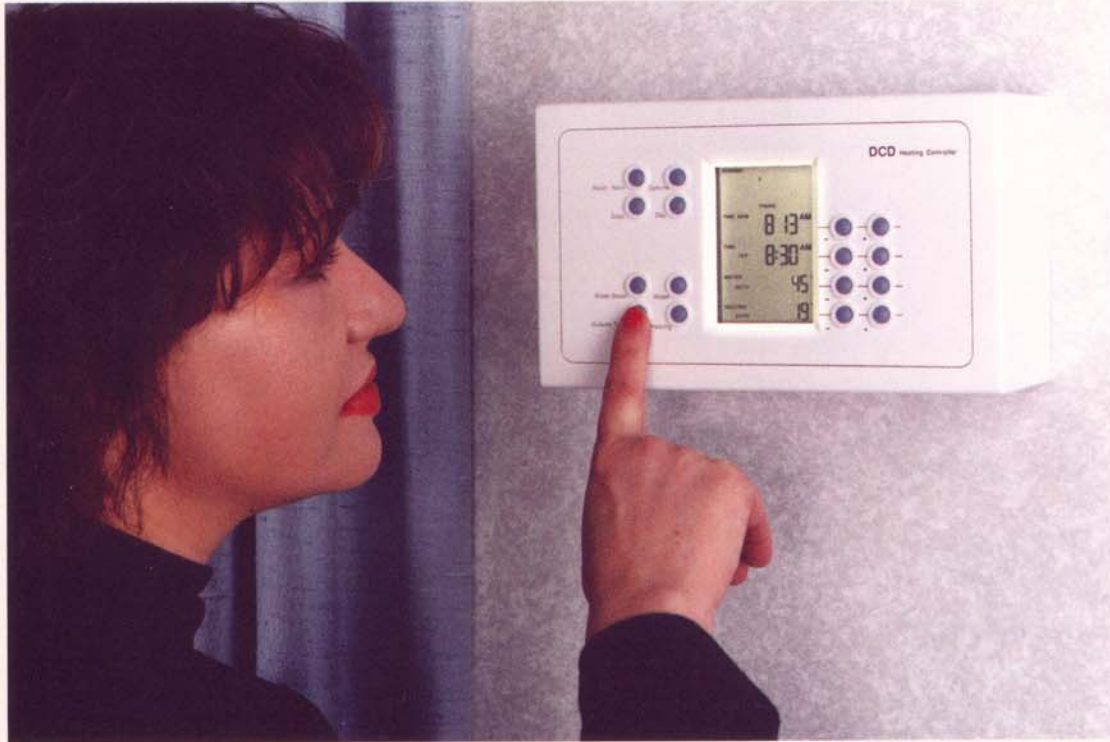


The DCD Heating Controller



**For a more Comfortable Home and
big savings on your Heating bills**

*So Intelligent that it teaches itself how to
manage both your **Heating** and **Hot Water***



IT'S CLEVER STUFF

*The only UK heating controller to receive support from the
European Commission's Thermie (Energy Efficiency) programme*

What it will do for you

- It will give you a more comfortable home.
- It will save you 25% or more on your heating bills.
- It allows you to choose your own temperatures at any time of the day for central heating and for water heating.
- It provides a holiday switch-off feature, which keeps your home at a safe minimum temperature when you are away, and then switches on to warm up again, ready for your return.
- It enables you to easily override any heating programme, so that you can cater for variations in your living pattern, such as holidays at home, family illness, entertaining, etc.
- It lets you display the outside temperature, so that you know how cold a day it is. Your home will always be comfortably warm, whatever the weather.

How will it give you a more comfortable home?

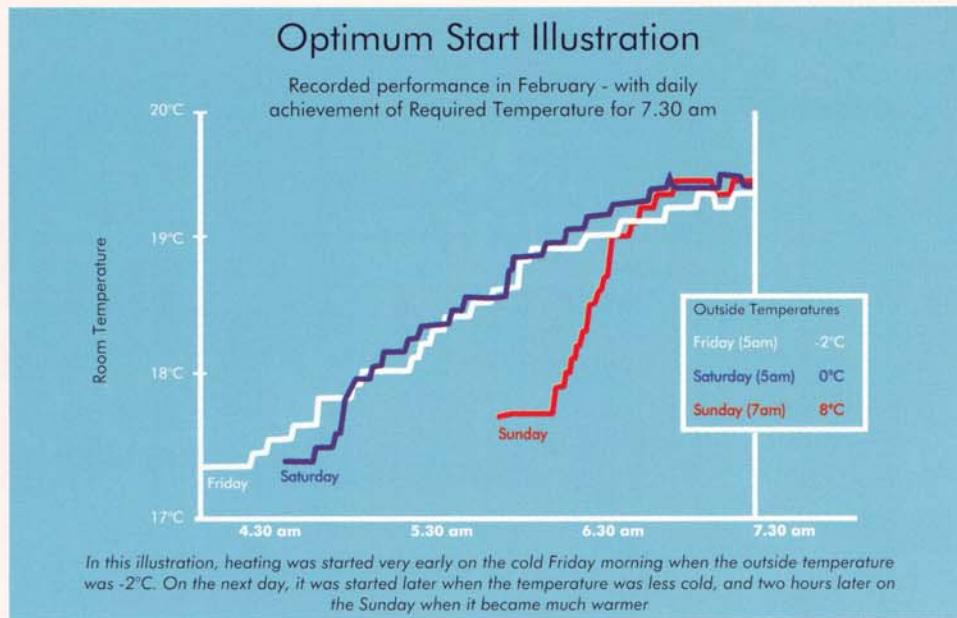
The priority is always to ensure maximum comfort, not to save fuel, and fuel is never saved at the expense of comfort.

