Satchwell™


# DC1100 & 1400
## Energy Controllers

### Satchwell DC1100 & DC1400 for energy-efficient temperature control in smaller buildings.

The DC1100 and DC1400 Energy Controllers are self-configuring optimiser/compensators, capable of controlling one or two boilers in sequence with HWS time control. Designed for easy installation and operation in small/medium commercial properties, they are a cost-effective option for achieving significant improvements in energy use.

- **Easy set-up** - these controllers are self-configuring, matching the connected sensors
- **Easy to use** - simple, intuitive user interface
- **Flexible application** - caters for a wide variety of control schemes
- **Energy efficiency** - optimiser function delivers consistent energy savings
- **Trouble-free operation** - proven reliability minimises problems and ensures peace of mind

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# Satchwell DC1100 & 1400


## EASE OF OPERATION

The user interface is designed to make day-to-day operation of the controllers as easy as possible. The large LCD display shows current status at a glance. The front panel control switch provides easy selection options, including an override to allow the heating to be turned on and off without the need to change the settings at the controller. This can also be achieved by means of a remote switch unit.

## ENHANCED BOILER PERFORMANCE

Boiler control in sequence with optional automatic weekly rotation provides stable control conditions, eliminating short cycling during light load conditions and enhancing boiler performance and life.

## SELF-CONFIGURATION

The DC1100 and DC1400 are self-configuring. The controller recognises the application by the sensors that are connected to it, and configures itself accordingly. The use of sensible default settings, and self-adaptive optimiser and compensator routines, means that the system can be set to work quickly after the required temperatures and times have been entered. The controller will automatically fine tune, matching the building's requirements.

To further reduce installation costs, a single outside sensor can pass information to other DC1100/1400's on the same site.

## PRODUCT SELECTION

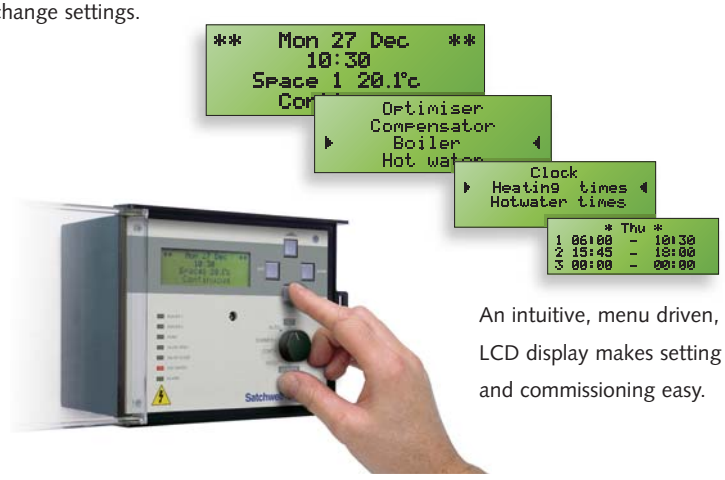
Matching sensors, valves and actuators are listed on the back cover of this brochure. The DC1100 uses A700 series sensors. The DC1400 uses standard Satchwell sensors, making it ideal for upgrading existing CMC and CSMC installations.

## FEATURES


Bright LEDs indicate which functions are on, clearly showing the controller's output status. An alarm is included to display a number of operating faults.


The control switch selects a choice of settings: normal automatic control of heating and hot water; summer operation of hot water only; constant heating; frost protection only; a set position to change times and temperatures. A service mode allows for plant maintenance without alteration of controller settings.


The large four-line display normally shows the time, date, a selected temperature and the current operating status. It is also used to view alarms and change settings.



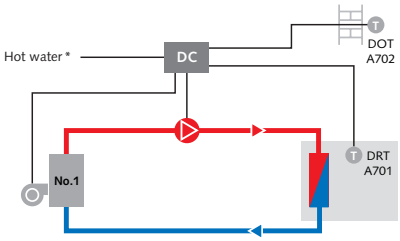

An intuitive, menu driven, LCD display makes setting and commissioning easy.

