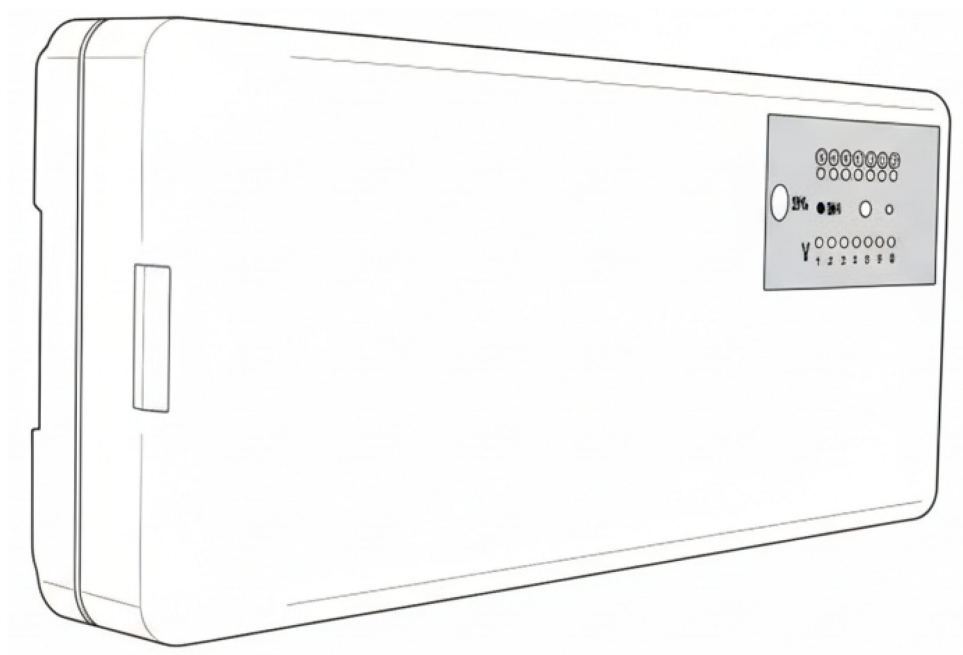


Installation Guide

KF-304 Essence 230v RF 8 Way Wiring Centre



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Product Overview



The KF-304 is stable, safe, secure tried and tested technology, 8-zone wireless central control system designed specifically for hydronic underfloor heating (UFH) and zonal heating applications. Its physical dimensions are 280mm x 110mm x 40mm. The system can both transmit and receive RF 868 Mhz signals, but not simultaneously, rather switching between TX and RX modes. Called Half Duplex, it is a mature, tried and tested method of very stable wireless comms over distance. It is also energy saving for batteries, prolonging the thermostats life. For a quick, reliable, and simple installation, providing a smart heating control solution.

The unit can wirelessly receive control signals from up to 8x WR-304 RF room thermostats and 230v wired control of up to 16 thermal actuator zone valves. As a central control unit, it also manages the primary boiler/heat source via a volt-free output and controls the main UFH circulation pump, ensuring compliance with modern heating control standards.

The WR-300 Gateway is an optional addition to your zonal control system that enables remote management of your RF-paired WR-304 thermostats via the Smart Life app. While a single gateway can support up to 10 thermostats, we recommend installing one WR-300 per KF-304 wiring centre to ensure optimal performance and network stability.

The unit includes on-board LED indicators to display system status at a glance, with distinct lights for power and separate indicators for each of the 8 room channels. These zone lights indicate the status of the RF pairing with each thermostat and heat demand. The unit offers a high total maximum load of 10A for pumps and thermal actuators.

