

Product and installation manual

Hep₂O

Underfloor Heating Control Centre 24V 16 Zone



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Underfloor Heating



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Introduction

Underfloor Heating

Thank you for purchasing our 16 Zone Control Centre. Please read through the relevant sections of this guide before beginning any installation works or operating the controls. It is important that the contents of purchased products are checked upon delivery, and that any damaged or missing items are reported immediately.

The Wavin 16 Zone Control Centre can be used with both wired and wireless thermostats to control the room temperature, as part of a heating system.

The Wavin 16 Zone Control Centre comes complete with integrated;

- ⊕ 230V supply for heat source
- ⊕ Volt-free switch for heat source
- ⊕ 230V supply for manifold control pack
- ⊕ Valve and pump maintenance program
- ⊕ Integrated receiver/transmitter and antenna

Each 16 Zone Control Centre Box (15UH316) contains:

- ⊕ 1 x 16 Zone Control Centre
- ⊕ 1 x Stylus
- ⊕ 2 x Rubber Grommets
- ⊕ 2 x 8mm x 40mm Wall Plugs
- ⊕ 2 x 40mm Mounting Screws
- ⊕ 1 x Drilling Template (Printed on the Box)

Only competent persons with certification recognized under Building Regulations – Part P should carry out electrical installation or servicing work. Other persons are not permitted to open the Control Centre cover and/or make any modifications.

Each Wired Thermostat Box (15UH372 or 15UH373) Contains:

- ⊕ 1 x Thermostat
- ⊕ 2 x 6mm x 30mm Wall Plugs
- ⊕ 2 x 30 mm Mounting Screws
- ⊕ 1 x 4 Terminal Plug
- ⊕ 1 x 2 Terminal Plug

Each Wireless Thermostat Box (15UH382 or 15UH383) Contains:

- ⊕ 1 x Thermostat
- ⊕ 2 x 6mm x 30mm Wall Plugs
- ⊕ 2 x 30 mm Mounting Screws
- ⊕ 2 x AA batteries

Ancillary components for the 16-Zone Control Centre and Thermostats include:

- ⊕ Flow Watch Sensor (15UH334)
- ⊕ Floor Sensor Probe for Wired Thermostats (15UH395)
- ⊕ 24V – 2 Wire Actuator for Wavin Composite Manifold (15UH302)

The addition of a Touch Screen System Controller can create a network of up to 3 Control Centres, offering greater ease of use and increased functionality. Such as: DHW time and temperature control, holiday scheduling and creation of stored heating schedules which can be easily applied to controlled rooms.

Installers: Please complete this guide and pass to the end user or leave with the UFH manifold after installation

Hep₂O Project Reference Number:

Plumber

Name:.....

Company:.....

Address:

.....

Postcode:.....

Tel:

Email:.....

Electrician

Name:.....

Company:.....

Address:

.....

Postcode:.....

Tel:

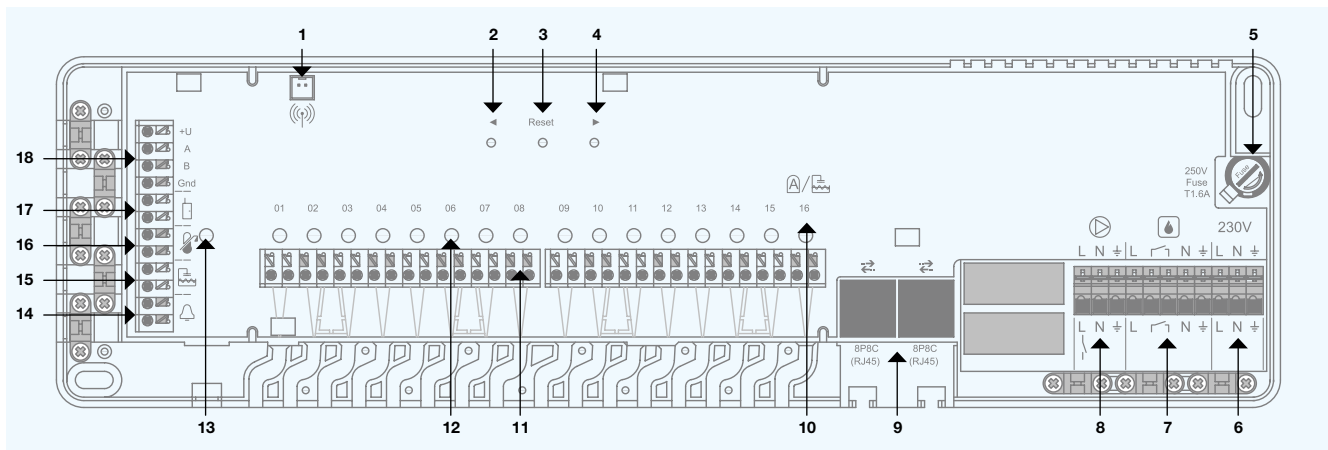
Email:.....

System Overview Underfloor Heating

Control Centre Overview

1. Connector for external antenna, to boost range
2. Left button, to change channel selection
3. **Reset** Reset button, to reset the selected channel
4. Right button, to change channel selection
5. Fuse, 250V, T1.6A
6. **230V** Connections for power supply
7. Connections for heating interlock
8. Connections to a circulator
9. 8P8C (RJ-45) sockets, for networking with Touch Screen System Controller
10. Connections for heating channel 16 or domestic hot water (DHW) actuator
11. Connections for 16 No. 24V DC Actuators
12. 16 No. LEDs, showing channel status
13. Power LED, shows the current Control Centre status
14. Connections for alarm interlock
15. Connections for DHW temperature sensor
16. Connections for Flow Watch Sensor Probe
17. Connections for 3rd party programmer
18. **+U**
A
B
Gnd Connections for wired thermostats

