

switchee

The Smart Thermostat for
Affordable Housing



Switchee Installation Manual

Contents

Switchee is a connected device that helps residents reduce their heating costs and helps landlords manage their property portfolio. **Switchee** can save the resident up to 10% of their energy bills.



Recycling and Disposal

Dispose in accordance with applicable legislation. The WEEE symbol means that this **Switchee Thermostat** must be disposed of separately from general household waste. When the thermostat reaches its end of life, take it to a designated waste collection point in your area for safe disposal or recycling.



EU Declaration of Conformity

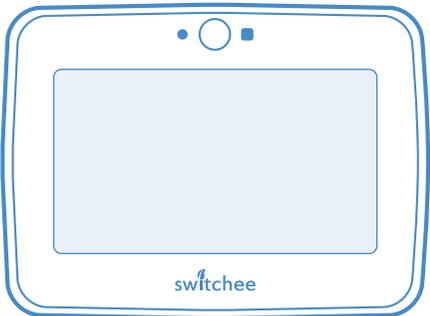
Switchee Limited hereby declares that this Switchee Thermostat is in compliance with the essential requirements and other relevant provisions of Directives 1999/5/EC, 2006/95/EC, 2004/108/EC. A copy of the EU Declaration of Conformity is available on request.

Email: install@switchee.co

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Section 1: What's in the box

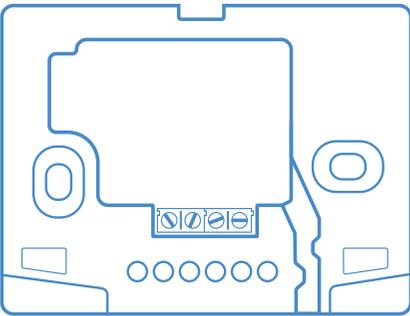
1.1



Switchee Thermostat

- controls heating or heating & hot water.
It replaces existing thermostat.

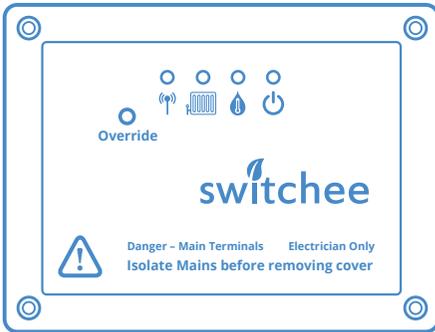
1.2



Mounting Bracket

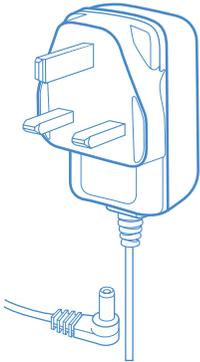
- to mount the **Switchee Thermostat**
and be affixed to a wall.

1.3



Boiler Receiver Unit (BRU)

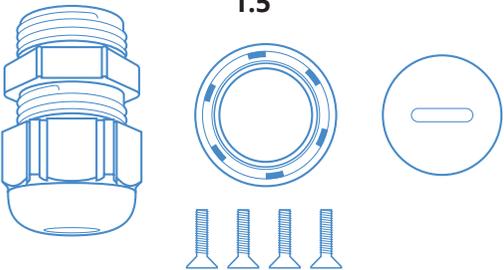
- controls valves for
heating or heating & hot water.



Power Supply (AC Adapter)

- to power the **Switchee Thermostat**
and be plugged into a socket IF there are no
existing wires to power the Unit.

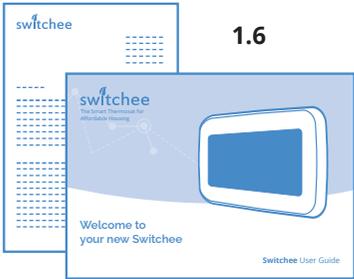
1.5



Set of Screws & Accessories

- for keeping any wiring tidy,
safely restrained and securely closing the
BRU.

1.6

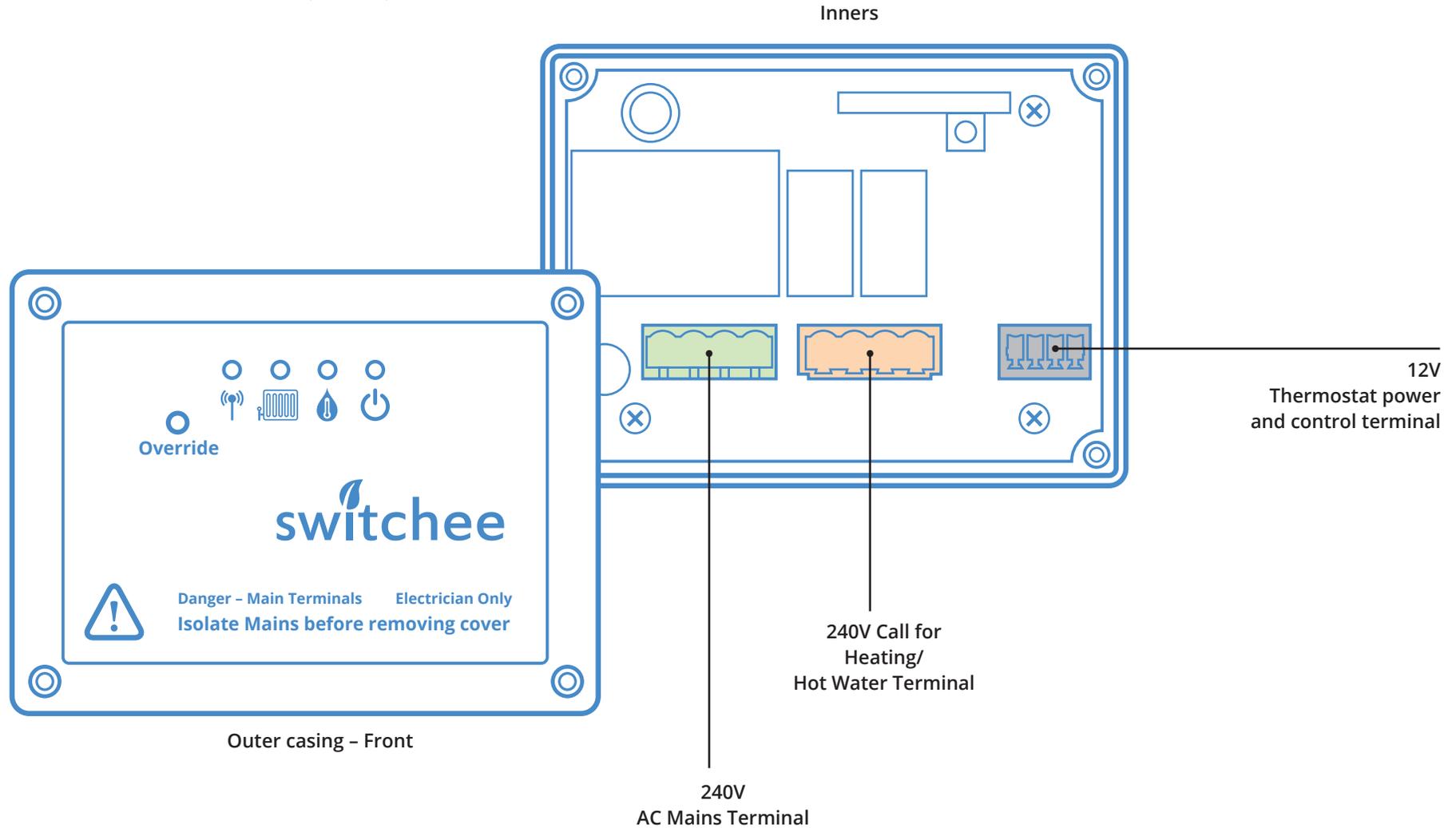


Privacy Policy & Switchee User Guide

- this must be handed to the resident
or left in the property after installation.

