

# Genius Hub Installer Training - Step 5: Boiler Receiver Units

## Step 5: Install the Boiler Receiver Units

The Genius system has been tested with a wide variety of boilers, heat pumps and other heat sources and there are 3 Receiver Units which can be used to control these: the Single Channel Receiver, Dual Channel Receiver and Electric Switch.

### General Information



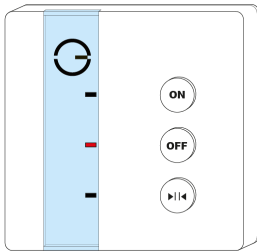
Standard wiring diagrams are provided with the system. To download a copy of the wiring diagrams, visit: <https://www.geniushub.co.uk/wiring>

The Single Channel and Dual Channel receiver units are rated to 3A maximum. They can only be used to switch a **zone valve** or a **boiler** and **not a circulation pump**. Controlling a circulation pump will result in damaging the receiver unit, voiding the warranty!



- Do not attempt to wire in your boiler controller if you are not 100% sure that you know what you are doing. Danger of electric shock! All wiring should conform to IEE regulations. The boiler and wiring for the boiler controller must be electrically isolated before you commence work on wiring in the boiler controller!
- To comply with building regulations, a hard-wired cylinder stat. must be present on every system to protect against scalding.

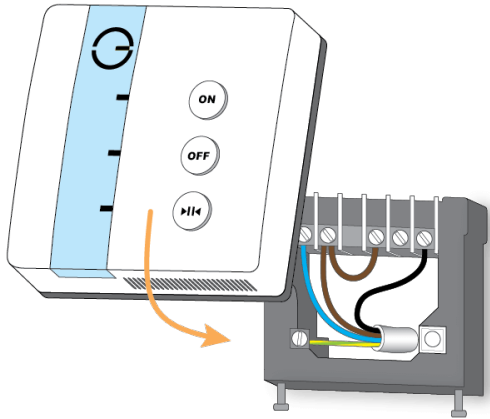
### Combination Boiler (Single Channel Receiver)



Included in the Genius Starter Kit is the Single Channel Receiver, which is most commonly fitted to a Combination boiler (for properties without a hot water tank). In many cases you can swap in the Single Channel Receiver where the wired house thermostat or boiler programmer was located as the Single Channel Receiver uses a standard backplate. You need to ensure that wiring is correct for the Single Channel Receiver before placing it on the backplate.

1. Always ensure that the boiler and wiring for the Single channel Receiver is electrically isolated before you commence work on any wiring.
2. Remove the backplate from the Single Channel Receiver by loosening the 2 screws found on the bottom of the Receiver Unit.
3. Mount the backplate onto the wall where the Single Channel Receiver is to be placed, or (if using an existing compatible backplate) remove the front of the existing thermostat/receiver unit. This must be on a flat surface to ensure good contact between the Single Channel Receiver and backplate.
4. Wire the Single Channel Receiver backplate as per the wiring diagrams provided, checking this is suitable as per the boiler installation manual.

5. Fit the Single Channel Receiver onto the backplate by first fitting it to the top of the backplate and hinging the receiver unit down. This should hinge easily and should rest squarely on the backplate. If it does not attach easily first time, take the receiver unit off and try again.



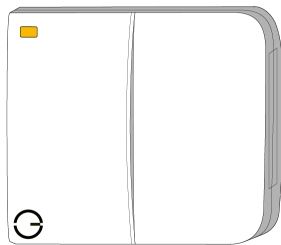
6. Tighten the screws underneath the Single Channel Receiver, and check the unit is securely and safely attached to the wall.

In normal operation the Single Channel Receiver will have a single solid light (**red** for when there is no call for heat, and **green** for when the Receiver unit is calling for heat).



- If there is no existing boiler programmer then the Single Channel Receiver must be wired into the boiler as if it were an external programmer or thermostat. See wiring diagrams provided by the boiler manufacturer to confirm the wiring guides provided with this installation manual.
- If you replace the existing house thermostat with the Single Channel Receiver, and leave the existing boiler programmer (not recommended), the customer must be aware that they will have no control of the boiler if the programmer turns off. The existing programmer in this case must be set to always on or constant to make sure that the Single Channel Receiver retains control of the boiler at all times.
- If you remove the existing wired house thermostat out of the control circuit (recommended), it must also be removed from the control in the boiler wiring centre, otherwise the Single Channel Receiver will not have control over the boiler.

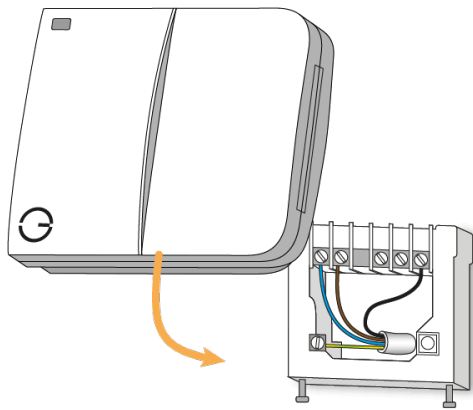
## System Boiler (Dual Channel Receiver)



Included in the Genius Starter Kit + Hot Water On/Off is the Dual Channel Receiver, which is most commonly fitted to a System boiler (for properties with a hot water tank). The existing programmer must be exchanged with the Dual Channel Receiver to control the heating and the hot water. You need to ensure that wiring is correct for the Dual Channel Receiver before placing it on the backplate.