Figure 1: Control centre



System Overview

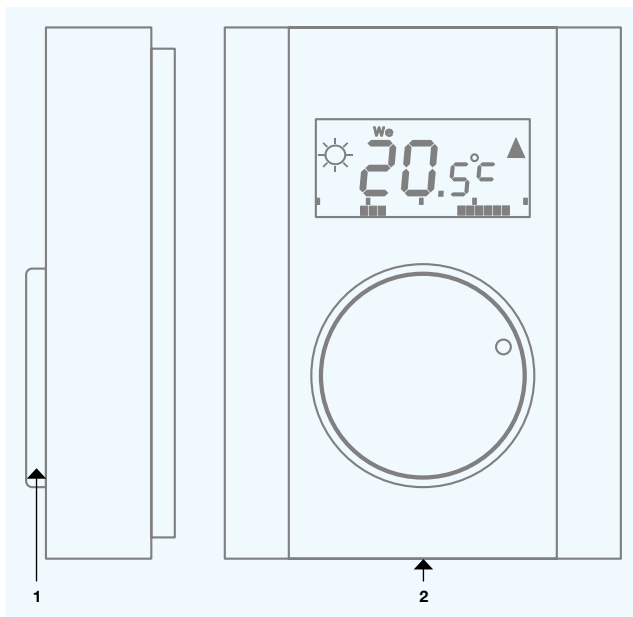
Underfloor Heating

Thermostat Overview

Thermostat body

1. Combined dial and button
2. Cover release tab

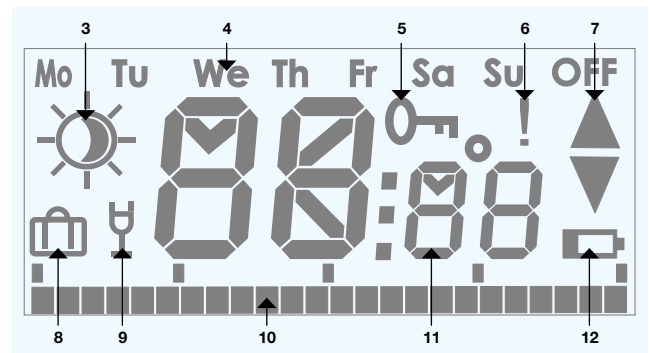
Figure 2: Thermostat unit



Thermostat Display

3. Symbols for comfort ☀ and economical 🌙 temperatures
4. The days of the week
5. Thermostat lock 🔑
6. Alarm temperature reached / loss of communication !
7. Heating ON / OFF ▲ ▼
8. Holiday 🏠
9. Temperature hold 🍷
10. Heating times 00:00
11. Symbols for showing temperature time and texts
12. Low battery 🔋

Figure 3: Thermostat Display



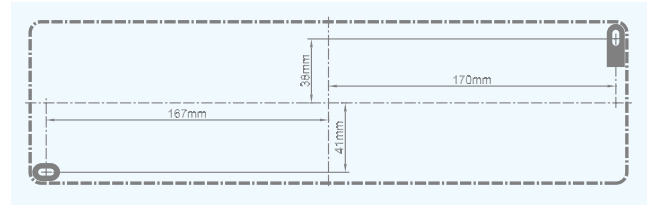
System Installation Underfloor Heating

Mounting the Control Centre

Identify a suitable location to mount the Control Centre. It should be mounted:

- ⌚ In a dry, indoor environment with a relative humidity of no more than 85%
- ⌚ Where it will not be exposed to temperatures less than -10°C or greater than 40°C
- ⌚ Not inside an earthed metal cabinet, as this will prevent wireless communication
- ⌚ Above the manifold, within cable reach of the valve actuators and the circulator on the control pack
- ⌚ The Control Centre can be screwed to the wall using the diagram below or the template on the box
- ⌚ Alternatively it can be mounted on a DIN Rail

Figure 4: Mounting the control centre



Mounting the Thermostats

Identifying a suitable location

Identifying a suitable location to mount the thermostats requires careful planning. It is critical to achieving energy efficient control of the heating system. It is recommended that you discuss it with the property owner or specifier to account for their preferences.

Generally, thermostats should be mounted:

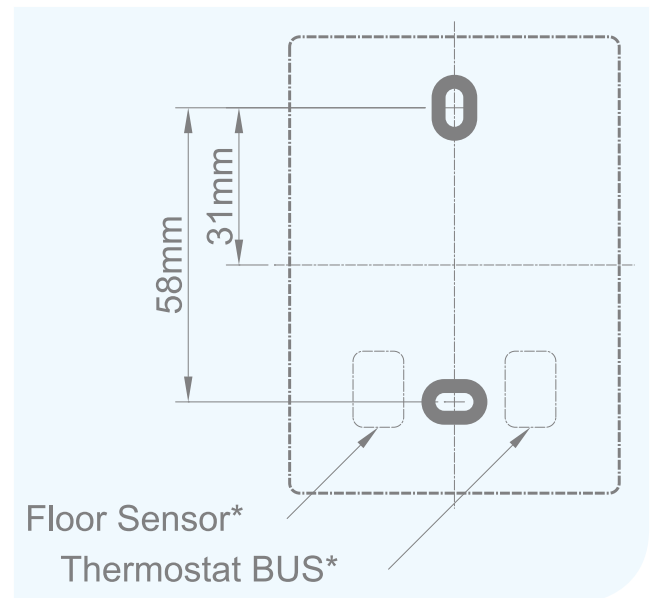
- ⌚ In a dry, indoor location.
- ⌚ Approximately 1.2m to 1.5m above the floor level
- ⌚ In an area with good air circulation
- ⌚ Away from:
 - Draughts caused by adjoining rooms or windows
 - Dead air spots such as those behind a door
 - Radiant heat such as direct sunlight
 - Convected heat from a heat emitter
- ⌚ Avoid mounting wireless thermostats directly on or against on metal surfaces or bases which may impair radio communication

Tamper resistance

The thermostat body has a partially moulded 1.5mm hole which when assembled, aligns with a corresponding hole through the cover release tab of the wall plate.

- ⌚ Fit a 5mm long button head screw to significantly improve the thermostats resistance to demounting

Figure 5: Mounting the thermostats



- ⌚ Adding the Touch Screen System Controller to the system provides three selectable levels thermostat locking:
 - Temperature adjustment (when the LOc menu is entered on the thermostat, it can be unlocked)
 - Entering the menu (the temperature can be changed but access to the menu is blocked)
 - Locked completely (control from the thermostat is completely blocked)
- ⌚ Full control is always possible from the Touch Screen System Controller, allowing central control over a locked system

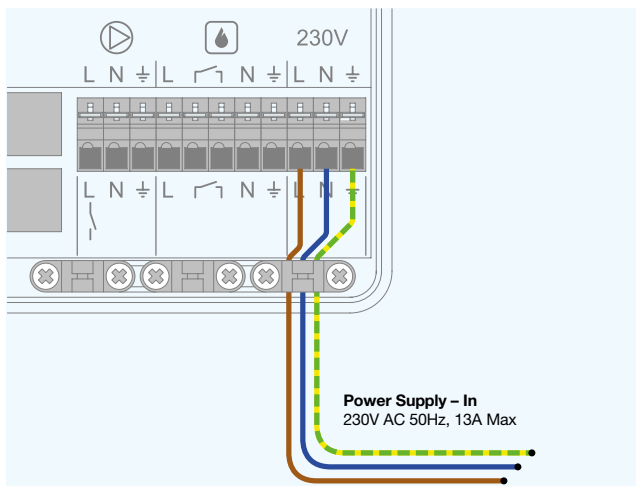
System Installation

Underfloor Heating

Connecting a Power Supply

- ⌚ The Control Centre requires a 230V AC 50Hz power supply
- ⌚ The maximum load created by the Control Centre is 1.6A
- ⌚ The combined load from the Control Centre, Circulator and heat source when powered by the Control Centre, should not exceed 13A
- ⌚ The power supply for all interconnected devices, including the heat source and any 3rd party controls, should be isolated from a single point to prevent the risk of electric shock
- ⌚ The power supply should not be connected until all wiring within the Control Centre and any interconnected devices is completed

Figure 6: Connecting a power supply



Connecting a Heat Source

The Heating Interlock terminals provide multiple methods of connection to match various requirements, closing its switch when any channel has heating demand.