Section 2: Installing the Boiler Receiver Unit (BRU)

The Boiler Receiver Unit (BRU)



Installing the **Boiler Receiver Unit (BRU)**

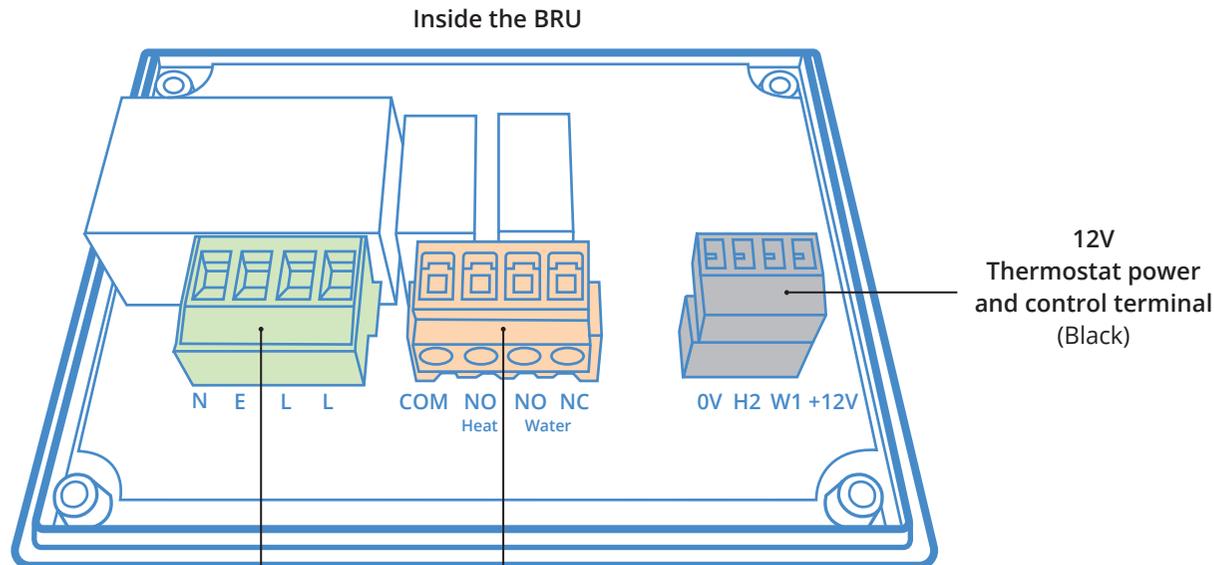
2.1 **Important:**

As you will be working with mains voltage cables you must protect yourself and the thermostat by isolating power to the central heating system and control before you begin any wiring. Confirm that power is isolated and secured in the off position for the duration of the installation.

This product should only be installed by an electrically skilled person competent in the installation of electrical accessories. The wiring must comply to the current edition of BS7671 (The IET Wiring Regulations), and the appropriate Building Regulations or Standards in place.

- 2.2 At the boiler, locate the wiring centre and find the wire running between the existing thermostat and the boiler (thermostatic control cable). This could be inside the boiler or in a terminal box, you can consult the boiler's operating manual if available. If the current thermostat is wireless, then you will most likely power the **Switchee Thermostat** with the **AC Adapter**. If, however, you do see cables running from the wiring centre to a wall that could be repurposed we recommend that you use these.
- 2.3 Remove this cable from the wiring centre.
- 2.4 Affix the **Switchee Boiler Receiver Unit** to a wall close to the boiler. If needed, drill holes in the back of the plastic part of the **Unit**. If possible, leave at least 30cm between the boiler and the **Boiler Receiver Unit**.
- 2.5 Run a length of 4 core (heating only) or 5 core (heating and hot water) through the **240V AC Mains Terminal** on the **Boiler Receiver Unit** box.
- 2.6 Connect and **Screw** in the N (neutral), E (earth) and L (Live) connectors on the **240V AC Mains Terminal** within the **Boiler Receiver Unit**. This will provide 240V power to the **Boiler Receiver Unit**.
- 2.7 If the existing boiler controls currently operate with switched live, add a jumper cable between the second L (live) on the **240V Call for Heating/ Hot Water Terminal** and the **COM** (common) in the middle **240V Call for Heating/Hot Water Terminal**.

Installing the **Boiler Receiver Unit (BRU)** (continued)



240V AC
Mains
Terminal
(Green)

240V Call for Heating/
Hot Water Terminal
(Orange)

12V
Thermostat power
and control terminal
(Black)



Important: If the current boiler control operates at a low voltage, connect the appropriate low voltage to the **COM** (common) and **do not** add the jumper cable.

2.8 Connect the NO (heat) connector on the middle orange **240V Call for Heating/Hot Water Terminal** to the call for heat connector on the boiler using a spare wire within the multi-core cable.

2.9 If the **Switchee** controls hot water (not the case for combi boilers) connect the **NO** (water) on the connector on the boiler using a spare cable on the multi-core cable.

If the boiler needs 240V to keep the hot water valve satisfied, then you will also need to connect the **NC** (satisfied water) on the middle orange **240V Call for Heating/Hot Water Terminal** using a spare wire on the multi-core cable.

2.10 Secure the cable tie from the accessories bag around all 240V mains cables (N, E, L).

Section 3: Choosing a location for the Switchee Thermostat

Switchee operates best when located in a room or corridor that is used frequently by the occupant(s), i.e. a living room or entrance corridor. If the existing thermostat isn't in a good location, install **Switchee Thermostat** somewhere new.



The **Switchee Thermostat SHOULD** be located:

- On an interior wall
- Away from drafts or sources of heating
- Approximately 1.1 – 1.6m above the ground
- In an area of frequent use.
- Above a power socket (if powered by a plug).



The **Switchee Thermostat SHOULD NOT** be located:

- Do not mount the device in recesses, shelves, behind curtains or doors, or above or near heat sources.
- Behind objects/obstructions such as bookshelves or doors.
- In direct sunlight.



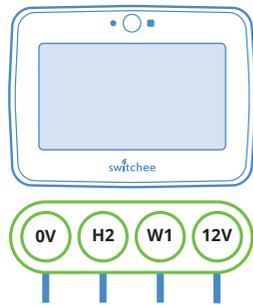
Section 4: Switchee Thermostat – Wiring scenarios

There are three scenarios to consider when installing the **Switchee Thermostat**...

4.1 Scenario 1: Fully wired in

There are enough existing cables between **Thermostat** and the **Boiler Receiver Unit (BRU)**: two wires for power (0V and 12V terminals), one wire (H2) to call for Heat and if applicable one cable (W1) to call for Hot Water.

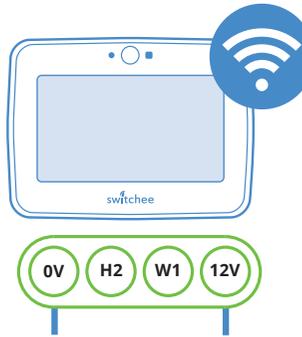
➔ See page 9



4.2 Scenario 2: Partly wired in

There are only two cables, enough to power the **Thermostat** (0V and 12V). Communications between the **Thermostat** and **BRU** are wireless.

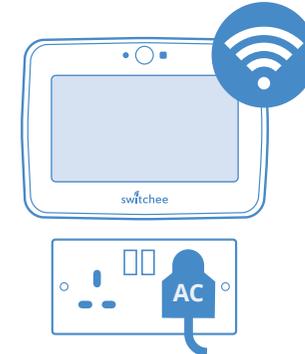
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4.3 Scenario 3: Powered by AC Adapter

No existing cables between **Thermostat** and the **BRU**: position the **Thermostat** as directed in Section 2. Plug the **Thermostat** into a plug socket using supplied **AC Adapter**. Communications between the **Thermostat** and **BRU** are wireless.

