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## Thermostats, Programmers and Thermostatic Radiator Valves (TRVs)

It is common for domestic heating systems in our houses to have a thermostat or programmer. This is normally placed in the hall or some other central location. It is unusual for a Caravan Holiday Home with a central heating system to have a programmer or thermostat installed from new although holiday home owners are requesting they be retro-fitted.

Caravan Holiday Homes are usually supplied with Thermostatic Radiator Valves (TRVs) and time clocks that are integral to the boiler.

This fact sheet should help the owner decide if a thermostat or programmer will enhance their caravan holiday home, and which type of device would best suit their requirements.

If TRVs are fitted in the home then the addition of a thermostat or programmer will duplicate the temperature control in the room in which it is fitted. It is therefore advisable to fit the thermostat or programmer in a room or hall way where there is either no radiator or no TRV on the radiator.

Alternatively you can turn the TRV in the room to maximum and use the thermostat or programmer to control the temperature. Be aware that a thermostat or programmer will only control the temperature of the room in which it is placed and this may result in the TRVs in other rooms not achieving the temperature to which they are set.

## Thermostatic Radiator Valves

These are installed on one side of most radiators inside the holiday home. There needs to be a single radiator that is not controlled by a TRV for reasons of boiler reliability. This is normally the radiator or towel rail in the bathroom although it is sometimes the living room.

A TRV is simply a thermostat - you turn the head to the room temperature required and the TRV will control the flow of hot water through the radiator to achieve that temperature. The TRVs only work when the boiler is switched on in central heating mode.

Graduations on a TRV and the equivalent temperature are shown in the table below. In the photo the TRV is set to 24°Celsius or position IIII.



Setting on Head	○	*	I	II	III	IIII	●
Temperature °Celsius	Off	8	12	16	20	24	28

## Pros

They are probably already fitted to your home

They control the heat in each room independently

They are the most efficient way of controlling energy usage in your holiday home

## Cons

They are sometimes placed in inaccessible locations

They sense the heat local to their position and this may not be what is comfortable for the rest of the room

## Thermostats (Stats)

A thermostat is simply an on/off switch that is triggered by temperature. The temperature at which the thermostat switches is set by the home user. If the boiler has a time clock (nearly all Morco boilers have a built in time clock), the thermostat works in conjunction with this clock provided the clock is calling for heating. If the clock is not calling for heat the thermostat is disabled. If the time clock is permanently on or it is in a timed period then the thermostat will control the maximum room temperature that the boiler will deliver. The temperature at which the thermostat switches the boiler off is the temperature being sensed at the stat itself. It does not control the temperature in another room or on the other side of the room in which it is located in. Often stats are incorrectly located above a radiator or near an oven or fire where they will switch the heating off earlier than anticipated and may leave other rooms in the home feeling cold. This can be compensated for by setting an artificially high temperature on the stat but it is good practice to locate a stat away from other heat sources, preferably at chest height and as near central in the room as possible.



The photo on the left shows a typical room thermostat. This one is available from Morco Products and the part code is PPC307000. It is compatible with all FEB Morco Combination Boilers and only requires a pair of thin wires to be run between the boiler and the stat. These wires are volt free so you do not need to be an electrician to install one. This stat will work with the new GB24 and GB30 boilers but an engineer will be needed to fit it to these boilers as mains connection is required and incorrect wiring will damage the boiler.



The photo on the left shows a wireless thermostat available from Morco Products, part code PPC303000. It is compatible with all FEB Morco Combination Boilers. This will also work with the new GB24 and GB30 boilers. As the receiver requires mains 240VAC connection it is advisable to have an engineer install the unit as incorrect installation will damage the boiler. The controller is battery operated.

### Pros

They can be relatively simple to install and low cost (wireless ones can be more expensive)  
They provide simple and accessible control

### Cons

Most inexpensive thermostats require wiring leading from the stat to the boiler and this can be difficult to route.  
It is often difficult to locate the stat in an optimum position as this would be in the middle of the room!  
They only control the temperature in one room - other rooms may end up too cold or too hot as a result of the setting on the stat.

### Programmer (Wired)

A programmer is effectively a thermostat and a heating time clock combined. It usually has a digital liquid crystal display and a number of buttons for programming its functions. As previously mentioned almost all holiday home combi boilers have a built in 24 hour timer and a programmer must override that timer in order to be effective. This normally requires the boiler time clock to be set to “permanently on” in central heating mode. The time and temperature settings entered by the user into the programmer will then control the boiler.



Morco sell this programmer part code PPC304000. The temperature is varied by turning the wheel and the current time and temperature is displayed. The unit is about the size of a large household box of matches. It is powered by an internal battery. It is compatible with all FEB Morco Combination Boilers and only requires a pair of thin wires to be run between the boiler and the stat. These wires are volt free so you do not need to be an electrician to install one. This stat will work with the new GB24 and GB30 boilers but an engineer will be needed to fit it to these boilers as they require 240VAC mains switching and incorrect installation will damage the boiler.

### Pros

You can control the temperature and heating on/off times from one device.  
It will display the current temperature being sensed.

### Cons

They are usually complicated devices and can take time to work out how to programme them correctly  
They are quite expensive – typically £35 plus VAT  
The hard wired programmers require cable to link the boiler and the programmer and this can be difficult to install  
It is often difficult to locate the programmer in an optimum position as this would be in the middle of the room!  
They only control the temperature in one room - other rooms may end up too cold or too hot as a result of the setting on the programmer  
The battery that controls the programmer can run out and need replacing

## Radio Frequency (RF) Programmers

Radio frequency controllers control the time and temperature in the same way as the hard wired versions but have one key difference – the time and temperature settings are sent from the programmer to a receiver in the boiler cupboard via radio frequency. This means that there is no physical wired link between the programmer and receiver and consequently they are very much easier to install.

The programmers are battery operated and the receivers need to be connected to the 240VAC mains electricity supply in the boiler cupboard.



Morco sell this programmer part code PPC305001. The temperature is varied by turning the wheel and the current time and temperature is displayed. The control unit is about the size of a large household box of matches, is powered by an internal battery and is compatible with all Morco Combination Boilers. As the receiver requires mains 240VAC connection it is advisable to have an engineer install the unit as incorrect installation will damage the boiler. The controller is battery operated.

### Pros

RF allows the controller to be placed anywhere in the home without being wired back to the boiler.

You can control the temperature and heating on/off times from one device.

It will display the current temperature being sensed and the target temperature.

Can be moved around the home if not fixed to the wall.

### Cons

They are usually complicated devices and can take some time to work out how to programme them correctly

They are expensive – typically £75 plus VAT

They only control the temperature in one room - other rooms may end up too cold or too hot as a result of the setting on the programmer.

The battery that operates the programmer can run out and need replacing.