resideo

The installer’s guide to heat pump controls

Resideo White Paper | June 2026

beama
The trade association for energy infrastructure & systems

resideo

There's a growing demand for heat pump expertise

Heat pumps are becoming a larger part of UK installers' workload. Policies such as the Warm Homes Plan and the Boiler Upgrade Scheme are incentivising homeowners to install heat pumps by offering grants to reduce the cost, and the government is consulting on requiring heat pumps to include smart functionality from 2027.

The heat pump revenue opportunity is growing, and with it, technical questions — particularly around controls. Conflicting advice from colleagues, manufacturers and trade bodies can make it harder for installers to determine the best strategy for managing homeowners' comfort levels.

Whether you're still gaining experience with heat pumps or installing them on a regular basis, the guidance we share here will help you make control choices that meet customer needs while aligning with industry best practice.

> I've been working with heat pumps for 20 years. They are generally higher-end, higher-value and higher-quality installations compared to basic boiler work. Much more challenging, but also more rewarding.
>
> **Stuart Edwards,**
> Director, Total Energy Solutions Scotland Ltd

How ready are UK installers for heat pumps?

The UK's heat pump market is gathering pace, but most installers are still gaining hands-on experience.

Around 260,000 heat pumps were installed in UK homes by the end of 2024[1], and over 125,000 systems were sold to UK homes in 2025.[2] The UK government's target is 450,000 heat pump installations per year by 2030, revised down from 600,000 by 2028 to improve achievability.[3]

City Plumbing research suggests that 90% of UK installers surveyed expect to complete heat pump training within the next 12 months.[4] However, 74% of installers who completed Heat Training Grant courses had not carried out a single heat pump installation within the first six months of qualifying.[5]

In short: there's a growing pool of trained installers who are yet to gain practical experience of low-temperature systems.

1 https://mcscertified.com/2024-was-a-record-year-for-small-scale-renewables/
2 https://ehpa.org/news-and-resources/press-releases/heat-pump-sales-testify-to-government-action/
3 https://www.gov.uk/government/publications/warm-homes-plan/warm-homes-plan-technical-annex
4 https://www.hvnplus.co.uk/news/industry-survey-finds-mixed-results-for-heat-pump-training-03-10-2025/
5 https://www.installeronline.co.uk/heating/nearly-three-quarters-havent-installed-a-heat-pump-since-completing-heat-training-grant-funded-training/

resideo

Control strategies: separating heat generation from comfort

To keep commissioning predictable, many installers start with straightforward heat pump control arrangements that align with manufacturer systems.

But across a broad mix of properties, situations will arise where manufacturer controls cannot fully support comfort requirements, varied room-use patterns or customer expectations. This is where additional control layers become more relevant, provided they maintain the heat pump's preferred operating conditions.

Why installers get conflicting advice

Many installers are encountering mixed messages about whether heat pumps should be zoned, and if so, how.

It is worth noting that cycling is not caused solely by zoning. Oversizing, aggressive setpoint strategies, limited compressor turn-down ratios and domestic hot water priority logic all contribute to the problem.

Mixed messages:

1. Some manufacturers prefer a heat pump system that uses a single, central demand signal with minimal external intervention.
2. They're concerned about the impact of excessive cycling when zones close and system flow drops too quickly.
3. They want to safeguard against installations where incorrect zoning setups could shorten the lifespan or reliability of their equipment.

resideo

Heat pump control best practice

Installers must protect low flow temperatures, maintain stable flow and avoid short cycling, especially when adding a control layer that is not the manufacturer's own.

For the overall system to function properly, the heat pump manufacturer's control must stay in charge of flow temperature and its operating curve. The specialist control layer should communicate demand in a steady, predictable manner rather than attempting to adjust the same parts of system behaviour.

Specialist controls improve the homeowner's user experience by giving them a simple interface for day-to-day adjustments, without the risk they will alter critical settings on the heat pump itself. When homeowners are unfamiliar with heat pump operation, installing separate comfort controls helps prevent unnecessary changes to the system's settings.