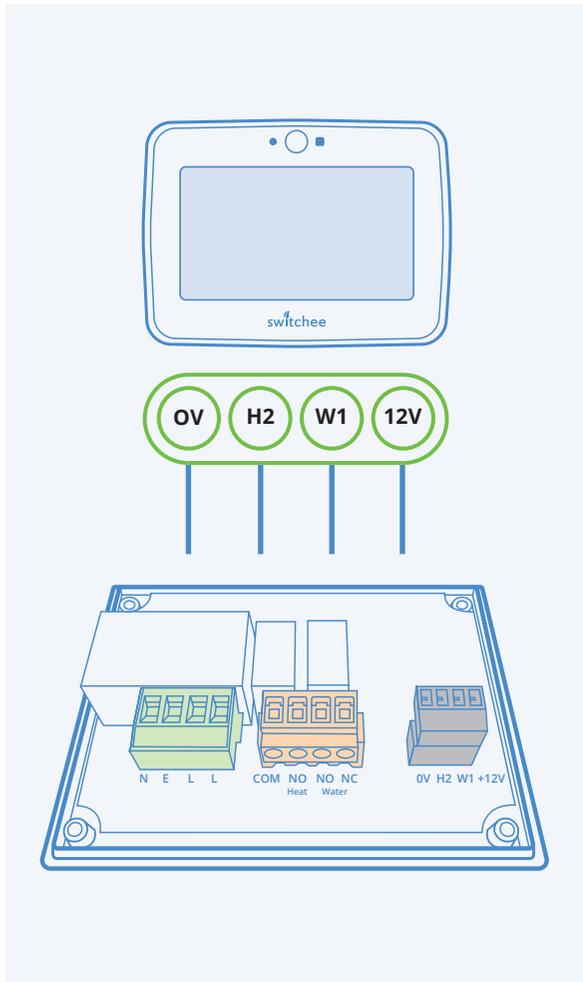
➔ See page 11



Scenario	Powered by wiring	Powered by AC Adapter	Wired in comm's	Wireless comm's
Fully wired in	✓		✓	
Partly wired in	✓			✓
Plugged in		✓		✓

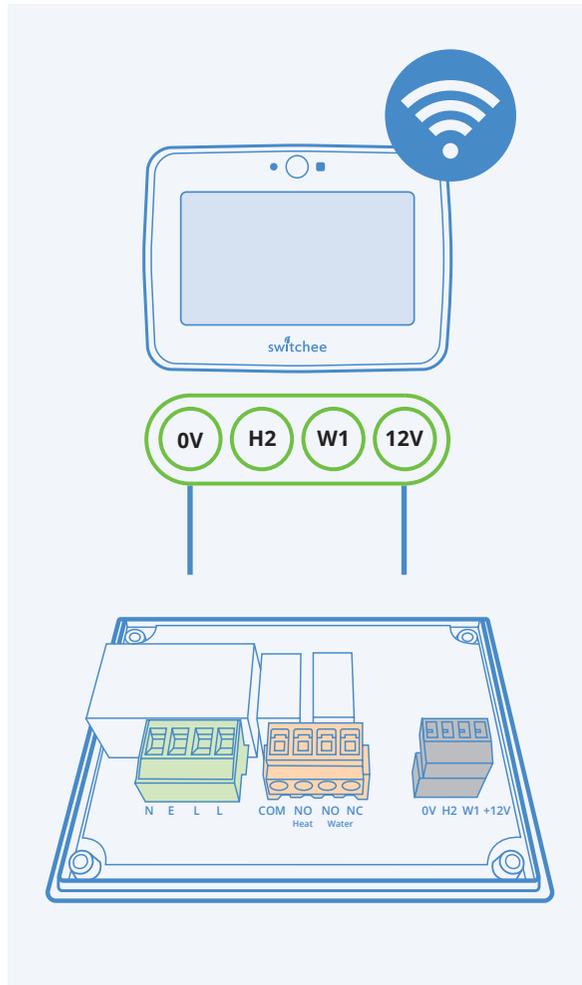
Section 5: Switchee Thermostat – Installation

Scenario I: Fully wired in



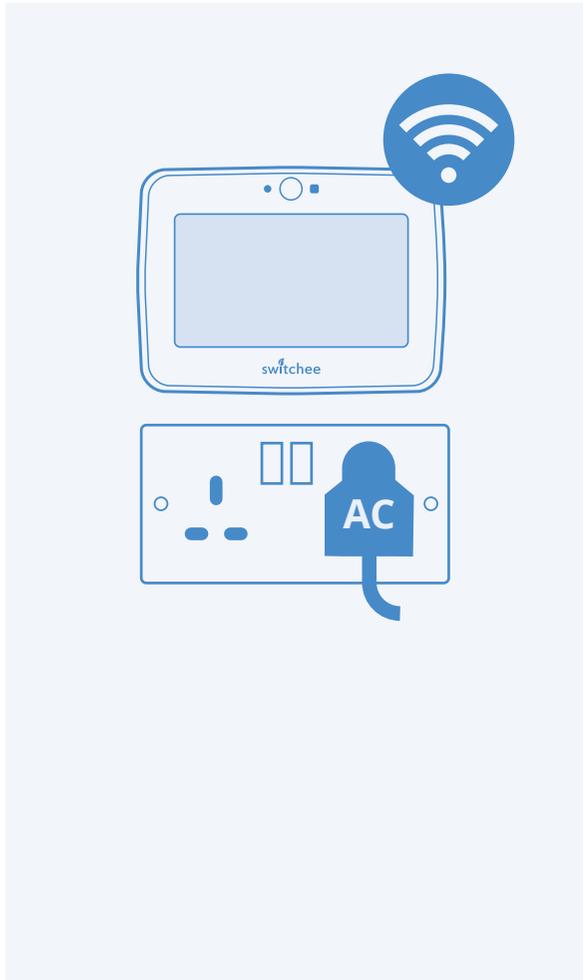
- 5.1.1** Locate the thermostatic control cable that was disconnected in Section 2.3. Feed the cable through the **12V Thermostat power and control terminal** (right hand black terminal) of the **BRU**.
- 5.1.2** Wire in the cores of the cable into the 0V, H2, W1 (if applicable), and 12V in the **12V Thermostat power and control terminal** (right hand black terminal) on the **BRU** where needed.
- 5.1.3** Make a note or take a photo of which colour wires went into each port in the black terminal. These must match the corresponding ports on the **Mounting Bracket**.
- 5.1.4** Replace the lid of the **BRU** and fasten this with the **Screws** provided. Make sure cable glands are tightened on the cables and that any unused holes have a blanking plug in place. **Do not** turn power on to the boiler.
- 5.1.5** Remove the old thermostat from the wall.
- 5.1.6** Take the black **Mounting Bracket**, which is provided in the box, pull the cable through the opening in the middle of the **Bracket** then affix the **Bracket** to the wall. The correct orientation is with the connectors 0V, H2, W1 and 12V at the bottom of the bracket.
- 5.1.7** Using your notes or photograph from step 5.1.3 wire the cores of the cable into the corresponding 0V, H2, W1 (if applicable) and 12V connectors.
- 5.1.8** Slot the **Switchee** onto the **Mounting Bracket** and tighten the grub **Screw** located at the bottom of the **Thermostat** using a 2hex screwdriver (these can be provided by Switchee if needed).
- 5.1.9** Before turning power back **ON**, confirm that the **BRU** lid is secured and wiring is safe.
- 5.1.10** Test the system (see section 7).

