FAQ Sheet

On/Off Control

What is On/Off Control?

On/Off control is the method of control used by most heating systems in the UK. The controls simply switch the current supplied to the boiler on or off at different times.

How does On/Off Control work?

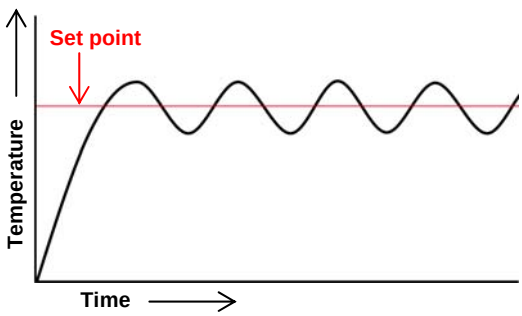
When the controls switch on, the current opens the gas valve, strikes a spark and allows the boiler to burn whilst there is a live supply to it. When the current is interrupted, the boiler ceases to fire.

For a traditional system with stored Hot Water, the time control (programmer) and temperature control (thermostats) operate zone valves. These have a switch inside them that control both the boiler and the pump.

For Combi boiler systems, the time and temperature controls switch the boiler directly. (Hot Water is controlled by the operation of a tap, which will cause the boiler to switch off the Heating until a Hot Water demand has been satisfied.)

A traditional mechanical room thermostat (such as the T6360 pictured above) will respond to temperature change. This means that once the room temperature reaches set point, it will switch off (satisfied), the room will start to cool again. The temperature will fall until the room thermostat switches on again (calling), it will stay on until the set point is reached, then switch off again. This will continue to happen throughout a heating period, it is called 'hunting' and is represented in Figure 1.

Figure 1 Temperature variation with a traditional On/Off room thermostat



The duration of the calling period is governed by the sensitivity of the sensing element (the bigger the better) the speed of the reaction of the sensing element, the siting of the thermostat and the design of the rest of the heating system.

What is required of heating controls in the Building Regulations?

Building Regulations require that every system has a room thermostat, whether old or new. This will form an essential part of the Boiler Interlock, providing the means to switch the boiler off when it is no longer required.

How can a system be improved from Building Regulation requirements?

Modern controls can have electronic logic within that calculates the demand periods expected, instead of reacting to a change that happens. An example of this is a TPI controller, for more information see the TPI FAQ sheet on www.honeywelluk.com

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