



**Learning Thermostat**  
Installation Guide

# The Nest Learning Thermostat for the UK and Ireland should be installed by a professional.

Please visit [nest.com/eu/install](https://nest.com/eu/install) to schedule your installation. You'll see a list of approved Nest Pro installers nearby and find pricing information.

A Nest Pro will:

- Make sure that your heating system is working. Your system needs to be working and needs to conform to building and safety regulations before a Pro can start working.
- Find the best place to install your Nest Thermostat.
- Install the thermostat and Heat Link.
- Connect your thermostat to Wi-Fi or help you do it yourself.
- Give you a quick product intro and demo.

If you've already bought installation, you can schedule it with your reseller. Find out more at [nest.com/eu/retail-install](https://nest.com/eu/retail-install)



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



# Compatibility

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

- Combi boilers
- System boilers with hot water control
- Heat pumps (heating only)
- Zoned systems
- District heating with electrical control valve

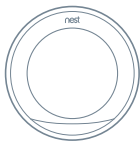
Control systems:

- On/Off
- OpenTherm

A Wi-Fi connection is required to control the Nest Thermostat with the Nest app and to receive software updates.

# In the box

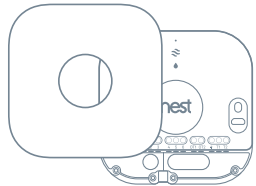
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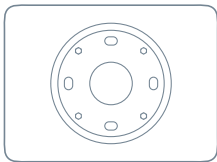
Display



Base



Heat Link



Trim plate



Screws

## Before you start

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### You may want 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 with the Nest Stand (sold separately) in a room that's used more often.

→ [Placement guidelines on page 12.](#)

### Where should you install it?

- Place it within 30 metres of the Heat Link. Closer is generally better. 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, can sense when the home is empty and know when to automatically turn down the heating.
- It should have a clear view of the room.
- Wall-mounted thermostats should be installed on an interior wall.
- Make sure that it's away from draughts and heat sources.
- For zoned systems, install the thermostat 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.

The Heat Link is necessary, even if there are low-voltage wires.



# Installing the Heat Link

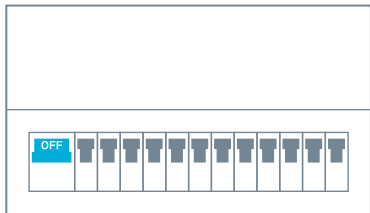
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## 1. Switch off mains power

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

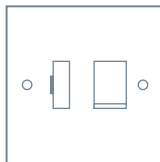


**CAUTION:** High voltage wires



Fuse box

or



Switch



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## 2. Connect to power and the control circuit

Check the heating system's wiring to determine what type it is.

Remove the Heat Link cover and connect the L (live) and N (neutral) terminals on the Heat Link to the L and N circuit on the boiler or junction box. This will power the Heat Link.

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

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

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

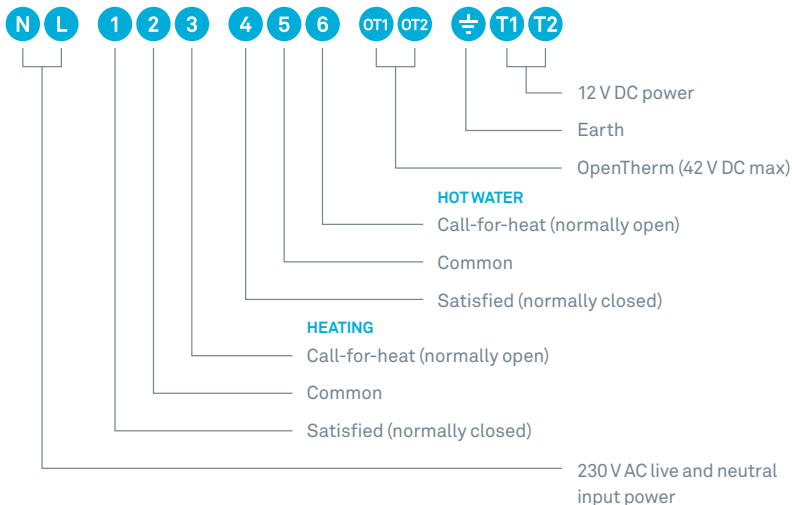
→ See pages 20-25 for detailed wiring diagrams.

