. Press ⊕ and the hour value will flash, adjust accordingly. Press ⊕ and the minute value will flash, adjust accordingly.
Press ↻ to complete the 1st programme and enter into the 2nd (off/setback ⌂→) period. Adjust the temperature and time periods as required. We recommend that 'off' periods are set at 16°C in Spring/Summer and 18°C in Winter/Autumn.
Press ↻ to complete the 2nd programme and enter into the 3rd (on/return ⌂→) period. Adjust the temperature and time periods as required.
There are 3 'on' periods as standard on the thermostat. If you prefer two, for example morning and evening, set the 3rd (out ⌂→) and 4th (on/back ⌂→) temperatures as the same 'off temperature used in the 2nd period – the heating will stay off (as long as the heating isn't below the required temperature)
Press ↻ to complete the 3rd and 4th programmes and enter into the 5th (on/return ⌂→) period. Adjust the temperature and time periods as required.

Press 🕐 to complete the 5th programme and enter into the 6th (night 🌙) programme. Adjust the temperature and time periods as required. Press 🕐 to complete the programming

If using 5 or 6 day programming, after setting these, pressing 🕐 will go to the remaining days, Saturday/Sunday or Sunday.

Factory set time Interval programming

These are the factory set programmes. Press 🕐 to select programmed function where one of the below characters will be displayed

Period		Icon	Default Period Time	Default Period Temperature
Working Day	1	☀	06:00	20°C
	2	🏠➡	08:00	15°C
	3	🏠⬅	11:30	15°C
	4	🏠➡	12:30	15°C
	5	🏠⬅	17:30	22°C
	6	🌙	22:00	15°C
Weekend	1	☀	08:00	22°C
	2	🌙	23:00	15°C

Advanced Setting

(1) Touch screen version (UFH1 PRT-TS) whilst the power is off, first press 🕐 then press ⏱ to enter into the advanced setting.
(2) Button version (UFH1 PRT) whilst the power is off, first press ⌄ then press ⏱ enter into advanced setting.

No.	Symbols	Setting Item	Parameter Setting Function	Factory Default
1	SEN	Sensor control option	00:internal sensor 01:probe sensor 02:internal & probe	00:internal sensor
2	OSV	Limit temperature value of probe sensor	5-99°C	42°C
3	dIF	Return difference of limit temperature value of probe sensor	1-9°C	2°C
4	SVH	Set upper limit temperature value	5-99°C	35°C
5	SVL	Set lower limit temperature value	5-99°C	5°C
6	AdJ	Measure temperature	Measure temperature,check and calibration	0.5° precision Calibration (actual temperature)
7	FrE	Anti-freezing function	00:anti-freezing function shut down 01:anti-freezing function open	00:anti-freezing function shut down
8	POn	Power on memory	00:Power on no need memory 01:Power on need memory	00:Power on no need memory
9	FAC	Factory default	08:just display,no other meaning 00:Restore factory default	08

Sensor fault hint
If the display shows 'Er' the incorrect 'SEN' option is selected. For example, no probe fitted/used when the function is set to internal temperature.

Lock/unlock Thermostat
To lock or unlock the thermostat, press and hold the clock button for 5 seconds.

Search for "Smart RM" or "Smart Life" Download the Wifi App with the following icon	● Turn on the thermostat, press and hold the key combination ▦ and 🕐 Activate WIFI distribution network icon

Kindly remind :you should press any key to start thermostat before setting

Features

Appearance

(1) Standard total Size is 86*86mm   (5) hidden box and 60mm European box
(2) Touch buttons for simple operation   (6) Display size : 64*64mm
(3) The visible thickness above the wall is only 15mm 86mm (7) Colour: white

Functions

(A) Including built-in sensor and external sensor
(B) 0.5°C accuracy keeps temperature within the level you set.
(C) Children lock to prevent misuse by children
(D) Data memory when power is off.
(E) Holiday mode
(F) The temperature of external sensor can be checked

Product Specifications

☆ Power: 90-240Vac 50/60HZ   ☆ Range of temperature display:：0~40°C
☆ Display accuracy:：0.5°C   ☆ Insulating condition: Normal environment
☆ Probe sensor:：NTC(10k)1%   ☆ Running program: Set per 1 week as a cycle
☆ Contact capacity:：3A/250V(WW);16A/250V(WE)   ☆ Output: Switch relay
☆ Working environment temperature:：0~90°C   ☆ Installation: Wall mounted or on battery seat
☆ Range of temperature adjustment:：5~35°C   ☆ Size(mm)：86*86*27

Before wiring and installing

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check the ratings given in the instructions and on the product to make sure the produce is suitable for your application.
3. Installer must be a trained experienced electrician
4. After installation is complete, check the operation as provided in these instructions

⚠️**CAUTION**

Electrical shock or equipment Damage Hazard. or short equipment circuitry.

