WARNING: High voltage. Nest should be installed by a professional
Compatibility

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

- Combi and condensing boilers
- System and heat-only boilers
- Hydronic underfloor systems
- Air source and ground source heat pumps (heating only)
- Zoned systems (one Nest Thermostat per zone)
- Switched live systems
- Low-voltage (dry contact) systems

You don’t need Wi-Fi to use the Nest Thermostat, but Wi-Fi is required to control Nest from the Nest apps.
In the box

- Display
- Base
- Heat Link
- Trim plate
- Screws
- Welcome Guide, Installation Guide and Warranty

For installations in a new spot only

- Power plug
- Power cord
- Clips
Before you start

Do I need to install the Nest Thermostat somewhere new?

Many existing wired thermostats are in rooms that are rarely used. The temperature they sense is warmer or cooler than homeowners feel.

So if the old thermostat isn’t in a good spot, install Nest somewhere new using the included power plug and cord or using the Stand for Nest Learning Thermostat (sold separately).

The Nest Thermostat should be:

- Installed so that it can communicate wirelessly with Heat Link (up to a maximum distance of 30m). The home’s construction and arrangement will affect the communication range
- In a room that’s used often, so Nest can read the right temperature and the homeowner can easily reach it
- On an interior wall
- Away from drafts
- 1.2 – 1.5m from the floor
- Not behind doors, bookcases or other objects
- If in a zoned system, near the radiator that it’s controlling

→ On the next page, you’ll see options for switching out an existing thermostat or installing Nest in a new spot.
Replacing an existing wired thermostat

Choose this installation method if the current thermostat connects to heating cables in the wall and you don’t need to move it to a better spot.

→ Jump to page 8
Installing the Nest Thermostat in a new spot

Choose this installation if the homeowner has a wireless thermostat, no thermostat at all, or a thermostat that needs to be moved to a better spot.

→ Jump to page 20

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

Connect to the Stand for the Nest Learning Thermostat and place on a desk, shelf or other flat surface.

**NOTE:**
The stand is sold separately and comes with its own Installation Guide. More info at [nest.com/uk](http://nest.com/uk)
To replace an existing wired thermostat, you’ll need to:

1. Install the Heat Link first
2. Remove or configure the programmer
3. Install the Nest Thermostat
Install Heat Link

1. Switch off mains power

You’ll be working with high voltage cables, so protect yourself and the thermostat by turning off the power before you start.

CAUTION: High voltage cables

Fuse box

Switch
Install Heat Link

2. Understand the cables

Find the call-for-heat circuit in the heating system.

The circuit may run directly from the thermostat to the boiler or pass through a junction box.

If there’s a combi boiler with no junction box, the Heat Link will be connected directly to the boiler’s control circuit.

You may need to test each cable to understand its function.

Make sure you connect the correct cables to the Heat Link to avoid blowing a fuse.
Install Heat Link

3. Choose where you’ll install the Heat Link

The Heat Link and Nest Thermostat communicate wirelessly, even if they are also connected by cables. Position the Heat Link such that large metal objects—like the boiler or hot water tank—don’t come between it and the thermostat. This can block the wireless signal.
Install Heat Link

4. Run power to the Heat Link

Use a cable to 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.

If existing controls operate at mains voltage, you can add a jumper cable between live and common. The jumper cable should be 0.75mm² and 55mm long (with 8mm of exposed cable at each end).

WARNING:
DO NOT SKIP
It’s important to install the Heat Link before the Nest Thermostat. Otherwise, high voltage current will irreparably damage the Nest Thermostat.
Install Heat Link

5. Connect the control circuit to the Heat Link

Connect the common and call-for-heat connectors on the boiler or junction box to the 2 (common) and 3 (call-for-heat) connectors on the Heat Link. These cables will control the heating system.

6. Connect the thermostat cables to the Heat Link

Take two cables from the cable bundle that goes to the thermostat and attach them to the T1 and T2 connectors on the Heat Link.

See installation diagrams on page 32.
Install Heat Link with a zoned system

If this home has multiple heating zones, each zone valve will need its own Nest Thermostat and Heat Link.

First, disconnect the thermostat cables from the zone valve.

Use a cable to connect the L (live) and N (neutral) connectors on the Heat Link to the L and N connectors on the zone valve.