Technical Specification

Item	KF-304 Essence 230v RF 8 Way Wiring Centre
Product Code	WCR3-0304
Compliance:	CE, RoHS, RED
Safety Standards:	EN 60730-1:2016, EN 60730-2-9:2010 EN 62368-1:2014+A11:2017
EMC Standards:	ETSI EN 301 489-1 V2.2.1 (Draft) ETSI EN 301 489-3 V2.1.1 EN 55032:2015, EN 55035:2017 EN 61000-3-2:2014, EN 61000-3-3:2013+A1:2019 ETSI EN 300 220-1 V3.1.1 ETSI EN 300 220-2 V3.2.1
Radio Standards:	EN 62479:2010
EMF (Health):	280mm X 110mm X 40mm
Dimensions	280mm X 110mm X 40mm
Compatibility (Thermostats)	WR-304
Compatibility (Gateway)	WR-300, required for Smart Life App access for
Mounting Type	On Wall, bottom cable entry
Voltage	100-240VAC 50-60Hz
Max Relay Load	250VAC 10A (Pumps and Thermal actuators total)
Total Load Max	250VAC 10A
Fuse Rating / Type	10Amp
Number of Zones	Up to 8
Radio Frequency Band	868MHz (Frequency Shift Keying)
Radio Communication Mode	Half-duplex
Valid Receiving Distance	100m
Actuators Per Zone	2
Actuator Output	230VAC, Max 2A per output
Boiler/Heat Source Connection	Volt-free relay signal (Max 4A)
Pump Delay Options	5min Fixed Delay
Protection Rating	IP40
Ambient Temp Range	-20~C~60°C (Operation temperature)

⚠ Safety ⚠

- **DANGEROUS VOLTAGES ARE PRESENT.** This document is intended for the use of suitably **qualified and competent persons only.**
- Installation, commissioning, maintenance, and testing must be carried out by individuals who meet the relevant **UK professional requirements.**
- All electrical work is **MANDATORY** to be carried out in strict accordance with:
 - The Electricity at Work Regulations 1989.
 - **BS 7671 (IET Wiring Regulations)**, current edition.
 - The requirements of **Part P of the Building Regulations** and all other relevant UK standards and Codes of Practice.
- **Isolation Requirements:** The mains supply to this unit must be provided via a switched double-pole fused spur with a contact separation of at least 3mm in both poles. This ensures that both Live and Neutral conductors are fully disconnected during maintenance, in compliance with best practice for fixed heating appliances
- **Prior to any work, the installer must:**
 - **Isolate:** Safely isolate all circuits from the power supply, **Prove Dead**, and secure against inadvertent re-energisation (e.g., Lock Out, Tag Out procedures).
 - **Assess:** Complete a thorough risk assessment.
 - **PPE:** Ensure appropriate Personal Protective Equipment (PPE) is worn.
- Failure to comply with these requirements may result in serious injury or death.

Disposal

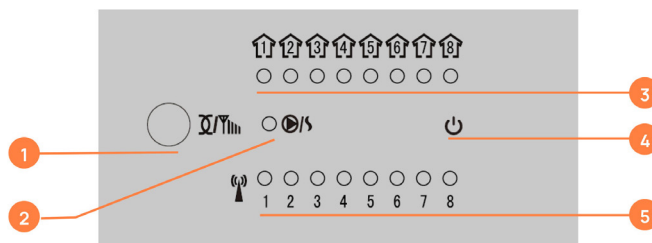


Do not dispose of this product or its batteries in household waste; please use local WEEE and battery recycling schemes.

Installation Steps (WR-304 Thermostat)

- The KF-304 Central Controller is finished in **White**.
- It features an integral display panel with **LED indicators** on the front face for power status and for all eight room channels.
 - LED lights 1-8 indicate RF 868 Mhz commissioning status (blinking or successful pairing (always on) with a corresponding WR-304 RF room thermostat.
- The dimensions are 280mm x 110mm x 40mm
- The unit has a power-on LED light and includes indicators for the status of the main pump and boiler

Installation Overview



1	RF 868 Mhz Pairing Button
2	Pump Pump/Boiler Active LED
3	Zone Heating Zone Heating Demand LEDs
4	Power LED
5	RF 868 Mhz Pairing Zone Selection LEDs



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Pump Delay and System Optimisation

The KF-304 features a fixed 5-minute pump and boiler delay function. This unit's delay is non-adjustable, ensuring factory-set system protection. This built-in timing ensures the system has sufficient time to open the thermal actuators before the pump and boiler fire, preventing short-cycling, protecting the heat source, and optimising overall system performance. The pump and boiler outputs will be activated only after the 5-minute delay has passed once a heat demand is received from any paired RF thermostat.