Scenario 2: Partly wired in



- 5.2.1** Locate the thermostatic control cable that was disconnected in section 2.3. Feed the cable through the **12V Thermostat power and control terminal** (right hand black terminal) of the **Boiler Receiver Unit (BRU)**.
- 5.2.2** Wire in the cores of the cable into the 0V and 12V in the **12V Thermostat power and control terminal** (right hand black terminal) on the **BRU** where needed.
- 5.2.3** Make a note or take a photo of which colour wires went into each port on the black terminal. These must match in the corresponding ports on the **Mounting Bracket**.
- 5.2.4** Replace the lid of the **BRU** and fasten this with the **screws** provided. Make sure cable glands are tightened on the cables and that any unused holes have a blanking plug in place. **Do not** turn power on to the boiler.
- 5.2.5** Remove the old thermostat from the wall.
- 5.2.6** Disconnect the existing cable. Take the **black Mounting Bracket**, which is provided in the box, pull the cable through the opening in the middle of the **Bracket** then affix the **Bracket** to the wall. The correct orientation is with the connectors 0V and 12V at the bottom of the **Bracket**.
- 5.2.7** Using your notes or photograph from step 5.2.3 wire the cores of the cable into the corresponding 0V and 12V connectors.
- 5.2.8** Slot the **Switchee Thermostat** on to the **Mounting Bracket** and tighten the grub screw located at the bottom of the unit using a 2hex screwdriver (these can be provided by Switchee if needed).
- 5.2.9** Before turning power back **ON**, confirm that the **BRU** lid is secured and wiring is safe.
- 5.2.10** Test the system (see section 7).

Scenario 3: Powered by AC Adapter



- 5.3.1** If applicable, remove the old thermostat from the wall and disconnect the existing cable and blank it off.
- 5.3.2** Find a suitable location for the **Switchee Thermostat**. It should be no more than 1.5 metres away from a socket as power will be provided via the **AC Adapter**.
- 5.3.3** Take the **black Mounting Bracket**, which is provided in the box. Plug it into the power socket then plug the other end into the **Mounting Bracket**.
- 5.3.4** Affix the **Mounting Bracket** to the wall.
- 5.3.5** Slot the **Switchee Thermostat** on to the **Mounting Bracket** and tighten the grub screw located at the bottom of the unit using a 2hex screwdriver
- (these can be provided by Switchee if needed).
- 5.3.6** Make sure the lid of the **BRU** is fastened with the **screws** provided. **Do not** turn power on to the boiler yet.
- 5.3.7** Turn the power ON at the wall socket for the **Switchee Thermostat**.

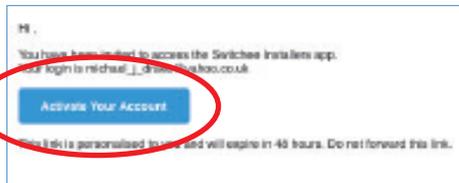
Section 6: Registering the Switchee

Activating your account

1. You can activate or sign up to your account once you have received an email with an invitation link.

Press the **Activate Your Account** button.

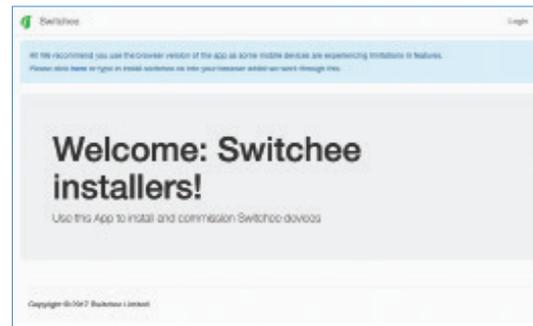
(Note: If you have not received an invitation link via email, and you need one, then email us at install@switchee.co or call us on 0800 133 7957).



2. Click on **Activate your account**.

You will then be redirected to the Installers Registration form. You will be required to fill in your details including: your First Name, your Surname, your company name, and your chosen password (which must include uppercase letters and numbers).

3. Once you've registered as an installer you'll be transferred to the the Installer's Web App. Its home page looks like this:



Logging in to your web app account

The Installer Web App can be accessed via the following link: <https://install.switchee.co/> Log in using your **email address**, and the **password** you created when you signed up via the activation email.

Once you've logged in to your web app account, you'll be able to register a Switchee.

Registering the Switchee on the Installer Web App

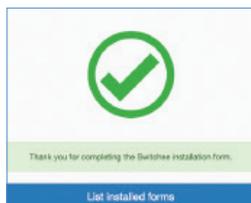
1. Select the **client** that you are installing for.
2. Enter the **IMEI** or **Serial number** then click **next**. (Note: The serial number can be found on the sticker on the box that the unit came in. It is also found on the sticker on the front and back of the thermostat. The full IMEI can also be found within the **settings** menu under **Status**.)
3. On the next page look up the installation address, **tick** the relevant smart metre boxes, then press **next**.
4. If applicable, select the bracket type from the dropdown: **wired** or **wireless**.
5. Then select installation type: **heating only** or **heating and hot water**.
6. If you have any comments on the installation that we need to know about, please leave a note in the **notes section**. Also, if a resident wants their heating or hot water times set you can enter the times here and we will set this remotely.

(continued from previous page)

Once you have entered all necessary details it will take you to a summary page to confirm the details entered...

When you are sure the details are correct press **next** to complete the form.

The screen shown below confirms the installation form has been completed and correctly submitted.



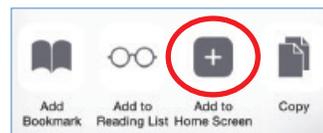
Downloading the WebApp icon onto your phone

For Apple Users

Step 1: Click on the **Sharing** icon on your browser, (shown below circled in red).

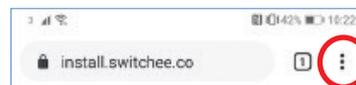


Step 2: After you click on the **Sharing** icon, this browsing menu will pop up on your screen. Click on the **Add to Home Screen** icon.



For Android Users

Step 1: Click on the **more** icon (three dots) on the top right of your browser (shown below circled in red).



Step 2: After you click on this, a browsing menu will pop up on your screen. You should click on the **Add to Home Screen** icon.

Resetting your password

If you forget your password, please click on the **Forgot your password** link below the entry fields. You will be redirected to another page where you will be able to retrieve your password after providing your email address.

Fill in your email address and click on **Send verification code**. A verification code will be sent to your email address. You can then input this into the Verification code field on the updated page. Then press **Continue**.

If you need a new code, click on **Send new code**.

Section 7: Final checklist

You **MUST** have all of the below checks ticked off to complete the installation:

1. Check for power

Check that the **Switchee Thermostat** has power: when you turn on the power to the boiler, the **Thermostat** should come on.

2. Check thermostat has GSM signal

Important:

Once the **Thermostat** is powered on you will need to check the unit has picked up the GSM signal. If you tap the spanner to open the **Settings** on the top left corner of the **Touch Screen**, the **Time** and **Date** in the **Settings** screen should automatically update to the current time. If it does update, it means the **Unit** has picked up the GSM signal. It can take a minute or two to update. If the time and date do not update, **please call us on 0800 133 7957**.

3. Check for power (AC adapter)

If using an **AC Adapter**, the **Switchee Thermostat** should turn on once the **AC Adapter** is plugged in.

4. Test heating

Test the heating. Tap the **+** button on the **Touch Screen** to raise the desired heating temperature (large number) above the current temperature (small number). The boiler should then fire up. Make sure you turn this back to a normal temperature after testing.

5. Test hot water

If the **Switchee** also controls hot water, tap the **Hot Water**  **button** on the bottom right of the **Switchee Thermostat Touch Screen** – the boiler should fire up.

6. Provide privacy policy to the resident

Once satisfied that everything is working it is very important that you hand the resident the privacy policy and the resident manual.

7. Register the Switchee

Register the **Switchee** on our installer web app **install.switchee.co** using the installer web app instructions.