# Installing the Heat Link

## 3. Connect to the thermostat wires

Skip to the next step if you're installing the Nest Thermostat on the stand and are using the USB cable for power.

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.

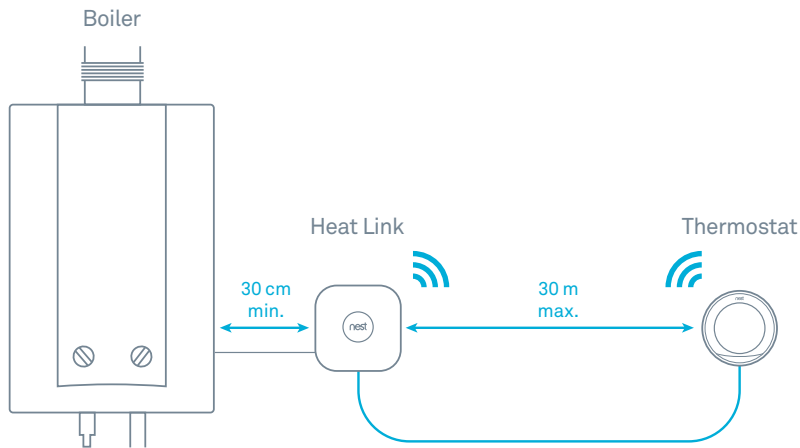


## 4. Mount the Heat Link

Use the screws included to mount the Heat Link near the boiler or junction box. Then put the Heat Link cover back on.

To help ensure a good wireless connection to the thermostat:

- Leave at least 30 cm of space on each side.
- Install it within 30 m of the thermostat.

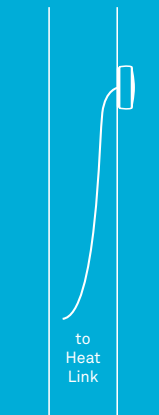


# Installing the thermostat

## On the wall

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.

Go to page 13 to start.



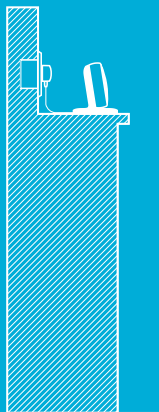
Existing  
thermostat wires

## Using the stand

Choose this installation method if you're replacing a wireless thermostat or if the thermostat needs to be moved to a better position.

The Nest Stand is sold separately.  
Go to [nest.com/eu](https://nest.com/eu) for more information.

Go to page 14 to start.



With the stand, you can put your thermostat  
on a desk, shelf or other flat surface

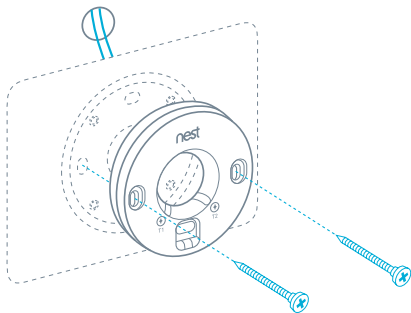
# Installing it on the wall

## 5. Install the Nest base

Remove the old thermostat if there is one. You can attach the Nest base directly to the wall or use the trim plate included to cover up any marks.

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

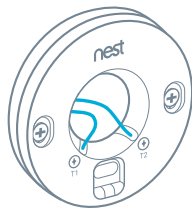
When installed on the wall, the Nest Thermostat should be 1.2-1.5 m above the floor.



## 6. Connect the 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 15.



**IMPORTANT:** Terminate and insulate all wires according to the regulations in your country or region.

# Installing it on the stand

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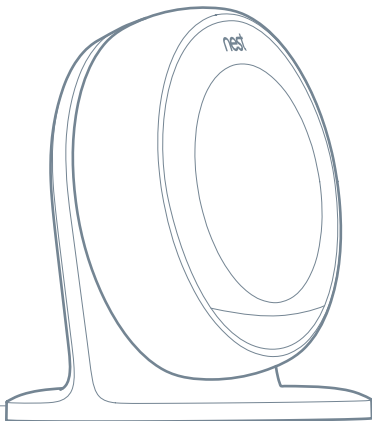
## 7. Install the Nest Stand

Attach the thermostat base to the stand according to the instructions that came with it. Connect the power cable to the base and plug it into a wall socket.

Stand-mounted thermostats should be placed on a table or shelf 0.75–1 m above the floor and no further than 1 m from the edge.