Connections

Mains Supply: Power supply into the KF-304 (100–240V AC, 50/60Hz). It is essential that all wiring conforms to the latest edition of BS 7671 (IET Wiring Regulations). It is recommended this supply is fused externally at 5 amps. These connections are:

- L = Live or phase (100–240V AC 50/60Hz)
- N = Neutral
- PE = Earth terminal (dedicated connection for the main supply).

UFH Pump: Used for an underfloor heating manifold pump. Connections are:

- SL = Switched Live (250V AC Max 4A)
- N = Neutral
- PE = Earth (dedicated connection for the pump).

When an underfloor heating zone sends a call for heat via its paired RF thermostat, the live & neutral output will supply 230V to the manifold pump after the initial pump/boiler delay.

Boiler / Heat Pump Connection - Volt Free: This is the main call for heat for the system, with a **volt-free relay output** (Max 4A) that can be used with any heat source (e.g., boiler, heat pump, or electric heat source). There are 2 connections:

- COM = Common
- NO = Normally Open

Electrically this is a volt-free switch. Whatever supply is placed on the **COM** connection is fed to the **NO** connection when there is a call for heat from any active zone (and the 5-minute delay has passed). For safety and regulatory compliance, the power to the heat source and wiring centre **must** originate from the same spur.

High Limit Protection: It is recommended that a high limit device is fitted when using this product for Underfloor Heating Systems. This will protect against mechanical failure of the manifold's temperature control. This is particularly advisable when using delicate floor coverings, floors with adhesives and wooden floors.

UFH Valve: The KF-304 has a dedicated UFH valve relay (250V AC Max 3A) for controlling a 2-Port Zone Valve, which can be wired into the provided terminals.

Typical 2 Port Zone Valve Wiring: This wiring may vary depending on the valve type. Wiring the valve allows the KF-304 to integrate the valve into the system's overall heat control logic.

- PE, N, SL = Earth (dedicated connection for the valve motor), Neutral, and Switched Live from the valve motor.
- Gr (Grey) & Or (Orange) = Volt-Free contacts typically used for boiler enabling (Switched Live from valve to boiler).

Outputs and Fuses: The maximum load rating for the pump and thermal actuators is 250V AC 10A total. The individual thermal actuator outputs are rated at Max 2A per output (Max 5A in total for actuators). The Boiler (Volt Free) is rated at Max 4A, and the UFH Valve output is Max 3A. It is recommended the Isolated Fused Spur is fused according to the total connected load (Max 10A)

Location and Mounting

When choosing the location for the RF UFH wiring centre, it's crucial to select a dry, accessible area that is protected from potential water ingress, ensuring long-term system integrity.

Wireless Range: As this is an RF unit, ensure it is located centrally and within the 100m effective receiving distance (open space) of all corresponding RF thermostats to maintain a stable connection and optimal wireless signal reliability. Avoid installation near large metal objects or thick structural walls that could interfere with the 868MHz signal.

Ambient Temperature: The unit has a wide operational range of -20°C to 60°C. The installer must consider the installation location in relation to protection against thermal effects, as extremes of temperature can affect the performance and longevity of the internal electronic components and wiring. Whilst the range of the temperature ambience is specific up to 60°C, we advise that the ambient temperature must not exceed 35°C.

