Beama
Heating Controls

User guide to your heating and hot water controls

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Why is this guide important?

Your central heating and hot water system is the biggest single user of energy within your home. This guide will help you learn about the system's controls and how best to use them – and can help you make a considerable saving on your energy bills. After all, heating and hot water accounts for around 82% of your home's total energy use and, seeing as your boiler is responsible for this, it makes sense to use it as effectively as possible.

Your system's controls allow you to set up your home to be both comfortable and efficient. If programmed correctly, the system will automatically heat your home and provide your hot water using as little energy as possible. This guide is based on the typical controls that are recommended within the Government's Building Regulations Compliance Guide for Boilers and Radiators. Of course, if you have a different type of central heating and hot water system – or controls that differ from the ones covered here – then you may also need to consult your installer or the system manufacturer.

Before we get started on setting up your new central heating and hot water system, have a think about what you want from it. When do you want to be warm? How warm do you want your home to be? When do you need hot water? By answering these questions and correctly setting up your system's controls, you can sit back and let your central heating and hot water system do the rest.

The controls and how to use them

1. The programmer (photos of examples below)

What does the programmer do?

The programmer tells the boiler when to be turned on or off. You can set it to activate the boiler during different parts of the day and, if you wish, different days of the week (meaning you can have the system do different things at weekends to weekdays, for example). During the times that the boiler is turned on, it will provide you with heating or hot water if requested by other controls, such as a thermostat (see below). However, during the times the boiler is turned off, it will not be able to provide heating or hot water – even if asked to by other controls.

If you have a hot water cylinder you should also have the ability to set time control for your hot water – either within the programmer or through a separate timer. Ideally this should allow you to set different on and off times for your hot water compared to your heating.

The programmer often has a 'boost' function, which will let you operate the heating for a short time when it has been turned off. This is especially useful if, for example, you come home after a cold day but there is some time until the boiler is due to turn itself on. At the end of the 'boost' period, the boiler will automatically turn itself off.

How should I use the programmer?

It is recommended that you set the programmer to turn the boiler on and off at times that suit your lifestyle. After all, there is little sense in heating the house and generating hot water all day if there is nobody at home. (One exception to this rule is if you are using the system for frost protection while on holiday, in which case the thermostat must be set to a low temperature.)

When setting the programmer to turn the boiler on in the morning, think about the time you usually get up, how long your house will usually take to heat up, and the weather outside. This will help you work out roughly when your heating system needs to get going. A good time to try is around 30 minutes before you usually wake up. If the house is not warm enough for you, extend this time, and at times when the weather is warmer outside, reduce it. Your programmer should allow you to set a series of programmes throughout the day (for example, turning the boiler off when you leave the house in the morning, but turning it on again before you return home of an evening). Tip: Setting the heating to come on later when you know you will be late home will save you money!

If you have a hot water cylinder, your boiler will need time to heat the water inside it to give you hot water when you need it. This can take anything up to two hours so, if you use a lot of hot water in the mornings, you should bear this in mind when setting the programmer. The thermostat inside the cylinder (see below) will turn the boiler off when the water is hot enough. If you have a programmer that allows you to set different timings for the heating and the hot water, then it may be worth setting the hot water to come on an hour before the heating, so that the boiler can deal with one at a time. Tip: If your programmer cannot set different times for heating and hot water then you should reprogramme it in the summer, when the heating is off, so that the boiler only runs long enough to satisfy your hot water needs.

The programmer can seem daunting at first but by taking time to get used to its control functions you will be able to get the most out of your system – and be comfortable when you have to make changes to the programmes.

2. The room thermostat (photos of examples below)

What does the room thermostat do?

While the programmer is simply a 'master switch' that turns the boiler on or off, the room thermostat lets you set how warm you want your home to be. It checks the temperature of the room and turns the boiler on or off, to maintain the chosen temperature. If you want your home to stay the same temperature all year, keep the room thermostat at the same setting. In the winter months the room thermostat will turn the boiler on more often and for longer periods of time to maintain this temperature. Tip: You should not have to adjust the room thermostat on cooler days as the focus is on internal temperature. Remember: During 'off' periods set by the programmer, the boiler will not provide heating, even if requested by the room thermostat.

How should I use the room thermostat?

Find an inside temperature that you are comfortable with, bearing in mind that you want your home to be comfortably warm, not hot, and that a lower set point will mean lower heating bills! To do this, try setting the thermostat to around 20°C and gradually adjust it over a few days to find a temperature that works for you. Most people are comfortable with a temperature of 18 – 20°C, but remember, elderly and vulnerable people need warmer temperatures, so always check specific advice if you have any concerns.

A few other things to remember: Firstly, trying to warm the house more quickly by turning up the thermostat will not work – although it will result in higher fuel bills, particularly if you forget to turn it down again! Secondly, the room thermostat is sensitive to internal temperatures. If a window is open in the room where the thermostat is located, then the thermostat will assume that the whole house is not warm enough and keep the boiler on – even if other rooms are overheating.

