

## Wireless when and where?

**Wireless devices and appliances are now an accepted way of domestic life and wireless heating controls are no exception, offering both installers and homeowners numerous benefits over their wired alternatives. Not only do wireless heating controls provide a greater level of control and functionality - as well as favourable cost savings for the homeowner - they offer the installer much greater flexibility when it comes to where to install them. However, as with any technology, the key to efficient operation is for installers to understand how wireless heating controls operate and how they will integrate into everyday life. A common concern is how they will function in the home environment when surrounded by other devices which may interfere with or block the signal. Andy Mansfield, marketing communications manager at Honeywell, explains what installers need to consider when fitting wireless heating controls.**

Today's homes are filled with various wireless technologies – from cordless telephones, remote controlled garage doors, wireless doorbells and baby monitors to wireless computer data networks and wireless light switches - each operating on different radio frequency (RF) signals.

### RF Frequencies

Three main frequency bands exist which are most often used by RF emitting products. System interference from the surrounding environment is always possible, dependent on where the

controls are positioned, the use of the main regulated 868 MHz frequency minimises these occurrences.

### Installing Programmers

A home's structural elements can cause interference with RF signals, so being able to recognise these is key to ensuring the heating controls work as designed and also minimise any



installation problems that may require the products to be repositioned at a later stage. An installer should review these before committing to the position of the programmer, thermostat or cylinder thermostat.

Metal objects are the greatest barrier that wireless signals encounter so considering what metal objects are in a direct line between the thermostat and programmer is best practice. In most cases the wireless signal will find a communications route, but large metal objects will act as a reflector, so a simple repositioning of a few centimetres in any direction may be

enough to improve signal reception.

Is there a metal object within 30cm of the thermostat? If so it may be creating a permanent reflector for the signal that will interfere with operations. Again, moving the thermostat a few centimeters away from the risk of interference should solve the problem.

Is the thermostat mounted onto the wall using a metal mounting box? Standard metal wall boxes may have an effect on operations, so an installer should always test signal strength before preparing any permanent fixings.

Wireless signals will pass through walls and ceilings but foil backed plaster or insulating board may have an effect on signal strength or the range of the wireless communications. Though all good heating controls operate in a way that will not cause any clashes with other wireless signals, occasionally any electronic device emitting a signal in close proximity to the programmer or thermostat can saturate the surrounding area and cause disruption to the signal.

The product should therefore always be mounted at least 1m away from any other wireless or electronic device. Even when mounting a pair of the same products together, a 1m gap between the two will avoid signal saturation.

### **Installing Thermostats**

Wireless thermostats are designed to make it easy and convenient for the homeowner to control the temperature wherever they are in the property. The signal strength of wireless controls is such that they can be moved around the

property to ensure that the control of temperature is always available to them.

For best performance, install the wireless thermostat in an open space where it can sense the room temperature, and where the signal strength is high. The room thermostat can be mounted on a wall or on the optional table stand, preferably at least 1.2m from the floor.



Similarly with programmers, they should not be positioned on metal wall-boxes and should be placed at least 30cm from any metal objects and at least 1m from any other electrical equipment.

### **Signal strength testing**

The final stage, prior to installing a wireless device in an area where the level of metal, other wireless devices and other major electrical devices are present, is a signal strength test.

Signal tests are simple to carry out and vary from model to model, as laid out in their installation instruction guides.

This is simple guidance that should be followed when considering where to site these controls and will often ensure a trouble free installation,

allowing the homeowner to get the full benefit from the full functionality modern heating controls offer.

### For the Homeowner

An installer is best placed to educate the homeowner on the functionalities of using a thermostat, so being able to provide some tips on where best to place it is key.

When using a wireless thermostat on a free standing table mount, installers should recommend that a user checks that the correct strength 'indicators' are showing on the screen when moving the thermostat to a new location. If the product does not seem to be working, a simple repositioning should enable the signal to be received and most products have a simple form of signal strength test built-in.

Homeowners should also be aware that if they have thermostatic radiator valves (TRVs) fitted in the property, positioning a thermostat in a room with a TRV may develop a clash of instructions to the boiler. If the TRV is set at a lower set point than the thermostat then the room may never get to the desired temperature to fire the boiler.

Each of these tips will help a homeowner ensure they are getting the best from their heating controls.

Though most domestic heating controls are now designed to minimise the risk of interference – such as the Honeywell Sundial RF<sup>2</sup> packs which has its own protocol so that even if another signal is received it will not be recognised and acted upon - following these simple guidelines is

a must for any installer to keep ahead in the wireless revolution.

### TYPICAL HOME ENERGY CONSUMPTION