1. Always ensure that the boiler and wiring for the Dual channel Receiver is electrically isolated before you commence work on any wiring.
2. Remove the backplate from the Dual Channel Receiver by loosening the 2 screws found on the bottom of the Receiver Unit.
3. Mount the backplate onto the wall where the Dual Channel Receiver is to be placed, or (if using an existing compatible backplate) remove the front of the existing programmer/receiver unit. This must be on a flat surface to ensure good contact between the Dual Channel Receiver and backplate.
4. Wire the Dual Channel Receiver backplate as per the wiring diagrams provided, checking this is suitable as per the boiler installation manual.

5. Fit the Dual Channel Receiver onto the backplate by first fitting it to the top of the backplate and hinging the receiver unit down. This should hinge easily and should rest squarely on the backplate. If it does not attach easily first time, take the receiver unit off and try again.



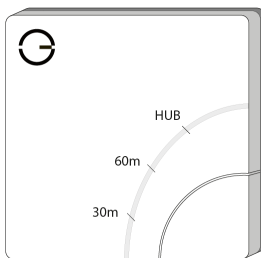
6. Tighten the screws underneath the Dual Channel Receiver, and check the unit is securely and safely attached to the wall.

In normal operation the Dual Channel Receiver will have a solid **amber** light which means it is connected to the system.



- If there is no existing boiler programmer then the Dual Channel Receiver must be wired into the boiler as if it were an external programmer. See wiring diagrams provided by the boiler manufacturer to confirm the wiring guides provided with this installation manual.
- If you remove the existing wired house thermostat out of the control circuit (recommended), it must also be removed from the control in the wiring centre, otherwise the Dual Channel Receiver will not have control over the heating.
- Inside the door on the Dual Channel Receiver are 2 labels to display which button controls which part of the heating. When wiring the Dual Channel Receiver, check that the wiring matches these labels.

## Hot Water Time & Temperature addon (Electric Switch)



The Electric Switch and Temperature Probe, which is used to measure the temperature of the Hot Water Tank. The Electric Switch must be wired into a switched, fused spur near the Hot Water tank. Place the end of the Temperature Probe into the pocket/under the insulation of the hot water tank. The Electric Switch and Temperature Probe, which is used to measure the temperature of the Hot Water Tank. The Electric Switch must be wired into a switched, fused spur near the Hot Water tank. Place the end for the Temperature Probe into the pocket/under the insulation of the hot water tank

If the Hot Water Tank has an immersion heater backup, this can be wired into the Electric Switch (output) so you can also control the heating of the hot water from the immersion heater as well as the boiler.

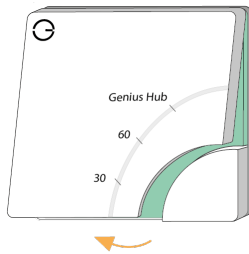


At no point should the Temperature Probe be pulled out or removed from the Electric Switch.

The Electric Switch should be wired into the same fused spur as the relevant zone valve or immersion heater.

1. Always ensure that the boiler, immersion heater and wiring for the Electric Switch is electrically isolated before you commence work on any wiring.
2. Locate the existing tank cylinder thermostat for the hot water tank.
3. If the same pocket as the cylinder stat is accessible, insert the Temperature Probe into this pocket.
  - a. If it is not available, attach the Temperature Probe to the outside of the tank (under the insulation) using a thermal paste so it gets an accurate water temperature reading and has good adhesion.
4. Break out the relevant section of a 1-gang pattress for the wiring, allowing for the temperature probe to exit the pattress box if applicable, and fix the pattress to the wall. It is recommended that a 40mm pattress is used.
5. Pull through the relevant wiring, allowing plenty of spare.

6. Wire in the Electric Switch as per the wiring diagrams provided, checking this is suitable as per the relevant installation manual, such as immersion heater.
7. Remove the front cover of the Electric Switch to expose the screw holes. The cover can be removed by placing a flat bladed screwdriver into the gap underneath the Electric Switch and levering in a downwards direction.



8. Fit the Electric Switch into the pattress, ensuring there are no trapped wires. Screw in using standard pattress screws, and check the unit is securely and safely attached to the wall. Re-attach the front cover starting at the top.

In normal operation there will be no lights when the unit is not heating and one or more **red** lights near the button when heating.



- The temperature in a hot water tank will stratify, and so the Electric Switch will measure a different temperature dependent on where on the tank it is located. It is recommended to use the location of the existing Cylinder Stat or a pocket built into the Hot Water tank. For more information, please see the installation manual provided with the hot water tank.
- The existing cylinder stat should be set to a temperature above the temperature required on the app, and above 60° to protect against legionella.
- Using the appropriate wiring, as in accordance with BS7671 (or newer if such exists).
- The Electric Switch is rated to 13A and must not be wired to an immersion heater with a higher rating. This will result in damaging the Electric Switch and voiding the warranty!