SALUS
Dual Channel Controller
Model No SP220

Instruction Manual
PRODUCT COMPLIANCE
This product complies with the essential requirements of the following EC Directives:

- 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 - if you are in any doubt, please contact the Salus Controls technical helpline.

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.

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

A 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 SP220 from Salus Controls is a stylish and accurate twin channel programmable heating controller designed for independent control of central heating and hot water. Fitted with a large, easy to read Liquid Crystal Display (LCD), this controller has been specifically designed to be used for 230V AC heating applications.

The use of the revolutionary Touch Ring technology makes for simple usage, and is coupled with a unique, smart design and the ‘one touch’ operation makes the SP220 easy to operate.

FEATURES

- Touch Ring Technology
- Large LCD with white backlight
- Stylish Casing
- Radio Controlled Clock (RCC)
- Manual Time and date Setting Option
- Advance +1Hr function (maximum 9 hours)
- Holiday Function
- Service Function
- Three On/Off Periods each day
- Built in Start-up Programmes
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 SP220 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 and draughts. Do not mount the controller on an outside wall, above a radiator or in a location where it may be subjected to direct sunlight.

The SP220 should be mounted in a location where it will not come into contact with moisture or condensation, as this can affect the Touch Ring operation.

To ensure trouble free reception for both the Radio Controlled Clock (RCC) and the Radio Frequency (RF) signal, always ensure that the programmable thermostat is mounted away from any possible sources of interference (such as radios, TV sets, computers, etc.), and is not mounted on or in close proximity to large metal objects. Installing the SP220 in enclosed areas such as cellars and basements is not recommended.

The electrical connections to the SP220 are made to the terminal strip within the controller itself. Connection details are shown below - no Earth connection is required for the correct and safe operation of the SP220.

230V AC Connections

<table>
<thead>
<tr>
<th>Terminal</th>
<th>Description</th>
<th>Terminals</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Central Heating On</td>
<td><img src="image1.png" alt="Diagram" /></td>
</tr>
<tr>
<td>3</td>
<td>Hot Water On</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Central Heating Off</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Hot Water Off</td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>Mains Live</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>Mains Neutral</td>
<td></td>
</tr>
</tbody>
</table>
After installing the controller 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 made at the cable entry point
- All wiring connections should be securely made, and be firmly gripped beneath the terminal clamp.

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 controller 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 SP220 without the mains supply to the system being isolated.**

**AFTER INSTALLATION**

After completing installation and powering up the SP220 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 a few seconds. The internal firmware version will then be displayed for a few seconds, and the SP220 will then operate in **Normal** mode (controller output OFF).

If the Reset Button is pressed, the SP220 will behave in the same way as described above and any previously saved user settings will be deleted and overwritten with the default settings, except when the SP220 is in SERVICE mode.
USER INTERFACE AND CONTROLS

The status and operation of the SP220 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.

The display consists of a combination of symbols and alphanumeric displays. The top row displays status indicators, the centre row is a time and day of the week indicator and the bottom row is an alphanumeric display for menu and status messages.

The status indicator symbols and their meanings are shown in the following table:

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Description</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Clock Display</td>
<td>Displays the day and time</td>
</tr>
<tr>
<td></td>
<td>Alphanumeric Display</td>
<td>Displays menu and other status messages</td>
</tr>
<tr>
<td></td>
<td>Hot Water indicator</td>
<td>Indicates Hot Water system is turned on</td>
</tr>
<tr>
<td></td>
<td>Central Heating indicator</td>
<td>Indicates Central Heating system is turned on</td>
</tr>
<tr>
<td>ON</td>
<td>Mode indicator</td>
<td>Indicates Continuously On</td>
</tr>
<tr>
<td>ONCE</td>
<td>Mode indicator</td>
<td>Indicates output is turned on for one period per day, from PROGRAM 1 ON to PROGRAM 3 OFF</td>
</tr>
<tr>
<td>AUTO</td>
<td>Program Mode indicator</td>
<td>Indicates Auto ON or Auto OFF programme is running</td>
</tr>
<tr>
<td>OFF</td>
<td>Mode indicator</td>
<td>Indicates Continuously Off</td>
</tr>
<tr>
<td>RCC</td>
<td>RCC indicator</td>
<td>Indicates the status of the Radio Controlled Clock</td>
</tr>
<tr>
<td>Holiday</td>
<td>Holiday indicator</td>
<td>Indicates Holiday operation mode is selected</td>
</tr>
<tr>
<td>Touch Lock</td>
<td>Touch Lock indicator</td>
<td>Indicates Touch Lock is activated</td>
</tr>
<tr>
<td>Service</td>
<td>Service indicator</td>
<td>Indicates Service function is active</td>
</tr>
</tbody>
</table>
There are few user controls for the SP220, making the controller very easy to operate. The controls are a Touch Ring (which surrounds the user display), two touch sensitive buttons, a reset button and a slide operated switch mounted on the side of the controller.