- Optimised tight temperature control ensures that your selected room temperature is smoothed and kept within 0.1°C. This is many times more accurate than any thermostat. You get the right temperature all the time, to keep you more comfortably warm.
- Different temperatures can be programmed for different times of day and for different days of the week for both central heating and for water heating, to meet the needs of modern family living.
A night-time background temperature can be set for the benefit of very young children, the elderly, and for sufferers of asthma, bronchitis, angina, etc.
- The controller's weather compensating Optimum Start feature, which operates on all programmes for both central heating and for water heating, ensures that heating is started at the appropriate time to warm up ready for the times that are programmed. This means, for example, that your home is always at the right temperature for when you get out of bed in the morning or for when you get home from work, and that your hot water is at the appropriate temperature for your needs - for showers, for washing or for baths. Whatever the weather conditions, even in Winter when temperatures can vary widely (see illustration opposite), you get the right temperature at the right time.

How will it save 25% or more on fuel bills?

Savings are obtained from temperature optimisation and accurate control, involving the programming of precise requirements and the elimination of heating that is not needed.

- The cost of Optimum Start in cold weather is more than offset by fuel savings in the Spring and Autumn, when heating can start much later than with pre-set time clock controls, and still achieve the temperatures that you want at the time that you need them.
- Programming of the right temperature at the right time, together with tight temperature control avoids raising room and water temperatures beyond what is required. This gives you greater comfort and saves fuel, too.
- The ability to control, optimise and vary the temperature of water heating independently of central heating, throughout the week, saves a considerable amount of fuel by comparison with systems which constantly top up the hot water temperature to the level set on a hot water thermostat.
- Control of boiler firing ensures that your boiler operates efficiently and keeps the return water to the boiler as cool as possible. This is particularly important for condensing boilers which operate at maximum efficiency when the temperature of the return water is low.



How does it use its intelligence?

It examines your programmes and the heat sensors, which provide very accurate temperature information, and it then decides for itself how to meet your requirements.

- It keeps a detailed history of performance, under varying operating conditions, which it uses intelligently to calculate Optimum Start switch-on times. Simultaneous demands for central heating and for water heating are taken into account.

The Optimum Start feature is extremely sophisticated. It will start warming up your home to get it to temperature by the time that you have programmed and, on very cold days, this can be up to four hours early. It separately optimises both central heating and hot water heating for all programmes for all days of the week. It does not simply apply yesterday's experience to today, but gives consistently high performance even when the weather changes sharply by several degrees from one day to the next - see illustration above.

- It constantly monitors performance and adjusts the temperature of water in the radiators to keep the room temperature even.

If there is a sudden drop in room temperature, the controller reacts immediately to ensure that the full power of the boiler is used to maintain maximum comfort.

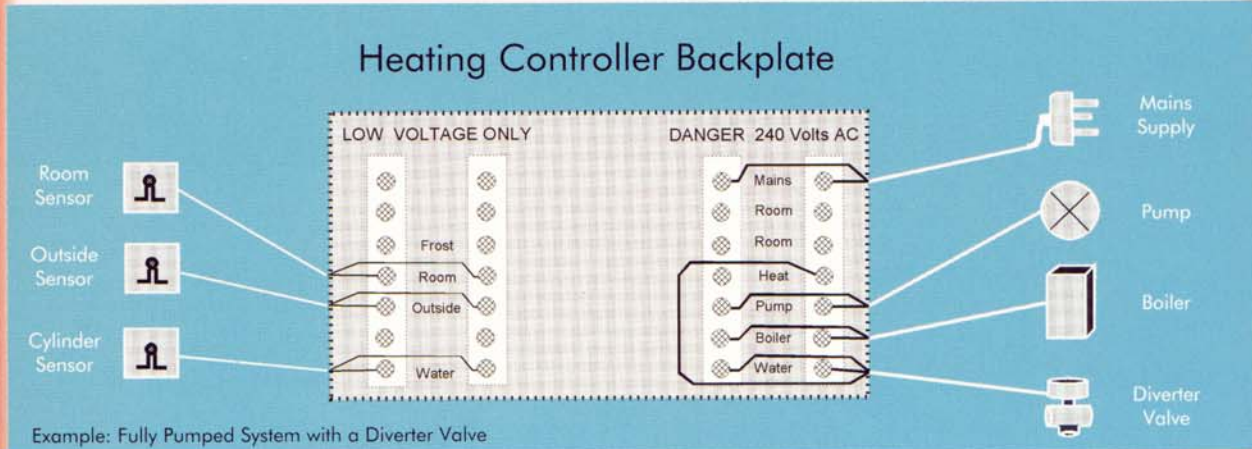
How easy is it to install and use?

