

SALUS

Programmable Heating Controller



**Instruction Manual
Model No EP101**



CE



PRODUCT COMPLIANCE

This product complies with the essential requirements of the following EC Directives:

- Electro-Magnetic Compatibility directive 2004/108/EC
- Low Voltage Directive 2006/95/EEC
- EC Marking directive 93/68/EEC

SAFETY INFORMATION

These instructions are applicable to the Salus Controls model stated on the front cover of this manual only, and must not be used with any other make or model.

These instructions are intended to apply in the United Kingdom only, and should be followed along with any other statutory obligations.

This accessory must be fitted by a Competent person, and installation must comply with the guidance provided in the current editions of BS7671 (IEE Wiring Regulations) and Part 'P' of the Building Regulations. Failure to comply with the requirements of these publications could lead to prosecution.

Always isolate the AC Mains supply before opening or removing the unit from the wall or wall box.

When fitting batteries don't mix old and new batteries together. Do not use rechargeable batteries.

Please leave these instructions with the end user where they should be kept in a safe place for future reference.

INTRODUCTION

A programmable heating controller is used to switch the heating system in your home on and off as needed. It works by controlling the heating boiler according to a series of programmed settings that take effect at different times of the day.

The EP101 from Salus Controls is a stylish and accurate 5/2 or 7 day programmable heating controller with a large, easy to read Liquid Crystal Display (LCD). This controller has been specifically designed to be used for single channel Volt Free or 230V AC heating applications.



A simple jumper switch changes the EP101 between 5/2 or 7 day programming.

Features

- Timed control of central heating
- Large LCD with blue backlight
- Stylish Casing
- Volt Free Contacts
- Built-in start up programme
- 12 or 24 hour clock display
- Advance 1 hour facility
- Holiday Function
- 5/2 or 7 day programming
- Three On / Off periods
- Memory backup

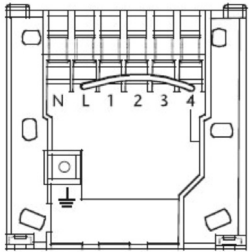

INSTALLATION

Please read the important safety information at the start of this manual before you begin to install the device.

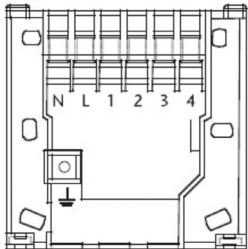

The ideal position to locate the EP101 programmable heating controller is about 1.5m above floor level. It should be mounted in a location where the controller is easily accessible, reasonably lit and free from extremes of temperature.

The electrical connections to the EP101 are made to the supplied industry standard backplate. This simplifies installation, as no connections are made to the controller itself. Connection details are shown below - no Earth connection is required for the correct and safe operation of the EP101, but a parking terminal is provided to connect an Earth wire if one is present.

230V AC Switching

Terminal	Description	Backplate
N	Mains Neutral	
L	Mains Live	
1	Hot Water Off	
2	No Connection	
3	Switched Live (output)	
4	230V link from Mains Live (do not remove)	
	Earth Parking (no electrical connection)	

Volt Free Switching

Terminal	Description	Backplate
N	Mains Neutral	
L	Mains Live	
1	Normally Closed (NC)	
2	No Connection	
3	Normally Open (NO)	
4	Volt Free Common	
	Earth Parking (no electrical connection)	

After installing the backplate in a suitable location, wiring connections can be made as shown above. The following criteria apply to the installation:

- The incoming AC mains supply should be 230V AC and fused at 6 amps.
- Optimum cable size for installation is 1.5 mm²; wiring colours should be in accordance with the current requirements of the IEE Wiring Regulations.
- Cable entry should be from the rear of the backplate.
- All wiring connections should be securely made, and be firmly gripped beneath the terminal square brass washer.

Do not restore the mains supply to the system until all associated items are fully installed.

NOTE: All electrical installation work should be carried out by a suitably qualified Electrician or other competent person.

If you are not sure how to install this programmable thermostat consult either with a qualified electrician, heating engineer or your boiler / heating system supplier for advice on how to continue.

Do not remove or refit the EP101 onto the backplate without the mains supply to the system being isolated.

JUMPER SETTINGS

Changes to the jumper settings should only be made by the Engineer carrying out the installation or other qualified person.

The installer should select the jumper positions required if changes need to be made to the factory default settings. These jumpers are found on the rear of the controller.