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

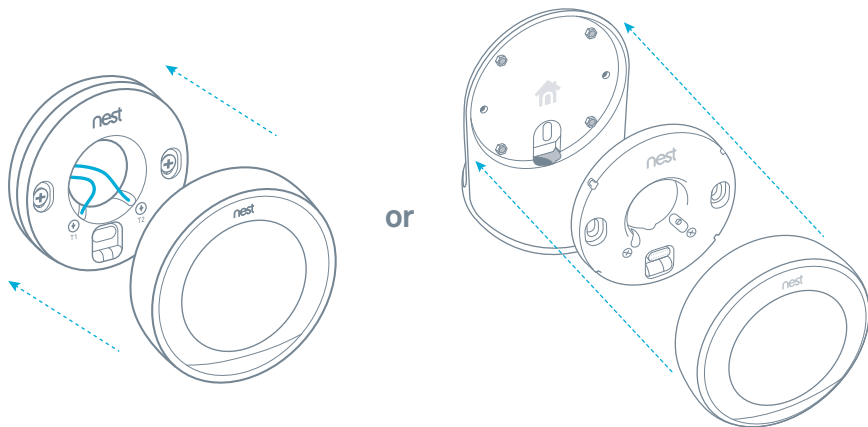
**NOTE:** The Nest Stand is sold separately and comes with its own installation instructions. Go to [nest.com/eu/stand](https://nest.com/eu/stand) for more information.



# Finishing installation and setup

## 8. Attach the display

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



# Finishing installation and setup

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## 9. Setup

The Nest Thermostat will turn on and take you through setup. You can select a language, connect it to Wi-Fi, and tell it some things about your home and system so that it can help save energy.

The Nest Thermostat doesn't have a touch screen. Turn the thermostat display and press it to select.

## 10. Control it with the Nest app

To control your thermostat with your mobile, download the free Nest app from Google Play or the iTunes App Store. Then create a free Nest account with the app.

You can go to [home.nest.com](http://home.nest.com) if you're using a computer.

If you need help, please visit [nest.com/eu/pairing](http://nest.com/eu/pairing)



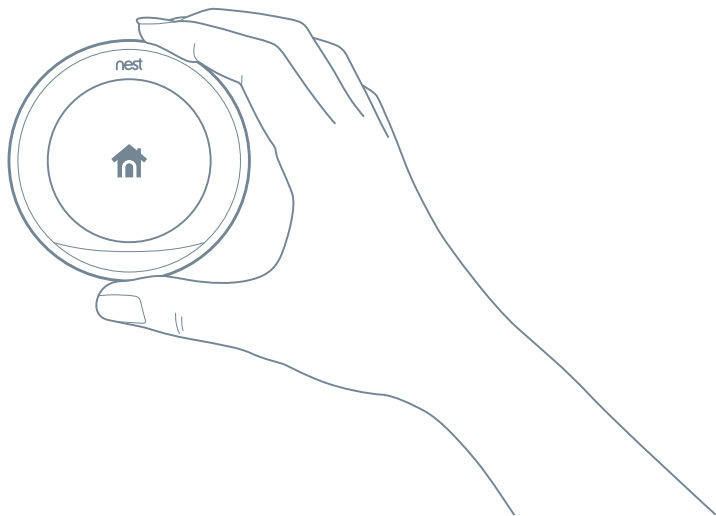
# Getting started

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## Using your thermostat

Your thermostat can automatically start learning your schedule or you can choose a schedule with preset times and temperatures. You can edit your schedule at any time.

For help with getting started, learning about Nest Thermostat features, energy-saving tips and more, please go to [nest.com/eu/thermostatbasics](https://nest.com/eu/thermostatbasics)



# Wiring diagrams

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

230 V combi boilers (page 20)

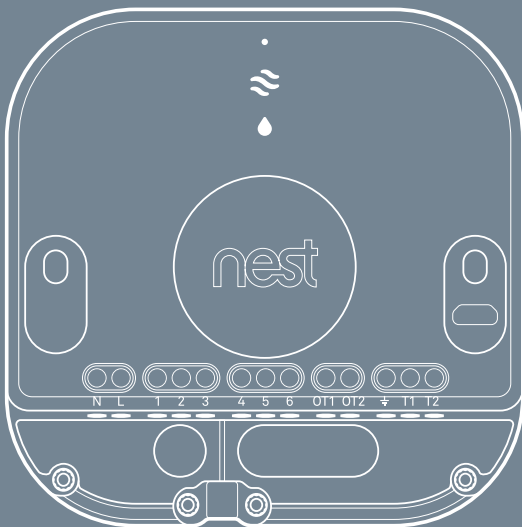
Low voltage/dry contact combi boilers (page 21)