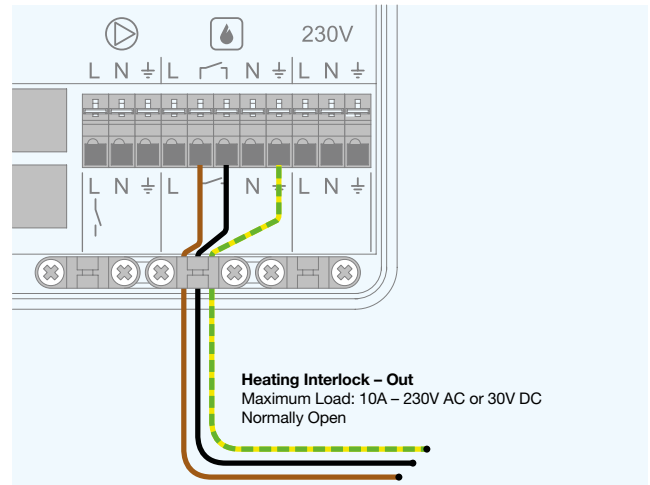
The Heating Interlock is enabled 3 minutes after the Control Centre receives demand from the thermostat, to allow valves to open.

Connecting a heat source requiring a potential-free switch

This method typically suits connection into:

- ⌚ Combi boilers
- ⌚ S-Plan Wiring system
- ⌚ Other 3rd party systems that require a switched pair

Figure 7: Connecting a heat source requiring a potential-free switch



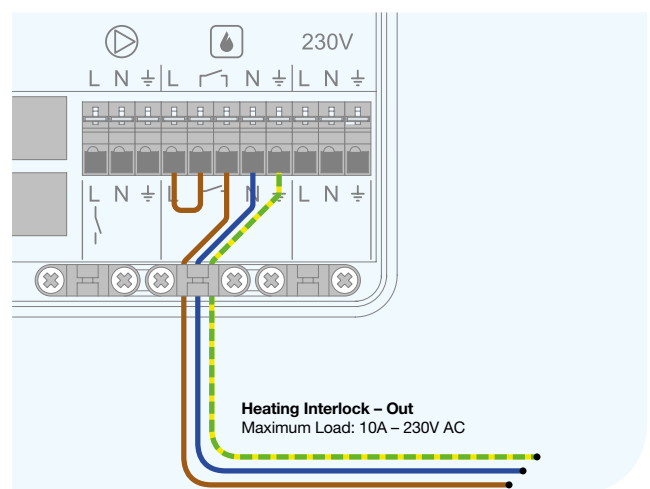
Connecting a heat source requiring a switched power supply

This method typically suits connection into:

- ⌚ System boilers
- ⌚ Motorised zone valves, which must then switch the heat source via their end switch
- ⌚ Other 3rd party systems that require a switched power supply

Note: A motorized zone valve is not required on the water feed to a manifold fitted with actuators.

Figure 8: Connecting a heat source requiring a switched power supply

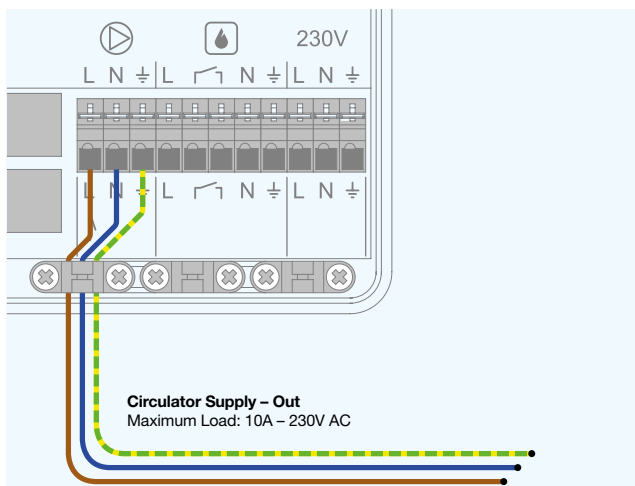


Connecting a Circulator

The Control Centre provides a switched power supply out to a circulator that activates when any underfloor heating channel has demand.

- ⦿ If a mixing unit is fitted to the controlled manifold, it should be this secondary circulator that is connected
- ⦿ Alternatively, if there is a dedicated primary circulator to this manifold, or if the connected manifold is the only emitter on the heat source, then these terminals can provide power to that primary circulator

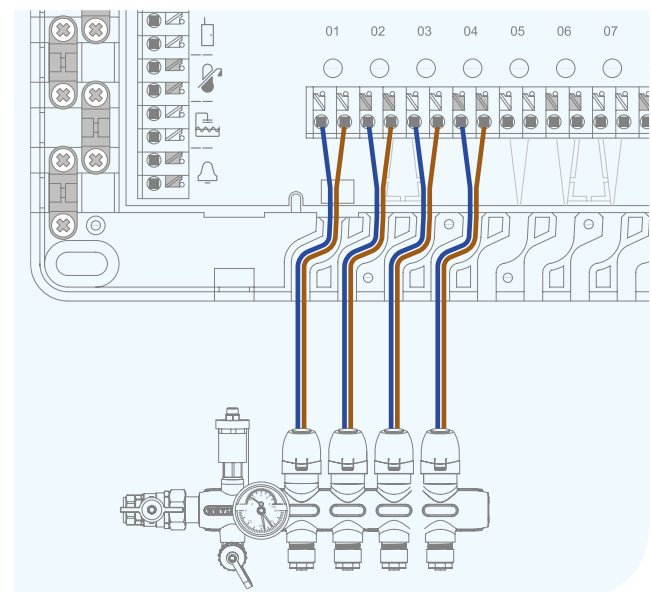
Figure 9: Connecting a circulator



Connecting 24V Actuators

- ⦿ Install the actuators on the manifold by removing the manual valve cap from the return ports and then pressing the actuator down onto the collar by hand until it clicks into place
 - Wavin Actuators are supplied Open and will not close until they have been activated for 10 minutes. If an output has not been activated within 60 minutes of being paired to a thermostat, it will automatically activate the channel to close the actuator
- ⦿ The Control Centre terminals are designed to connect only one actuator per channel
 - If a thermostat needs to control multiple actuators, it should be set to operate multiple channels during the pairing process later
- ⦿ If the load on a single output exceeds 0.4A, the control centre will switch off supply and the channels LED will indicate an overload
- ⦿ For devices requiring a power supply other than 24V DC at up to 0.4A, a 3rd party relay can be connected into the relevant outputs
 - If the total load on the Control Centre reaches 1.6A it will begin sequentially switching the outputs off to prevent overloading. In this mode control of devices requiring a continuous supply is not possible

Figure 10: Connecting actuators

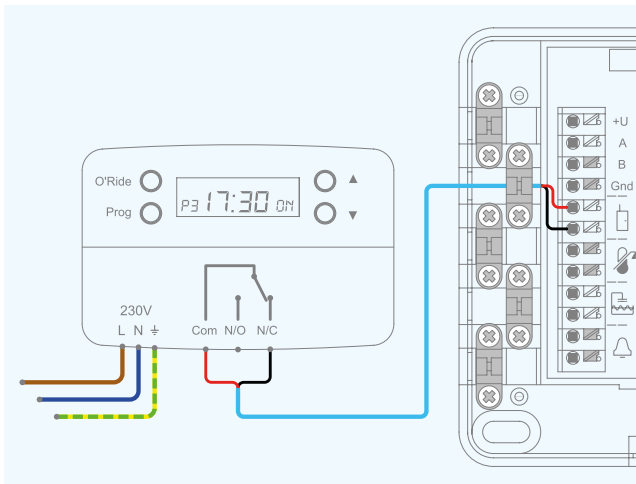


Connecting an External Programmer

- ⦿ Non programmable thermostats can be switched to their standby temperatures on a schedule by connecting an external 3rd party programmer the Control Centre
- ⦿ The standby temperatures can be set on each individual thermostat to suit requirements
- ⦿ The programmer should have a normally closed potential-free switch
 - DO NOT connect 230V into these terminals as it will damage the Control Centre
 - If the selected programmer only has a normally open switch, the heating will be in standby when it is programmed to be active and vice versa

Tip: This function works even with programmable thermostats. Therefore by connecting a standard switch across the terminals instead of a programmer, it can provide an easy means of putting the system into standby/frost-protect mode without turning it off completely.