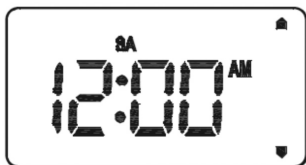
Jumper	Function	Default
Program Type	Movable jumper for 5-2 or 7 individual days programming.	5-2 programming
Internal Backup Battery	Movable jumper for enabling or disabling the internal backup battery.	Internal backup battery disabled

The installer should enable the internal backup battery before fitting the controller to ensure user settings are retained – the battery will be kept charged from the controller mains supply.

AFTER INSTALLATION

After completing installation and powering up the EP101 for the first time the controller will behave in the following way:

All the indicators on the display and the backlight will be turned on for two seconds. After two seconds, the EP101 will then operate in **Normal** mode (controller output OFF).



All the controller settings will be returned to default values. If the Reset Button is pressed, the EP101 will behave in the same way as described above, except that any previously saved user settings will be deleted and overwritten with the default settings.









USER INTERFACE AND CONTROLS

The status and operation of the EP101 can be clearly seen on the large backlit Liquid Crystal Display (LCD) - this display allows the user to see at a glance the current status of the heating system.



There are few user controls for the EP101, making the controller very easy to operate. These controls are shown below, along with a description of each of their functions.

User Control Function Summary

Key / Operation	Symbol	Functions
+1Hr		Temporary override
UP key		Increases the selected setting
DOWN key		Decreases the selected setting
BACKLIGHT / HOLIDAY key		Manually turns on the LCD backlight for 5 seconds, or activates / deactivates Holiday Override
MODE key		Selects operating mode
SELECT key		Selects a clock or programme setting
SET key		Sets a clock or programme setting
RESET button		Resets the controller to default (original factory) settings

OPERATION

The EP101 is configured and adjusted by the use of an intuitive user interface with a minimal number of user controls.

The backlit LCD gives a highly visible, easily readable indication of the controller status.



Setting the Time

Press and hold SET and SELECT when the EP101 is in Normal mode for three seconds to enter the Clock setting mode. Releasing both keys will display "12 hr" or "24 hr" and SET, as shown below:



Release the SET and SELECT keys and press UP or DOWN to toggle between 12 and 24 hour time format.

Pressing and releasing SELECT will then display the time and a SET indicator, with all other indicators cleared from the display. The hour part of the time will be flashing to indicate that it is the currently selected item and is ready to be adjusted.



Press the UP or DOWN keys to increase or decrease the hour setting – the selected item will stop flashing while a key is pressed, and will resume flashing when you release the key.

Press the SELECT key to select the 'minutes' section of the time. Set the minutes in the same way as the hour by using the UP and DOWN keys.

Pressing and releasing SELECT again will then display the year as displayed



Press the UP or DOWN keys to increase or decrease the year – valid settings are between 05 and 99 (indicating a year range of 2005 to 2099).



Press the SELECT key to select the month section of the date – this is adjusted in the same way by using the UP and DOWN keys – valid settings are between 01 and 12

Press the UP or DOWN keys to then increase or decrease the day setting.



Pressing and releasing SELECT again will then take you to the final part of the time and date setting process: enabling daylight saving.



Press the UP or DOWN keys to enable or disable the daylight saving setting

Pressing the SET key will confirm and save the settings, before returning the EP101 to Normal mode. Not pressing any keys for more than 15 seconds will also update the clock settings and return the controller to Normal mode.

PROGRAMMING THE EP101

The EP101 offers great versatility with its programming options, allowing the user to programme the unit to operate on a 5/2 or 7 day control cycle. The controller has a default set of programmes that have been designed to meet the needs of most users. If these default programmes are not suitable for your particular situation, reprogramming the EP101 with your own settings is a very straightforward operation.

Selection of the default programming mode (5/2 or 7 day) is made by changing the jumper setting on the rear of the controller, as previously described within the Installation section of this manual.

5/2 Day Mode

5/2 day mode is the default programming mode for the EP101. With this mode selected three different sets of on/off times can be set for Weekdays or Weekends.

To review or change a programme, press the SET key when the EP101 is in **Normal** mode. This will change the unit status to Programme Setting mode.

The display will show programme number 1 and SET PROG, with all other indicators cleared. The weekdays will be flashing to indicate they are the selected item and are ready to be adjusted:

Press the UP or DOWN key to select the programme set for either Weekday or Weekend to be reviewed or adjusted. Pressing the SET key at any time when in programming mode will return the EP101 into Normal mode.