Single-zone vs multi-zone control: where each approach fits

Consideration	Single-zone control	Multi-zone control
Property type	Small homes, even heat-loss, simple layouts	Large homes, varied heat-loss, extensions, attics, basements
Room-use patterns	Consistent use across all rooms	Irregular use (e.g. home office, spare rooms)
Homeowner expectations	Prefers simplicity, minimal interaction, lower upfront cost	Expects tailored comfort per room or has previous zoning experience
System behaviour	Single demand point: heat pump runs long, steady cycles	Zonal demand changes; requires minimum flow and stable hydronics
Control hardware	Manufacturer controller only	Manufacturer controller + zoning/ comfort layer
Best suited to	New builds, well-insulated properties	Retrofits, hybrids, varied room use, mixed insulation levels
Risks if mis-applied	Overheating unused rooms, comfort complaints	Cycling risk if minimum flow is not maintained

resideo

Choosing your control approach: questions to ask

Before deciding on an approach to heat pump controls, it's worth considering a few things. How will the residents use their homes? What is their living/working pattern? How will the heat pump have to work to meet their requirements?

Use this checklist at the start of each project before specifying controls.

Building and system:

- Q How varied is the heat loss across the property?
- Q Is the heat pump system hybrid or fully electric?
- Q Will existing temperature controls remain in place?

Heat pump operation:

- Q Does the heat pump have the modulation range to handle low loads?
- Q Are open-loop or buffered arrangements more appropriate?
- Q Will zoning reduce flow to a point where hydronic measures are needed?

Homeowner expectations:

- Q Do customers expect a single setting, or room-by-room control?
- Q Are there rooms used intermittently where single-zone control would waste heat?
- Q How much day-to-day interaction do homeowners want?

Installer considerations:

- Q Will the chosen control keep the commissioning predictable?
- Q Does the approach avoid short cycling and prevent unnecessary boiler switching?
- Q Does your approach minimise the chance of callbacks without compromising comfort?

The bottom line

Homeowners will judge heat pumps like any heating system: by their comfort and usability. For installers, this puts control strategy at the heart of your system design.

These insights are taken from Resideo's whitepaper, "Practical approaches to controlling heat pumps." Scan the QR code opposite to explore additional guidance, compatible Resideo controls, and installer resources—including the option to download the full-length report.

resideo

Heat pump-compatible thermostats and controllers from Resideo

Resideo's range of heat pump-compatible thermostats and controls is designed to separate heat generation from comfort control when supported by the connected system, configuration and manufacturer requirements.

Across the range, the heat pump's controller remains responsible for system behaviour, while Resideo controls manage time schedules, room temperatures and zoning. This is intended to avoid competing control logic and may reduce the risk of short, unprofitable cycling where the system is correctly sized, designed and configured.

Simple programmable control: T3/T3R

For homeowners who want a straightforward, set-and-forget approach. Available in wired and wireless versions, it allows occupants to adjust comfort safely without having to adjust the manufacturer's heat pump settings. Installer parameters have been updated specifically to support heat pump operation.

Versatile room thermostat: DT4

Combines a slim, modern design with straightforward functionality. Compatible with on/off and OpenTherm® heating and cooling appliances including heat pumps, hybrid systems, boilers and district heating. Can be installed as a standalone thermostat or as part of a wider home comfort solution.

resideo

Advanced multi-zone control: evohome

Supports up to 12 heating zones, allowing homeowners to heat occupied rooms while turning down areas not in use. Wi-Fi enabled with smartphone control, giving homeowners flexibility without interfering with the heat pump's operating logic.

Underfloor heating control: HCC100

Purpose-built multi-zone controller for wet underfloor heating systems. Supports multiple wired and wireless thermostats. Designed to work with low-temperature systems and can be commissioned using the Resideo Pro app.

The T3/T3R, evohome and HCC100 are compatible with multiple heat pump brands, so installers can repeatedly recommend familiar controls rather than learning a new manufacturer interface for every project. This simplifies commissioning, reduces setup errors, and makes it easier to explain system operation to homeowners.

For more information
resideo.com

Resideo Technologies, Inc.
Z. A. La Pièce 6,
1180 Rolle,
Switzerland

RES-EMEA-MKG-WP-0154-A1 | 06/26