Figure 14: Connecting an external programmer

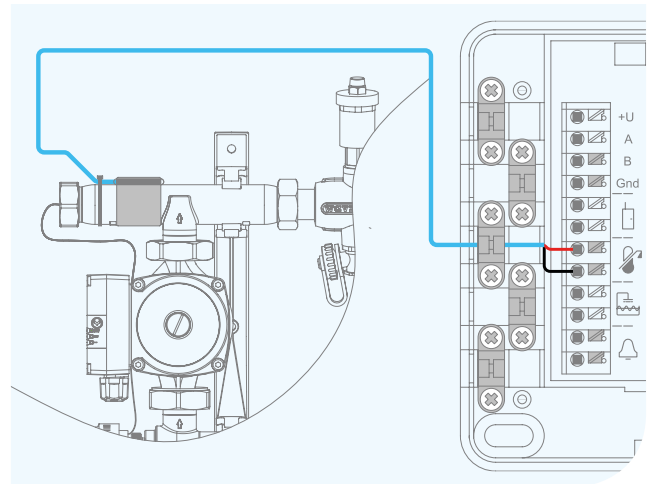


Connecting the Flow Watch Sensor

The Control Centre incorporates a protection circuit, which deactivates all of its outputs in the event of water exceeding 65°C entering the floor.

- ⦿ Attach the Flow Watch Sensor to the manifold with the cable tie provided
- ⦿ Wrap the Velcro strap around the sensor, holding it tight to the manifold and insulating it from the ambient air
- ⦿ Set temperature can be changed when a Touch Screen System Controller is connected
- ⦿ 3rd party sensors and switches are not supported

Figure 15: Connecting the flow watch sensor



System Installation Underfloor Heating

Connecting Wired Thermostats

- ⦿ Thermostats require a 4 core UTP Data Cable or better to function properly
 - Maximum supported cable length is 200m
 - Minimum wire size 0.5mm or 0.2mm²
 - Do not use mains power cable to connect thermostats
- ⦿ A 4-pin plug is provided in the thermostat box for connections made at the thermostat
- ⦿ Thermostats should be connected in parallel
- ⦿ Use of a branching radial circuit will minimize cable usage
 - If preferred, each thermostat can use a dedicated cable, however it may be necessary to use a 3rd party junction box at the Control Centre to connect them all together before connecting to the Control Centre itself

Figure 11: Connecting wired thermostats

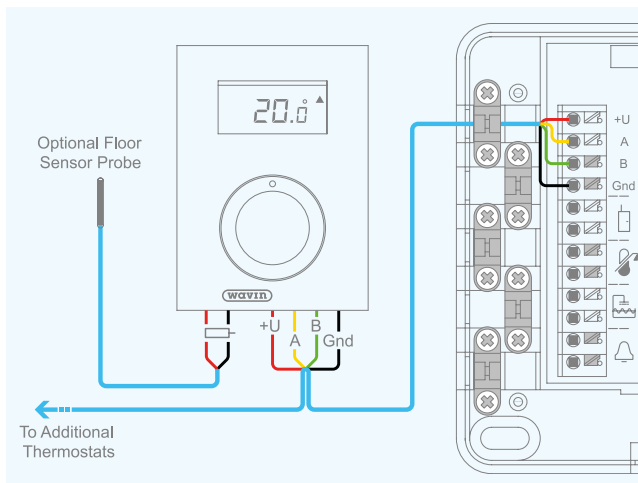
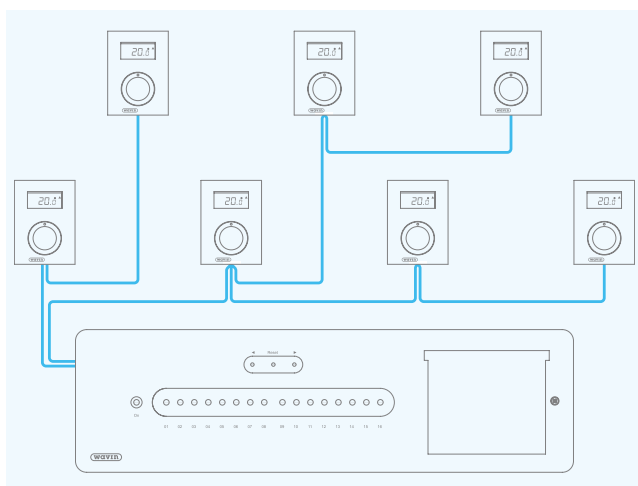


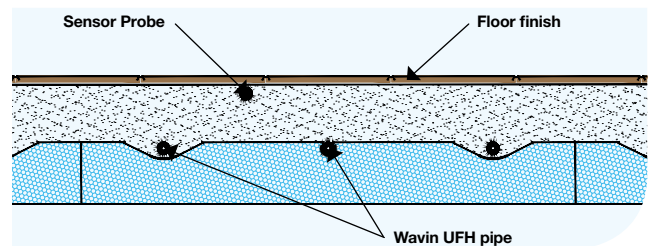
Figure 12: Additional thermostats



Connecting Optional Floor Sensors

- Wired thermostats can be fitted with a floor sensor probe to provide close control over the floor temperature. When connected and enabled, the thermostat will keep the floor temperature within the Min and Max values set, while heating the room to its set temperature.
- ⦿ A 2 pin plug is provided in the thermostat box for the sensors connection to the thermostat
 - ⦿ Floor sensors should be installed
 - In an actively heated and exposed section of the floor
 - Equidistant between two parallel heating pipes
 - As close to the upper surface of the floor as possible
 - In conduit (or an off cut of pipe) so that they can be easily removed and replaced in the event of a failure

Figure 13: Floor sensor probes



System Commissioning Underfloor Heating

With all wired connections made within the Control Centre and throughout all interconnected devices, the system power can be powered on. Before the system will control the heating, each thermostat must be paired to the channels it is to operate.

Power LED Indicator

| LED Pattern | Description |
|-------------|---|
| | The Control Centre has no power |
| | The Control Centre has power |
| | Pairing Mode (Ready to pair thermostat to or reset channel) |
| | Standby Mode (Thermostats operating at standby temperature) |
| | Please reset channel |
| | Please reset channel |

Note: If a thermostat is accidentally enrolled to the Power channel, it will force the system into Standby Mode. Please reset the Power channel to remove its pairing if this occurs.