NOTE: it is critical that you register the Switchee otherwise it will not function correctly and a revisit may be required

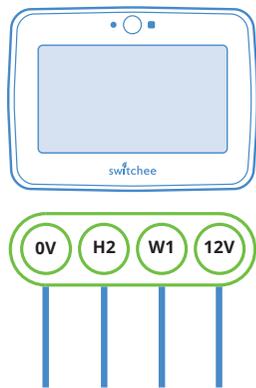
If you have any issues doing this please call or email us.

Section 8: Wiring diagrams

The three diagrams below show the three different wiring scenarios for the thermostat (see also Section 4 for instructions)...

Scenario 1:

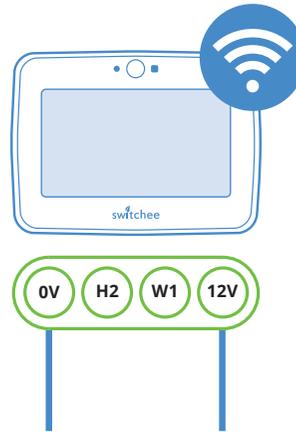
Wired for power AND wired communication with the **Boiler Receiver Unit (BRU)**



If there are enough existing cables in the wall you will be able to wire in the 0V and 12V to power the **Thermostat**, H2 (Call for Heat,) and W1(Call for Hot Water).

Scenario 2:

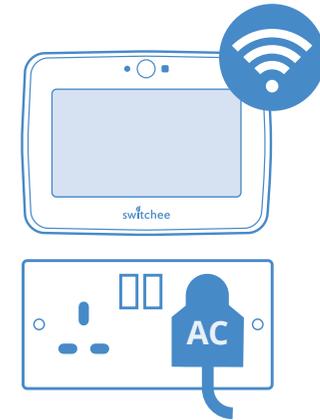
Wired for power only. Wireless communication with **Boiler Receiver Unit (BRU)**



If there are only two cables to the existing thermostat, you can wire in 0V and 12V to provide power to the **Thermostat**.

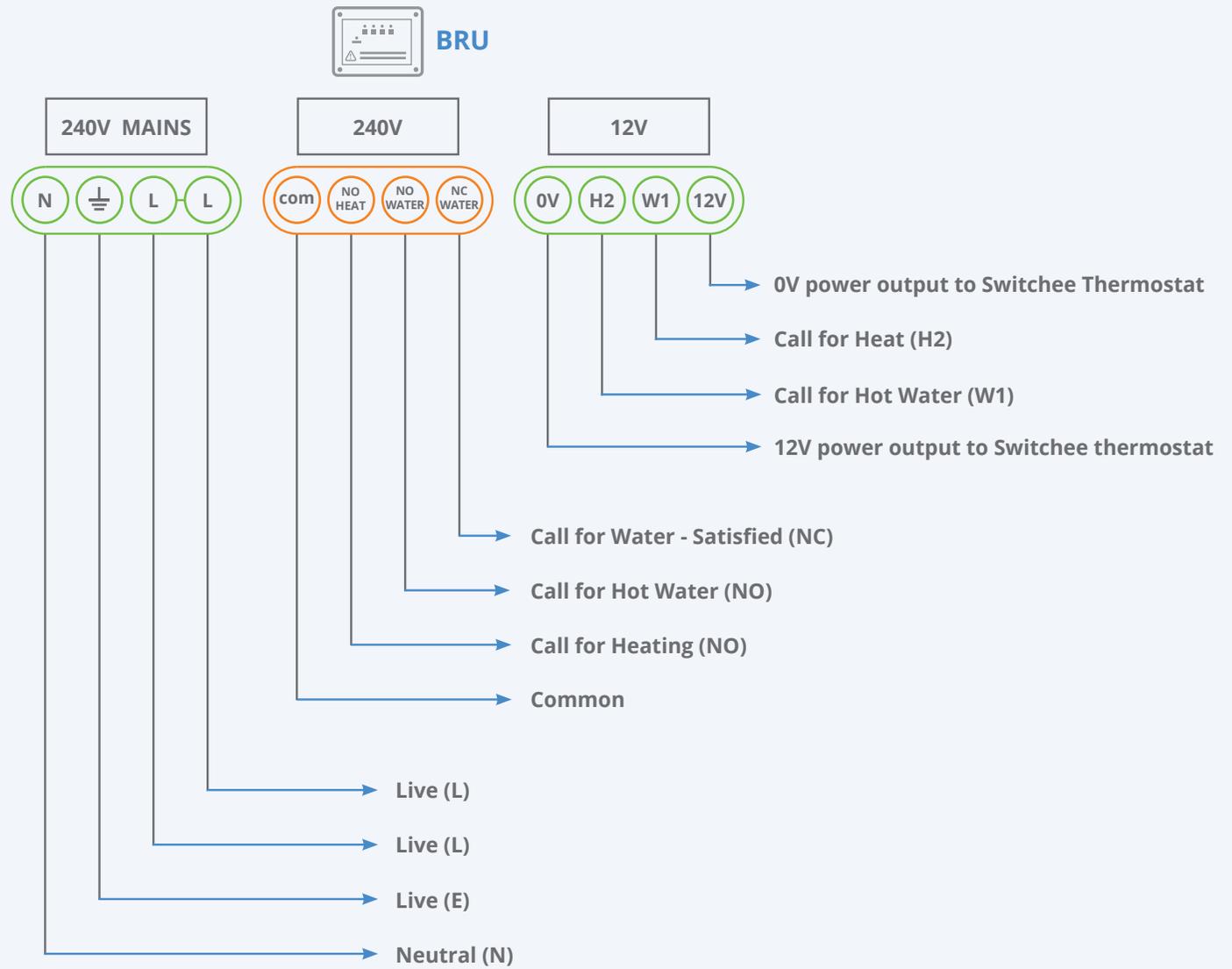
Scenario 3

Powered by **AC adapter**. Wireless communication with **Boiler Receiver Unit (BRU)**