These controls are shown below, along with a description of each of their functions.

**USER CONTROL FUNCTION SUMMARY:**

<table>
<thead>
<tr>
<th>Key / Operation</th>
<th>Functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Touch Ring (move <strong>clockwise</strong>)</td>
<td>Increases the selected setting and scrolls down the menu selection</td>
</tr>
<tr>
<td>Touch Ring (move <strong>anti-clockwise</strong>)</td>
<td>Decreases the selected setting and scrolls up the menu selection</td>
</tr>
<tr>
<td>OK Key</td>
<td>Enters Menu or confirms a menu selection</td>
</tr>
<tr>
<td>Arrow (Back) Key</td>
<td>Single press goes back to the previous screen or previous option selected. Press and hold for 2 seconds to return to NORMAL mode</td>
</tr>
<tr>
<td>Reset Button</td>
<td>Resets the controller to default (original factory) settings, except when in SERVICE mode.</td>
</tr>
<tr>
<td>Slide Switch</td>
<td>Activates and deactivates the key lock function (prevents accidental changes)</td>
</tr>
</tbody>
</table>
OPERATION

The SP220 is configured and adjusted by the use of an innovative and stylish Touch Ring, and two touch sensitive buttons. The Touch Ring surrounds the controller display, and is operated very easily by moving your finger around the ring.

ACCESSING THE MENUS

The Arrow key is not active when the SP220 is in NORMAL mode. To access the Menu screens, press the OK key twice and backlight is now ON. The first menu displayed is the BOOST menu. Use the Touch Ring to scroll through the Menus, and press the OK key to select the menu you want to use:

You can scroll through the menus in either direction (forwards or backwards) depending on the direction you move your finger around the Touch Ring. The menus are displayed in the order shown in the picture above.

Pressing the Arrow key will return the SP220 to NORMAL mode. The controller will also return to NORMAL mode after 10 seconds if no Key is pressed or if no movement is detected on the Touch Ring.
BOOST MENU

The BOOST menu allows the use of a temporary override mode which allows the user to override the current programme settings and turn the heating and/or hot water on for a preset period. This mode is activated by selecting the BOOST menu – this mode allows you to override the current programme settings up to a maximum of 9 hours. The options available will differ slightly depending on whether the controller is set for pumped (P) or gravity (G) operation.

Pumped Operation:

<table>
<thead>
<tr>
<th></th>
<th>Central Heating</th>
<th>Hot Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>c0</td>
<td>Heating override OFF</td>
<td>h0</td>
</tr>
<tr>
<td></td>
<td>Hot Water override OFF</td>
<td></td>
</tr>
<tr>
<td>c1 – c9</td>
<td>Heating override active for selected period</td>
<td>h1 – h9</td>
</tr>
<tr>
<td></td>
<td>Hot Water override active for selected period</td>
<td></td>
</tr>
</tbody>
</table>

If the controller is set for Pumped operation, then central heating and hot water override settings can be set independently.

Scroll through the setting by using the Touch Ring. Changing the settings 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. Confirm the heating setting by pressing the OK key, and then change the hot water setting in the same way.
Gravity Operation:

Although the BOOST mode operates in a similar way when the controller is configured for gravity operation, the central heating cannot be operated without the hot water. The override duration for hot water MUST be equal to or longer than the setting for central heating.

When configured for gravity operation, increasing the central heating override setting will automatically increase the hot water setting.

After changing the BOOST settings and confirming with the OK key, the display will change to indicate the controller status.

