



EINBREW 4F
Electric Fermentation Controller
For 4 Vessel Fermentation Systems

USER INSTRUCTIONS

INTRODUCTION

Congratulations on your investment in an EINBREW 4F electric fermentation controller. Our precise temperature control, automatic fermentation steps and hop insertion/testing alarms means that you can focus on what you really want – making great beer with your home or craft brewery.

There's nothing as satisfying as putting together your own brewery, however dealing with complex electrical and temperature control can be concerning – not only making sure everything works the way you want, but safely too! EINBREW 4F takes away those concerns with a flexible, configurable and industrial-grade control system – all expertly engineered into an easy to install package.

We'll work with your existing heaters and coolers – no need to purchase additional, expensive equipment. Our control will help you make a great batch of beer every time, and give you the repeatability you want.

Our temperature control will automatically adjust itself to your system's requirements – you don't need to be a chemical engineer to get brewing. It'll also keep going 24 hours a day, 7 days a week when you're not there.

These user instructions will help you get the best out of your EINBREW 4F system and allow you to use it safely, and we recommend you read through them fully before installation and starting fermentation!

[For further help, search 'EINBREW' or '4F' on YouTube.com](#)

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SAFETY INFORMATION

- Please inspect your EINBREW 4F system and accessories for damage when you receive it. If there is any damage, please do not use the system and contact your supplier or Support for assistance.
- Do not operate the system if the power leads show any signs of damage or wear.
- If you need to clean the surface of your EINBREW 4F system, please ensure that it is fully disconnected from the mains supply beforehand. We recommend removing the plug from the socket to ensure disconnection. Use only a damp cloth and do not allow liquid to come in contact with EINBREW 4F, and ensure the vessel is dry before reconnecting the electricity supply.
- **The EINBREW 4F MUST be used with a RCD/GFCI/RCBO device. Ensure that you test it prior to every use. Installation by a competent person (e.g. Electrician) is required.**
- Ensure that any power leads are fully unwound during use. If using any extension leads, ensure that they are fully unwound and have an adequate current capacity when unwound.
- EINBREW 4F is not to be used by children or vulnerable adults, or around pets. Please ensure that the device is only used with adequate supervision to ensure safety.
- EINBREW 4F does not contain any internal user serviceable parts, and should not be disassembled or repairs attempted. Please contact your supplier or Support for any assistance required.
- Ensure that EINBREW 4F is positioned as far away as possible from liquids and vapours being used in the brewing process or condensate paths that may form – its enclosure is not water-tight.
- Do not operate your brewery or EINBREW 4F unless you are certain it has been correctly and safely setup. You may need to refer to a qualified/licensed electrician to achieve this.
- **DO NOT USE THIS PRODUCT AS AN ISOLATION DEVICE, TO ISOLATE PUMPS, ELEMENTS OR ANY EQUIPMENT.**

TECHNICAL SPECIFICATIONS

Feature	EINBREW 4F
Product Dimensions	300mm x 260mm x 85mm
Power Supply Input	220Vac/230Vac, 50Hz, 15Amax
Control Precision	0.1C (or 0.1F in Fahrenheit mode)
Temperature Measurement Accuracy	0.1C (or 0.1F in Fahrenheit mode)
Control Outputs Supported	4, (Heat or Cool), concurrent use, 15A each
Product Weight	3kg
Environmental	IP43, keep dry, splash proof fascia.
Fermentation Vessels Supported	Up to 4 Fermentation Vessels
Temperature Monitoring	YES, 4 PT100 sensors
PCB fuses	2, 3A, 20mm x 5mm
Power fuses	2, 15A, 32mm x 6.3mm
Audible Alarms	YES
Visible Alarms	YES
Automatic Timer	YES
Profiles Stored in Memory	YES, one profile per fermentation vessel
Programmable Fermentation Stages	YES, 3 programmable mash stages
Microprocessor Control	YES
Process Alarms	YES, 9 programmable process alarms
Review Reminder	YES, 1 programmable review reminder
Ergonomic Design	YES
Limited Lifetime Warranty	YES
Product Compliance	CE and LVD Compliant
Country of Manufacture	United Kingdom



COMPONENTS AND ACCESSORIES

Your EINBREW 4F system will come shipped with the following components. When you unpack please ensure you check everything is there, and if any parts are missing please contact your supplier or Support immediately.

