

nest

Learning Thermostat  
Installation Guide

## First, a word about privacy.

We're committed to being open and honest about how we use data. We will always ask for permission before sharing personally identifiable information, such as your email address, and we keep your data safe with the same security tools that banks use. Go to [nest.com/eu/privacy](https://nest.com/eu/privacy) to learn more about our Privacy Policy.

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**WARNING:** High voltage. The Nest Thermostat should be installed by a professional.

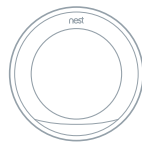
## Compatibility

The Nest Learning Thermostat is compatible with almost all central heating systems, including:

- Combi boilers
- System and heat-only boilers
- Domestic hot water tanks
- Hydronic underfloor systems
- Air-source and ground-source heat pumps (heating only)
- Biomass boilers
- OpenTherm systems
- Zoned systems (one Nest Thermostat per zone)
- Switched live systems
- Low-voltage/dry contact systems
- District heating with electrical control valve

You don't need Wi-Fi to use the Nest Thermostat, but Wi-Fi is required to control it with the Nest app and to get software updates.

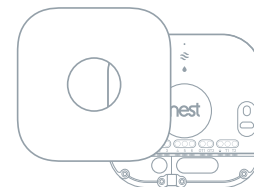
## In the box



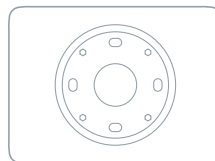
Display



Base



Heat Link



Trim plate



Screws



Welcome Guide, Installation Guide and Warranty

For installations in a new place only



Power plug



Power cable with tidy

## Before you start

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### Do I need to install the Nest Thermostat somewhere new?

Many wired thermostats are installed in rooms that are rarely used, so the temperature that they sense can be warmer or cooler than the temperature that homeowners feel.

If the current thermostat isn't in a good location, install the Nest Thermostat in a new place on the wall with the included power plug and power cable, or use the Nest Stand (sold separately).

→ [Placement guidelines on page 13](#)

### Where should I install it?

The Nest Thermostat and Heat Link communicate wirelessly. They can be up to 30 metres apart, but bear in mind that walls and large objects between them can affect their communication range.

The Nest Thermostat should be in a room that's used often, so that it can read the right temperature and homeowners can easily reach it.

Install it on an interior wall.

Make sure that it's away from draughts and heat sources.

When installed on the wall, it should be 1.2-1.5 m above the floor.

It should have a clear view of the room, so it knows when the homeowners are away.

For zoned systems, install it in the zone that it's controlling.

## Installing the Heat Link

It's important to install the Heat Link before the Nest Thermostat. Do not connect the thermostat directly to your heating system. High voltage current will irreparably damage the Nest Thermostat.

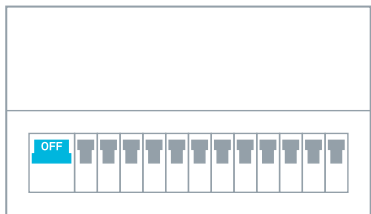


## Install the Heat Link

### 1. Switch off mains power

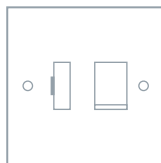
You'll be working with mains voltage, so protect yourself, the heating system and the thermostat by turning off the power before you start.

  
**CAUTION:** High voltage wires



Fuse box

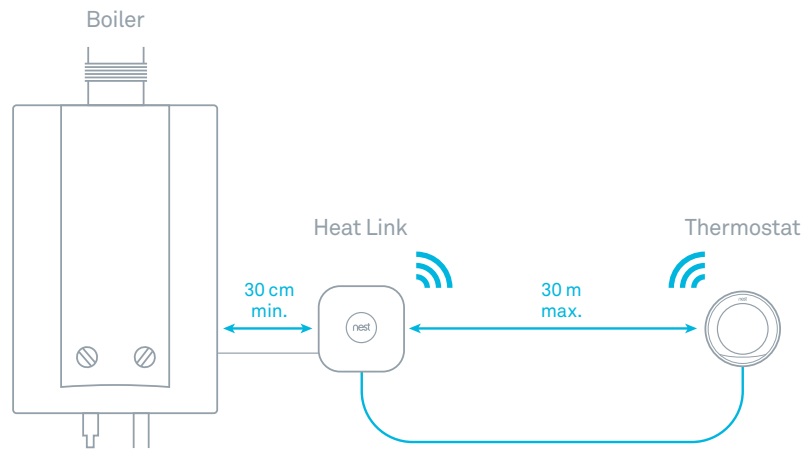
or



Switch

### 2. Choose where you'll install the Heat Link

The Heat Link and the Nest Thermostat communicate wirelessly, even if they are also connected by wires. Position the Heat Link so that large metal objects – such as the boiler or hot water tank – aren't between it and the thermostat. Metal objects can block the wireless signal.