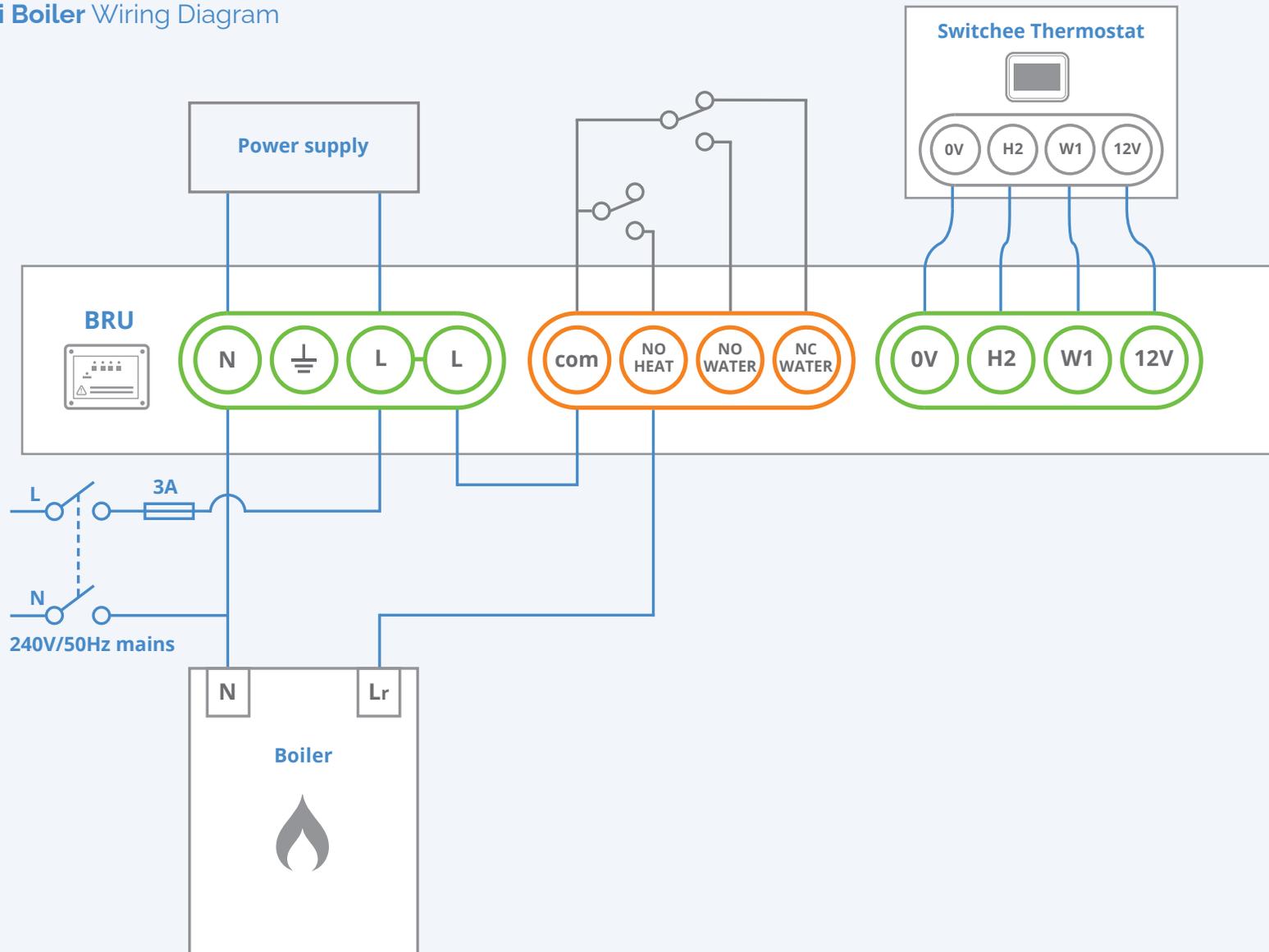


If there are no cables to the existing thermostat, or you are installing **Switchchee** somewhere new, affix the **Mounting Bracket** to a suitable location on the wall. Plug in the **AC Adapter** to power the **Switchchee**.