- 1) 1 x EINBREW 4F Electric Brewery Controller
- 2) 1x 2m IEC C20 Power Lead
- 3) 4 x Temperature Sensor, 1/4" BSP thread, 80mm length, with 3m lead.
- 4) 4 x Fermentation output plug, C13.
- 5) 1 x User Instructions (detailed).
- 6) 1 x Quick Start Guide.

BREWING SYSTEM REQUIREMENTS

We aim for EINBREW 4F to take care of electrical control for you, leaving you to concentrate on your beer production!

Constructing your own Fermentation System is beyond the scope of these user instructions, and there are a number of Suppliers and indeed guides out there that'll help you achieve this. There are also a number of performance and safety issues to consider when specifying and putting together your brewery.

However, for EINBREW 4F to work effectively, there are some areas to consider.

- Your heating and cooling systems must be appropriately sized for the amount of wort you're trying to ferment, whilst meeting the maximum EINBREW 4F power restrictions. If the temperature impetus is too small, it may take a long time to increase/decrease the temperature of the wort as you go through the fermentation process. In the worst case, you may be unable to maintain your target temperature at all due to losses or heat buildup. You can also improve system performance by ensuring that your vessel is closed during fermentation (with pressure release valve!), and insulating the vessels. Heating elements that are too powerful may result in scorched wort, or considerable temperature overshoot and oscillation during heating.
- EINBREW 4F supports up to 4 heating/cooling systems, with flexible configuration. You can assign each of the 4 system outputs to up to 4 tanks – so for example you could have cooling control for 4 tanks, or heating/cooling control for 2 tanks (2 outputs each!). It's all down to your particular requirements which would be the most suitable for your application – for example, you may be in a location that has a high enough ambient temperature all year round that only cooling is required.
- The heating systems can be an element directly in the vessel, or you can use an external heating element through which the wort is pumped around.
- The cooling systems are typically external to the vessel and function using coolant recirculation into the fermentation vessel.
- If utilising circulation pumps, ensure that you have added sufficient filtering to the pump inlet – otherwise, you may encounter clogs or flow restrictions due to loose debris or uncontained hops. We do not allow independent control of circulation pumps.
- Ensure that the temperature probes provided are adequately fitted. For example, with external heating it is important that you install the temperature probe near the point where heated liquid is fed back into the vessel, and not for example after it has circulated through the mash bed or at the pump inlet. Not doing so will result in issues such as temperature overshoot and oscillation, or in the worst case equipment damage or scorched wort. If you are using an internal heating element, do not place the temperature probe right beside it. Similarly, do not install the temperature probe right beside any cooling apparatus.
- EINBREW 4F provides precision temperature measurement and control, and should provide excellent temperature control over a wide range of brewery configurations. However, its

performance is ultimately down to the equipment you've specified and the volume of liquid under control. It is normal that the maintained temperature will fluctuate and you may see slight temperature overshoot (or undershoot). This can be exacerbated by issues such as insufficient circulation flow, too large/too small heating or cooling system.

- Unless you're using an off-the-shelf fermentation system, be prepared to experiment and improve as you go! It's not unusual for systems to require tweaking after first use.

GETTING STARTED

We know you're eager to get on with making some beer, so the first thing to do is get your EINBREW 4F system installed with your fermentation setup!

Once you've checked you've got everything, work out where you're going to install your EINBREW 4F controller. Everyone's brewery is different; however, you should make sure that it is situated far enough away from your fermentation and brewing vessels that there won't be any liquid splashed on the controller, or any danger of steam condensing and dripping on the controller for above.

Please also make sure that the inlet power cable for EINBREW 4F, the outlet power cables for the heating and cooling systems, and the temperature sensor cables will reach without being taut or presenting a trip hazard.