If central heating has no BOOST setting, but the hot water has, the display will alternate like this:
PROGRAM MENU

The SP220 offers great versatility with its programming options, allowing the user to programme the controller to operate on an individual, 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 SP220 with your own settings is a very straightforward operation.

To start programming the SP220, press the OK key twice when in NORMAL mode, and scroll using the Scroll Ring to select the PROGRAM menu - press the OK key once more to start the programming process.

The initial programming screen will be displayed, allowing you to choose whether to programme the central heating or hot water. Scroll to select CH or HW and confirm with the OK key.

Initially, the Weekdays will be selected and flashing – you can scroll through all the various options for day selection (Weekdays, Weekend, 7 days, or individual days) by using the Touch Ring. As usual, pressing the OK key will select the desired option.
After correct selection of the day option, the SP220 display will change to the next programming screen. These screens allow you to set the required time settings to provide optimum control for your heating system.

The hour setting will be the first setting that needs to be adjusted, and this will easily be seen because the ‘hours’ section of the time will be flashing. Using the Touch Ring, scroll up or down to adjust the hour to the required setting and then press the OK key to confirm. After confirming this setting the ‘minutes’ section of the time will then start to flash. Change this setting using the Touch Ring in the same way that you changed the hour setting, confirming your setting with the OK key.

Following this sequence you will have set up Programme 1 – the SP220 display will then move on to Programme 2. Continue to add your desired settings for each of the programmes through to Programme 3 in the same way as Programme 1 (hour and minutes). Note that the Hour setting is changed in increments of 1 hour, the Minutes setting is changed in increments of 10 minutes.

If you decide to enter settings for individual days rather than Weekdays or Weekends, the SP220 also offers a time saving COPY function that allows the user to copy settings from one day to another.
After entering the settings in Programmes 1 to 3 for Monday, the SP220 display will change to display a COPY TO screen. On this screen, scroll to the day that you want to copy the settings to using the Touch Ring, and then confirm this by pressing the OK key. The SP220 will then move to the next day and ask if you would like to copy again.

In the example here, Monday has been programmed, and the next day that has not been programmed is Tuesday. Once the settings for Tuesday have been programmed by copying, the settings can then be copied to Wednesday, and so on.

In this example, Thursday is the next day that has not been programmed and copied, so the display would look like this:

Pressing the Arrow key at any time will return the SP220 to the previous screen. Once all the days have been programmed, the SP220 will revert to NORMAL mode.

**Please be aware that each of the programme time settings must be in sequence:** For example, Programme 3 cannot be set with a time earlier than Programme 2. If this situation occurs, then the SP220 may operate in an unpredictable way. The controller will return to NORMAL mode after 10 seconds if no Key is pressed or if no movement is detected on the Touch Ring. In this case, the Programmes will not be updated.
MODE SELECTION

The SP220 operating mode is selected with the controller in NORMAL mode by touching the Touch Ring (but not the ARROW or OK keys). There are four operating modes for the controller:

ON, ONCE, AUTO and OFF

By default, the first modes displayed are for the central heating (CH) function. Each mode can be selected when the controller is in NORMAL mode by scrolling the Touch Ring in an ANTICLOCKWISE direction. This will cycle the operation mode as follows:

ON ➤ OFF ➤ AUTO ➤ ONCE ➤ ON

Each mode can be selected by pressing the OK key. After pressing the OK key to return to NORMAL mode, scrolling the Touch Ring in a CLOCKWISE direction will change to the hot water (HW) modes.

The mode indicator will change to indicate the selected operating mode for heating and hot water. Each mode can be selected by scrolling the Touch Ring. This will cycle the operation mode as follows:

ON ➤ ONCE ➤ AUTO ➤ OFF ➤ ON
In Gravity (G) systems, the central heating cannot be operated without the hot water. In this case with central heating in AUTO, the only selectable modes for hot water are ON, ONCE or AUTO.

The operating mode functions are:

<table>
<thead>
<tr>
<th>Mode</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>ON</td>
<td>Continuously on</td>
</tr>
<tr>
<td>ONCE</td>
<td>On for one period per day (from Programme 1 ON to Programme 3 OFF)</td>
</tr>
<tr>
<td>AUTO</td>
<td>Automatic programme control</td>
</tr>
<tr>
<td>OFF</td>
<td>Continuously off</td>
</tr>
</tbody>
</table>

In fully pumped and controlled systems (P), the central heating and hot water can be operated independently, but as previously mentioned, with gravity fed hot water systems (G), the central heating cannot be operated without hot water.