Maintenance Access: Ensure the chosen location allows for easy access for future maintenance, fault-finding, and crucially, for the RF commissioning process of the thermostats.

Installation

Mount the Unit: Secure the wiring centre to the wall using the provided fixings.

Prepare Cable Entries: Remove the required number of knockout panels located on the bottom and sides of the unit to accommodate your cables.

Connect Wiring: Connect the main power supply, pump, and any necessary zone valve and boiler wiring to their respective terminals, ensuring the Earth (PE) connection is made to the specific terminal provided for that device or supply. Connect the thermal actuators for each room to their corresponding zone terminals.

Pairing the RF Thermostats: The KF-304 must be successfully RF paired with up to 8 WR-304 RF thermostats. Hold the designated pairing button on the KF-304 for 3 seconds to enter pairing mode, then follow the instructions for each thermostat to pair it to its corresponding room channel. The channel LED will be solid when successfully paired. Please view the full connection guide for step-by-step pairing instructions.

Test the System: Power on the unit. Test each zone individually by setting the paired thermostat to a high temperature to confirm correct operation (the zone light should illuminate, and the pump/boiler outputs should activate after the 5-minute delay).

Final Checks: Perform a final check to ensure the entire system is functioning correctly and as intended.

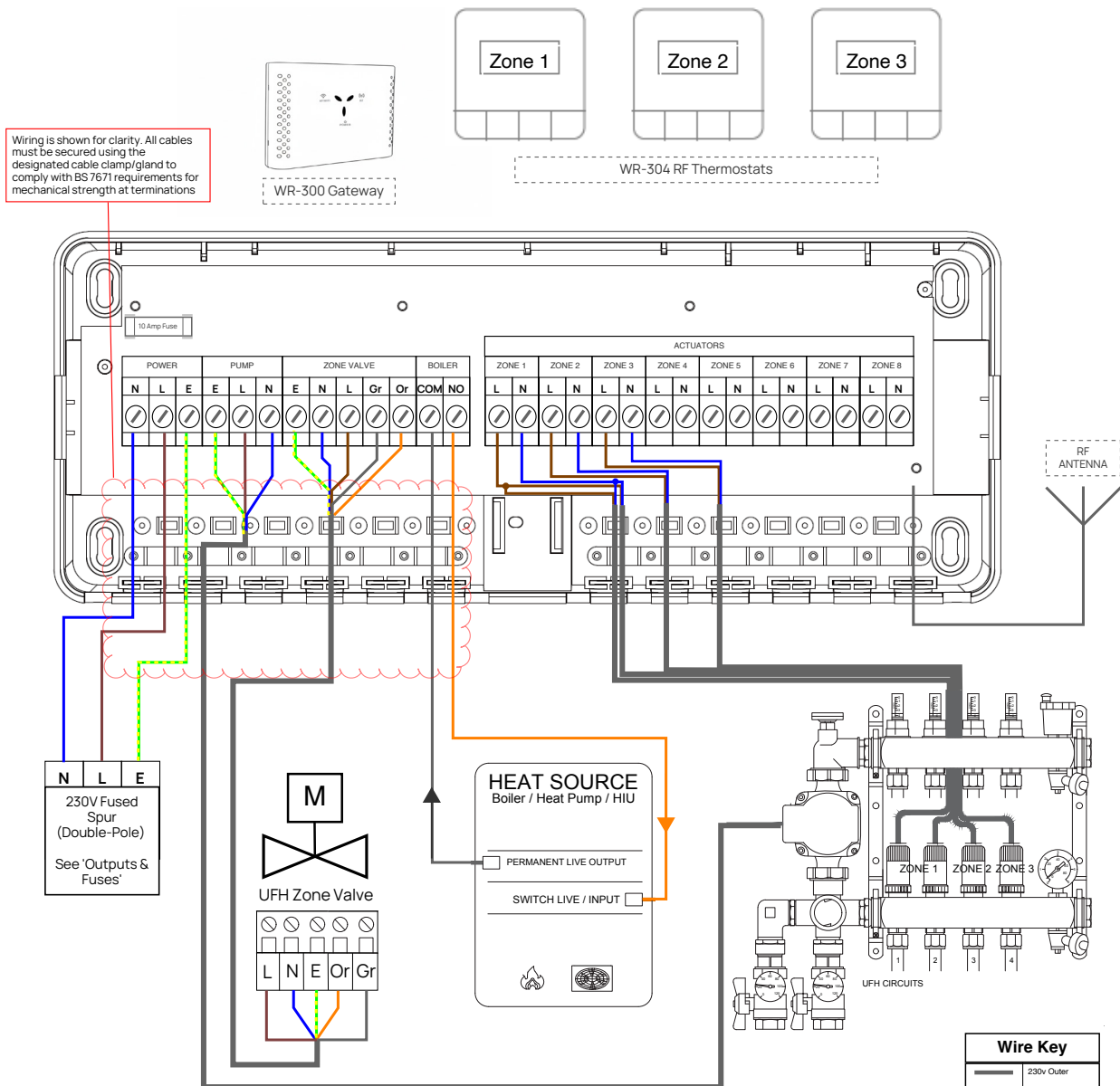
Secure the cables with the cable brace: Once all testing is complete, secure all cables within the unit using the provided **cable brace**. Fit the brace securely over the installed cables and fasten it to the housing of the wiring centre using the dedicated screws. This is a critical safety step to ensure mechanical stability and minimise the risk of electric shock, fulfilling requirements for cable retention.