EINBREW 4F should be connected to an electric outlet suitable for the total electrical load you wish to drive, controller + heaters + coolers. The supply MUST be protected by an **RCD/GFCI/RCBO device**, for your safety – please test the **RCD/GFCI/RCBO device** before use, using the built-in test function.

IF YOU DO NOT UNDERSTAND THE ABOVE STATEMENT, PLEASE CONSULT A LOCAL EXPERT.

Once that's done you're ready to turn on! Move the power switch to the ON position and EINBREW 4F will power on, running through a short self-test of the onboard displays, indicators and alarm buzzer before starting. This will only take a few seconds.

The first thing you'll be asked to do is enter your Tank Setup. We'll go through how to configure that later.

When operational, EINBREW 4F will display the readings from the temperature sensors on its displays and you can begin configuring and testing the system.

BREWING SYSTEM INTEGRATION

We know you're eager to get on with making some beer, so the first thing to do is get your EINBREW 4F system installed with your brewing setup!

Installing C20 Plug to Heating Element

The EINBREW 4F connects to your heating system using a C19 power socket. To interface with it, you need to install a C20 plug onto the power lead for your heating system. If you are unsure of any aspects of how to undertake this task, please contact a competent person (e.g. qualified and certified Electrician) for advice and assistance. Miswiring a plug can be potentially fatal.

To achieve this, firstly remove the screws holding together the spare C20 plug that has been supplied with your system. Leave these carefully to one side.

Once you've done that, you'll note that there are screw terminals for Live, Neutral and Earth – along with a retaining clamp for the power cable to be inserted, to ensure that it cannot be taken out later. Unscrew the retaining clamp to allow you to feed in the power cable.

Strip back the Live, Neutral and Earth conductors to allow you to fit the exposed conductors into the appropriate screw terminals. You may need to shorten one or more of the conductors for a good fit. For safety, ensure that you only strip enough of the protective sheath to allow insertion of the relevant conductor into each of the screw terminals – no more.

Screw each of the terminals down firmly to ensure that the conductor cannot move and is securely in place, then screw down the retaining clamp for the power cable such that it is also secure.

Finally, reassemble the C20 plug using the screws from earlier, firmly screwing the plug back together.

To test, ensure that EINBREW 4F is turned off, then insert the assembled C20 plug with attached power cable into the C19 receptacle. Ensure that the vessel the heating system is fitted to has enough water added in the vessel for the system to function sufficiently. Turn on the EINBREW FERMENTEX system, and utilise the control system to energise the heating system. You should note that the water will increase in temperature accordingly.

Installing C20 Plug to Cooling System

The EINBREW 4F connects to your cooling system using a C19 power socket. To interface with it, you need to install a C20 plug onto the power lead for your cooling system. If you are unsure of any aspects of how to undertake this task, please contact a competent person (e.g. qualified and certified Electrician) for advice and assistance. Miswiring a plug can be potentially fatal.

To achieve this, firstly remove the screws holding together the spare C20 plug that has been supplied with your system. Leave these carefully to one side.

Once you've done that, you'll note that there are screw terminals for Live, Neutral and Earth – along with a retaining clamp for the power cable to be inserted, to ensure that it cannot be taken out later. Unscrew the retaining clamp to allow you to feed in the power cable.

Strip back the Live, Neutral and Earth conductors to allow you to fit the exposed conductors into the appropriate screw terminals. You may need to shorten one or more of the conductors for a good fit. For safety, ensure that you only strip enough of the protective sheath to allow insertion of the relevant conductor into each of the screw terminals – no more.

Screw each of the terminals down firmly to ensure that the conductor cannot move and is securely in place, then screw down the retaining clamp for the power cable such that it is also secure.

Finally, reassemble the C20 plug using the screws from earlier, firmly screwing the plug back together.

To test, ensure that EINBREW 4F is turned off, then insert the assembled C20 plug with attached power cable into the C19 receptacle. Ensure that the vessel the cooling system is fitted to has enough water added for it to function sufficiently. Turn on the EINBREW FERMENTEX system, and utilise the control system to energise the cooling system. You should note that the water will decrease in temperature accordingly.