Channel LED Indicators

| LED Pattern | Description |
|-------------|---|
| | The channel is not paired to any thermostats |
| | Pairing Mode (Ready to pair thermostat to or reset channel) |
| | The channel is paired to one or more thermostats, none of them demanding heat |
| | The channel is paired to one or more thermostats, at least one of them is demanding heat |
| | Valve maintenance |
| | The channel is paired to one or more thermostats, none of them demanding heat. At least one thermostat has a low battery |
| | The channel is paired to one or more thermostats, at least one of them is demanding heat. At least one thermostat has a low battery |
| | Valve maintenance. At least one thermostat has a low battery |
| | The channel is paired to one or more thermostats, at least one thermostat have been disconnected |
| | The channel is overloaded or short circuited |

Pairing Thermostats

A thermostat can be paired to any number of channels allowing it to operate multiple heating circuits. In addition multiple thermostats can be paired with a channel group, allowing more than one thermostat to control it.

- ⌚ Using the stylus provided, press ◀ or ▶ on the Control Centre until the desired channels LED flashed red
- ⌚ With the thermostat on, press and hold the room thermostat button for approximately 5 seconds
 - With wireless thermostats they will display “LRN” indicating that they are pairing to the channel
 - With wired thermostats ▲ will ▼ stop flashing once they have finished pairing to the channel
- ⌚ When the thermostat and Control Centre have successfully paired, the relevant channels LED will change to reflect its status
- ⌚ Repeat this process for every channel to be controlled

Resetting a Channel

If you wish to reset a channel and delete its thermostat pairings:

- ⌚ Using the stylus provided, press ◀ or ▶ on the Control Centre until the desired channels LED flashed red
- ⌚ Using the stylus provided, press “Reset” on the Control Centre
- ⌚ The LED for the relevant channel / zone will switch off



An Introduction to Thermostats

Our thermostats are designed to be easy to use whilst incorporating the latest energy saving features. They're available in both programmable and non-programmable versions. They work by measuring the room air temperature, switching the heating on when the air temperature falls below the thermostat setting and switching it back off again once it reaches it.

Our programmable thermostats also allow you to set "comfort" and "economy" temperatures for occupied and unoccupied periods throughout a 7 day schedule, to match each independently controlled rooms usage.

While not providing the scheduling features available in our programmable versions, our non-programmable thermostats still incorporate many advanced features to help you save money heating your property.

How quickly a room heats up and cools down depends on the heating system and the water temperature used, setting the thermostat to "very hot" or "very cold" will not make the room warm up or cool down to the desired temperature any quicker.

To save energy, we recommend that you find the lowest temperature(s) within each room that you are comfortable with during its hours of use and then leave the thermostat to it. There will always be those times when you wish to boost or lower the temperature by 1°C or so, but if you find you change it on a daily basis then it's probably worth making the temperature or schedule change permanent.



Example room schedules to start you off, don't be afraid to customize them to your needs:

| Room Type | Temperatures | | Comfort Times | |
|-------------|--------------|---------|--------------------------|--------------------------|
| | Comfort | Economy | Weekday | Weekend |
| Kitchen | 18°C | 16°C | 07:00-09:00, 17:00-21:00 | 08:00-21:00 |
| Living Room | 21°C | 18°C | 17:00-23:00 | 09:00-23:00 |
| Bedroom | 18°C | 16°C | 07:00-09:00, 22:00-24:00 | 08:00-10:00, 22:00-24:00 |
| Bathroom | 22°C | 19°C | 07:00-09:00, 17:00-24:00 | 08:00-24:00 |

System Commissioning Underfloor Heating

When operating in the “Auto” setting, our thermostats use smart technology to calculate how long a room takes to heat up to the desired temperatures, and adjusts the weekly schedule set by the user so that the desired temperature is reached at the desired time. For example, when setting the time for the heating to turn on in the morning, you should not consider how long the room will take to heat up, but at what temperature you would like the room to be at the time that you state. For example, if you would like the room to be 20°C at 7am, this is what you should input and the thermostat will work out (over a three day period) what time the heat source needs to turn on according to how long it takes for this to reach your preferred temperature. The thermostat will constantly re-evaluate this setting to adjust to external weather conditions throughout the year.

The overall efficiency of a heating system is not only dependent on the heat lost from your property but also by how efficiently the heat source generates the heat.

- ⌚ For heat sources which offer significant increases in efficiency through reducing their operating temperatures it may be more efficient to keep your property at constant temperature, using non programmable thermostats and as cool a water as possible
- ⌚ For heat sources which are only minimally affected by their water temperature, it may be better to use warmer water to produce a more responsive heating system controlled by programmable thermostats, allowing you to only heat your rooms according to the times at which they are usually occupied. If a thermostat is set to say, 19°C rather than 20°C, that 1°C reduces heat loss by approximately 10% on average – so keeping rooms cooler when not occupied can save substantial amounts of energy. This lower set temperature is referred to as the ‘Economy’ temperature on our thermostats. It is worth noting however, the Economy temperature should never be set to over 4°C lower than the Comfort temperature as this will have a negative effect when heating the room again, as the room may have been allowed to get too cold
- ⌚ There should be an optimum mode in which to run your heat source recommended by the supplier. For example your boiler instructions may state that it is most efficient when used continuously at a constant temperature – this will enable you to choose the best method for your needs



Interacting with the Thermostats

The thermostat settings are changed by a combination of turning the dial to change the flashing item and pressing it to select or confirm.

By pressing and holding the dial for 2 seconds you will access the thermostats settings, in general:

1. The flashing icon on the LCD shows the currently highlighted setting
 - Pressing the dial selects the currently highlighted setting or confirms a change in value
 - Turning the dial scrolls through other settings in that menu level or changes its value
2. After confirming a change in value, the thermostat will return to the previous menu, with the changed setting highlighted
 - To then move back up through the thermostat **main** menus, scroll to the end by turning the dial and press “OK”
3. The thermostat will return you to the previous menu automatically if there is no interaction for 30 seconds

Our thermostats have up to 6 groups of settings; features vary depending on the thermostat model.

† Only available on programmable thermostats

‡ Only available on wired thermostats

Non-Programmable Thermostats

Manual mode

- ⦿ When idle the thermostat LCD will display the current room air temperature and if it is currently calling for heat ▲
- ⦿ To view the set temperature, press the dial or turn it one notch
- ⦿ To change the set temperature, continue turning the dial until you reach the desired temperature, waiting or pressing the dial will return the thermostat to its idle screen and apply the change



Programmable Thermostats

Programmable mode†

*If operating in non-programmable mode – See above.

1. When idle the thermostat LCD will display the current room air temperature and if it is currently calling for heat ▲
2. Turning the dial will cycle the mode indicator through the following symbols: ☀️ 🌙 🏠
3. Pressing the dial will select the displayed mode of operation

Temperature hold



This mode is useful for changing the temperature in a room for a fixed duration for example; when it is being used at an irregular time and is therefore programmed to be at its economy temperature, or perhaps if you are planning to have a party and wish to cool the room down to prevent it becoming uncomfortable once the room is full.

1. Turn the dial to select the number of hours you would like the temperature to be held for
2. Press the dial to confirm the duration
3. Turn the dial to select the temperature to be held
4. Press the dial to confirm and enable Temperature Hold
5. The thermostat will return to its normal heating schedule at the end of the programmed duration
6. To cancel the Temperature Hold, from the idle screen:
 - Turn the dial to select the scheduled heating mode
 - Press the dial to confirm

Scheduled heating



This is the thermostat's normal mode of operation when operating in Programmable Mode.