To comply with BS 7671 (The IET Wiring Regulations), any cables exiting the KF-304 RF wiring centre must be secured and adequately supported outside the unit to prevent strain on the terminals and ensure mechanical protection. We strongly recommend securing the cables within 300mm of the wiring centre enclosure using appropriate cable clips or ties. This requirement is necessary for general safety, to prevent premature cable failure in the event of a fault, and to maintain the integrity of the connection.

Secure the Cover: When you are satisfied with the system's operation, secure the hinged cover using the single captive screw. The system is now ready for commissioning.



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CONNECTION TO THE HEAT SOURCE

Volt Free Connection (Default)

The KF-304 boiler connection is a volt-free contact. For standard boiler/Heat Pump / HIU control, connect the permanent live feed (from the Heat Source) to the COM terminal. The NO (Normally Open) terminal will then provide the switched live signal back to the boiler when heat is demanded. 230 V

Switched Output

Where a 230 V switched output is required, connect an external 230 V Live conductor to the COM terminal. The NO terminal will then switch this 230 V Live to the heat source.

⚠ SAFETY CRITICAL WARNING: 230 V External Feed ⚠

1. The external 230 V Live feed connected to the COM terminal must originate from the same final circuit/isolator as the heat source (boiler/pump) being controlled.
2. If the wiring centre is supplied via an isolation point separate from the boiler's isolation point, the presence of the external 230 V link creates a high risk. This link MUST NOT compromise the ability to safely isolate the boiler by its local isolator.
3. Where a link is installed, a permanent warning label must be affixed at the local isolation point of the boiler/heat source, clearly stating that an external 230 V feed is present on the control wiring. This is required to ensure compliance with isolation and labelling provisions of BS 7671.

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Installer FAQs

Power & Lights

Q: The power light is off.

A: Check the external fuse on the main supply line. Ensure the mains supply is live and correctly connected to the L, N, and PE terminals, in line with BS 7671.

Q: The zone light for room 3 is blinking, not solid.

A: A blinking light indicates that the room channel is at the pairing stage. Ensure you have successfully completed the pairing process with the RF room thermostat assigned to channel 3. A solid light indicates successful pairing.

Q: No zone lights are coming on when I call for heat from the thermostat.

A: Verify the thermostat is paired successfully (solid light). Check that the thermostat's signal is reaching the wiring centre (RF Range).

