



Savastat Load Compensation Boiler Control



What does Savastat Do?

Savastat employs another level of intelligence to a heating and domestic hot water system. By monitoring the return water temperature and rate of temperature decay (at the boiler) it can determine the load on the system. This allows small adjustments to be made in mean system temperature that accumulate to as much as 20% reduction in fuel costs.

Microprocessors have revolutionised control systems in recent years and the Savastat processor samples the system twice per second so is working in 'real time' to compute the savings potential. It doesn't use historic data to try to 'out think' the system and predict what might happen. As we all know, weather changes can be dramatic and short term, often fooling devices that try to predict system demands.

How Does it Work?

When the existing boiler control or thermostat tries to turn a boiler on, it sends an electrical signal to the igniter or burner valve on the boiler. Savastat intercepts this signal (it must pass through Savastat to reach the igniter or burner valve) and for 30 seconds (indicated by a yellow 'Idle' light on the Savastat) it senses the return water temperature and the rate of decay of the return water temperature. If it determines that there is little or no demand on the system it will not pass the signal through to the igniter or burner valve. A green light will illuminate on the Savastat indicating that the Savastat is in 'Save' mode. It will stay in the save mode continuing to sample data until it determines that the boiler should fire. There is a maximum delay period of 10 minutes at which time it will pass control back to the existing boiler control/heating system and allow the signal to pass through to the igniter or burner valve. A red 'Run' light will appear on the Savastat to indicate that Savastat has passed control back to the existing controls and Savastat is no longer in the circuit. Once the boiler has satisfied the requirement and turned off, all lights on the Savastat will go out until the next time the boiler is asked to fire, when the cycle will repeat itself.

What Savastat Can't Do

1. Cause Boiler temperatures to increase.
2. Cannot control space or stored water temperatures.
3. Keep a boiler off more than 10 minutes and 30 seconds.





What Savastat Can Do

1. Reduce energy consumption by 10% or more
2. Reduce boiler maintenance costs by reducing short cycling of the boilers.
3. Work with existing boiler controls such as outdoor weather compensators, optimizers and building management systems.

Savastat Status Indicator Lights

All Savastat models use the same status lights to indicate which mode the device is in.

If none of the status lights are illuminated there is no 'call for heat' by the boiler thermostat. This means the boiler thermostat is open and the boiler is turned off.

-  **RUN** The red *run* light will be illuminated when Savastat has finished its active mode and allowed the boiler to fire. When the boiler finishes its burn this light will go out and the cycle will repeat the next time the boiler is asked to burn.
-  **BOOST** When both the *save* light and the *boost* light are illuminated Savastat has entered a save mode while the computation involved is looking at how fast the return water temperature is dropping *towards* the set reference temperature (Domestic model factory set others variable).
-  **SAVE** When only one green *save* light is illuminated it indicates that Savastat has entered a save mode preventing the boiler firing while the computation involved is looking at how fast the return water temperature is dropping *away* from the set reference temperature (Domestic model factory set, others variable).
-  **IDLE** When the boiler thermostat switches on the yellow *idle* light is illuminated for a 30 second delay whilst Savastat computes what action to take next.