# Install the Heat Link

## 3. Connect to power

Take a look at the wiring in your heating system to determine what type it is.

Connect the L (live) and N (neutral) connectors on the Heat Link to the L and N connectors on the boiler or junction box. This will power the Heat Link.

**TIP:** If there are multiple heating zones in the home, each zone valve will need its own Nest Thermostat and Heat Link.

## 4. Connect the control circuit

Connect the heating control circuit to the Heat Link 1 (satisfied), 2 (common), 3 (call-for-heat) as needed.

If the system has a hot water control circuit, connect it to 4 (satisfied), 5 (common), 6 (call-for-heat) as needed.

If you have an OpenTherm boiler, connect its control circuit to the OT1 and OT2 terminals.

→ See pages 20-27 for detailed wiring diagrams for these system types:

230 V combi boiler

Low voltage/dry contact combi boiler

S-plan

Y-plan

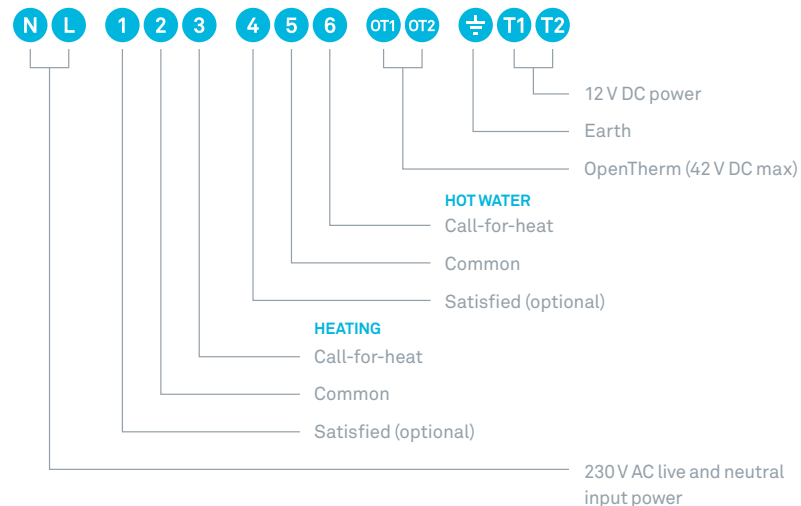
OpenTherm boiler

District heating with electrical control valve

## 5. Connect to the thermostat wires

If you're installing the Nest Thermostat in a new place, skip this step.

Take two wires from the wire bundle that goes to the current thermostat and attach them to the T1 and T2 terminals on the Heat Link.

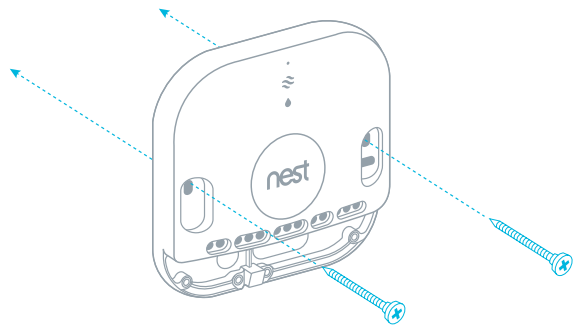


## Install the Heat Link

### 6. Attach the Heat Link

Use the included screws to attach the Heat Link to a wall near the boiler or junction box. If you can, leave 30 centimetres of space on all sides.

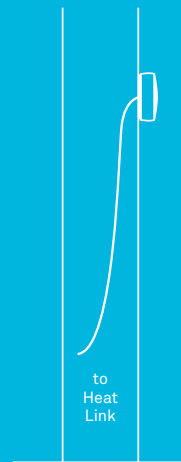
When you've finished, put the Heat Link's cover back on.



## Installing the Nest Thermostat

### Replacing an existing wired thermostat

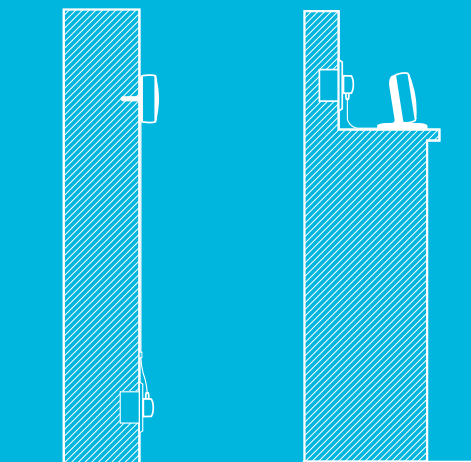
Choose this installation method if the current thermostat connects to heating wires in the wall and doesn't need to move to a better place.