Disconnect power supply before installation

Wiring

Electric heating wiring diagram

Water heating wiring diagram
(do not connect terminal "close 4" of electric valve)
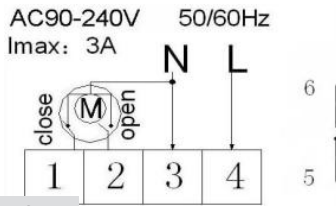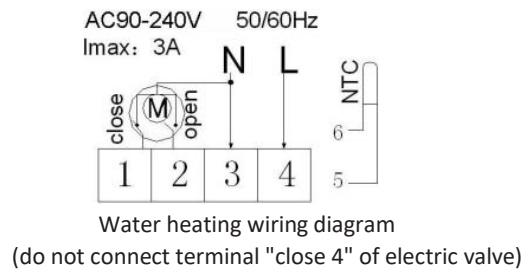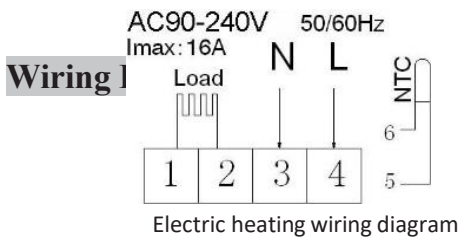
Water heating - Note:3 & 4 Live and Neutral. 2 is switched live and 5 & 6 are for the floor sensor (if required).

Displays


Description of icon

Auto mode;run preset program   Manual mode

Temporary manual mode   Clock

Holiday mode, Holiday days and temperature can be set to run in countdown mode

Heating,,icon disappears to stop heating   EXT :External NTC sensor

WIFI connection, flashing EZ distribution mode   Child lock

Cloud icon: flashing AP distribution network mode   Open window

Operation key

NO	symbols	represent
A		Turn ON/OFF:Short press to turn on/ turn off
B		1 Short press to switch automatic mode and manual mode
		2 Turn on thermostat, long press for 3-5 seconds to enter into programmable setting
		3. Turn off thermostat, long press for 3-5 seconds to enter into advanced A setting
C		1 Confirm key: use it with key
		2 Only short press it to set time

		3 Turn on thermostat,long press for 3-5seconds to holiday mode setting. Appear **OFF**, press ▽ or △ change to ON,then press⊕ to confirm opening holiday mode 4 Turn off thermostat ,long press⊕ to enter into advanced B setting
B	▽	1 Decrease key 2 Long press to lock /unlock
D	△	1 Increase key : 2 Long press to inquire external sensor temperature 3 In the Auto model, press ▽ or △ enter to temporary manual mode

Programmable

5+2 (factory default),6+1 and 7 models 6 times period setting for user choose. In the advanced options choose model of you need, under power on state, long press for ⠿ 3-5 seconds enter into programming mode setting, then short press ⠿ choose: hour,minute, time period, and press ▽ and △ to adjust data, finished setting, about 10 seconds will automatic save and exist.

⌂1	⌂2	⌂3	⌂4	⌂5	⌂6
Wake up		Out door		Back home		Out door		Back home		Sleep	
6：00	20℃	8：00	15℃	11：30	15℃	13:30	15℃	17:00	15℃	22:00	15℃

The optimum comfort temperature is 18℃-22℃.

Advanced options A

Under turn off state, long press ⠿ for 3-5 seconds to access advanced A setting.

From A1 to AE, short press ⠿ to choose the option, and adjust data by ▲,▼, short press ⠿ to switch next option.Remain about 5 seconds after finish setting will quit setting.