S-plan (page 22)

Y-plan (page 23)


OpenTherm boiler (page 24)

District heating with  
electrical control valve  
(page 25)



# 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/satisfied	3 A resistive, 1 A inductive
2	Heating relay common	3 A resistive, 1 A inductive
3	Heating relay normally open/call for heat	3 A resistive, 1 A inductive
4	Hot water relay normally closed/satisfied	3 A resistive, 1 A inductive
5	Hot water relay common	3 A resistive, 1 A inductive
6	Hot water relay normally open/call for heat	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.

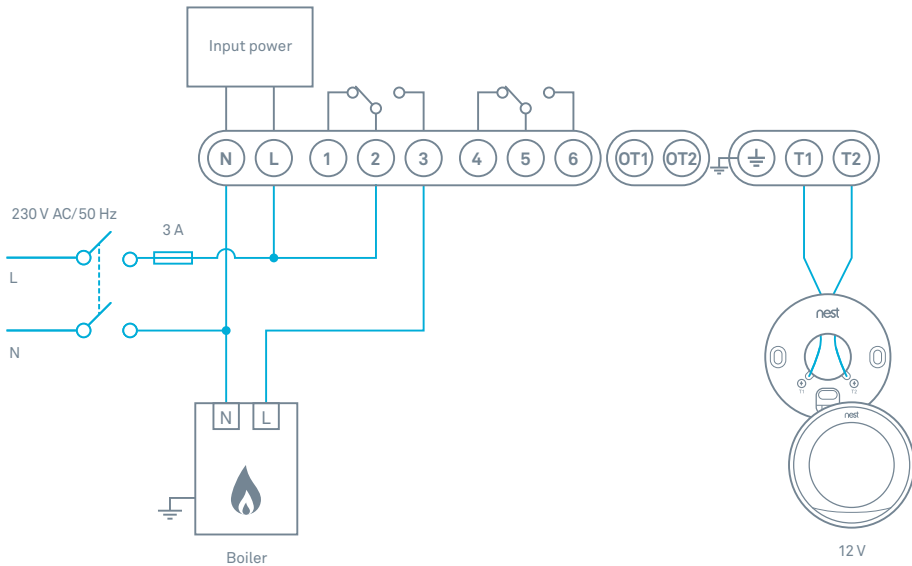
**Maximum cable thickness** = 2 mm<sup>2</sup>

## AC power adaptor

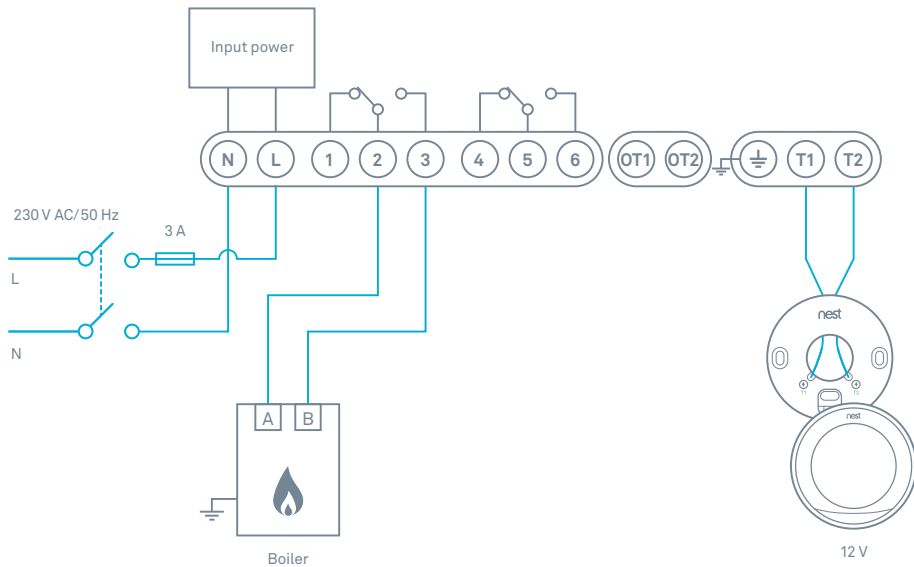
**Input:** 100-240 V AC, 50/60 Hz, 0.2 A | **Output:** 5 V DC, 1.4 A