Connect the common and call-for-heat cables to the 2 (common) and 3 (call-for-heat) connectors on the Heat Link. If necessary, connect the 1 (satisfied) cable from the zone valve to the Heat Link.
Install Heat Link

7. Attach the Heat Link

Use the included screws to attach Heat Link to a wall near the boiler or junction box, making sure to leave 30cm of space on all sides. When you’re done, put the Heat Link cover back on.

Check page 11 for placement info.

8. Configure the programmer

If there’s a programmer that controls hot water and heating, set the heating controls to ALWAYS ON. If the programmer only controls heating, then remove it. The Heat Link will control heating in its place.

TIP: Put this sticker on the programmer to remind homeowners not to adjust it.
Install thermostat

9. Install the base

Remove the old thermostat and attach the Nest base. You can either attach the base directly to the wall or use the included trim plate to cover up marks or route cables that are outside the wall. The trim plate and base snap together and should be screwed to the wall as one piece.

Remember, if the old thermostat isn’t in a good place, you should install it in a new spot. Check the placement guidelines on page 5.
10. Connect cables

Connect the existing cables to Nest’s T1 and T2 connectors. It doesn’t matter which cable goes into which connector.

11. Attach the display

Press the display onto the base until it clicks into place.

Switch on mains power and Nest will begin setup.
Install thermostat

12. Set up the Nest Thermostat

Just turn the ring and press to select.

During setup, you will:
- Choose a language
- Connect to the home’s Wi-Fi network
- Confirm that Heat Link is connected
- If the homeowner used to have a programmer, enter that schedule
- Choose the post code
- Choose an Away temperature

TIP: Double check that the programmer has been removed or that its heating channel has been set to ALWAYS ON.
Install thermostat

13. Create a Nest Account

Before the homeowner can control Nest from their mobile, tablet or laptop, they need a Nest Account. Tell them to create one at nest.com/uk/account or just download the Nest app.

Once the thermostat is connected to Wi-Fi, the Nest app will automatically add it to a Nest Account.

Questions about connecting to a Nest Account? Visit nest.com/uk/pairing
Installing the Nest Thermostat in a new spot

If you’re installing the Nest Thermostat and aren’t connecting it to any cables within the wall, then you’ll need to:

1. Install the Heat Link first
2. Remove or configure the programmer
3. Attach the Nest Thermostat to the wall
4. Plug the thermostat in with the power plug and cord

NOTE: The Stand for the Nest Learning Thermostat is sold separately.
Install Heat Link

1. Switch off mains power

You’ll be working with high voltage cables, so protect yourself and the thermostat by turning off the power before you start.

![Fuse box diagram](Fuse_box.png)

![Switch diagram](Switch.png)

CAUTION: High voltage cables
Install Heat Link

2. Understand the cables

Find the call-for-heat circuit in the heating system.

The circuit may run directly from the thermostat to the boiler or pass through a junction box.

If there’s a combi boiler with no junction box, the Heat Link will be connected directly to the boiler’s control circuit.

You may need to test each cable to understand its function.

Make sure you connect the correct cables to the Heat Link to avoid blowing a fuse.
Install Heat Link

3. Choose where you’ll install the Heat Link

The Heat Link and Nest Thermostat communicate wirelessly. Position the Heat Link such that large metal objects—like the boiler or hot water tank—don’t come between it and the thermostat. This can block the wireless signal.
4. Run power to the Heat Link

Use a cable to 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.
Install Heat Link

5. Connect the control circuit to the Heat Link

Connect the common and call-for-heat connectors on the boiler or junction box to the 2 (common) and 3 (call-for-heat) connectors on the Heat Link. These cables will control the heating system.

See installation diagrams on page 32.
Install Heat Link with a zoned system

If this home has multiple heating zones, each zone valve will need its own Nest Thermostat and Heat Link.

First, disconnect the thermostat cables from the zone valve.

Use a cable to connect the L (live) and N (neutral) connectors on the Heat Link to the L and N connectors on the zone valve.

Connect the common and call-for-heat cables to the 2 (common) and 3 (call-for-heat) connectors on the Heat Link. If necessary, connect the 1 (satisfied) cable from the zone valve to the Heat Link.

Satisfied cable optional
Install Heat Link

6. Attach the Heat Link

Use the included screws to attach Heat Link to a wall near the boiler or junction box, making sure to leave 30cm space on all sides. When you’re done, put the Heat Link cover back on.

Check page 23 for placement info.

7. Configure the programmer

If there’s a programmer that controls hot water and heating, set the heating controls to ALWAYS ON. If the programmer only controls heating, then remove it. The Heat Link will control heating in its place.