Installing Temperature Probes to Brewing Vessels

The EINBREW 4F comes supplied with 4 Temperature Probes to allow you to monitor and control your system. These will typically be PT100 probes depending on the type of system you have purchased; however, installation and operation is identical.

To fit the probes into each vessel, firstly consider where you are going to place each probe. The ideal placement will vary depending on factors like the type of heating system you have chosen to use, along with other factors. Generally, the temperature probe is positioned near the bottom of a vessel, about 40/45mm from the base and at 90 degrees to the heating element. The sensors are 80mm in length and have a ¼" BSPP thread, which requires a 13/14mm hole in the vessel.

It is important not to install the temperature sensor too near any heating element, as this can produce readings which are artificially high and prevent the control system from operating correctly.

You'll only need to fit one Temperature Probe per vessel – so the number that you need to fit depends on how many tanks you want to control. EINBREW 4F can control temperature in up to 4 fermentation vessels.

Extending EINBREW 4F C20 Power Lead

The EINBREW 4F comes supplied with a 2m power lead. However, you may find this is insufficient for your purposes. If this is the case, please extend the cable using a suitable extension cord, or purchase a longer power lead.

Please note any replacement/extension must be capable of handling 15A of current. If using a wound extension cord, please ensure that it is fully unwound before use to allow it to handle its

maximum rated capacity. Not doing so will reduce the current capacity of the cable and may result in fire or death.

Replacing user-replaceable fuses

There are two user-replaceable fuse receptacles mounted on the base of the enclosure. If you believe that these fuses have blown, these can be replaced. Please ensure to replenish them with an equivalent specification of fuse.

To replace, first ensure that you have turned off EINBREW 4F by disconnecting it at the plug. This will ensure the system is isolated. Then use a screwdriver to access the fuse compartments, and replace the damaged fuses. If capable, you may wish to use a e.g. multimeter to test if the fuse(s) are actually damaged or not, as the fault may lie elsewhere.

Insert the new fuse(s) and screw in the fuse compartment again. Then reconnect the system to mains electrical supply, and test the system to ensure that it operates correctly.

Drilling Holes in Stainless Steel Vessels for Heating Elements and/or Temperature Probes

Depending on which vessels you are using in your system, you may already have holes pre-drilled for heating elements and water pump inlet/outlets – this makes things very convenient as you can simply use those for installation, as long as they're in the right place!

However, if you are building a system without any of this work carried out, you will have to undertake the work yourself.

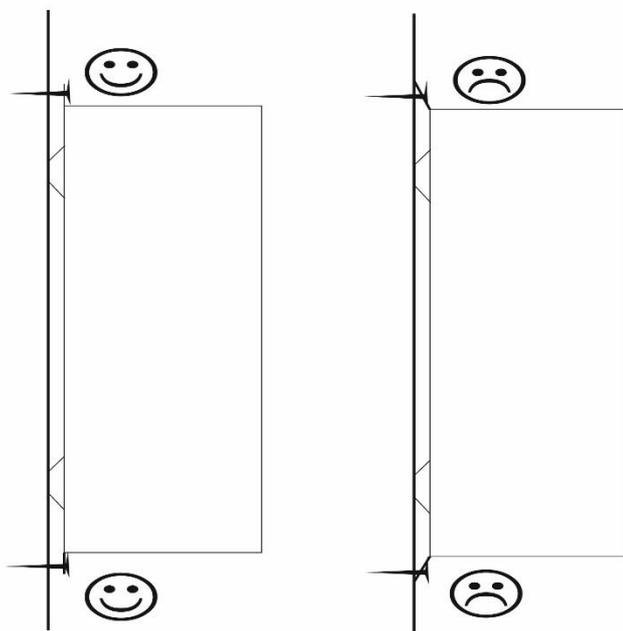
Firstly, confirm that you have appropriate drill bits (or hole saws, etc) and drill (available speed, etc) for the job of creating these holes. You will likely require special drill bits, and depending on the grade and thickness of the stainless steel, you may require non-standard and/or higher speed drill drivers also. If you do not have experience in this work, you would be advised to contract a specialist metal worker to help, as it can be easy to damage or cosmetically mark your vessels.