1. In this mode the thermostat will follow the times and temperatures programmed in menus SE t1 and SE t2

System Commissioning Underfloor Heating

Holiday mode



To save energy while the property is unoccupied during a holiday the thermostat can be switched into Holiday mode. While in this mode the thermostat will maintain its holiday temperature which can be changed in the SE t1 menu.

1. Turn the dial to select the duration of your holiday in days
2. Press the dial to confirm the duration
3. The thermostat will return to its normal heating schedule at the end of the programmed duration
4. To cancel the Holiday mode, from the idle screen:
 - Turn the dial to select the scheduled heating mode
 - Press the dial to confirm

Schedule Settings

SE t2 – Heating schedule†



This menu allows you to set the heating schedule, defining when the thermostat should be heating to its comfort temperature and ☀ when it should be heating to its economy temperature 🌙. When you have finished changing the settings within this menu, scroll to the end and to select OK before pressing the dial to exit.

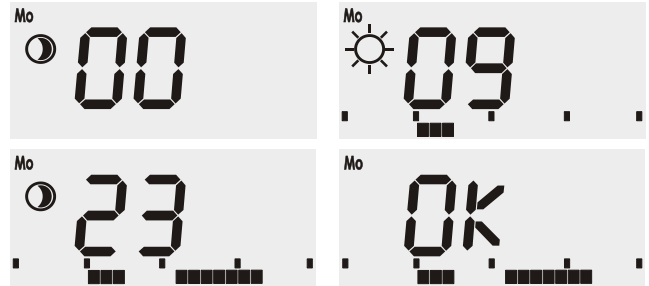
Selecting the days to create a schedule for



The thermostat stores every days heating schedule individually, allowing you to set a different schedule for every day of the week if required.

1. Turn the dial to select the day to create a schedule for
2. Days can be selected individually or in the following groups
 - Mo, Tu, We, Th, Fr
 - Sa, Su
 - Mo, Tu, We, Th, Fr, Sa, Su

Creating the schedule



With the day(s) selected you can now create a heating schedule.

1. Programming always starts
 - At 00 hrs and is set in 1 hour blocks
 - In economy temperature 🌙
2. Press the dial to change the setting from economy temperature 🌙 to comfort temperature ☀ and vice versa
3. Turn the dial clockwise to scroll forwards along the time line along the bottom of the LCD, applying the current temperature setting to the hours that you scroll through
4. Turning the dial anti clockwise will change the setting to economy temperature 🌙 applying it to the hours that you scroll through
5. Upon reaching the end of the day, OK will be displayed, press the dial to confirm and save the schedule for the selected day(s)

Repeat the above steps to select the remaining days and create their schedules.

Temperature Settings

SE t1 – Temperature, time and date settings†



This menu allows you to set the comfort temperature ☀ economy temperature 🌙 holiday temperature mode 🏠 date and time used by the heating schedule (see SE t2) when operating in programmable mode. When you have finished changing the settings within this menu, scroll to the end and to select OK before pressing the dial to exit.

Economy temperature



This value is located in, Settings Menu > SE t1 > ☾

1. After selecting ☾ turn the dial to change the Economy Temperature in 0.5°C increments
2. Press the dial to confirm the change in value

Comfort temperature



This value is located in, Settings Menu > SE t1 > ☀

1. After selecting ☀ turn the dial to change the Comfort Temperature in 0.5°C increments
2. Press the dial to confirm the change in value

Holiday temperature



This value is located in, Settings Menu > SE t1 > 🧳

1. After selecting 🧳 turn the dial to change the Holiday Temperature in 0.5°C increments
2. Press the dial to confirm the change in value

Time and date



This value is located in, Settings Menu > SE t1 > Mo-Su and it applies to the whole system. Once set on the first thermostat or Touch Screen System Controller, it will copy across to all other thermostats connected to the system, so there is no need to set it on every thermostat manually.

1. After selecting Mo-Fr turn the dial to select the Year, i.e. 2014
2. Press the dial to confirm
3. Continue to set the Month, Day, Hour and Minute in the same way

General Settings

MA n – Manual mode†



When operating in manual mode, the temperature is set by turning the dial on the home screen and does not follow a heating schedule.

1. Setting MAn to ON enables manual mode
2. Setting MAn to OFF enables programmable mode
3. While in programmable mode, the day and set temperature (Comfort/Economy) will also be shown on the LCD with the current room temperature

LO C – Locking the thermostat



To protect the thermostat against unwanted adjustment the thermostat controls can be locked

1. Setting Loc to ON enables the lock mode
2. Setting Loc to OFF disables the lock mode
3. When the thermostat controls are locked 🗝️ is displayed on the LCD
4. The setting can be changed again by pressing and holding the dial for 2 seconds to enter the settings menu

OF F – Standby mode



The thermostat can be put into standby mode where it will only turn the heating on if it senses the temperature drop beneath its set standby temperature (see SE t3, Stby).

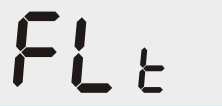



1. Setting OFF to ON switches the thermostat off
2. Setting OFF to OFF switches the thermostat on
3. When the thermostat is in standby mode “OFF” is displayed on the LCD
4. The setting can be changed again by pressing and holding the dial for 2 seconds to re-enter the settings menu

System Commissioning Underfloor Heating

Advanced Settings

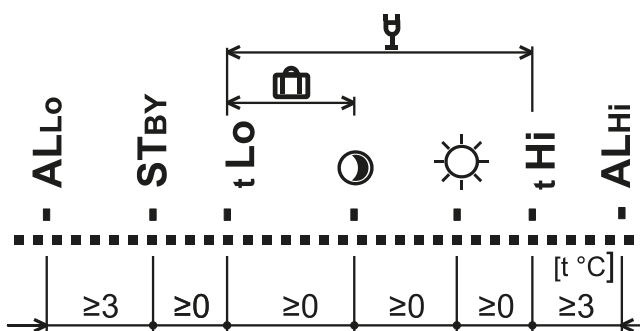
The SE t3 – Advanced Settings menu contains several settings that usually will not need to be adjusted but are provided to enable advanced configuration the heating controls when required.

| Setting | Default Value | Adjustment Range | Description |
|---------|---------------|------------------|--|
| H4St | +/- 0.2°C | 0.1°C to 1.0°C | Sets how far above or below the set temperature, the measured temperature is before the heating is turned off or on |
| Stb4 | 6°C | -6°C to 40°C | Sets the temperature maintained by the thermostat when it is either turned off in its setting or when an external programmer switches the whole system into standby. See guidance beneath this table |
| tLo | 6°C | 40°C | Sets the lowest selectable room temperature 🌙 |
| tHi | 6°C | 40°C | Sets the highest selectable room temperature ☀️ |
| ALLo | 3°C | -9°C to 20°C | The low alarm temperature at which the Control Centre will activate the alarm interlock terminals and the thermostat displays (!) on its screen |
| ALHi | 60°C | 30°C to 70°C | The high alarm temperature at which the Control Centre will activate the alarm interlock terminals and the thermostat displays (!) on its screen |
| FL | OFF‡ | ON / OFF | Enables or disables a floor sensor connected to a thermostat |
| FLLo | 22°C‡ | 6°C to 40°C | Sets the lowest permissible floor temperature for thermostats with a floor sensor connected and enabled. If the floor drops below this temperature the heating will activate |
| FLHi | 27°C‡ | 6°C to 40°C | Sets the highest permissible floor temperature for thermostats with a floor sensor connected and enabled. If the floor rises above this temperature the heating will deactivate |

| Setting | Default Value | Adjustment Range | Description |
|---|---------------|------------------|---|
|  | N/A‡ | N/A | Displays the current floor temperature for thermostats with a floor sensor connected and enabled |
|  | 0.0°C | -3.0°C to 3.0°C | Manual calibration of the air temperature sensor |
|  | ON† | ON / OFF | Enables or disables the thermostats automatic optimisation feature that allows it to adjust its heating schedule to match the requested schedule with the rooms thermal inertia |
|  | OFF | ON / OFF | Resets the thermostat to its factory default condition by selecting ON |

The selectable ranges of each temperature setting above cannot overlap each other. The figure below indicates where each temperature can be adjusted relative to each other.