<table>
<thead>
<tr>
<th>Central Heating (CH)</th>
<th>Selectable Modes for Hot Water (HW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ON</td>
<td>ON</td>
</tr>
<tr>
<td>ONCE</td>
<td>ON, ONCE</td>
</tr>
<tr>
<td>AUTO</td>
<td>ON, ONCE, AUTO</td>
</tr>
<tr>
<td>OFF</td>
<td>ON, ONCE, AUTO, OFF</td>
</tr>
</tbody>
</table>
HOLIDAY MENU

Entering the HOLIDAY menu allows you to turn on the holiday override mode of the SP220. The HOLIDAY mode allows the user to override all the current Programme settings and turn off the heating system between two dates entered by the user.

When the holiday start date arrives, the HOLIDAY indicator turns on and the HOLIDAY mode is switched on. When the holiday end date is reached, the HOLIDAY mode will be turned off automatically and the SP220 will operate in AUTO mode.

The HOLIDAY mode indicator 🌟 will be displayed on all the HOLIDAY menu screens.

To start entering the Holiday Override settings, press the OK key once. ‘S-DAY’ will appear on the display. Use the Touch Ring to scroll to set the date and confirm the choice using the OK button.

The month setting (‘S_MONTH’) will then be selected – change this setting in the same way using the Touch Ring, and confirm the setting using the OK button. Finally, set the year (‘S_YEAR’) – this is done in exactly the same way as previously described for the date and month.
After confirming the year setting by pressing the OK key, the display will then change to display the first screen for entering the holiday end date (‘E_DAY’, ‘E_MONTH’ and ‘E_YEAR’)

Use the Touch Ring to enter the date in exactly the same way as for the holiday start date. By default, the HOLIDAY mode start and end dates are set to the current date.

Make sure that the end date is after the start date – if not, the HOLIDAY mode will be disabled. Once HOLIDAY mode is enabled and active, the display will look like this:

**CANCELLING HOLIDAY MODE**

When in HOLIDAY mode, pressing OK key will display CANCEL HOLIDAY alternately as shown below:

Pressing the OK key again will cancel HOLIDAY mode and return the SP220 to AUTO mode. Pressing the Arrow key leaves the controller in HOLIDAY mode.
SYSTEM MENU

The SYSTEM menu allows the installer to match the operating mode of the controller with the installed heating system. The controller can operate in two distinct modes – Pumped (P – the default setting) or Gravity (G) mode.

On entering the menu, use the Touch Ring to scroll to the preferred option (P or G), and confirm the choice using the OK button. Use the Arrow key to return to the previous screen display.
TIME MENU
If the time and date setting need to be set manually, this can be done by accessing the TIME menu. The first option within the menu is a choice of 12 or 24 hour clock setting.

On entering the menu, use the Touch Ring to scroll to the preferred option (12 or 24 hour clock), and confirm the choice using the OK button. Use the Arrow key to return to the previous screen display. After setting the time display format, the next screen display allows you to set the time.

Use the Touch Ring to scroll to set the hour and confirm the choice using the OK button. The minute setting will then be selected – change this setting in the same way using the Touch Ring, and confirm the setting using the OK button.

After setting the time, the next screen display allows you to set the date – this is set in exactly the same way as previously described for the time. Press the Arrow key to return to the previous screen display, or do nothing for 10 seconds and the SP220 will return to NORMAL mode.
After completing the setting of the date, the last operation is to turn Daylight Saving on or off. By default, Daylight Saving is ON.

Use the Touch Ring to scroll to the preferred option (ON or OFF), and confirm the choice using the OK button. Use the Arrow key to return to the previous screen display.

**SERVICE MENU**

The Service Menu should only be selected or changed by the Engineer carrying out the installation, or other qualified person. It is strongly recommended that you familiarise yourself with the instructions contained in the Operation section of this manual before attempting to change any of the settings in the SERVICE menu.