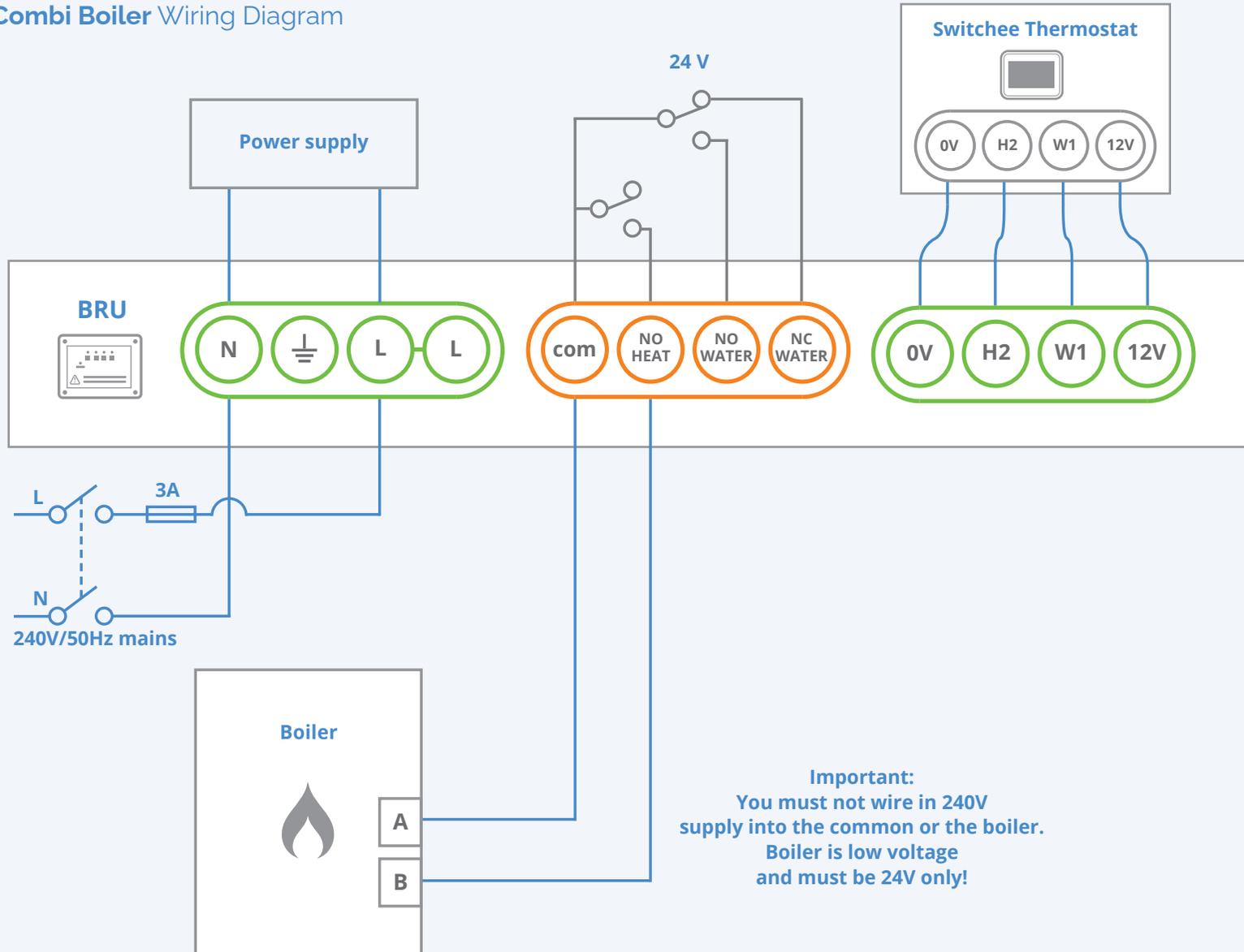
Section 8: Wiring diagrams



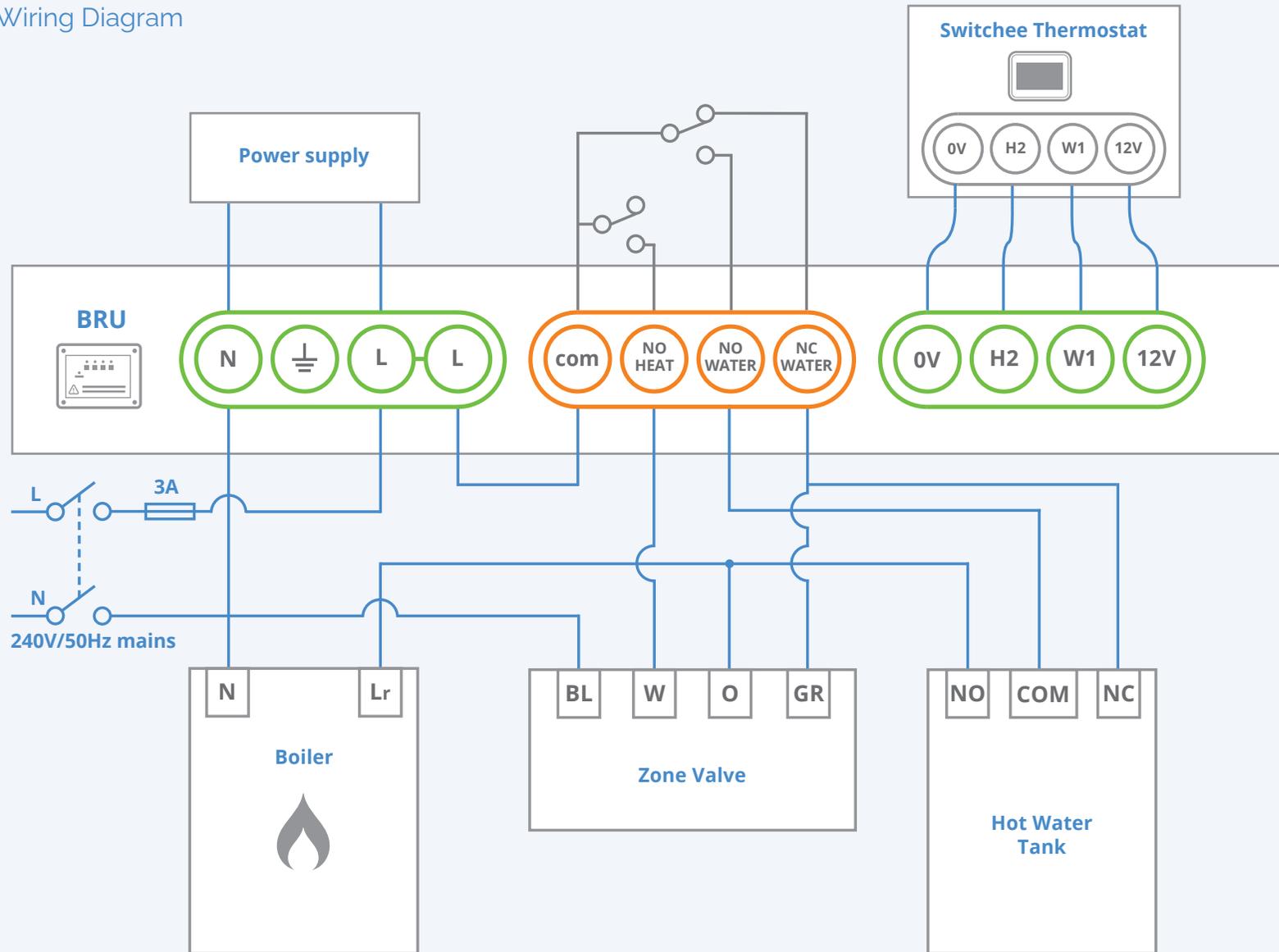
240V Combi Boiler Wiring Diagram



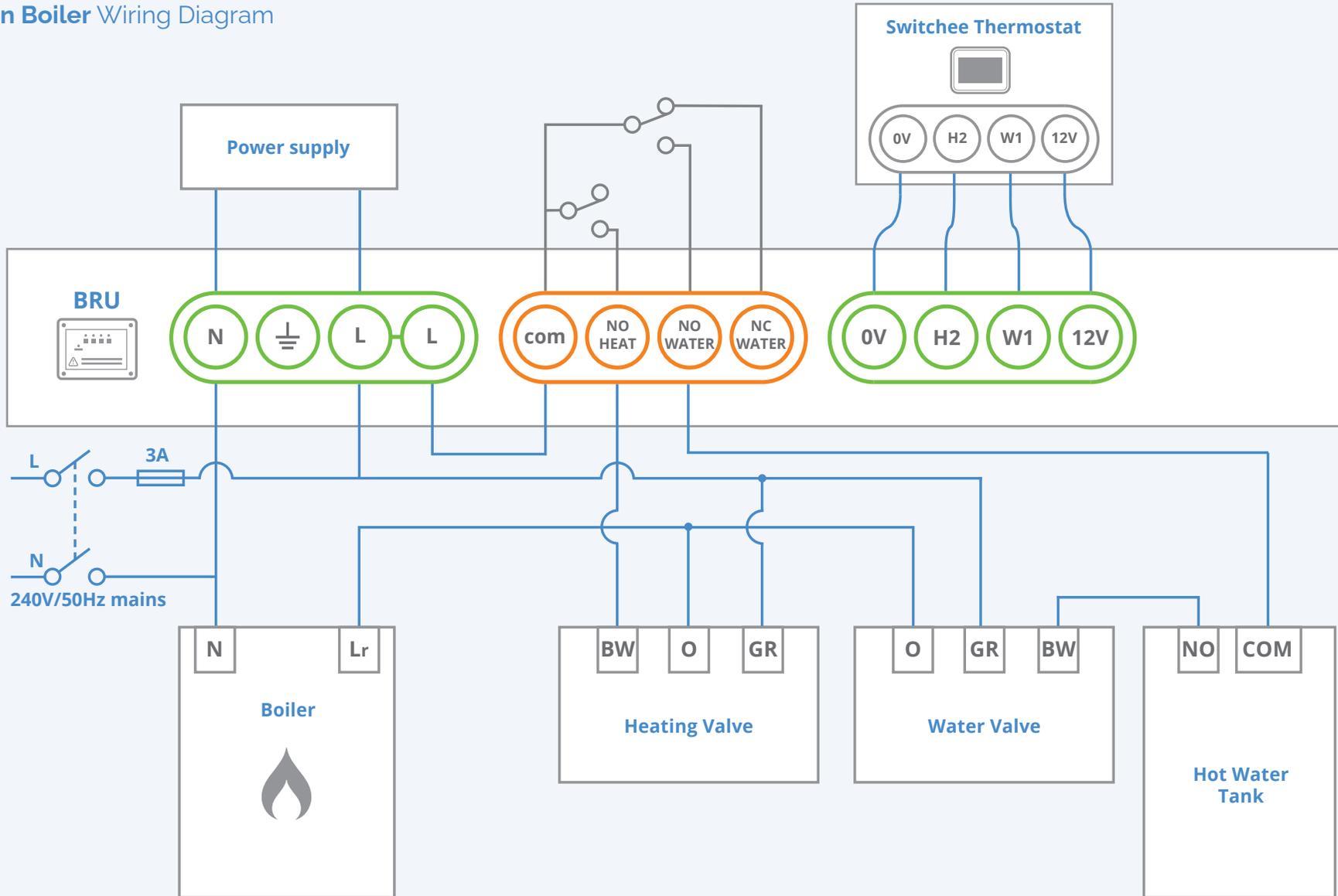
Low Voltage Combi Boiler Wiring Diagram



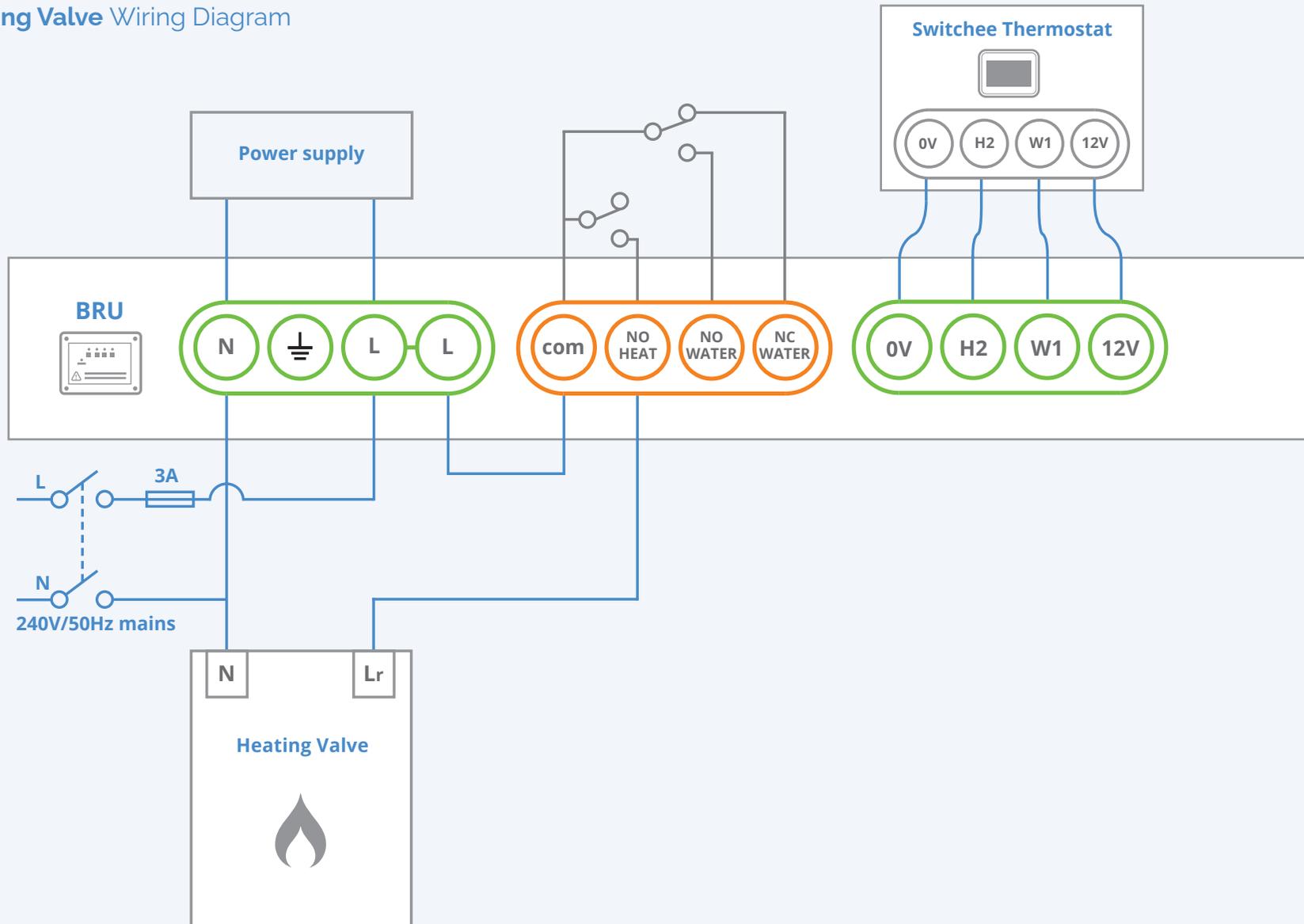
Y-Plan Boiler Wiring Diagram



S-Plan Boiler Wiring Diagram



District Heating Valve Wiring Diagram



Section 9: Technical information

Purpose of control:	Automatic electrical thermostatic control of heating system. Control of the unit and response times are faster than required by the expected ambient temperature rise.
Rated voltage:	115–240V ~ (AC), 50/60 Hz.
Surge immunity category:	Installation Class 2 or Residential.
Electric shock protection:	Independently Mounted Class I Equipment.
Pollution degree:	2.
Rated loads for relays:	240V ~ (AC) or 30V DC, 1A (Resistive).
Method of earthing:	Non-functional ground terminal.
Rated impulse voltage:	2.5kV
Temperature for the ball pressure test:	125 °C for materials in contact with or supporting live parts; 80 °C for accessible surfaces.
Limits of power output from BRU:	Safe Extra Low Voltage (SELV) limits power output from receiver unit to thermostat are 12V DC, 0.15A on all SELV terminals (0V, H2, W1 and +12V).

Internal fuse:	Internal 1A fuse non-replaceable.
Desired temperature	The desired temperature can be set from 0°C to 30°C.
General technical information	<ul style="list-style-type: none">– No user serviceable parts.– Indoor use only.– Intended for continuous use.– Operates between 0°C and 55°C as set by the user on the display. There will be no increase in this operating value in the case of failure of the temperature sensing equipment.– This control provides a type 1 switching action.– The maximum intended click rate for the relays is 1Hz.– Relay is rated for 100,000 operations.– At the expected switching rate of once per hour, the unit is expected to have a service life of 11.4 years.– Relay contacts provide micro-interruption only and do not provide disconnection.– The state of the control during transportation is not critical.

Section 10: Frequently Asked Questions

Does Switchee work with Y-Plan and S-Plan boilers?

Yes, with both. Please see wiring diagram on page 19 and 20.

Does Switchee work with Combi boilers?

Yes, with Combi boilers Switchee controls only the heating. Please see wiring diagram for combi boiler on page 17.

Can Switchee control storage heaters?

Switchee can only control heating systems already using thermostatic controls.

Does Switchee require Wi-Fi?

No, each Switchee has a SIM card with a mobile connection operating on the 2G network.

I have never installed a Switchee before. Is it difficult to install?

It's quite simple just like installing any other thermostat, and very similar to the installation of other smart thermostats.

Do I need a separate mounting bracket?

No, each Switchee comes with its own **Mounting Bracket**.

How do I attach the Switchee to make sure no one removes it?

Each Switchee comes with a grub screw which is size hex2 or a flat head (changed in more recent kits). If you need some extra grub screws we can provide some, please let us know at install@switchee.co