Next, mark out the holes in the design to ensure that placement of the new equipment is correct. Then create the hole. After the metal has cooled down afterwards, fit the elements and probes as necessary. Ensure that the vessels are well cleaned afterwards to ensure that no metal shavings or dust get into the brewing system during use.

Mounting the Control Panel

The panel must be mounted vertically. There are mounting holes in tabs on the corners of the enclosure, these are used to mount the panel. During use the rear of the panel can get hot, this is normal. It is vital that a gap be left between the rear and the mounting surface, to allow airflow, the outward dimples are to facilitate this. It is also vital that the mounting surface can withstand temperatures of up to 50C. Ensure that you do not over-tighten the 4 mounting screws and bend the tabs, the tabs should remain vertical like the rear of the control panel.

Side view of mounted panels



Basic System Testing

Once you've installed all your heating/cooling systems and temperature probes – it's time to test everything out before starting to ferment properly!

Connect up everything to EINBREW 4F, and add some water into each of the vessels you're controlling. The water level will need to be sufficient for the heating/cooling system(s) to function as they would when normally filled.

If you have any circulation pumps, confirm that they are operating correctly, and flowing well. Also ensure that there are no leaks coming from any pipework! If there are any leaks that look as if they may contact with electrical connections, disconnect the power to your system immediately.

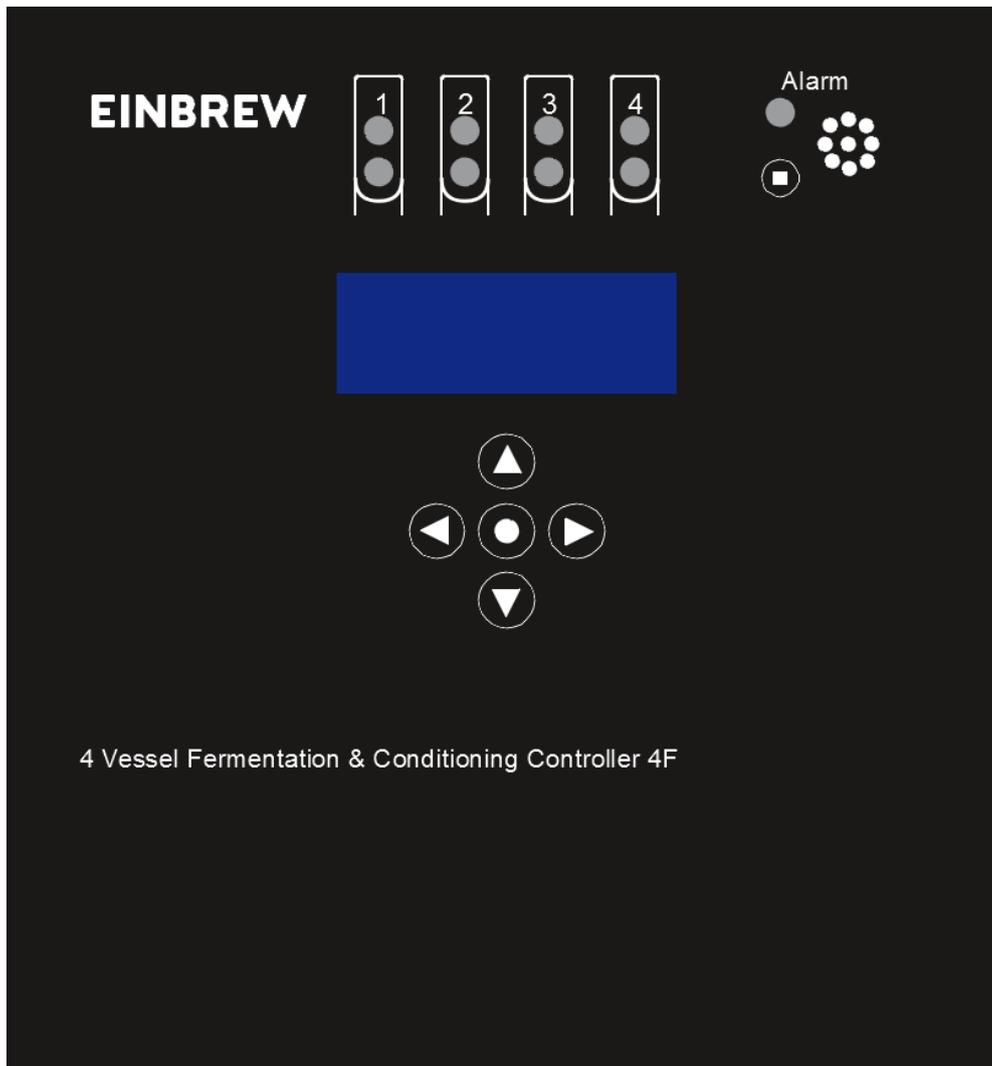
Once the circulation system seems to be working OK, test that the heating/cooling systems are altering the vessel temperature as expected. It will take time for the temperature to change, so do not expect an instant ramp to your set temperature. Take care to look for any leaks as time goes on. You may find that you need to tighten connectors, add washers, etc. before everything is completely watertight.