3. Programmable room thermostat (photos of examples below)

What does a programmable room thermostat do?

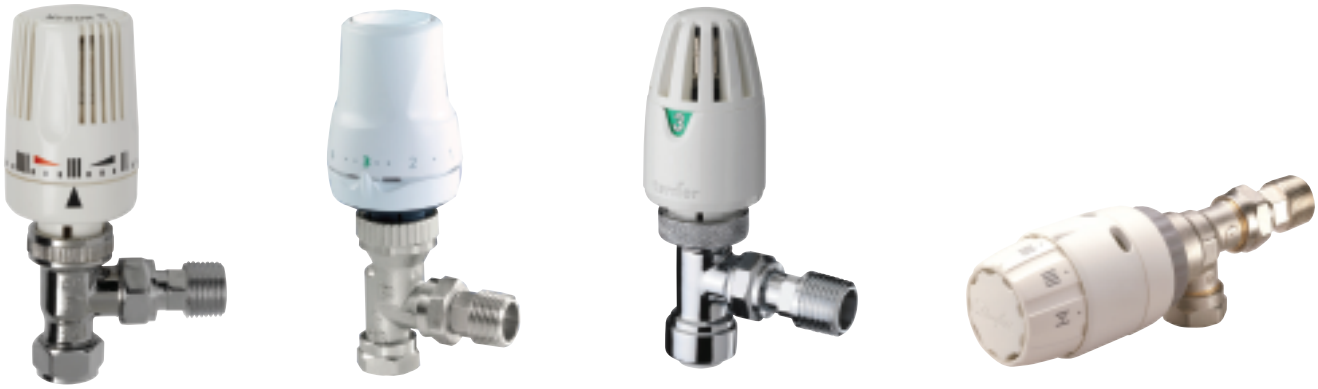
Your system may have this control, which does the job of both a programmer and room thermostat combined. A programmable room thermostat will have both time and temperature shown on its display. Like a programmer, it allows you to set on and off times for your boiler, but it also provides overall temperature control during times when the boiler is turned on.

When the boiler is turned on, the programmable room thermostat will react to the room temperature and operate the boiler to maintain the desired room temperature. It will also provide hot water during this period if requested by a cylinder thermostat (see below).

How should I use the programmable room thermostat?

Follow the guidance given for an individual programmer and room thermostat (above). The big advantage of this control is that it lets you set different temperatures for different times of the day, which can reduce your energy use and save money. For example, you could set the temperature to 18°C for mornings and early evenings when you are likely to be more active, and to 20°C for late evenings.

4. Thermostatic radiator valves, TRVs (photos of examples below)



What do TRVs do?

Thermostatic radiator valves provide individual temperature control in each room where a TRV is located. They prevent the room from overheating and prevent the boiler from heating a room that is already warm.

Each TRV will monitor the room temperature and reduce the heat generated by the radiator, so that the room temperature matches the set point.

Like a room thermostat, a TRV is focussed on maintaining the internal temperature regardless of how cold it is outside. Unlike a room thermostat, TRVs do not directly turn the boiler off when no heat is required – however they do reduce the amount of heat the boiler needs to provide.

How should I use TRVs?

Try to find a comfortable temperature for the room and leave the thermostat at this setting. Remember that TRVs will usually have a number scale (for example, 1-6), rather than temperature settings. You may be best starting with the TRV set at the mid-point and over the course of a couple of days gradually adjusting it higher or lower, until the room remains at a comfortable temperature.

For rooms that are not used very often you can save money by keeping the TRV at a low setting, providing background heating only, and turning it to a more suitable setting when the room needs to be warmer. Tip: As TRVs work by sensing temperature it is important to keep them free of obstructions such as furniture or curtains. Generally this is true of radiators anyway, as you want to get the heat into the room.

5. Cylinder thermostat (photos of examples below)

(Note: This only applies if you have a hot water cylinder connected to your heating system.)

What does a cylinder thermostat do?

The cylinder thermostat controls the overall temperature of your hot water. It monitors the temperature of the water in the cylinder and turns the boiler off when the water temperature has reached the set point. If the hot water set point is reached but the heating is on, the boiler will not turn off and instead the cylinder thermostat will close a valve so that no more hot water is provided. When some of the hot water is used the cylinder will be refilled with cold water and the cylinder thermostat will allow the boiler to come back on until the set point is reached again. Remember: During 'hot water off' periods set by the programmer, the boiler will not heat the water, even if requested by the cylinder thermostat.

How should I use the cylinder thermostat?

An ideal temperature setting is between 60°C and 65°C, which is hot enough to kill off any harmful bacteria in the water while keeping energy costs down. However, note that these temperatures can cause scalding, so you should still be careful with hot water straight out of the tap. Remember, setting your hot water cylinder to the maximum temperature is unnecessary and will only waste energy!

Guide produced by BEAMA Heating Controls Group, TACMA

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