What happens if I am having trouble during installation?

Please refer to this **Installation Manual** and this troubleshooting guide. Otherwise, please **call us on 0800 133 7957** and we can assist.

Can a resident set a timer?

Residents can manually program their own heating and hot water (where applicable) times on the Switchee.

Can a resident change the heating and, if applicable, hot water if their timer is active?

Yes, the heating and hot water can always be adjusted manually. Switchee will revert to the timer after approximately three hours.

Do I always need to use the included AC Adapter?

Only in Scenario 3 (see 5.3) when you are replacing a wireless thermostat or installing the Switchee in a new location.

What should I do with the old thermostat after installing Switchee?

You need to take it with you and recycle it in accordance with your company's WEEE recycling policy.

Can I reboot a Switchee?

Yes. Tap on the **Spanner** icon on the top left-hand corner of the **Touch Screen**, then tap '**More**', then tap '**Reboot**'.

How long does it take to install a Switchee?

It depends on the location, boiler and wiring. After a few installations it should take 45–60 minutes.

Section 11: Troubleshooting

The screen doesn't turn on

Re-check the wiring of the used connectors on the **Mounting Bracket**. The colours should correspond with those inside the **Boiler Receiver Unit (BRU)**. There is also a green light in the **Mounting Bracket** if its powered correctly.

Calling for Heat or Hot Water and the boiler isn't firing

Press the **Override button** on the **Boiler Receiver Unit**:

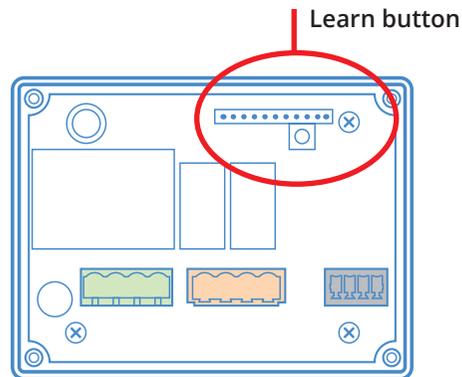
- once for the heating to come ON,
- twice for the hot water to come ON,
- three times for both the heating and hot water to come ON.

If none of these happen, it is most likely a wiring issue. Please look at the wiring diagrams in Section 8. Check the wires match on the 0V, H2, W1 and 12V connectors. Also check that no loose wire strands are touching other wires in the terminal connectors.

Wireless communication call for heat and hot water not working

Please follow these two steps:

1. Make sure the **Barcode** on the **Mounting Bracket** matches the **Barcode** on the **Wireless Chip** on the **Boiler Receiver Unit** (chip located above the **Learn** button) this should begin with the letters BKW. These come paired from the factory so they must match.
2. If you have confirmed that they do match, make sure the **Boiler Receiver Unit** and **Switchee Thermostat** are powered ON, and press the **Learn** button on the **Boiler Receiver Unit** for around two seconds. This will re-pair the **Chip** and the **Bracket**.



There is no hot water button on the Switchee.

Please call us and we will update the device remotely.

Please make sure to always complete all checks in Section 7 after each installation.

For any questions please call
Switchee or ask the resident to call us on:

0800 133 7957

Alternatively you can email us at:

install@switchee.co

switchee

 www.switchee.co/installers

 install@switchee.co

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 0800 133 7957 – Option 2



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