Existing thermostat wires

### Installing the Nest Thermostat in a new place (skip to page 16)

Choose this installation method if there's a wireless thermostat, no thermostat at all, or a thermostat that needs to be moved to a better place.



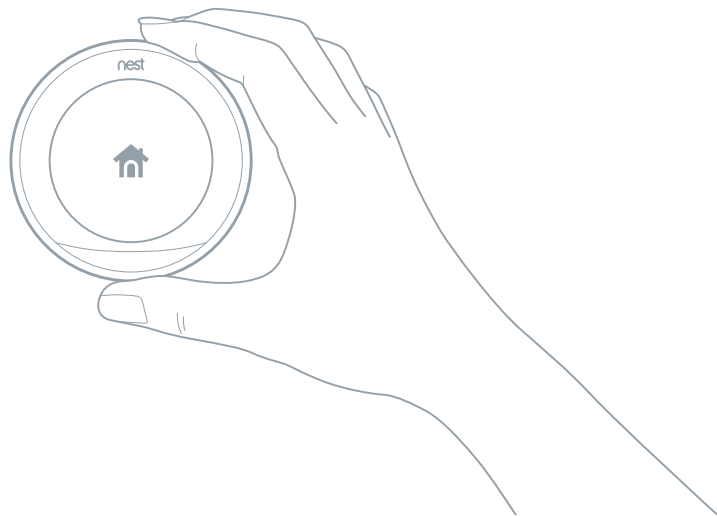
Install over a socket and power with the provided cable and plug.

Put the thermostat on the Nest Stand (sold separately) and place it on a desk, shelf or other flat surface.

## Replacing an existing wired thermostat

After you've installed the Heat Link, you'll need to:

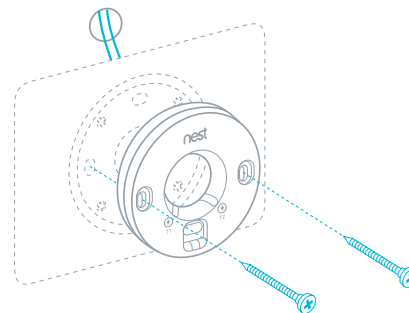
- Remove the existing thermostat
- Install the Nest base
- Connect the thermostat wires
- Attach the Nest display



### 7. Install the Nest base

Remove the old thermostat and install the Nest base. You can attach the base directly to the wall or use the included trim plate to cover up any marks and to route wires that are outside the wall.

If you're using the trim plate, snap it onto the base first, then screw them to the wall as one piece.



Remember, if the old thermostat isn't in a good place, you should install the Nest Thermostat somewhere new. Check the placement guidelines on page 13.

### 8. Connect wires

Connect the wires coming through the wall to Nest's T1 and T2 terminals. It doesn't matter which wire goes into which connector.

→ Continue to page 18.





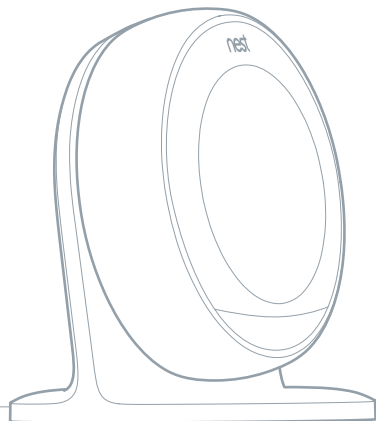
## Installing the Nest Thermostat in a new place

If you aren't connecting the Nest Thermostat to any wires within the wall, then you'll need to:

- Choose a good location for the thermostat
- Install the Nest base
- Attach the Nest display

**IMPORTANT:** Make sure that you install the Heat Link before you install the Nest Thermostat.

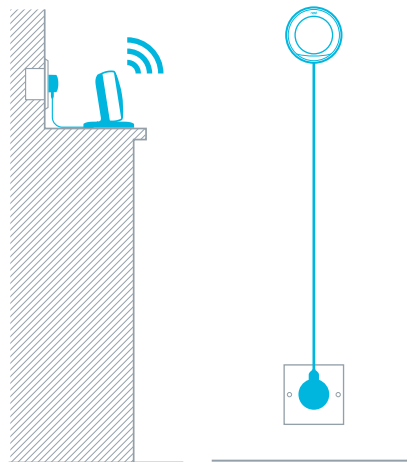
**NOTE:** The Stand for Nest Learning Thermostat is sold separately and comes with its own installation guide. More info at [nest.com/eu](https://nest.com/eu)



### 7. Choose the new location

The Nest Thermostat should be in a room that's used often, so that it can read the right temperature and homeowners can easily reach it.