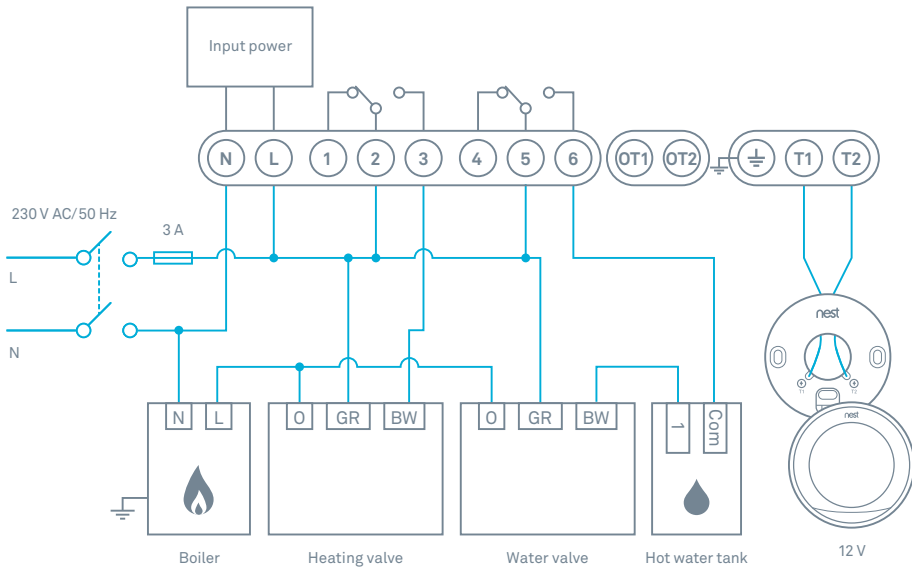
# 230 V combi boiler



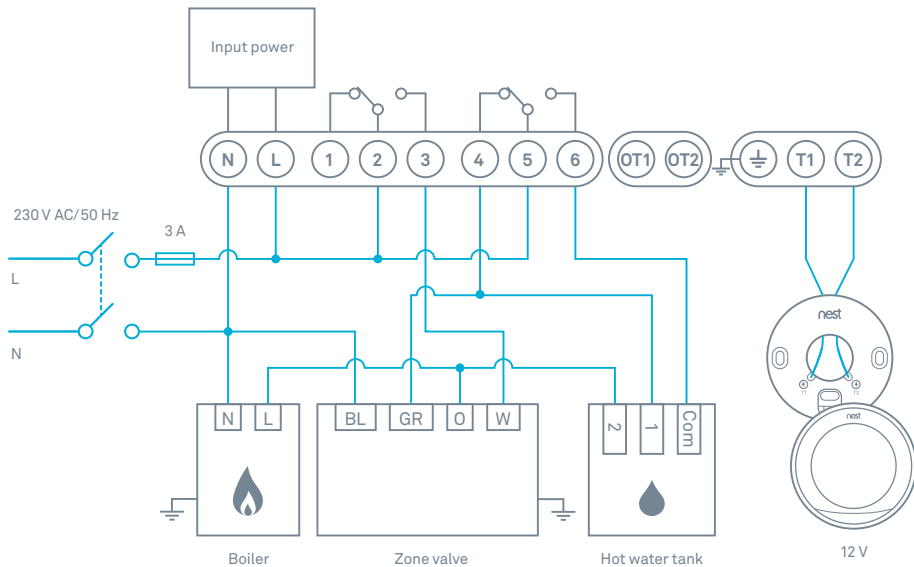
# Low voltage/dry contact combi boiler



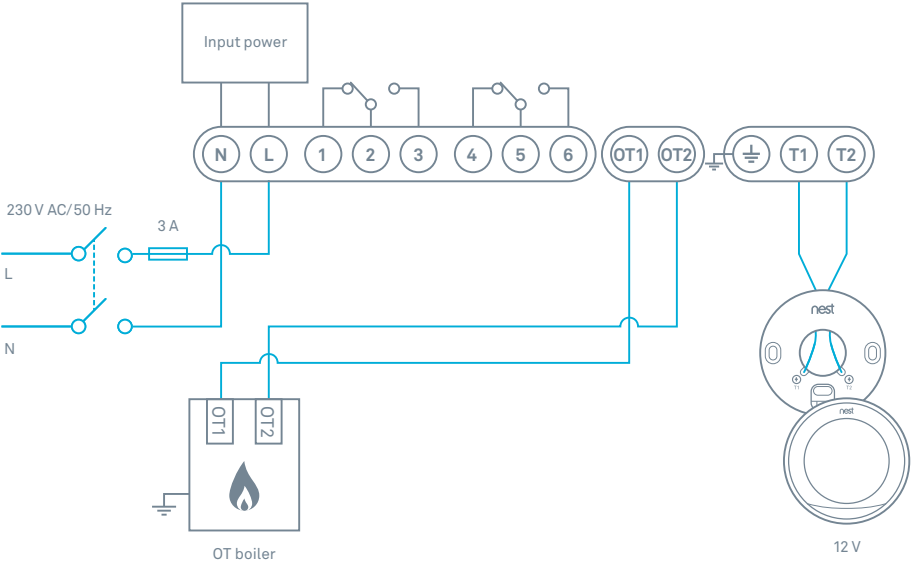
# S-plan



# Y-plan

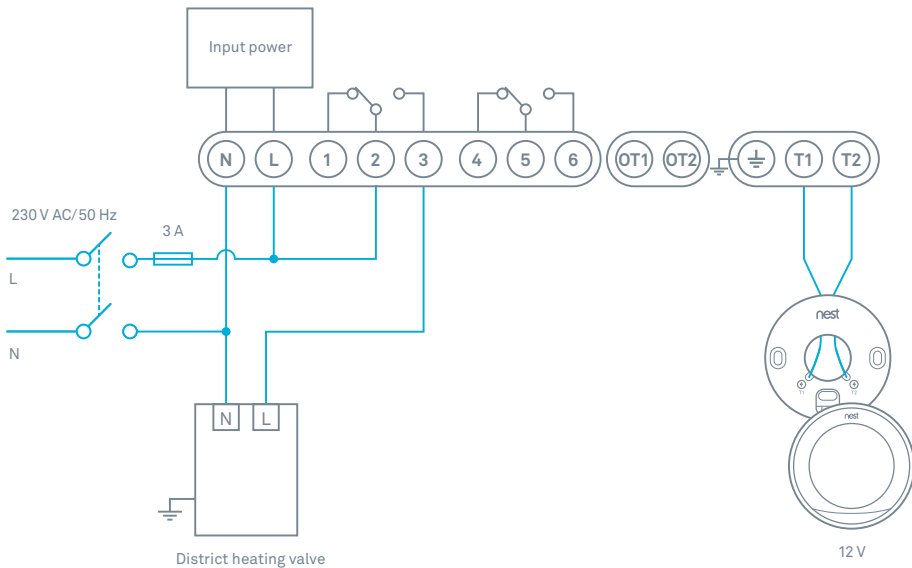


# OpenTherm boiler





# 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:** 1C

**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

**THIS LIMITED WARRANTY CONTAINS IMPORTANT INFORMATION ABOUT YOUR RIGHTS AND OBLIGATIONS, AS WELL AS LIMITATIONS AND EXCLUSIONS THAT MAY APPLY TO YOU UNDER THIS LIMITED WARRANTY.**

## **YOUR RIGHTS AND THIS LIMITED WARRANTY**

This Limited Warranty gives you specific legal rights. You may also have other legal rights that vary by state, province or jurisdiction. The disclaimers, exclusions and limitations of liability under this Limited Warranty will not apply to the extent prohibited by applicable law. For a full description of your legal rights, you should refer to the consumer protection laws applicable in your jurisdiction, and you may wish to contact a relevant consumer advisory service. This Limited Warranty is in addition to your legal rights in relation to the Products and does not affect your statutory rights. In particular, this Limited Warranty does not limit the legal warranty obligations imposed on the seller and you may claim your rights under the legal warranty against the seller. This Limited Warranty only applies to Products purchased and used in the European Union, Norway and Switzerland.

## **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 RETURNS 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/au/support](http://nest.com/au/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, placement guidelines, 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.

## **5. DISCLAIMER OF WARRANTIES**

EXCEPT AS STATED ABOVE IN THIS LIMITED WARRANTY, AND TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, NEST LABS DISCLAIMS ALL EXPRESS, IMPLIED AND STATUTORY WARRANTIES AND CONDITIONS WITH RESPECT TO THE PRODUCT, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, NEST LABS ALSO LIMITS THE DURATION OF ANY APPLICABLE IMPLIED WARRANTIES OR CONDITIONS TO THE DURATION OF THIS LIMITED WARRANTY.