NO	Setting Options	Data Setting Function	Factory Default
A1	Measure Temperature Calibration	-9-+9℃	0.5℃ Accuracy Calibration
A2	Temperature control return difference setting	0.5-2.5℃	1℃
A3	Children lock setting	0:half lock 1:full lock	0
A4	Power with memory function	0:Power with memory function 1:Shutdown power after power off 2:Shutdown power after power on	0
A5	Backlight sleep brightness	0: 0% of brightness 1: 50% of brightness 2: 100% of brightness	1
A6	Weekly programming selection	0: 5+2 1:6+1 2 :7	0
A7	Setting temperature lowest limit	1-10℃	5℃
A8	Setting temperature highest Limit	20-70℃	35℃

A9	Protection of low temperature	1 :1-10℃ 2:Exceed 10℃, screen display 【--】, Low temperature protection was cancelled.	5
AA	Protection of high temperature	1::35-70℃ 2: low than 35 ℃ , screen display 【 -- 】 ,high temperature protection was canceled	45
AB	Return different for high temperature protection	1-9	2
AC	Running temperature of open window function	1:10-20℃ 2: low 10℃,screen display 【--】,open window function was canceled	15
AD	Running time of open window function	10-20 min	10
AE	Reset	Long press ⠿ until whole display	

Advanced options B

Under turn off state, long press ⊕ for 3-5 seconds to access advanced B setting

NO.	Setting Options	Data Setting Function	Factory Default
BN	Choose sensor	N1: only inner sensor N2: only external sensor N3: both sensor	N1
BC	Descaling function	0: closed 1: open	0
BO	version	V1.0	1.0

Return difference : limit valve of external sensor is 45℃ for factory default (A6),value of external sensor control return difference (A3) is 2. when temperature rise to 45℃,then relay stop working and will remind high temperature production alarm. If temperature decline to 43℃relay continue to work and heating alarm will be relieved. (it can be operated ,only when indoor temperature is lower than setting temperature)

Sensor fault display:please choose correct working way of built-in and external sensor, if choose wrongly or sensor fault (breakdown), "E1" or "E2" will be displayed on the screen. Thermostat will stop heating until the fault has gone.

TOP10 **Wifi Stat Mobile App Programming Guide**

Preparation required for Wifi Connection:

You will need a 4G mobile phone and wireless router. Connect the wireless router to the mobile phone and record the WIFI password [you will need it when the thermostat is paired with the Wifi].

Step 1   Download your app

Android users can search "Smart life" on Google Play, IPhone users can search "Smart life" in the App Store.

Step 2   Register your account

● After installing the app, click "register" （Fig 2-1）

● Please read the Privacy Policy and press Agree to proceed to the next step. (Fig 2-2)

● Registration account name uses your Email Or mobile phone number. Select Region, then click "Continue"(Fig 2-3)

● You will receive a 6-digit verification code via email or SMS to enter your phone (Fig 2-4)