- The controller is supplied with room, water and outside sensors, and is very easily installed with point to point connections. No complex wiring or plumbing changes. See back page for details.
- It comes with pre-installed programmes which meet the needs of most people. However, these can easily be modified and other programmes added, if necessary.
- It has a large and easily understood LCD display, with adjacent '+' and '-' buttons for changing times and temperatures. No complicated procedures to learn.

Tests carried out by the Building Research Establishment demonstrated that the DCD controller is a capable unit with the ability to manage domestic heating and hot water services to a high standard and provide substantial energy savings. Features such as optimum start, temperature smoothing, pump overrun and boiler control were highlighted as offering improved system management whatever the desired temperature requirements. Further details of these authoritative tests and the savings that were demonstrated are available as part of the technical information on the Internet or may be obtained from DCD.

Easy and Quick to install - no complex wiring

Bell Wire or Telephone Cable can be used to connect the Sensors



Features

Heating Programmes and Temperature Settings Up to ten programmes can be set for each day of the week, making seventy in all. Each programme has its own start and stop times and temperatures for central heating and for water heating. Optimum Stop can be programmed. Programmes can be set with a 'Boost', which will automatically extend water heating beyond the 'Off' time, if the water has not reached the set temperature when the programme finishes.

Full Optimum Start All programmes are separately optimised for both central heating and water heating and can start up to four hours before the set start time, depending on both the room temperature and the outside temperature. Therefore, a programme can be terminated early, in order to allow a following programme with higher temperature requirements to start warming up. This ensures that you get the right temperature at the right time, yet avoids wasted energy by switching on at the latest possible time to meet the programmed requirements for your home.

Full Optimum Start should not be confused with setback optimum start which is offered by some central heating controls that use factory set delays based on room temperatures without regard to weather conditions.

Smoothing of Central Heating and Pump Overrun Optimum boiler firing to obtain a central heating temperature differential no greater than 0.1°C, with Pump Overrun to assist the even distribution of heat and minimise the heat losses into the boiler flue and the surrounding atmosphere.

Boiler Control and Optimisation Regulates firing of the boiler, while still providing immediate full power whenever needed to achieve the set temperature.

Delayed Water Valve Closure Enables utilisation of residual heat in the boiler.

Pump and Valve Exercise Keeps the pump and valves in good condition and avoids build-up of sediment in summer months.

Minimum Heat Maintenance Maintains a minimum of 12°C when central heating is not in use.

Water Boost Heats water to your selected boost temperature and then turns off.

Overrides for Heating and Water Allows for instant changes to be made to programme 'On' and 'Off' times and temperatures. Other overrides enable constant temperature operation until cancelled, constant temperature operation throughout the day, etc. Reset button to cancel any overrides entered.

Holiday Switch-Off Switch off heating for absences from home. Automatic return to programmed operation at the time you set for your return. Minimum temperature of 12°C maintained while you are away.

Frost Protection The controller can operate frost protection heating in conjunction with a thermostat which, typically, may be located near to a boiler sited in an exposed position (e.g. a garage).

Outside Temperature Outside temperature display.

Memory Protection and Clock Operation Internal self-charging battery that comes into operation whenever the mains supply is interrupted. This will maintain the clock and all settings for more than six months in the absence of mains power.

Installation Easy and inexpensive installation without changes to existing plumbing and pipework. Set time and day of week, then leave to run with pre-installed programmes. All programmes self-optimize and many users do not find it necessary to make any changes. However, it is easy to modify the programmes to meet your own requirements, and to add other programmes, as necessary.

Applications The Controller works with both pumped and gravity systems. It is suitable for use with most types of gas and oil fired boilers, including combination and condensing boilers, and with most types of valves, including diverter valves and mid-position valves. It is also suitable for use with thermostatic radiator valves and for the control of zones, electric underfloor heating, etc. Versions available for swimming pools, commercial premises and other applications.

For sales enquiries and more information contact:

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Technical details and further information also available on Internet: <http://www.dcd.co.uk>

Technical information

Electrical Supply	230/240V ac 50Hz
Temperature Control Ranges (Further ranges for Swimming Pools and other applications)	Heating 10°C to 30°C Water 20°C to 80°C
Heating and Water Control Programmes	10 each day (Mon to Sun)
Output Current (Boiler, Pump, Heating & Water Valves)	2 amp
Dimensions	215mm x 130mm x 85mm
Conformity	Conformity with EMC Directive 89/336/EEC, also with the safety regulations of the Low Voltage Electrical Equipment (Safety) Regulations and the relevant IEE Regulations.

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