Boiler & Pump

Q: The boiler/heat pump is not firing when a zone demands heat.

A: The boiler output is **volt-free** (COM/NO). Ensure the heat source's permanent live is correctly wired to the KF-304 **COM** terminal and the Switched Live is wired to **NO**. The boiler will only fire after the **fixed 5-minute delay**. Verify that the current draw does not exceed the 4A rating.

Q: The pump is not starting when a zone calls for heat.

A: Check that the pump wiring to SL and N is secure. The output is 230V AC (Max 4A). The pump will only start after the **fixed 5-minute delay** has passed.

RF/Commissioning

Q: I am confused about which thermostat is linked to which room channel.

A: Follow the Reset Commissioning steps (Power off, hold the commissioning button for 3 seconds, then re-power on) to clear all previous pairings. All zone lights will blink, and you can re-commission each thermostat one by one, ensuring you know which thermostat corresponds to which room channel.

User Guide: Understanding Your KF-304 Heating System Status

The KF-304 Wireless Central Control System manages your underfloor heating (UFH) zones and ensures your boiler and pump operate correctly based on the demands from your **WR-304 RF Thermostats**.

While the KF-304 does not have a user interface, the LED lights on the unit provide a quick visual check that the system is operating as expected.

LED Status Indicators

The KF-304 has two types of lights that the homeowner should observe: the main **Power LED** and eight **Zone/Channel LEDs** (numbered 1 through 8).

Indicator	Status	Meaning for the Homeowner	Action Required
Power LED (Blue/ Green)	ON (Solid)	The KF-304 is receiving mains power and is ready to operate.	None. This is normal operation.
	OFF	The unit is not receiving power.	Check your main electrical supply. If the issue persists, contact a qualified electrician.
	Solid ON (Red/ Green)	Heat Demand: The RF Thermostat for this zone is paired and is currently calling for heat. The system will activate the UFH actuator for this zone. (The boiler/pump will follow after the fixed 5-minute delay).	None. This confirms the thermostat is working.
Zone LED (1 to 8)	Blinking	Pairing Mode: The thermostat for this zone is currently in the process of pairing or commissioning.	Check the connection guide for your WR-304 Thermostat to complete the pairing process.
	OFF	No Demand: The thermostat for this zone is either paired but satisfied (room temperature reached) or not paired at all.	If you expect heating, check the thermostat setting. If the zone has never worked, refer to the connection guide for pairing instructions.

Important Safety Instructions for Homeowners

Do Not Open the Unit: The KF-304 Wiring Centre operates on 230V AC mains power. The unit contains no user-serviceable parts, and removing the cover poses a serious risk of electric shock. Only a qualified electrician or heating engineer should ever remove the cover.

What to Do in the Event of a Fault: If you notice the Power LED is off, or if the Zone LEDs are not responding as expected, and you have confirmed the issue is not related to thermostat pairing:

1. **Turn off the power** to the entire heating system at the main isolation switch or circuit breaker.
2. **Contact a qualified electrician** or heating engineer to inspect and diagnose the fault. Your responsibility is limited to visual inspection of the LEDs and checking the thermostat settings.

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Download a digital version of this manual or to find out more about our range of controls:
www.whispercontrols.com



Activate Your Warranty

To validate the 5-Year Warranty on your Whisper Controls product, you must register your installation within 7 days of fitting.

Key Conditions for a Valid Claim:

The warranty is offered subject to the following conditions:

Installation: Must be carried out by a UK qualified professional with relevant electrical competence and conform to the latest version of BS 7671: 18th Edition IET Wiring Regulations.

Building Regulations: Installation must comply with Part P of the Building Regulations in England and Wales.

Indemnity: The warranty includes compensation for proven manufacturing defects up to a £5,000,000 limit of indemnity per incident.

To register your product and for full terms, conditions, please visit our website.

www.whispercontrols.com/productregistration