● Please set the password, Password must contain 6-20 letters and numbers. click "Done"(Fig 2-5)
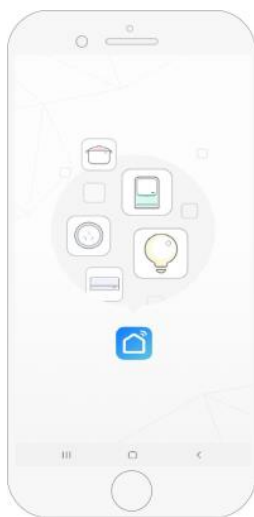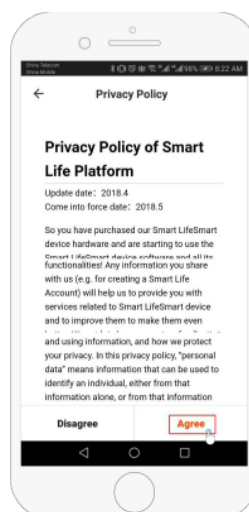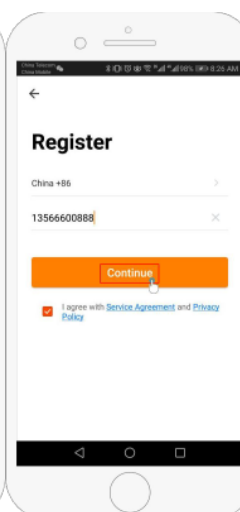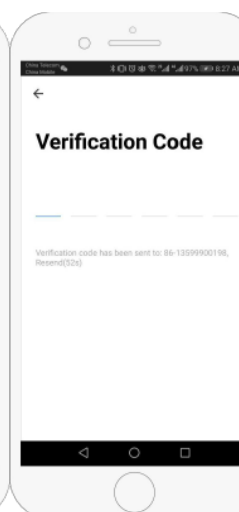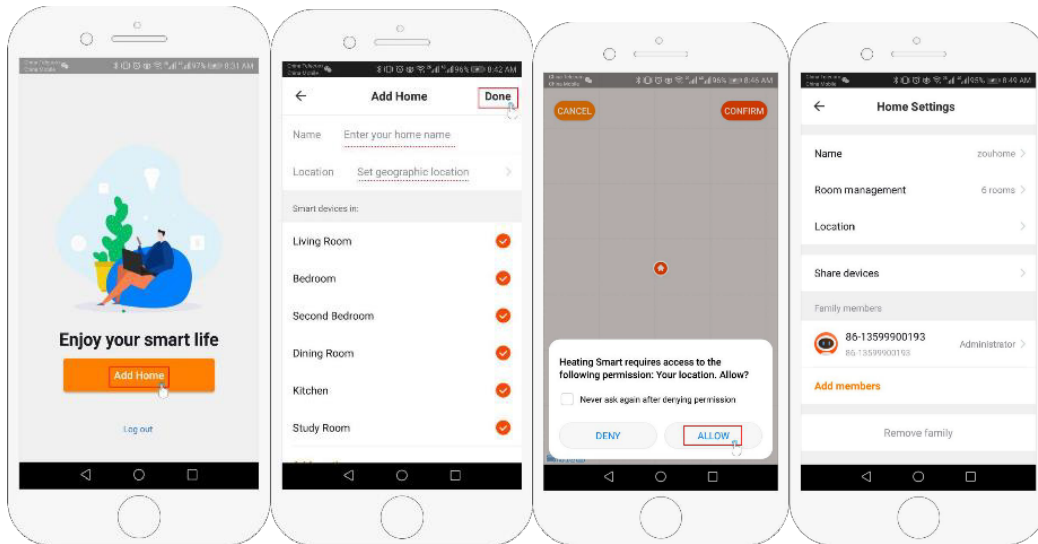
| Fig 2-1 | Fig 2-2 | Fig 2-3 | Fig 2-4 | Fig 2-5 |
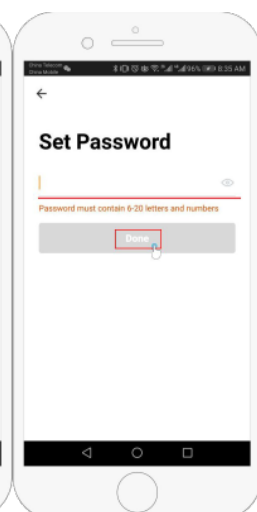
Step 3 Create family information(Fig 3-1)

1. Fill in the family name (Fig 3-2).

2. Select or add a room (Fig 3-2).

3. Set location permission (Fig 3-3) then set thermostat location (Fig 3-4)

Step 4a Connect your Wi-Fi signal (EZ distribution mode) 📶🔘

1. Go to your Wifi setting on your phone and make sure you are connected via 2.4g <u>and not</u> 5g. most modern routers have 2.4g & 5g connection. 5g connections **do not work** with the thermostat.

2. On the phone press "Add Device" or "+" in the upper right corner of the app to add the device (Fig 4-1) and under the small appliance section select the device type "Thermostat"（ Fig 4-2）

3. With the thermostat powered on, press and hold [SET] and [OK] at the same until both icons(📶 &🔘) flash to indicate the EZ distribution mode. This can take between 5-20 seconds.

4. On your thermostat confirm 📶🔘 icons are rapidly blinking and then go back and confirm this on your app. Enter the password of your wireless router this is case sensitive（fig 4-4）and confirm. The app will connect automatically（Fig 4-5）This may typically take up to 5~90 seconds to complete.