After you've carried out the basic tests, dispose of all the water from the system in case there is any loose debris or other material present. Then you're ready to ferment for real!

CONTROL PANEL

Before beginning to make your brew, let's go through the main control panel. EINBREW has a shared LCD display with temperature and status information for the maximum supported 4 tanks, along with dedicated status indicators for each tank (control active and heating/cooling in progress).

Our diagram of the front panel below illustrates some of the options available.

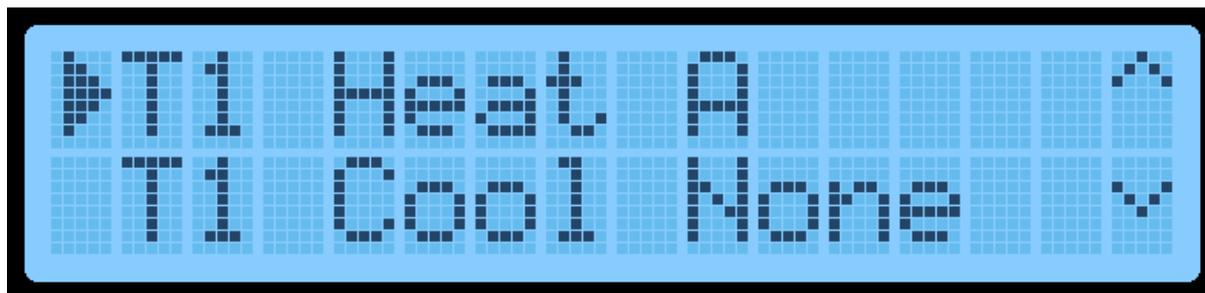


The first thing you'll need to do after powering up your EINBREW 4F is to complete Tank Setup.

Tank Setup

The EINBREW 4F supports temperature monitoring for up to 4 fermentation vessels (T1 to T4), and up to 4 control outputs (labelled A to D). These outputs are flexible and can be assigned to tanks as required – so you could have e.g. 4 tanks with cooling only control (1 output used per tank), or 2 tanks with heating and cooling control (2 outputs used per tank).

When you first start using EINBREW 4F you'll be asked to configure which outputs you're going to use for each tank! Don't worry if you make a mistake, as you'll be able to reconfigure it from the menu later on if needed.



The configuration for each tank will be displayed in turn (T1, T2, T3, T4). You can use the **Up** and **Down** keys to choose between the Heat and Cool outputs for each tank, and **Left** and **Right** to change the output allocation.

For example, if you wanted to use Tank 1 and have Heating control only using Output A, you can assign it as per the depiction above. **T1 Heat** is set to A, which means Output A will be used to provide heat impetus to Tank 1. **T1 Cool** is set to None, which means that no cooling control will be used.

Once you've assigned the outputs for the Tank, you can either scroll down to the **Save** menu option and press **OK**, or simply press **OK**.

