



## What is Optimisation?

Most UK heating systems waste energy by firing unnecessarily early for most of the year. Homeowners set the times based on when they wake up, but then make a guess about when the boiler should fire. So if you want to be warm at 7.30am, you may set your timer to come on 6am. Yet the time taken for your home to warm up varies considerably throughout the heating season. Optimisation allows for energy savings, by varying the start up time of the boiler, depending on the weather. It then learns how the house reacts, so that the calculation can be more accurate the next day.

Optimum Start, Delayed Start and Optimum Stop are all methods of Optimisation.

## What is Optimum Start?

Instead of using a fixed start time, Optimum Start calculates every morning how long the house will take to warm up depending on the weather, then fires the boiler at the latest possible moment.

## How does Optimum Start work?

Optimum Start works on a daily basis. You set the time you want to be warm and Optimum Start will do the rest. On warmer days it will start later. Optimum Start ensures that you are warm when you want to be (and not before), reducing wasted energy and saving money (up to 10%).

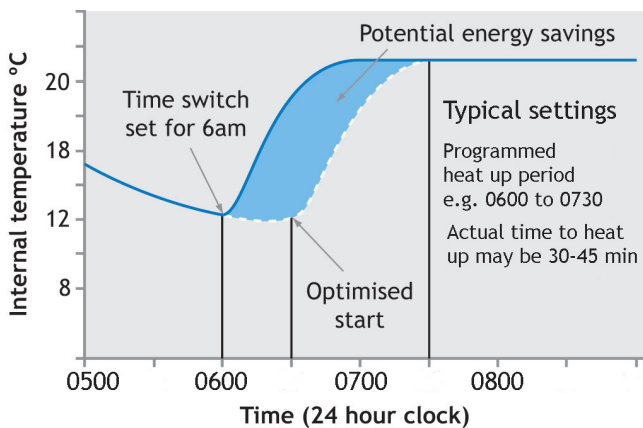


Fig 1 Optimum Start savings

Fig 1 shows the difference between fixed times, set to come on at 6.00am and an Optimum Start enabled control set to achieve a comfort temperature at 7:30am.

The fixed times (*solid blue line*) fire the boiler at 6.00am and reach the desired temperature early, well before 7.00am.

Optimum Start (*dotted white line*) fires the boiler later, at 6.30am, but still achieves the desired temperature by 7.30am.

The savings are indicated by the shaded blue area. As the weather gets warmer, the start up time will be later, therefore increasing potential savings.

## What is Delayed Start?

Delayed Start makes similar calculations, starting from the earliest firing time, fixed by the householder. It calculates how long the house will take to warm up depending on the weather, then delays the boiler firing if it can.

## How does Delayed Start work?

You set the earliest start time, based on an estimate and Delayed Start will do the rest. Delayed Start will delay the boiler firing time on warmer days, when it is possible to save energy. But, on colder days, the programmed time may prevent your desired temperature being reached. Delayed Start does accrue a 0.15°C reduction in heating load for calculations under SAP for Building Regulations.

## FAQ Sheet (continued)



### What is Optimum Stop?

Optimum Stop tries to turn the heating off early, when it calculates that you will not feel the effect.

### How does Optimum Stop work?

Optimum Stop calculates how long the house will take to cool down depending on the weather, then turns off the boiler at the earliest possible moment, when it calculates that the temperature will not decay by more than  $\frac{1}{2}^{\circ}\text{C}$ .

If there is a sudden heat loss during this period, then Optimum Stop will be overridden to regain comfort conditions.

### Which products have these energy saving features?

Model	Optimum Start	Delayed Start	Optimum Stop	ErP Class	%
CMT701	✓			Class IV	2%
CMT707	✓			Class IV	2%
CMT721	✓			Class V	3%
CMT727	✓			Class V	3%
CMT901	✓			Class IV	2%
CMT907	✓			Class IV	2%
CMT921	✓			Class V	3%
CMT927	✓			Class V	3%
ST9120*	✓	✓	✓		
ST9420*	✓	✓	✓		

\* Forms part of the Sundial RF<sup>2</sup> wireless enabled packs. See [FAQ What are Sundial RF<sup>2</sup> Packs](#)

### Which option should I choose?

This is really up to the individual.

All three choices have their benefits as they will all save you energy and cut your energy bills.

- Optimum Start will give the most efficient form of heat
- Delayed Start will only ever save money, but may not keep you warm

You need to select which of these you want.

- Optimum Stop can be combined with either.