Make sure you install the Nest base within 2 metres of a socket and within range of the Heat Link.



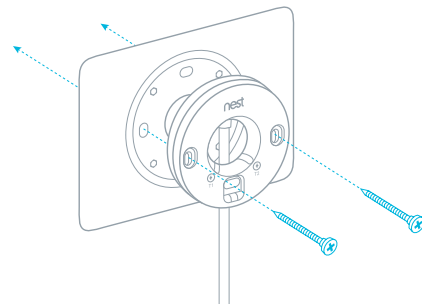
### 8. Install the Nest base

You have three options for installation:

1. Use the Nest Stand (sold separately).
2. Install directly on the wall
3. Install on the wall with the included trim plate to cover any holes or marks.

First, plug the supplied power cable into a wall socket. Then, connect it to the micro USB port on the Nest base.

If you're using the trim plate, snap it onto the base first, then screw them to the wall as one piece.

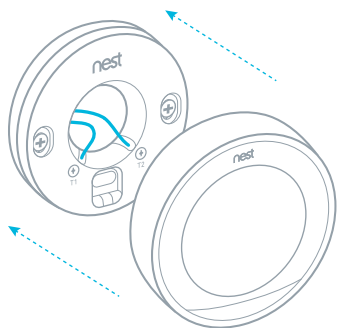


# Install thermostat

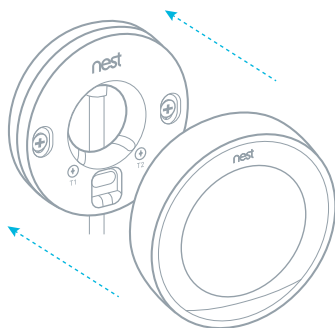
## 9. Attach the display

Press the display onto the base until it clicks into place. Switch on mains power and the Nest Thermostat will begin setup.

**IMPORTANT:** If you're replacing a wired thermostat, terminate and insulate its wires according to regulations in your country or region.



or



## 10. Set up the Nest Thermostat

Just turn the ring and press to select.

During setup, you will:

- Choose a language and location
- Connect to the home's Wi-Fi network
- Confirm that the Heat Link is connected to the thermostat, boiler and hot water tank, if present
- Choose an Away temperature
- Run system test to confirm

For help connecting the Heat Link to the Nest Thermostat, visit [nest.com/eu/pairheatlink](https://nest.com/eu/pairheatlink)

## 11. Create a Nest Account

Before the homeowner can control the Nest Thermostat with their mobile, tablet or computer, they need a Nest Account. They can create one at [nest.com/eu/account](https://nest.com/eu/account) or with the Nest app. They can download the Nest app from the App Store™ or Google Play™.

The app will show you how to add the thermostat to the Nest Account.

Have questions about connecting to a Nest Account? Visit [nest.com/eu/pairing](https://nest.com/eu/pairing)

# Wiring diagrams

The following diagrams show you how to install the Nest Thermostat on:

230 V combi boilers (page 22)

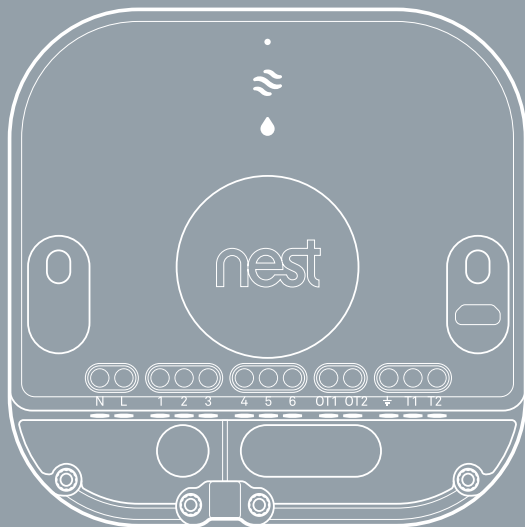
Low voltage/dry contact combi boilers (page 23)

S-plan (page 24)

Y-plan (page 25)

OpenTherm boiler (page 26)

District heating with electrical control valve (page 27)



## General specs

### Heat Link

Terminal	Specification	Notes
L	230 V AC/50 Hz mains voltage	Live wire
N	230 V AC/50 Hz mains voltage	Neutral wire
1	Heating relay normally closed	3 A resistive, 1 A inductive
2	Heating relay common	3 A resistive, 1 A inductive
3	Heating relay normally open	3 A resistive, 1 A inductive
4	Hot water relay normally closed	3 A resistive, 1 A inductive
5	Hot water relay common	3 A resistive, 1 A inductive
6	Hot water relay normally open	3 A resistive, 1 A inductive
OT1	OpenTherm wire 1	42 V DC max.
OT2	OpenTherm wire 2	42 V DC max.
⏚	If using T1 and T2, connect to earth	
T1	12 V DC power output to Nest	
T2	12 V DC power output to Nest	

