

# THERMOMATIC EC HOME®

## Relay box for controlling booster heating pump

For optimisation of heat regulation using pump control and booster heating.

Art no 12 70 03

### **Pump control saves Energy!**

In order to minimise losses when there is no need for heating, the circulation pump is stopped when the mixing valve has been closed for 1 hour. The pump restarts as soon as a room sensor calls for heating. When the system is controlled by outdoor sensor, start and stop is set according to the outdoor temperature.

As all mixing valves have a leak that lets out a little heat, even when they are closed, by stopping the pump in this way you can minimise the losses.

**Example:** A heating system leaks 1°C (from 20 to 21°C) and has a flow of 1,000 l/h. This gives a loss of nearly 1 kW/h, in other words 24 kW per day.

In order to safeguard pump operation, the system has integrated pump exercise, which starts the pump for 5 minutes every day.



### **Booster control**

**Permits precise regulation of booster heating.** This function cannot be used for hot water production.

This connects a booster heat source, e.g. electric heater, burner, heat pump etc., if there is a need for extra heating.

It is used, e.g. during heat pump operation when the pump's maximum temperature/power is not sufficient to heat the house at low outdoor temperatures. When the mixing valve reaches a set value, the booster heating is connected as long as it is needed.

You can also select the valve position/time delay for turning on, and the time delay before the valve continues to open, in order to permit waiting for the external heat source to warm up.

This option permits e.g. an electric heater to be only connected exactly when needed.

### **Advantages:**

#### **With heat pump:**

Booster electric heating is used only when needed. If it is warm enough indoors, the booster electric heating is shut down immediately, and the heat pump works at its optimum efficiency.

#### **With wood-fired boiler:**

The electric booster heating is only used when there is an actual need for heating, as decided by the room sensor. Most electric heaters are fitted far down in the storage tank. With EC Home, the electric heater only heats just the amount needed to heat the house.

#### **Example:**

**With EC Home:** If the radiator circuit requires 35°C on the supply line, and the stored heat from the wood-fired boiler has been used up, EC Home will instruct the electric heater to heat the tank to 35°C. If the heat need is reduced, EC Home shuts down the electric heating.

**Without EC Home:** If the electric heating is connected by a standard thermostat it has to heat the tank to the thermostat setting, which must often be set at 50–60°C to meet all needs. When you start wood firing the next time, the tank is already unnecessarily hot.

# THERMOMATIC®

by  Termonventiler AB

## The function of the EC Home relay box:

The relay box is used to start and stop the circulation pump and to control any booster heating, e.g. electric heating, oil-fired burners.

The box communicates with the Connection Centre (CC) through a 4 conductor multicable that is connected in parallel between terminals 1-4 and the Peripheral box, according to the diagram below.

*The functions are described in more detail in the EC Home user guide.*

### Pump control

In order to connect the circulation pump, the pump's phase is connected in series to terminals 10 and 13 in the relay box, according to the diagram below. When the CC says that the pump is "On", this connection is closed.

Selection of pump control is set in menu 7.7.1 in the Control Panel.

### Booster relay

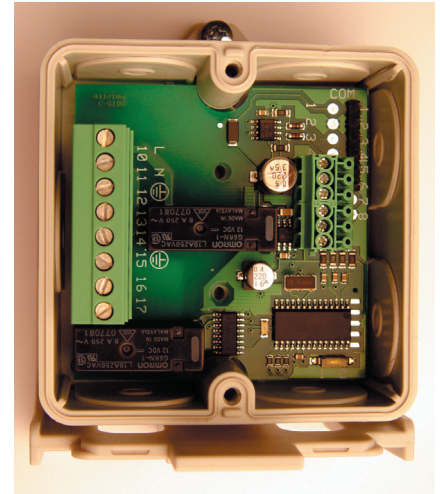
The booster relay is connected to terminals 16 and 17 in the relay box.

The parameters for booster heating are set in menus 7.7.3, 7.7.4 and 7.7.5 in the Control Panel.

In menu 7.7.3 you set which position you want the Booster heating to start.

In menu 7.7.4 you set the length of the time to pass before Booster heating is started.

In menu 7.7.5 you set the length of the time to pass from the time the Booster heating starts before the motor continues to open.



*The relay box is delivered fitted with a bracket for installation directly on the motor.*

*Both connection terminal blocks can be removed. Terminals 1-6 are loose when delivered for ease of installation.*

## Electrical data

Relay 12 V, sec 250 V, 8 A

Signal voltage from EC Home to the relay box = 12 V

Relay contacts for the pump and booster heating are potential-free for max. 250 V, 8 A.