## APPLICATIONS

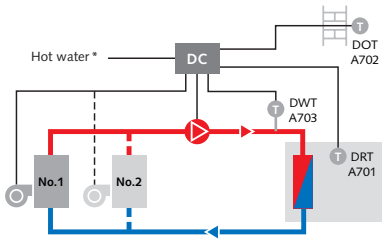
The DC1100 and DC1400 provide total heating control, controlling both the heat source and the heat emitters, whether conventional radiators, under-floor coils, fan convectors or other devices.

Many different applications are possible.

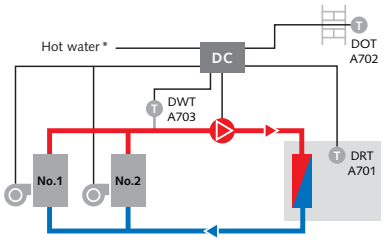
### Optimisation only



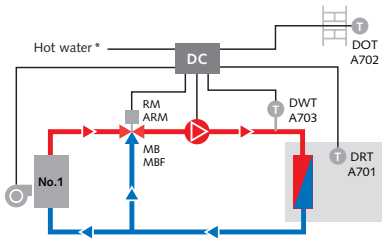

### Optimisation with Boiler Compensation – one or two boiler control



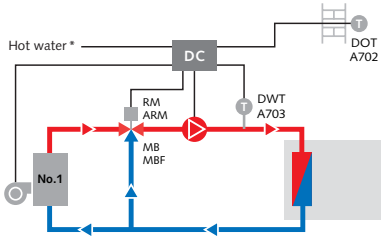

### Optimisation and Boiler Sequence Control



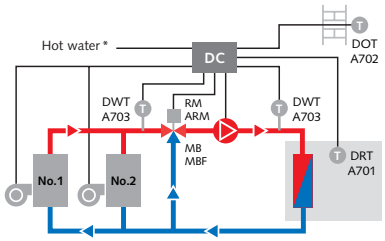

### Optimisation with Valve Compensation



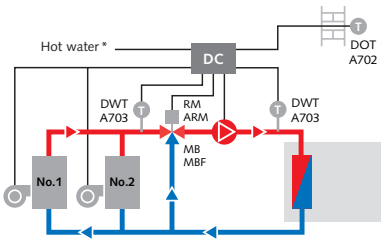

### Valve Compensation only – fixed time start



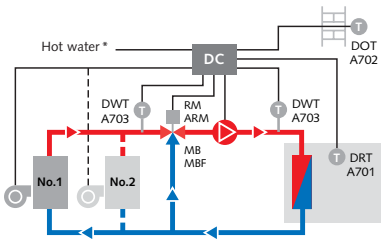

### Optimisation with Valve Compensation and boiler sequence control



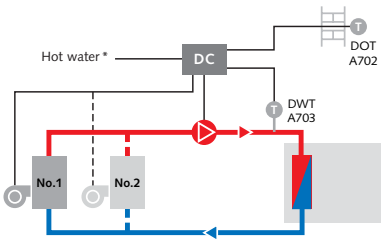

### Valve Compensation only – fixed time start – boiler sequence control



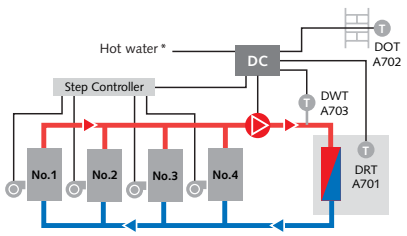

### Optimisation and Valve/boiler Compensation – one or two boiler control




### Boiler Compensation – fixed time start – one or two boiler control



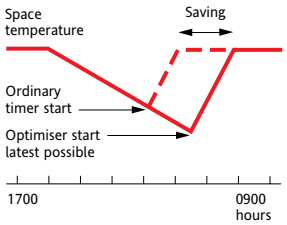

### Optimisation with Boiler Compensation and sequence control




* See data sheet DS 2.042 (DC1100), DS 2.044 (DC1400) for further information.