If you get an error message make sure you have entered your correct Wi-Fi password (case sensitive typically found on the bottom of your router) and that you are not on your Wi-Fi's 5G connection.
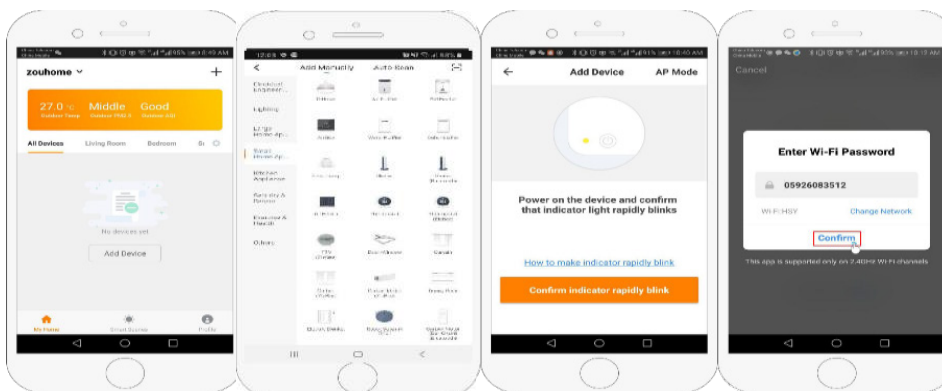
Your room name can be edited when the device is connected，

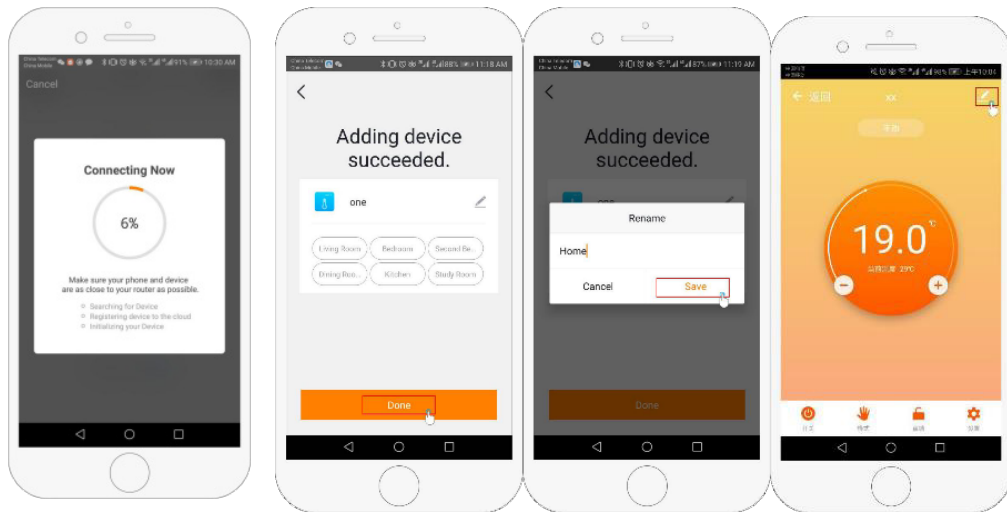Fig 4-1   Fig 4-2   Fig 4-3   Fig 4-4

| Fig 4-5 | Fig 4-6 | Fig 4-7 | Fig 4-8 |

Step 4b (Alternative method) (AP mode pairing) Only do this if step 4a failed to pair the device

1. On the phone press "Add Device" or "+" in the upper right corner of the app to add the device (Fig 4-1) and under the small appliance section select the device type "Thermostat" and click AP Mode in the top right corner. （Fig 5-1）

2. On the thermostat press power on and then press and hold SET and OK until ⊜ flashes. This can take between 5-20 seconds. If 📶 also flashes release buttons and press and hold SET and OK again until just ⊜ flashes.

3. On the app click "confirm light is blinking", then enter the password of your wireless router（fig 4-4）

4. Press "Connect now" and select the Wifi signal (Smartlife-XXXX) of your thermostat（ Fig 5-3 and 5-4） it will say internet may not be available and ask you to change network but ignore this.