**Note:** T1 and T2 have no polarity at the thermostat.

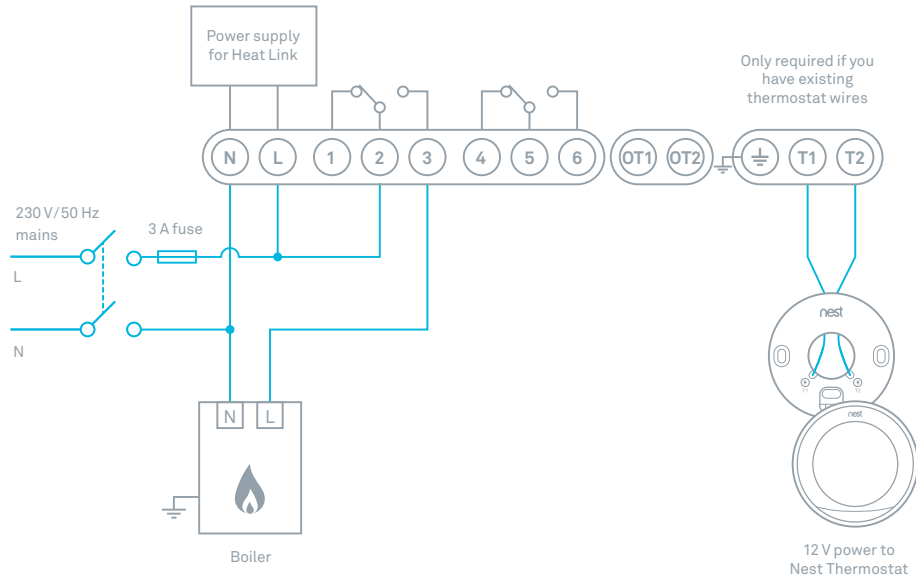
**Maximum cable thickness** = 2 mm<sup>2</sup>

### AC power adaptor

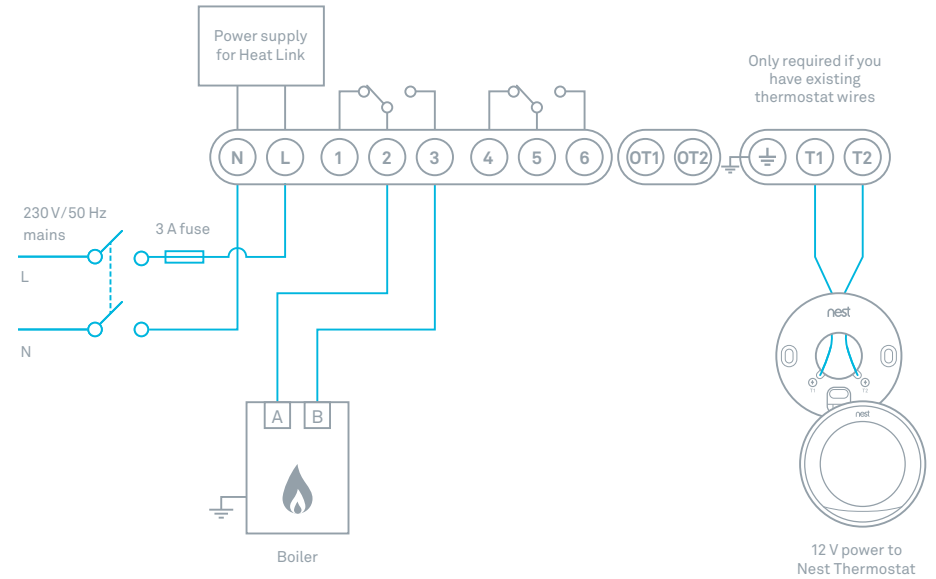
**Input:** 100-240 V AC, 50/60 Hz, 0.2 A | **Output:** 5 V DC, 1.4 A