## **6. LIMITATION OF DAMAGES**

IN ADDITION TO THE WARRANTY DISCLAIMERS ABOVE, IN NO EVENT WILL NEST LABS BE LIABLE FOR ANY INDIRECT, CONSEQUENTIAL, INCIDENTAL, EXEMPLARY OR SPECIAL DAMAGES, INCLUDING ANY DAMAGES FOR LOST DATA OR LOST PROFITS, ARISING FROM, OR 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.

#### **7. LIMITATION OF LIABILITY**

IF YOU CHOOSE TO USE THEM, ONLINE SERVICES OFFERED BY NEST LABS, INC., A US AFFILIATE OF NEST LABS, ("SERVICES") PROVIDE YOU WITH INFORMATION ("PRODUCT INFORMATION") REGARDING YOUR NEST PRODUCTS OR OTHER PERIPHERALS CONNECTED TO YOUR PRODUCTS ("PRODUCT PERIPHERALS"). THE TYPE OF PRODUCT PERIPHERALS THAT MAY BE CONNECTED TO YOUR PRODUCT MAY CHANGE FROM TIME TO TIME. WITHOUT LIMITING THE GENERALITY OF THE DISCLAIMERS ABOVE, ALL PRODUCT INFORMATION IS PROVIDED FOR YOUR CONVENIENCE, "AS IS" AND "AS AVAILABLE". NEST LABS OR ITS AFFILIATE DOES NOT REPRESENT, WARRANT OR GUARANTEE THAT PRODUCT INFORMATION WILL BE AVAILABLE, ACCURATE OR RELIABLE, OR THAT PRODUCT INFORMATION OR USE OF THE SERVICES OR PRODUCT WILL PROVIDE SAFETY IN YOUR HOME. YOU USE ALL PRODUCT INFORMATION, THE SERVICES AND THE PRODUCT AT YOUR OWN DISCRETION AND RISK. YOU WILL BE SOLELY RESPONSIBLE FOR (AND NEST LABS AND ITS AFFILIATE DISCLAIM) ANY AND ALL LOSS, LIABILITY OR DAMAGES, INCLUDING TO YOUR WIRING, FIXTURES, ELECTRICITY, HOME, PRODUCT, PRODUCT PERIPHERALS, COMPUTER, MOBILE DEVICE, AND ALL OTHER ITEMS AND PETS IN YOUR HOME, RESULTING FROM YOUR USE OF THE PRODUCT INFORMATION, SERVICES OR PRODUCT. PRODUCT INFORMATION PROVIDED BY THE SERVICES IS NOT INTENDED AS A SUBSTITUTE FOR DIRECT MEANS OF OBTAINING THE INFORMATION.

#### **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 Gordon House, Barrow Street, Dublin 4, Ireland or through [nest.com/eu/contact](https://www.nest.com/eu/contact)



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



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: Gordon House, Barrow Street,  
Dublin 4, Ireland

Hereby, Nest Labs (Europe) Limited declares that the Nest Learning Thermostat is in compliance with RED 2014/53/EU. The full text of the EU DoC is available at the following Internet address:  
[nest.com/eu/legal/compliance/red](https://nest.com/eu/legal/compliance/red)

#### PRODUCT WIRELESS INFORMATION

HU: 2400–2483.5 MHz: Wi-Fi (max 18.0 dBm), BLE (max 8.0 dBm),  
802.15.4 (max 15.1 dBm). 5150–5350 & 5470–5725  
MHz: Wi-Fi (max 14.8 dBm)

HL: 2400–2483.5 MHz: 802.15.4 (max. 12.5 dBm)

#### RF EXPOSURE INFORMATION (MPE)

This device meets EU requirements and those of the International Commission on Non-Ionizing Radiation Protection (ICNIRP) regarding the limitation of exposure of the general public to electromagnetic fields by way of health protection. To comply with the RF exposure requirements, this equipment must be operated at a minimum of 20 cm separation distance from the user.

The device is restricted to indoor use only when operating in the 5150 to 5350 MHz frequency range in AT BE BG CY CZ DE DK EE EL ES FI FR HR HU IE IT LT LU LV MT NL PL PT RO SE SI SK UK CH IS LI NO TR