Lastly, turn the power to the heat back on.

TIP: Put this sticker on the programmer to remind homeowners not to adjust it.

See page 15 for sticker.
Install thermostat

8. Install the Nest Thermostat

Install Nest on a wall using the included power cord, plug and clips. Instructions for installing the Stand for Nest Learning Thermostat (sold separately) come with the stand.

Before attaching the base to the wall, check to make sure the thermostat is within range of the Heat Link.

If you’re getting rid of an old thermostat, disable its cables after you remove it, then cover up the hole in the wall.
Install thermostat

9. Install the base

Make sure you install the base above a socket. You can either attach the base directly to the wall or use the trim plate to cover up marks or holes.

The trim plate and base snap together and should be screwed to the wall in one piece.

Check the placement guidelines on page 5 before you install.

10. Attach the display

Press the display onto the base until it clicks into place.
11. Set up the Nest Thermostat

Just turn the ring and press to select.

During setup, you will:
• Choose a language
• Connect to the home’s Wi-Fi network
• Confirm that Heat Link is connected
• If the homeowner used to have a programmer, enter that schedule
• Choose the post code
• Choose an Away temperature

TIP: Double check that the programmer has been removed or that its heating channel has been set to ALWAYS ON.
Install thermostat

12. Create a Nest Account

Before the homeowner can control Nest from their mobile, tablet or laptop, they need a Nest Account. Tell them to create one at nest.com/uk/account or just download the Nest app.

Once the thermostat is connected to Wi-Fi, the Nest app will automatically add it to a Nest Account.

Questions about connecting to a Nest Account? Visit nest.com/uk/pairing
Cable diagrams

The following diagrams show you how to install Nest on:

- Switched live systems
- Low voltage (dry contact) systems
- Zone valve systems
- MOMO zone valve systems

TIP: If the call-for-heat circuit is at mains voltage, you can jumper the L (live) and 2 (common) connectors with a 0.75mm², 55mm long jumper cable.
## General specs

<table>
<thead>
<tr>
<th>Connection</th>
<th>Specification</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>230V AC / 50Hz mains voltage</td>
<td>Required</td>
</tr>
<tr>
<td>N</td>
<td>230V AC / 50Hz mains voltage</td>
<td>Required</td>
</tr>
<tr>
<td>1</td>
<td>Relay normally closed</td>
<td>3A max.</td>
</tr>
<tr>
<td>2</td>
<td>Relay common</td>
<td>3A max.</td>
</tr>
<tr>
<td>3</td>
<td>Relay normally open</td>
<td>3A max.</td>
</tr>
<tr>
<td>T1</td>
<td>12V DC power output to Nest</td>
<td>Ground</td>
</tr>
<tr>
<td>T2</td>
<td>12V DC power output to Nest</td>
<td>Positive</td>
</tr>
</tbody>
</table>

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

**Maximum cable thickness =** 2mm²
Switched Live

Power supply for Heat Link

Boiler with “switched live” activation

N L 1 2 3

3A fuse

230V / 50Hz mains

L

N

Only required if you have existing thermostat cables

T1 T2

12V power to Nest Thermostat

Wiring specs
Low voltage (dry contact)

Power supply for Heat Link

Boiler with low voltage / dry contact activation

230V / 50Hz mains

3A fuse

Only required if you have existing thermostat cables

12V power to Nest Thermostat

3A fuse
Boiler with zone valves

Power supply for Heat Link

Boiler

Zone valve
(Zone valve cable colours may vary)

12V power to Nest Thermostat

Only required if you have existing thermostat cables

230V / 50Hz mains

3A fuse

Wiring specs
Boiler with MOMO zone valves

Power supply for Heat Link

Only required if you have existing thermostat cables

230V / 50Hz mains

3A fuse

12V power to Nest Thermostat

Boiler

Zone valve (MOMO)
Nest Labs (Europe) Ltd.
Limited Warranty
Nest Learning Thermostat™

For online or phone support, visit nest.com/uk/support
You can also find answers in the Nest Community at nest.com/community

Recycle your old thermostat:
see nest.com/uk/responsibility
Please recycle Nest’s 100% recyclable packaging.

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 Directives 1999/5/EC, 2006/95/EC, 2004/108/EC.
A copy of the EU Declaration of Conformity is available at: nest.com/uk/legal/eudoc

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