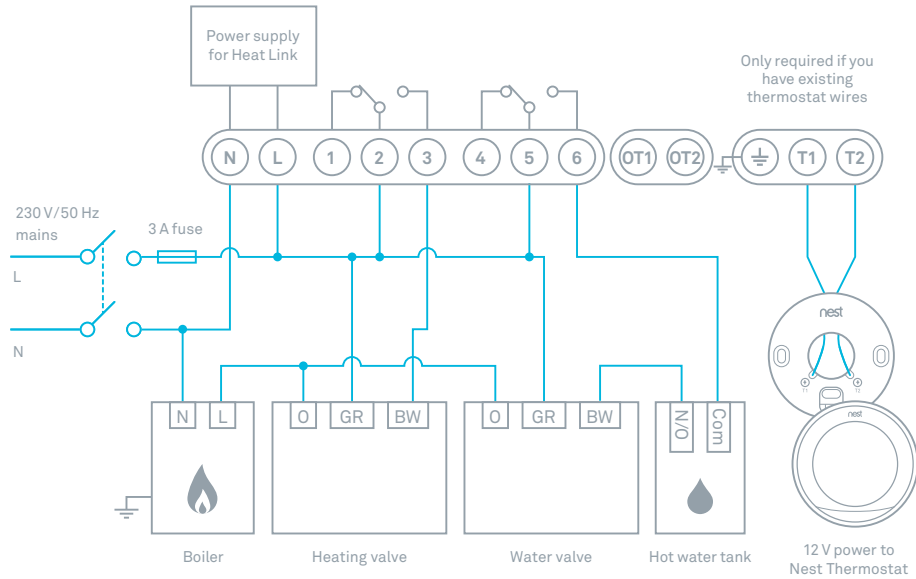
## 230 V combi boiler



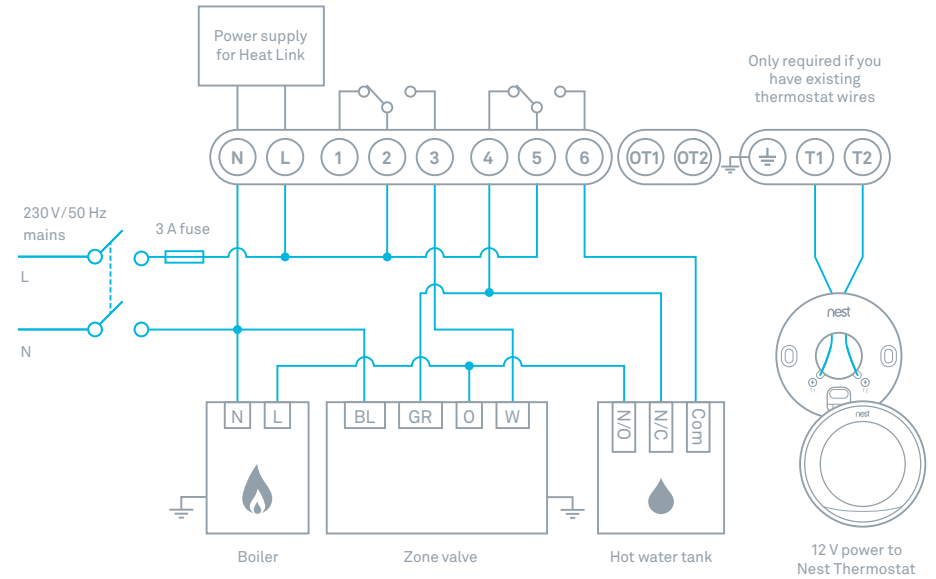
## Low voltage/dry contact combi boiler



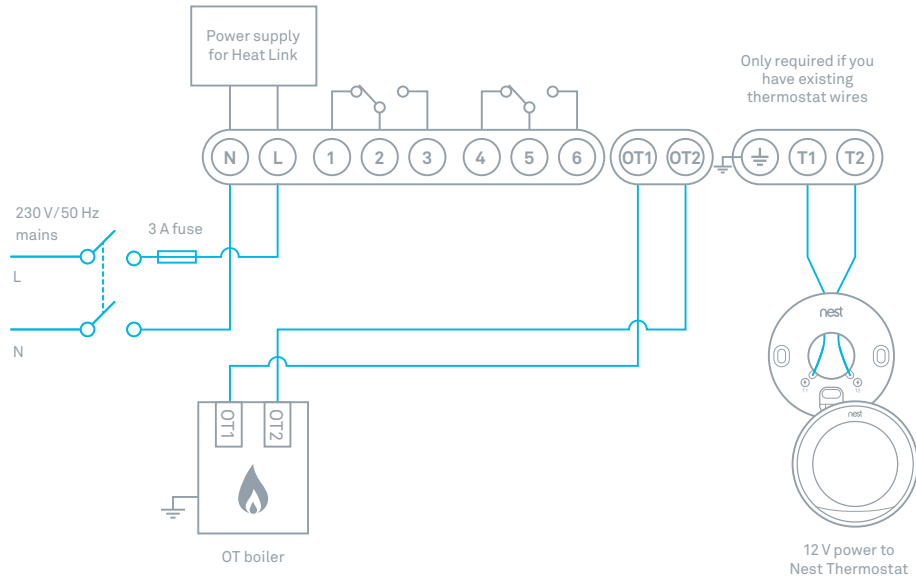
## S-plan



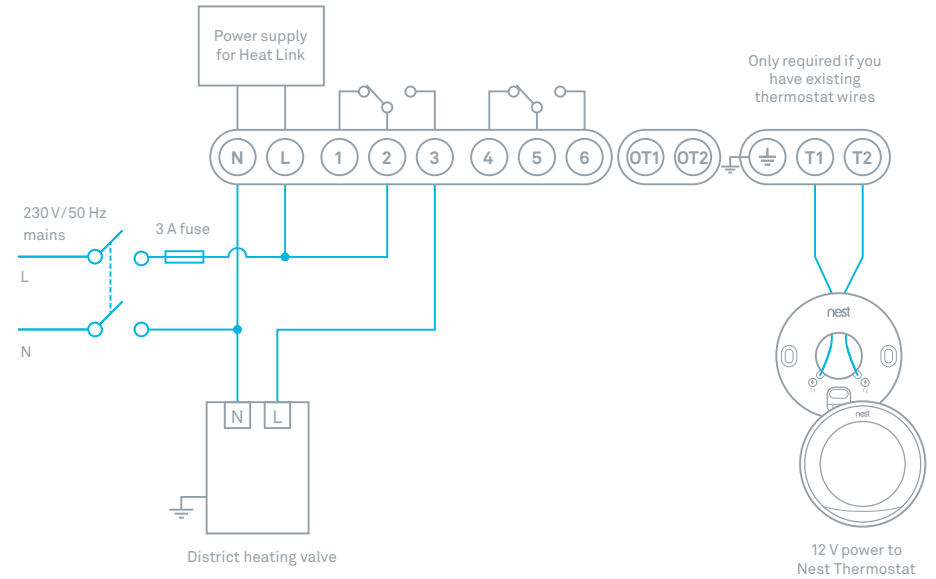
## Y-plan



## OpenTherm boiler



## District heating with electrical control valve



# Energy Related Product (ErP) Directive

Nest Learning Thermostat meets the criteria of the following temperature control classes under the ErP Directive.

Model	Control Class	Definition of Temperature Control Class	Additional seasonal space heating energy efficiency gain
Nest Learning Thermostat <sup>*</sup> installed in an On/Off heating system	IV	TPI room thermostat, for use with on/off output heaters: An electronic room thermostat that controls both thermostat cycle rate and in-cycle on/off ratio of the heater proportional to room temperature. TPI control strategy reduces mean water temperature, improves room temperature control accuracy and enhances system efficiency.	+2%
Nest Learning Thermostat <sup>*</sup> installed in an OpenTherm heating system	VI	Weather compensator and room sensor, for use with modulating heaters: A heater flow temperature control that varies the flow temperature of water leaving the heater dependant upon prevailing outside temperature and selected weather compensation curve. A room temperature sensor monitors room temperature and adjusts the compensation curve parallel displacement to improve room comfort. Control is achieved by modulating the output of the heater.	+4%

\* Model A0001 thermostat used with model A0003 Heat Link

## Device and function definition

in accordance with EN 60730-1

