

SANGAMO

POWERSAVER

family



Index

- Introduction Pg 2
- Powersaver - Pg 3 - 5
Single Element
- Powersaver - Pg 6 - 11
Dual Element

POWERSAVER

The Powersaver range provides the time control facility needed to help households lower their electric hot water costs by minimising energy consumption.

Sangamo Powersaver products are a set of simple to use, multi application controllers which offer a wide choice of programming functionality & flexibility. All of the products



are designed to control the timing operations of applications such as water heating to ensure expensive energy is not wasted. Heating and hot water heating account for 43% of a home's energy usage (mapawatt.com) - the Powersaver range can reduce energy and fuel costs for these domestic applications.

The Powersaver range has the ability to switch a resistive load of 16amps and varies from the simple Powersaver Boost switch which has a boost period of 30 minutes, 1 and 2 hours; to the fully programmable 7 day Powersaver 24/7 switch. There is also a new dual immersion controller (PS Dual) and boost timer (PSB Maxi) available.

Due to its functionality the Powersaver is the control of choice for many Local Authorities, private builders and electrical contractors. In fact, many local authorities use the Powersaver to achieve their housing objectives set within the Social Housing Quality Standards and the Code for Sustainable Homes.

The Powersaver range is aesthetically pleasing and with single immersion element applications, the Powersaver product can fit into a single gang pattress box.

POWERSAVER

Application Ideas:

Typical Applications

- ▶ Immersion heater- Single Element
- ▶ Fan heaters
- ▶ Storage heaters
- ▶ Panel heaters
- ▶ Towel Rails



POWERSAVER

BOOST & *Maxi*



Boost timer with 30mins, 1 hour and 2 hour boost periods

- ▶ Ideal for applications that need short term operating times
- ▶ Indicator light shows boost time period
- ▶ Fits directly into a single gang patress box

Boost timer with 1 hour, 3 hour and 5 hour boost periods

- ▶ Specifically designed to be used with appliances that need to be left on over a period of time but that can be easily forgotten to be switched
- ▶ Switches appliance off automatically after boost period
- ▶ Indicator light shows boost period
- ▶ Fits directly into a single gang patress box

Product Range

PSB	<i>Boost</i>	- User-selectable, half, one or two hour boost, 16A, 230V, 50/60Hz
PSB Maxi	<i>Maxi</i>	- User-selectable, one, three or five hour boost, 16A, 230V, 50/60Hz

Technical characteristics

Contact Rating	16A Resistive 240V a.c.
Supply	230V 50/60 Hz a.c.
Fixing	Single Patress - Surface and Flush Mounting
Resolution of Programs	N/A
Power Consumption	10VA Maximum
Live Parts Protection	This unit is totally protected by the enclosure
Dirt and Moisture Protection	IP00
Shock Protection	Class 1 (this unit must be connected to earth)
Case Material	Polycarbonate
Type of Action	Type 1B
Temperature Rating	T35
Operation Temperature	0°C to 35°C
Memory Reserve	none
Display	none
Program Settings	none
Boost Settings	PSB - User selectable - 1/2, 1 or 2 hours PSB Maxi - User selectable - 1, 3 or 5 hours
Control Pollution Category	Normal

POWERSAVER

DAILY WEEKLY & 24/7



Powersaver Daily

- ▶ 24 hour electronic timer with up to 3 program operations per day

Powersaver Weekly

- ▶ 5 day / 2day electronic timer with extra program operations for weekend

Powersaver 24/7

- ▶ 7 day electronic timer with up to 3 operations per day

All give the ability to program electrical appliances in order to improve their energy efficiency as well as enhancing their functionality to increase the comfort of the end user

Product Range

PSD	<i>Daily</i>	- 24 hour, three programmes daily, half, one or two hour boost, memory reserve, 16A, 230V, 50/60Hz
PSW	<i>Weekly</i>	- Five day / Two day programmer, three programmes week days, additional three programmes Saturday/Sunday, half, one or two hour boost, memory reserve, 16A, 230V, 50/60Hz
PS24/7	<i>24/7</i>	- 7 day, three programmes daily, half, one or two hour boost, memory reserve, 16A, 230V, 50/60Hz