For example, the standby temperature (STBY) cannot be adjusted from 6°C without first either lowering ALLO below 3°C, as it has to be at least 3°C cooler than STBY, or raising t LO above 6°C, as STBY cannot be any higher than tLO.



Maintenance and Troubleshooting Underfloor Heating

Maintenance

- ⦿ The Wavin 16-zone Control Centre does not require planned maintenance. The Control Centre can be cleaned with a damp cloth. Do not use any cleaning agents
- ⦿ Where applicable it is recommended that the thermostat batteries are replaced at the beginning of each heating season
- ⦿ If any of the channels in use have not been activated for 7 days, their outputs will be energized for 15 minutes to prevent the associated manifold valves from seizing
- ⦿ If no channels have been activated for 7 days, the heat source and circulator pump will be activated for 10 minutes to prevent them from seizing
- ⦿ If communication between the Control Centre and all thermostats attached to a specific channel are fails, that channel will be activated for 15 minutes every hour

Troubleshooting

Before working through this chart it is strongly recommended that you read through this installation guide thoroughly. In particular please read the maintenance section above and review the Control Centre LED's against the LED charts in section 3, as this may explain the symptom without any further investigation being required.

| Symptom | Problem | Solution |
|---|---|--|
| The power LED is off | Control Centre has now power | Check the power supply to the Control Centre is on Check the fuse on the Control Centre. |
| A channel LED is indicating an overload | More than one actuator or other device connected to the output Connected device is drawing too much power | Connect each actuator or device to separate channels and pair the thermostat to each of the channels it is required to control Check the connected device operates on 24V DC with a load of no more than 0.4A Use a 24V DC relay to switch a device which requires a higher voltage or current Check the connected device is not faulty |
| The thermostat display is blank | Control Centre has lost power Fault on the wired connection between the Control Centre and thermostat Batteries have been depleted | See the symptom "The power LED is off" above Ensure the connections have been made correctly both at the Control Centre and at the thermostat and that the thermostat plug is fully inserted Check for continuity from one end of the wire to the other, ensuring there is no short fault between individual cores Replace the batteries |
| Thermostat connection lost/intermittent | Fault on the wired connection between the Control Centre and thermostat Incorrect cable type used Weak wireless signal Very strong wireless signal | Ensure the connections have been made correctly both at the Control Centre and at the thermostat and that the thermostat plug is fully inserted. Check for continuity from one end of the wire to the other, ensuring there is no short fault between individual cores Ensure a suitable data cable has been use to connect the thermostats to the Control Centre Ensure that neither the thermostat or Control Centre are installed on a metal surface or enclosure. Check for uncertified wireless products within their range of the control system. Try the thermostat in a different location within the room to be controlled Ensure the wireless thermostats are not within 2m of the Control Centre |

| Symptom | Problem | Solution |
|---|--|--|
| Thermostats not pairing to the Control Centre | Control Centre is not receiving the pairing signal | Ensure the channel LED is indicating that it is ready to be paired |
| | Thermostat is not sending the pairing signal | Ensure the thermostat LCD is on its home/idle screen before pressing and holding the dial |
| | Other | See symptom "Thermostat connection lost/intermittent" |
| Thermostats have forgotten their time and date settings | Control Centre has previously lost power | Check for the cause of the intermittent power failure to the Control Centre |
| | | Note: If the property will continue to be prone to power failure, adding a single wireless thermostat to the heating system will allow the rest of the system to read the time and date from it when it powers back on |
| One or more rooms are overheating | Thermostats are controlling the wrong outputs | Reset incorrectly paired channels and pair them to the correct thermostats |

Technical Specifications

Underfloor Heating

| Control Centre | |
|--------------------------------|--|
| Dimensions: | 102mm x 359mm x 60mm |
| Mass: | 0.85kg |
| Power Supply: | 230V AC, 50Hz |
| Fuse: | T1.6A, 250V |
| Maximum Load: | 1.6A (excluding heat source and circulator) |
| Maximum Relay Load: | 10A, 250V AC or 30V DC |
| Outputs 1–16 Voltage: | 24V DC |
| Outputs 1–16 Maximum Load: | 0.4A each or 1.6A combined |
| Maximum No. of Thermostats: | 48 |
| RF range: | 2m to 100m in open air conditions |
| Communication band: | 868.1 MHz |
| Communication protocol: | JA-100 |
| Impact Resistance Rating: | IK06 |
| Ingress Protection Rating: | IP30 |
| Operational temperature range: | -10°C to +40°C |
| Operational humidity range: | 0% – 85% (non condensing) |
| Operable according to: | ERC REC 70-03 |
| Complies with: | ETSI EN 300220, EN 50130-4, EN 55022, EN 60730-1 |

| Thermostats | |
|---------------------------------|--|
| Dimensions: | 90mm x 66mm x 22mm |
| Mass: | 0.05kg (excluding batteries) |
| Power Supply (Wired): | 12V DC, 5mA |
| Power Supply (Wireless): | 2No. 1.5V AA batteries (alkaline) |
| Lifetime of batteries: | Typically 1 year |
| Controllable temperature Range: | +6°C to +40°C |
| Measurement accuracy: | +/- 0.1°C |
| Operational temperature range: | -10°C to +70°C |
| Operational humidity range: | 0% - 85% (non condensing) |
| Operable according to: | ERC REC 70-03 |
| Complies with: | ETSI EN 300220, EN50130-4, EN55022, and EN 60950-1 |



Wavin confirms that the Wavin 16 Zone Control Centre and associated devices conform to the essential requirements and relevant regulations of directive 1999/5/EC.



Although this product does not contain any harmful materials we recommend that the product be returned to the dealer or directly to the manufacturer after use.