**Purpose of control:** Automatic electrical control of modulating thermostat

**Protection against electric shock:** Independently Mounted Class I Equipment

**Rated voltage:** 100-240 V~, 50-60 Hz

**Surge immunity category:** Installation Class 2 or Residential

**Pollution degree:** 2

**Type of action:** 1

**Rated loads for relays:** 100-240 V~, 50-60 Hz, 3 A resistive or 1 A inductive

**Method of earthing:** Functional ground terminal

**Rated impulse voltage:** 4 kV

**Temperature for the ball pressure test:** 125 °C for materials in contact with or supporting live parts; 80 °C for accessible surfaces

**ELV limits of power output to thermostat:** 12 V DC, 0.15 A on terminals T1 and T2

## Nest Labs (Europe) Ltd. Limited Warranty Nest Learning Thermostat



For online or phone support, visit [nest.com/eu/support](https://nest.com/eu/support)

You can also find answers in the Nest Community at [nest.com/community](https://nest.com/community)



Recycling and disposal: visit [nest.com/eu/recycle](https://nest.com/eu/recycle)  
Dispose in accordance with applicable legislation.

The WEEE symbol means that your Nest Thermostat must be disposed of separately from general household waste. When Nest Thermostat reaches its end of life, take it to a designated waste collection point in your area for safe disposal or recycling. By doing this, you'll conserve natural resources, protect human health and help the environment.



### EU Declaration of Conformity

Nest Labs (Europe) Limited hereby declares that this Nest Learning Thermostat is in compliance with the essential requirements and other relevant provisions of R&TTE Directive (1999/5/EC), EMC Directive (2004/108/EC), Low Voltage Directive (2006/95/EC). A copy of the EU Declaration of Conformity is available at: <https://nest.com/eu/legal/eudoc>

This equipment may be operated in: GB, FR, IE, BE, NL

Operation in the 5150 to 5350 MHz frequency range is restricted to indoor use only.