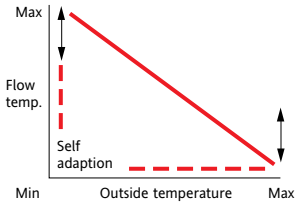
## FUNCTIONS

### OPTIMUM START




The controller starts and stops the plant at the earliest or latest possible time to reduce energy consumption.

### WEATHER COMPENSATED CONTROL




The flow temperature is adjusted to the outside to match heat losses from the building, preventing overheating and maintaining comfort.

- Self configuring controller
- Self adaptive optimum start
- Self adaptive optimum stop
- Day economy switch off
- Boiler sequence control
- Weekly boiler rotation
- Valve compensation
- Boiler compensation
- Valve/boiler compensation
- Self-adaptive compensator option
- Adjustable space temperature reset on compensator
- Night set back (space or flow temperature)
- Variable pump overrun
- Hot water time channel
- Multi-stage frost protection
- Valve/pump summer exercise
- Holiday scheduling
- BST/GMT auto clock change
- Summer/winter operation
- Front panel selector AUTO / SUMMER / CONT / FROST / SERVICE
- Remote override facility
- Alarm indicator

## GENERAL INFORMATION

Types: **DC1100** – Energy Controller using 'A' series sensors

**DC1400** – Energy Controller using Satchwell standard sensors

**Electrical/Mechanical**

| | |
|---|---|
| Power supply: | 230Vac, 15VA (50/60Hz) |
| Relay ratings: | SPNO 230Vac, 3A resistive, 1A inductive |
| Operating conditions: | 0 to 50°C, 5 to 95% rh non-condensing |

**Construction**

| | |
|---|---|
| Case: | Moulded polycarbonate plastic case, Fire resistant to UL94-V-0 |
| Dimensions: | Controller – 191 x 144 x 106mm |
| Protection class: | IP40 |
| Complies with EC directives: | EMC, LVD |
| Mounting: | Panel or surface mount |

## EASY INSTALLATION

The separate wiring base unit allows easy wall or panel mounting and access to the terminals. A single screw secures the controller to the base.

Gold plated pins ensure good contact between controller and wiring base.

## ASSOCIATED PRODUCTS

| Sensors | DC1100 | DC1400 |
|---|---|---|
| Room sensor | A701 *(DS 1.005)* | DRT3453 *(DS 1.001)* |
| Outside air sensor | A702 *(DS 1.955)* | DOT2301, DOT0001/2 *(DS 1.402)* |
| Water sensor (immersion) | A703 *(DS 1.955)* | DWT1701/2, DWT0001 *(DS 1.203)* |
| Water sensor (fast immersion) | – | DWT0002 *(DS 1.204)* |
| Water sensor (strap-on) | A704 *(DS 1.955)* | DST1601, DST0001 *(DS 1.203)* |

'A' series sensors

Satchwell standard sensors

**Actuators and Valves**

| | |
|---|---|
| Linear actuators, 240V | ALM (DS 3.401), AVUM (DS 3.005) |
| Linear actuators, spring return, 240V | ALMS (DS 3.501), |
| Rotary actuators, 240V | ARM (DS 3.215), RM (DS 3.201) |
| Linear valves, 3-port 'globe' | MZ, MJF, MZF (DS 4.610), MZX (DS 4.601) |
| Rotary valves, 3-port | MB, MBF (DS 4.501) |

**Accessories**

**RSU** Remote switch unit *(DS 2.043)* – part no. 04-03-109

**RB1** Interface relay (2 x DPCO, 230V, 6A resistive) *(DS 21.685)* – part no. 03-21-001

Satchwell is a global brand of TAC. The Satchwell DC1100 and DC1400 controllers and associated sensors, actuators and valves benefit from over 80 years' experience in the design and manufacture of control systems for commercial and industrial buildings.

ISO9001 certification and advanced manufacturing systems, based on Six Sigma and just-in-time techniques, ensure Satchwell products are built to the highest standards of quality and reliability. The products are backed by 1st class after sales support and ongoing research and development programmes, assuring customers of the long-term security of their investments.

**DC1100 – DS 2.042**
**DC1400 – DS 2.044**



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