Press the SELECT key to confirm the Weekday or Weekend selection. Once this is set, the 'Hour' will flash to indicate that it is the selected item and is the next item to be adjusted:



Press the UP or DOWN key to adjust the hour setting to the desired value, and confirm your selection by pressing the SELECT key.

Pressing the SELECT key allows you to step through each of the items to be reviewed or adjusted within the programmes in the following sequence:

Programme	Status	Function Sequence	
1	ON	Hour	Minutes
1	OFF	Hour	Minutes
2	ON	Hour	Minutes
2	OFF	Hour	Minutes
3	ON	Hour	Minutes
3	ON	Hour	Minutes

...before then allowing you to cycle back to Programme 1. Pressing the SET key at any time will confirm the setting and return to the programme set selection.

7 Day Mode

The EP101 also offers a 7 day programming mode, which allows you to programme three different sets of on/off times for each day of the week to give a total of 21 separate programme settings.

To review or change a programme, press the SET key when the EP101 is in **Normal** mode. This will change the unit status to Programme Setting mode.

The controller will display programme number 1 and SET PROG, with all other indicators cleared. The weekday will be flashing to indicate the selected item is ready to be adjusted.



Press the UP or DOWN key to change the display to indicate the single day you want to programme:



Pressing the SET key at any time when in programming mode will return the EP101 into Normal mode. Press the SELECT key to confirm the Day selection. Once this is set, the 'Hour' will flash to indicate that it is the selected item and is the next item to be adjusted:

Press the UP or DOWN key to adjust the hour setting to the desired value, and confirm your selection by pressing the SELECT key.

Pressing the SELECT key allows you to step through each of the items to be reviewed or adjusted within the programmes in the following sequence:

Programme	Status	Function Sequence	
1	ON	Hour	Minutes
1	OFF	Hour	Minutes
2	ON	Hour	Minutes
2	OFF	Hour	Minutes
3	ON	Hour	Minutes
3	ON	Hour	Minutes

...before then allowing you to cycle back to programme 1. Pressing the SET key at any time will confirm the setting and return to the programme set selection. Each programme for all the other days of the week is set in exactly the same way – just repeat the steps shown above, after entering programming mode and selecting the day you want to programme.

Regardless of which programming mode the EP101 is set for (5/2 or 7 day), not pressing any keys for 15 seconds will automatically save any programming changes and exit to **Normal** mode. Programmes can be reviewed or changed even if temporary override mode is enabled.

Please be aware that each of the programme time settings must be in sequence: for example, the OFF time cannot be earlier than the ON time, programme 3 cannot be set with a time earlier than Programme 2. If this situation occurs, then the EP101 may operate in an unpredictable way.

OPERATING MODE SELECTION

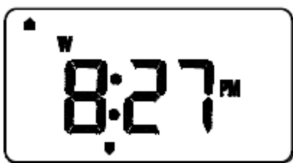
The EP101 operating mode is selected by pressing the MODE key. There are four operating modes for the controller:

ON, ONCE, AUTO and OFF

The mode can be changed when the controller is in NORMAL mode by pressing the MODE key. Each key press will cycle the operation mode as follows:

ON ➔ ONCE ➔ AUTO ➔ OFF ➔ ON

The mode indicator changes to indicate the selected operating mode:



The operating mode functions are:

Mode	Possible selections	Function
ON	ON	Continuously on
ONCE	ON, ONCE	On for one period per day (from Programme 1 ON to Programme 3 OFF)
AUTO	ON, ONCE, AUTO	Automatic programme control
OFF	ON, ONCE, AUTO, OFF	Continuously off

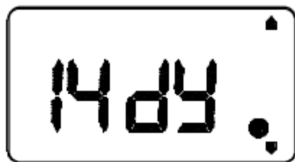
Holiday Override Mode

The holiday override mode allows the user to override all the current programme settings and turn off the heating for up to 31 days. When the EP101 is in **Normal** mode, pressing the BACKLIGHT/HOLIDAY key for 3 seconds or longer allows you to turn on the holiday override mode. The controller display will have the day numeral flashing to indicate that it is ready to be adjusted, as shown in the image below:



Use the UP and DOWN keys to increase or decrease the number of days to turn the system off. The maximum number of allowable override days is 31 – increasing past this number will roll back the display to 0 and disable the holiday override mode.