Technical characteristics

Contact Rating	16A Resistive 240V a.c.
Supply	230V 50/60 Hz a.c.
Fixing	Single Patress - Surface and Flush Mounting
Resolution of Programs	10 Minutes
Power Consumption	10VA Maximum
Live Parts Protection	This unit is totally protected by the enclosure
Dirt and Moisture Protection	IP00
Shock Protection	Class 1 (this unit must be connected to earth)
Case Material	Polycarbonate
Type of Action	Type 1B
Temperature Rating	T35
Operation Temperature	0°C to 35°C
Memory Reserve	4 Hours - when on power for previous 12 hours
Display	LCD
Program Settings	PSD - 3 Programmes repeating PSW - 3 Programmes weekdays & 3 Programmes Saturday/Sunday PS24/7 - 3 Independent programmes per day.
Boost Settings	User selectable - 1/2, 1 or 2 hours
Control Pollution Category	Normal

POWERSAVER DUAL

Application Ideas:



Typical Applications

- ▣ Immersion heater - Single or Dual Element

POWERSAVER DUAL

The Powersaver Dual can be used with low-rate electricity tariffs. The PS Dual has a set of pre-set programs to choose from- covering all of the low rate electricity tariffs, including Economy 7, Economy 10 & Eco 20:20 times: electromechanical programming selection with digital functionality. The PS Dual helps to lower energy costs and ensures installation is fast and painless.

The pre-set program times cannot be changed which is good news for the installer as there will be no unnecessary maintenance call outs.

For the convenience of the end user, there is a programmable boost function for your heating & hot water, up to a maximum of 2 hours. This is to make sure expensive, on-peak electricity is not wasted.

The PS Dual is designed as a direct upgrade of Sangamo Quartz 7 and Horstmann E7Q.

View the PS Dual demonstration video at www.sangamo.co.uk

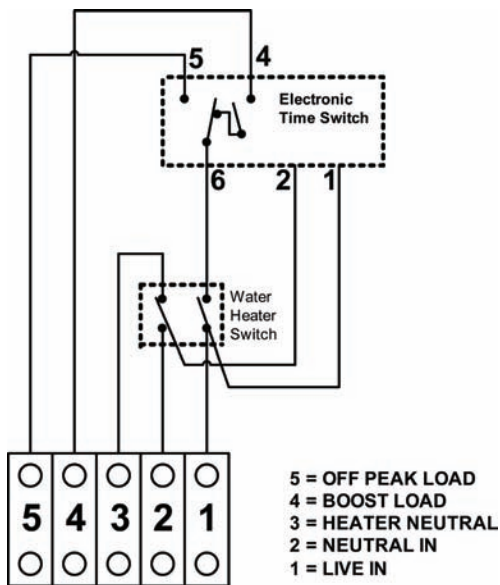
POWERSAVER DUAL



Dual immersion controller with pre-set programs for Economy 7, Economy 10 and Eco 20:20 tariffs.

- ▶ Tamper proof program settings - factory pre-set
- ▶ Automatic GMT/BST changeover
- ▶ Rotary switch for pre-set program choice
- ▶ Direct upgrade to Horstmann E7Q and Sangamo Q7 controllers

Wiring Diagram



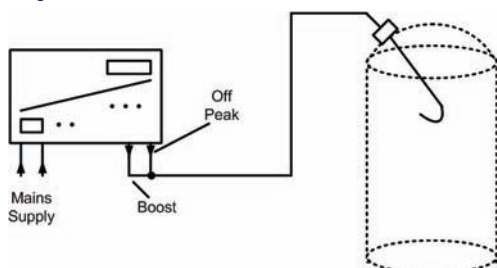
Link terminals 4 & 5 when using a single immersion heater