A minimum separation distance of 20 cm must be maintained between the user's body and the device, including the antenna during body-worn operation to comply with the RF exposure requirements in Europe.

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### 1. WHAT THIS LIMITED WARRANTY COVERS; PERIOD OF COVERAGE

Nest Labs (Europe) Ltd. ("Nest Labs") warrants to the owner of the enclosed product that the product contained in this box ("Product") will be free from defects in materials and workmanship for a period of two (2) years from the date of delivery following the original retail purchase (the "Warranty Period"). If the Product fails to conform to this Limited Warranty during the Warranty Period, Nest Labs will, at its sole discretion, either (a) repair or replace any defective Product or component; or (b) accept the return of the Product and refund the money actually paid by the original purchaser for the Product. Repair or replacement may be made with a new or refurbished product or components, at Nest Labs' sole discretion, to the extent that this is permitted by local laws in your jurisdiction. If the Product or a component incorporated within it is no longer available, Nest Labs may, at Nest Labs' sole discretion, replace the Product with a similar product of similar function. Any Product that has either been repaired or replaced under this Limited Warranty will be covered by the terms of this Limited Warranty for the longer of (a) ninety (90) days from the date of delivery of the repaired Product or Replacement Product, or (b) the remaining Warranty Period. This Limited Warranty is transferable from the original purchaser to subsequent owners, but the Warranty Period will not be extended in duration or expanded in coverage for any such transfer.

### 2. TOTAL SATISFACTION RETURN POLICY

If you are the original purchaser of the Product and you are not satisfied with this Product for any reason, you may return it, at your cost, in its original condition, within thirty (30) days of the original purchase and receive a full refund.



### 3. WARRANTY CONDITIONS; HOW TO GET SERVICE IF YOU WANT TO CLAIM UNDER THIS LIMITED WARRANTY

Before making a claim under this Limited Warranty, the owner of the Product must (a) notify Nest Labs of the intention to claim by visiting [nest.com/eu/support](http://nest.com/eu/support) during the Warranty Period and providing a description of the alleged failure, and (b) comply with Nest Labs' returns delivery instructions. Nest Labs will have no warranty obligations with respect to a returned Product if it determines, at its reasonable discretion after examination of the returned Product, that the Product is an Ineligible Product (defined below). Nest Labs will bear all costs of return delivery to the owner and will reimburse standard delivery costs incurred by the owner, except with respect to any Ineligible Product, for which the owner will bear all delivery costs.

### 4. WHAT THIS LIMITED WARRANTY DOES NOT COVER

This Limited Warranty does not cover the following (collectively "Ineligible Products"): Products marked as "sample" or "Not for Sale", or sold "AS IS"; or Products that have been subject to: (a) modifications, alterations, tampering, or improper maintenance or repairs; (b) handling, storage, installation, testing or use not in accordance with the user's guide or other instructions provided by Nest Labs; (c) abuse or misuse of the Product; (d) breakdowns, fluctuations or interruptions in the electricity supply or the telecommunications network; or (e) Acts of God, including, but not limited to lightning, flood, tornado, earthquake or hurricane. This Limited Warranty does not cover consumable parts, including batteries, unless damage is due to defects in materials or workmanship of the Product or software (even if such consumable parts or software are packaged or sold with the product). Nest Labs recommends using only authorised service providers for maintenance or repair. Unauthorised use of the Product or software can impair the Product's performance and may invalidate this Limited Warranty.

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RELATING TO THIS LIMITED WARRANTY OR THE PRODUCT, AND NEST LABS' TOTAL CUMULATIVE LIABILITY ARISING FROM, OR RELATED TO THIS LIMITED WARRANTY OR THE PRODUCT WILL NOT EXCEED THE AMOUNT ACTUALLY PAID FOR THE PRODUCT BY THE ORIGINAL PURCHASER.

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### 8. VARIATIONS THAT MIGHT APPLY TO THIS LIMITED WARRANTY

Some jurisdictions do not allow limitations on how long an implied warranty lasts or specific exclusions, so some of the limitations set out above may not apply to you. If any court or relevant authority decides that any of these limitations is unenforceable, it should be deemed modified to the minimum extent necessary to make it enforceable. If this modification is not possible, the relevant provision should be deemed deleted. Any modification or deletion will not affect the validity of the rest of this Limited Warranty.

### 9. CONTACT INFORMATION

Please direct any questions about this Limited Warranty to Nest Labs (Europe) Ltd. at the address located at: [nest.com/eu/contact](http://nest.com/eu/contact).