During commissioning the installation Engineer has the option to enter either his Mobile or Office telephone number as both a reminder when the system is due to be serviced, and as a way for the home owner to make contact when the service is due.

Use the Touch Ring to scroll through the Menus, and press the OK key to select the SERVICE menu. You will be prompted to turn SERVICE mode OFF or ON (by default, SERVICE mode is OFF):
The SERVICE indicator will be displayed on all the SERVICE menu screens. The first SERVICE screen will prompt you to enter a 3 digit access code – this code is very important, as once set it will be needed to turn SERVICE mode on or off. The default service code is set to 000.

If you forget the code, then you will need to contact Salus Controls technical support. Once the code has been entered, the next menu screen allows you to set the next service date for the system. Set the date in the order day, month and year:

Confirm the setting using the OK key, or press the Arrow key to return to the previous screen display. After enabling SERVICE mode, there is a screen that will allow you to enter an 11 digit number – this feature is intended for you to enter your telephone number so that the end user can contact you when the next service is due. The number is entered in the same way as the code – scroll with the Touch Ring until you reach the required number, then confirm by pressing the OK key.
Repeat this action until you have entered the entire telephone number. After entering and confirming the last digit, store the telephone number by pressing the OK key.

Once set as described, the SERVICE indicator will appear on the display 30 days before the set date, and the status message will change in the sequence shown here:
At seven days before the set date, the SERVICE indicator will flash:
Once the set date has been reached, the SERVICE indicator will continue to flash and the display will change to indicate that the service is now due:

Once the service is due, all outputs from the controller are turned OFF, regardless of any other programme settings. There are now two options available: press the OK key and the display will change to allow the selection of SERVICE BOOST mode or turning SERVICE mode OFF:

It is possible to temporarily turn the heating back on by using the SERVICE BOOST mode. To activate the SERVICE BOOST mode, press the OK key. It is not possible to increase the set time above 1 hour, but the controller outputs for heating and hot water will immediately turn on for one hour. After one hour, the controller outputs will again be turned off.

To turn off SERVICE mode, press the OK key and select the SERVICE OFF display, and then enter the code you originally set to access SERVICE mode.

If you want to deactivate SERVICE mode before the set date has arrived, select the SERVICE menu. Once back in SERVICE mode, you can edit the telephone number, set a new servicing date, or turn SERVICE mode ON or OFF in exactly the same way as described earlier.
OTHER FUNCTIONS AND CONTROLS

BACKLIGHT
The backlight of the SP220 is switched on automatically whenever any of the keys are pressed. The backlight will remain illuminated for a few seconds after the last key press, except if you are changing settings within the Programme mode – 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, or if the Touch Lock feature is active.

RADIO CONTROLLED CLOCK
The SP220 time and day of the week settings are updated automatically every day (at 12:00 AM or 2:00 AM) by the use of a very accurate internal Radio Controlled Clock.

The RCC status indicator will be displayed for 10 minutes during clock updates. The indicator will flash during the time update process, after which the indicator will be displayed for 5 minutes before turning off.

The time and date will also be automatically updated when the SP220 is powered up, or after the Reset Button is pressed.

If for any reason the SP220 fails to automatically update the time setting, then the data stored in the internal memory will be used. The clock settings can also be changed manually if required – manual settings will be overwritten at the next successful automatic update. The RCC feature only works when there is mains power to the controller.

NB: During the SP220 initial start up sequence the backlight will not operate due to the unit receiving a signal from the Atomic clock. The Radio Controlled Clock built into this unit receives a signal from the UK's Atomic clock therefore setting the time accuracy to 1 second every million years. The RCC function also solves the issue with day light saving as the unit will update itself at 12:00am or 2am every day, therefore when the time changes twice a year, so will the SP220. Please be aware that the signal received by the RCC is similar to a mobile phone signal; some areas will not obtain a signal. If you happen to be located in a poor RCC reception area, then the time and date can be set manually in the settings menu.
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 1:00am. 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, except when the SP220 is in SERVICE mode.