Product Range

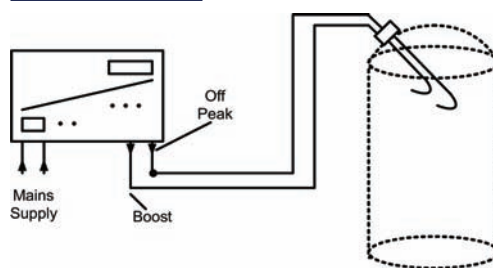
PS DUAL	Dual Immersion, 24 hr, half, one or two hour boost, 2hr max programmable boost, pre-set programs for low rate tariffs.
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	Technical characteristics
Rating	13A, 230V, 50Hz, suitable for immersion heaters up to 3Kw
Live Parts	Enclosed
Power consumption	1.2W
Dirt Protection	IP30
Shock Protection	Class 1
Contacts	Micro-Disconnection
Temperature	0 to + 35 °C
Battery Reserve	Approx 2 years, Non Rechargeable Lithium
Clock Accuracy	+/- 5mins per year @ 23 °C
Dimensions	H x W x D (mm) 114x169x60
Program Cycle	24hour
Summer/Winter Time change	Automatic
Off Peak Program	Installer Selectable - Up to 10 presets available covering low rate electricity tariffs
Boost Facility	User selectable - 1/2, 1 or 2 hours
Boost Program	User selectable - Up to 2 hours

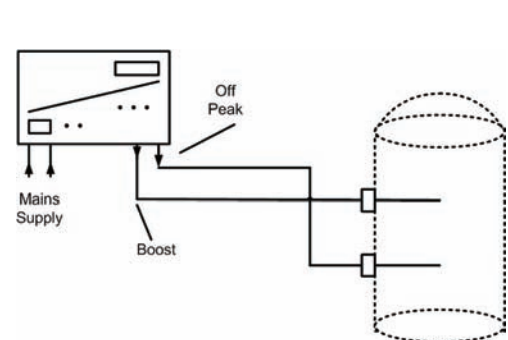
Single Immersion Heater



Dual Immersion Heater



Two Immersion Heater



POWERSAVER DUAL FLEXI

The PS Dual Flexi is an immersion controller that can be used with low-rate electricity tariffs. The PS Dual Flexi has a set of pre-set programs to choose from covering all of the low rate electricity tariffs, including Economy 7, Economy 10 & Eco 20:20 times.

The PS Dual Flexi allows pre-set program operating times to be minimised or cancelled, which means settings can be tailored to suit different installation requirements. Yet vitally, the PS Dual Flexi still ensures that all programs only operate within off peak tariff hours.

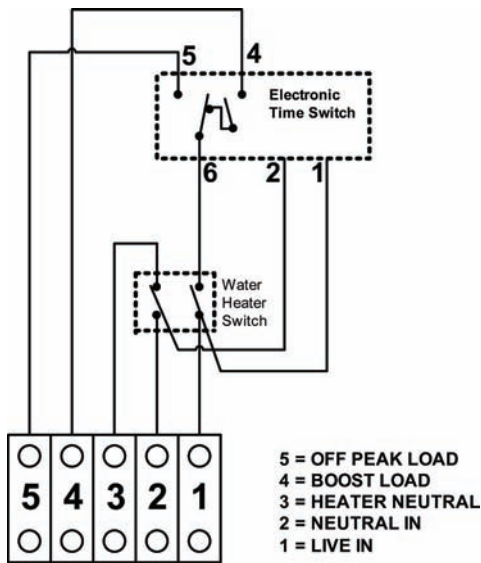
The benefits of this are that expensive electricity is not being used or wasted unnecessarily, and that the user can have flexibility in their hot water control. For further convenience there is a boost button and a boost program function, each a maximum 2 hours, to make sure on-peak electricity usage is limited. This will further reduce energy consumption and electricity bills.

The PS Dual Flexi has been designed to make installation fast and painless. The PS Dual is a direct upgrade of Sangamo Quartz 7 and Horstmann E7Q - no rewiring is required. To set programs and operating times, the installer simply refers to the tariff table and turns the rotary switch to the program of choice.

POWERSAVER DUAL FLEXI



Wiring Diagram



Link terminals 4 & 5 when using a single immersion heater

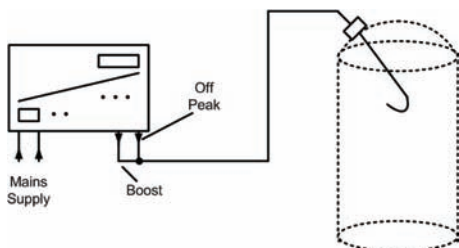
Dual immersion controller with flexible pre-set program times for Economy 7, Economy 10 and Eco 20:20 tariffs.