Hep₂O



Installation Summary

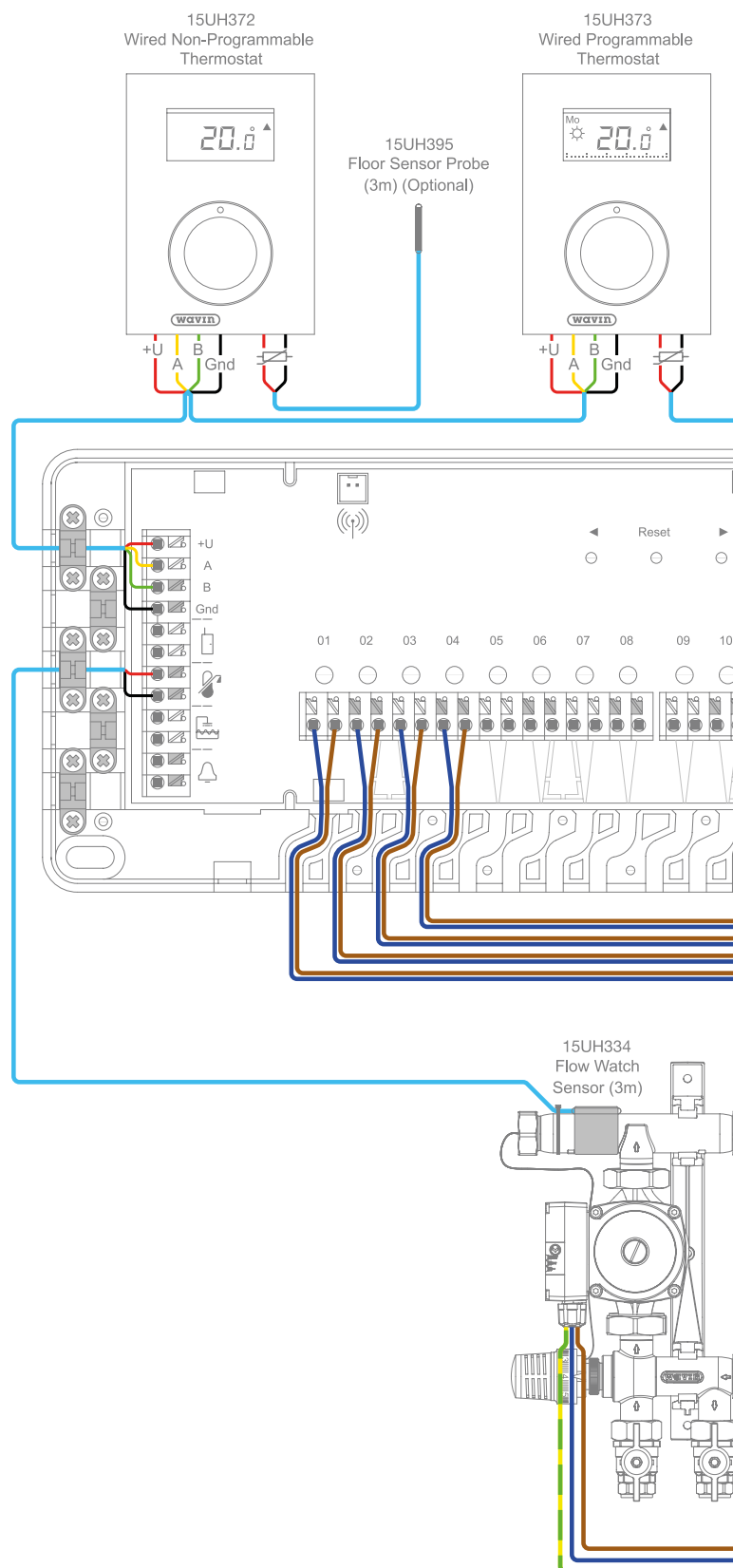
Underfloor Heating

Thermostats

Where wired thermostats are installed, they will require a 4 Core UTP Cable. Maximum length 200m.

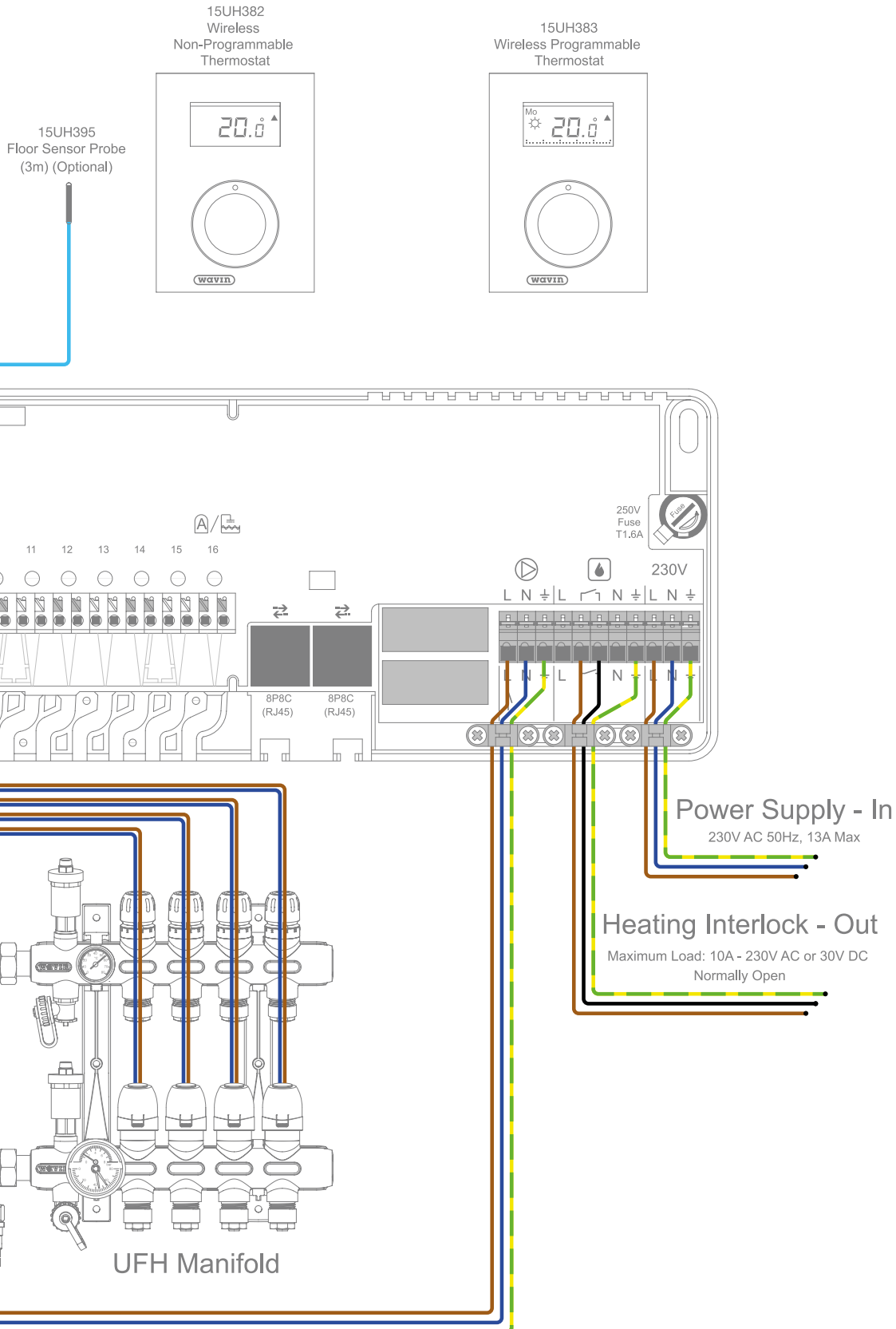
Thermostats are to be connected in parallel and are designed to allow the use of a branching radial circuit.

A Junction box may be required for installations made using individual thermostat cables in place of a radial circuit.



All components must be installed and earthed in accordance with local regulations.

Only competent persons with certification recognised under Building Regulations – Part P should carry out electrical installation or servicing work.



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