Pressing the SET key, or not pressing any keys for more than three seconds will activate the holiday override mode and the heating will immediately be turned off. The EP101 display will change to show the number of days the system will be turned off for – the number of days displayed will decrease at midnight each day.



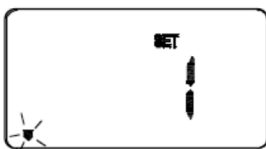
Cancelling Holiday Override Mode

Pressing the BACKLIGHT/HOLIDAY key for more than three seconds will turn off the holiday override mode and return the EP101 to Normal mode.

Temporary Override Mode

The temporary override mode allows the user to override the current programme settings and turn the heating on for a preset period. This mode is activated by pressing the +1Hr key.

After pressing the +1Hr key, the controller display will change have the day numeral flashing to indicate that it is ready to be adjusted, as shown in the image below:

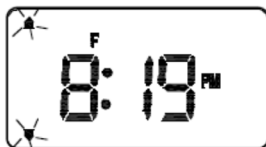


Each press of the +1Hr key will increase the duration of the override by one hour, to a maximum duration of nine hours. Increasing the setting beyond this level will roll the setting back to 0 and disable the temporary override.

Pressing the SET key, or not pressing any keys for more than three seconds will activate the temporary override mode and the heating will immediately be turned on. After 10 seconds, the EP101 display will change to a countdown display showing the amount of time the system will be turned on for. The MODE indicator will flash in the ON position for the duration of the temporary override.



The EP101 will go back to Normal mode at the end of the manual override period.



Cancelling Temporary Override Mode

To turn off the temporary override, press the +1Hr key until the display indicates 0. Pressing the SET key, or not pressing any keys for more than three seconds will then disable the temporary override mode.

OTHER FUNCTIONS AND CONTROLS

Backlight

The backlight of the EP101 is switched on automatically whenever any of the keys are pressed. The backlight will remain illuminated for approximately 5 seconds after the last key press, except if you are changing settings within the Clock, Programme or Temporary Override modes – in this case the backlight will remain illuminated throughout the setting change process.

The backlight will not illuminate if there is no mains supply to the controller.

Daylight Saving

When enabled, the clock will automatically change from Greenwich Mean Time (GMT) to British Summer Time (BST) on the last Sunday in March at 2:00am. The clock will automatically change back to GMT on the last Sunday in October at 2:00am.

Reset Button

The Reset Button is provided as a way to restore the heating controller to its default factory settings. **Pressing this button will delete any previously entered settings.**

MAINTENANCE

The EP101 programmable heating controller requires no special maintenance. Periodically, the outer casing can be wiped clean using a dry cloth (please **DO NOT** use solvents, polishes, detergents or abrasive cleaners, as these can damage the thermostat).

There are no user serviceable parts within the unit; any servicing or repairs should only be carried out by Salus Controls or their appointed agents.

Should the EP101 programmable heating controller fail to function correctly, check:

- Mains supply to the EP101 is switched on.
- Heating system is switched on.
- If the EP101 is still not functioning correctly, press the Reset Button.

WARRANTY

Salus Controls warrants that this product will be free from any defect in materials or workmanship, and shall perform in accordance with its specification, for a period of two years from the date of purchase. Salus Controls sole liability for breach of this warranty will be (at its option) to repair or replace the defective product.

PRODUCT SPECIFICATION

Model:	EP101
Type:	Programmable heating controller designed for 230V AC and Volt Free heating applications.

Programming

Programming Modes:	User selectable for 5/2 or 7 day option
Number of Programmes:	Three (3) user programmes plus factory default programme.
Override Facility:	User selectable programme override facility.
Holiday Facility:	User selectable option to temporarily override selected programme.

Default Programmes

Programme	Output	Weekday	Weekend
1	ON	6:00 AM	6:00 AM
	OFF	8:00 AM	8:00 AM
2	ON	10:00 AM	10:00 AM
	OFF	12:00 PM	12:00 PM
3	ON	6:00 PM	6:00 PM
	OFF	10:00 PM	10:00 PM

Switching

Switching Voltage:	230V AC / 50Hz
Switching Current:	16A resistive, 5A inductive
Contact Type:	Single Pole Double Throw (SPDT)

Environment

Operating Temperature:	0 °C to + 50 °C
Storage Temperature:	- 20 °C to + 60 °C

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Customer Name:

Customer Address:

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Post Code: **Tel No:**

Email:

Engineers Company:

Tel No:

Email:

Intallation Date:

Engineers Name:

Engineers Signature:





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