5. Go back to your app and click "Connect" then the app will connect automatically（Fig 4-5）

This may typically take up to 5~90 seconds to complete and will then show confirmation (Fig 4-6) and allow you to change the thermostat name (Fig 4-7)
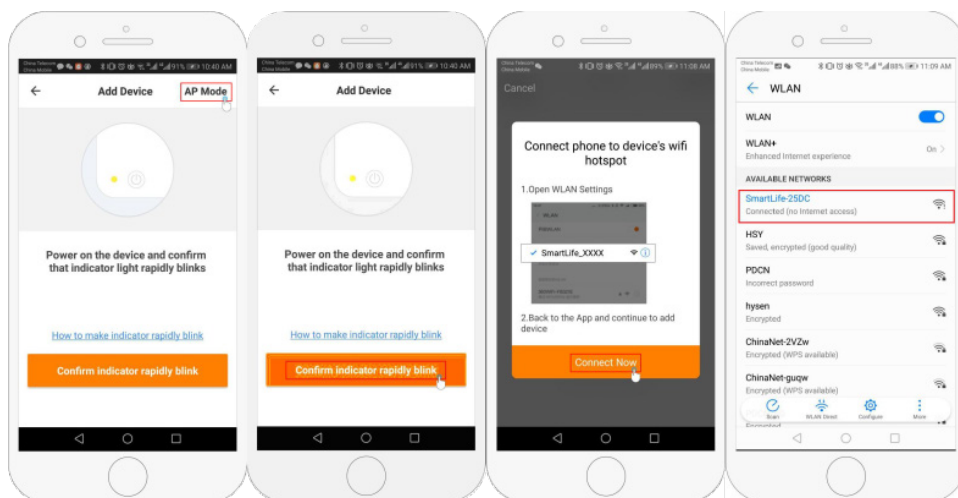

| Fig 5-1 | Fig 5-2 | Fig 5-3 | Fig 5-4 |

Step 5 Changing sensor type and temperature limit

Press the setting key ⚙ (Fig 4-8) in the bottom right hand corner to bring up the menu.

Click the Sensor type option and enter password (normally 123456). Then you will be given 3 options:

(1) "Single built-in sensor" will only use the internal air sensor (DO NOT USE THIS SETTING*)

(2) "Single external sensor" will only use the floor probe (ideal for bathrooms where thermostat installed outside room).

(3) "Internal and external sensors" will use both sensors to read the temperature (Most common option).

Once you have chosen the sensor type, check that "Set temp. max" option is set to a suitable temperature for your flooring (typically 27℃)

*A floor probe must always be used with electric underfloor heating to protect the flooring.

Step 6 Programming daily schedule

Press the setting key ⚙ (fig 4-8) in the bottom right hand corner to bring up the menu, at the bottom of the menu there will be 2 stand alone options called "week program type" and "weekly program setting".

"Week program" type allows you to choose the number of days the schedule applies to between 5+2 (weekday+weekend) 6+1 (Mon-Sat+Sun) or 7 days (all week).

"Weekly program" setting allows you to choose the time and temperature of your daily schedule at varying points. You will have 6 options of times and temperatures to set. See example below.

Part 1	Part 2	Part 3	Part 4	Part 5	Part 6
Wake up	Leave Home	Back Home	Leave Home	Back Home	Sleep
06:00	08:00	11:30	13:30	17:00	22:00
20℃	15℃	20℃	15℃	20℃	15℃

If you do not need the temperature to rise and fall in the middle of the day then you can set the temperature to be the same on parts 2,3 and 4 so that is does not increase again until the time in part 5.

Additional Features

Holiday Mode: You can program the thermostat to be on for a set temperature for up to 30 days so that there is background heat in the house while you are away. This can be found under the mode ✋ (fig 4-8) section. You have the option to set the number of days between 1-30 and a temperature up to 27℃.

Lock Mode: This option allows you to remotely lock the thermostat so no changes can be made. This can be done by clicking the (Fig 4-8) symbol. To unlock click the (Fig 4-8) symbol again.

Grouping devices: You can link multiple thermostats together as a group and control them all simultaneously. This can be done by clicking on the (Fig 4-8) in the top right corner and then clicking the Create Group option. If you have multiple thermostats linked it will allow you to tick each one that you want to be in the group and once you confirm the selection you will be able to name the group.

Family Management: You can add other people to your family and allow them to control the devices you have linked. To do this you need to go back to the home page and click on the family name in the top left corner and then click on Family Management. Once you have selected the family you wish to manage there will be an option to Add Member, you will need to enter the mobile number or email address they have registered the app with to send them an invitation. You can set whether or not they are an administrator which allows them to make changes to the device ie removing it.

FOLLOW US ON

 Search Underfloor Heating 1

 Search Underfloor Heating 1

 Search Underfloor Heating 1

GET IN TOUCH

Tel: 01302 727 182

Email: Sales@underfloorheating1.co.uk

Web: www.underfloorheating1.co.uk

Unit 11E, Carcroft Enterprise Park, Carcroft, Doncaster, DN6 8DD