- ▶ Flexibility in pre-set operating times but ensures programs only operate within off-peak tariff hours
- ▶ Ability to minimise or cancel operating times
- ▶ Automatic GMT/BST changeover
- ▶ Rotary switch for pre-set program choice
- ▶ Direct upgrade to Horstmann E7Q and Sangamo Q7 controllers

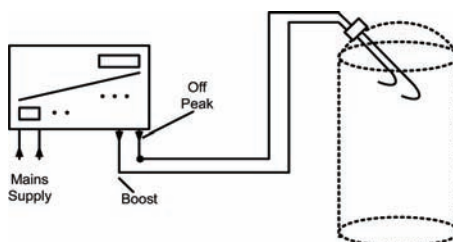
PS Dual Flexi: Dual immersion, 24 hr, half, one or two hour boost, 2hr max programmable boost, pre-set programs with flexible operating times for low rate tariffs.

Product Range	
PS DUAL Flexi	Dual Immersion, 24 hr, half, one or two hour boost,
Technical characteristics	
Rating	13A, 230V, 50Hz, suitable for immersion heaters up to 3Kw
Live Parts	Enclosed
Power consumption	1.2W
Dirt Protection	IP30
Shock Protection	Class 1
Contacts	Micro-Disconnection
Temperature	0 to + 35 °C
Battery Reserve	Approx 2 years, Non Rechargeable Lithium
Clock Accuracy	+/- 5mins per year @ 23 °C
Dimensions	H x W x D (mm) 114x169x60
Program Cycle	24hour
Summer/Winter Time change	Automatic
Off Peak Program	Installer Selectable - Up to 10 presets available covering low rate electricity tariffs
Boost Facility	User selectable - 1/2, 1 or 2 hours

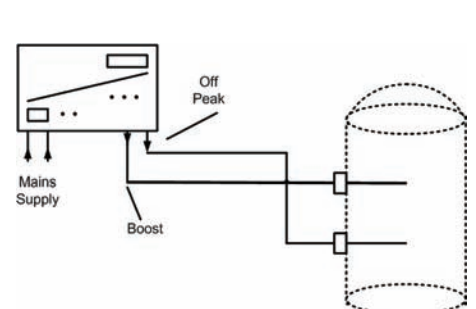
Single Immersion Heater



Dual Immersion Heater



Two Immersion Heater



Economy 10 Tariff- explained.

We are constantly reminded of the need to reduce energy consumption, and the message seems to be getting across as we see a growing demand from consumers for more ways to save in this area.

With rising fuel costs and consumers feeling the effects of the recent recession, cutting energy consumption is one of today's top priorities. The ordinary consumer may well be more concerned with their electricity bill than with cutting CO² emissions, but by adopting the Economy 10 tariff, they will be helping with both.

The Economy 10 tariff has been around for six years now, and is provided by many UK suppliers. It is designed for use with electrical boilers which drive radiators to air/ground heat pumps, as well as high thermal mass heating such as storage heaters, underfloor heating and water heating.



The tariff gives households 10 hours of discounted off-peak electricity spread throughout the day. Users of the tariff have the benefit of seven hours of discounted electricity in the evening and overnight, with an extra three hours in the afternoon. Matching the storage periods to the times when heat is required, means less heat needs to be stored during the day, when there may be little or no demand. This reduces energy consumption and subsequently energy costs.

The afternoon and evening periods provide a top up to heating systems at off peak prices. If a consumer is on Economy 7 and they find they are running out of hot water, or if their storage heaters are cooling off by the evening, then Economy 10 could well be a viable solution.

In addition to the energy used by heating and hot water, the electricity used at the off peak times by domestic appliances is also charged at the lower rate.

Times allotted to Economy 10 vary across suppliers, and are switched automatically. It's common for the switching times to be locked to either GMT or BST when the meter is installed. Some metering systems use a radio teleswitch controlled by the supplier to vary switching times, so Economy 10 requires a special multi-tariff meter, which enables them to measure the consumption of electricity between the set Economy 10 hours as specified by the supplier. Very often a time switch is used to set boilers, night storage heaters, and other appliances to automatically switch on during the cheaper period, allowing them to heat as much water as possible with low cost electricity.

The UK Government has set a target of cutting CO² emissions by 34% of 1990 levels by the year 2020 and many measures are being introduced to help achieve this, including the phasing out of inefficient light bulbs and encouraging consumers to reduce "stand-by" losses on appliances. Using the Economy 10 tariff can also help by controlling energy use and energy costs.



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