The default factory settings for the SP220 are:

<table>
<thead>
<tr>
<th>Function</th>
<th>Default Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Auto OFF (both channels)</td>
</tr>
<tr>
<td>Programme</td>
<td>3</td>
</tr>
<tr>
<td>Date</td>
<td>Friday, Jan. 1, 2010</td>
</tr>
<tr>
<td>Time</td>
<td>12:00AM (12 hour format)</td>
</tr>
<tr>
<td>DST</td>
<td>ON</td>
</tr>
<tr>
<td>Boost Hours</td>
<td>0</td>
</tr>
<tr>
<td>Holiday</td>
<td>OFF</td>
</tr>
</tbody>
</table>

SLIDE SWITCH
The Slide Switch has two positions: UNLOCKED and LOCKED.

In the LOCKED position, the Touch Lock indicator will be visible on the LCD, and it will not be possible to change the SP220 settings:

If you are unable to change any of the controller settings, check that the Slide Switch is in the UNLOCKED position.
AC MONITORING

The SP220 monitors the presence of mains power. If the mains supply is not detected, all settings are saved to the internal memory and all controller functions are paused. The controller output will also be turned off.

During periods of mains failure, the clock will continue to operate in the background for a few hours, but the LCD display will be turned off (see picture), the touch ring will be disabled and no other functions will operate. Normal operation is resumed when mains power is restored.

ENERGY TIP

One way to set and use your heating system is to find the lowest temperature setting that you are comfortable with, and then leave it set at this temperature. You can do this by setting the room thermostat to a low temperature, (for example 17 °C) and then increasing the setting by one degree each day until you are comfortable with the room temperature - you won’t have to adjust the thermostat further, as adjustment above this setting will waste energy - a 1 °C increase in temperature is equal to 3% of your heating costs.

MAINTENANCE

The SP220 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 controller).

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 SP220 programmable heating controller fail to function correctly, check:

• Mains supply to the SP220 is switched on.
• Heating system is switched on.
• If the SP220 is still not functioning correctly, press the Reset Button.
PRODUCT SPECIFICATION
Model: SP220
Type: Dual channel programmable heating controller designed for 230V AC heating applications.

CLOCK
Type: Radio Controlled (RCC).
Reception Frequency: 60 kHz ± 300 Hz
Display Modes: 12 or 24 hour clock with Day of Week display.

PROGRAMMING
Programming Modes: User selectable for individual, 5/2 or 7 day options
Number of Programmes: Three (3) user programmes each day.
Holiday Facility: User selectable option to temporarily override selected programme.

MODES
Operating Modes: Pumped (P) or Gravity (G) modes
Default Setting: P mode

DEFAULT PROGRAMMES (HEATING AND HOT WATER)

<table>
<thead>
<tr>
<th>Programme</th>
<th>Output</th>
<th>Weekday</th>
<th>Weekend</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ON</td>
<td>6:00 AM</td>
<td>6:00 AM</td>
</tr>
<tr>
<td></td>
<td>OFF</td>
<td>8:00 AM</td>
<td>8:00 AM</td>
</tr>
<tr>
<td>2</td>
<td>ON</td>
<td>10:00 AM</td>
<td>10:00 AM</td>
</tr>
<tr>
<td></td>
<td>OFF</td>
<td>12:00 PM</td>
<td>12:00 PM</td>
</tr>
<tr>
<td>3</td>
<td>ON</td>
<td>6:00 PM</td>
<td>6:00 PM</td>
</tr>
<tr>
<td></td>
<td>OFF</td>
<td>10:00 PM</td>
<td>10:00 PM</td>
</tr>
</tbody>
</table>
MEMORY AND OPERATING BACKUP
Memory Backup: Electrically Erasable Programmable Read Only Memory (EEPROM)

SWITCHING
Switching Voltage: 230V AC / 50Hz
Switching Current: 3A resistive, 1A inductive
Contact Type: Single Pole Double Throw (SPDT)
Number of Relays: Two (2)

ENVIRONMENT
Operating Temperature: 0 ºC to +40 ºC
Storage Temperature: -20 ºC to +60 ºC
SP220 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.

Customer Name: .................................................................

Customer Address: .................................................................

............................................................................. Post Code: .................................

Tel No: ............................... Email: .................................................................

Engineers Company: .................................................................

Tel No: ............................... Email: .................................................................

Intallation Date: .................................................................

Engineers Name: .................................................................

Engineers Signature: .................................................................