IMPORTANT: each Output can only be assigned **once**. This means that if for example you've assigned Output A to **T1 Heat**, you can't assign it to **T1 Cool**, or Tank 2-4. If you assign an Output twice, when you confirm the assignment by pressing **OK** the system will beep twice and display the message "**Invalid Outputs**" on the display. The outputs will then be reset so that one of the invalid settings is removed, and you'll have a chance to review them and choose again. Don't forget that you may have assigned an output in a previous Tank allocation, in which case, you'll need to go through configuration as-is and restart it again in the Menu afterwards.

The configuration is very flexible, so for example you could have Tank 1 as Heating Control, Tank 2 as Cooling Control, and Tank 3 as Heating and Cooling Control. Any combination of the 4 Tanks and 4 Outputs is allowable. You also don't have to allocate all Tanks and Outputs – e.g. having a single Tank with heating only control would be perfectly fine.

After you've confirmed the setup for all 4 Tanks, the message "**Tank Setup Complete!**" will be displayed, and the system will reset in around 10 seconds. If you need to reconfigure later, you can choose the **Settings->Edit TankSet...** menu option to do so.

Example Tank Configurations

To illustrate further some of the configurations you can achieve with EINBREW 4F, please refer to the examples below.

Example 1 – Single Tank with Heating and Cooling Control

Tank Setting	Output Setting
Tank 1 Heat	A
Tank 1 Cool	B
Tank 2 Heat	None
Tank 2 Cool	None
Tank 3 Heat	None
Tank 3 Cool	None
Tank 3 Heat	None
Tank 4 Cool	None

Example 2 – Four Tanks with Cooling Only Control

Tank Setting	Output Setting
Tank 1 Heat	None
Tank 1 Cool	A
Tank 2 Heat	None
Tank 2 Cool	B
Tank 3 Heat	None
Tank 3 Cool	C
Tank 3 Heat	None
Tank 4 Cool	D

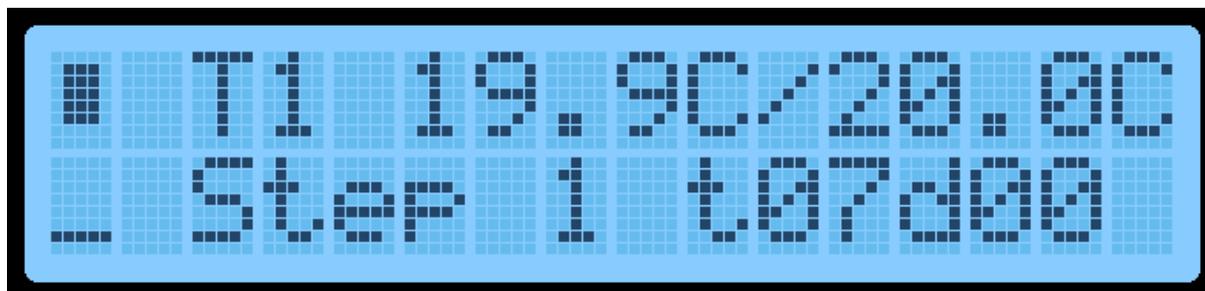
Example 3 – Two Tanks with Heating and Cooling Control

Tank Setting	Output Setting
Tank 1 Heat	A
Tank 1 Cool	B
Tank 2 Heat	C
Tank 2 Cool	D
Tank 3 Heat	None
Tank 3 Cool	None
Tank 3 Heat	None
Tank 4 Cool	None

Shared LCD Display for Fermentation Status

EINBREW 4F uses a single LCD display to output status information for each of the tanks that has been configured.

Normally it will automatically scroll between the different tanks that are present on the system, and show status and temperature information for each in turn.



In the example above, we can see that information for **T1 (Tank 1)** is being displayed. The current temperature is 19.9C, and the present set temperature for Step 1 is 20.0C. Step 1 will last for 7 days. The **Stop** symbol in the top-left hand corner indicates that control is not presently active for this Tank. The **Heating/Cooling Status** symbol in the bottom-left corner indicates that no heat or cooling is being supplied, which is expected given control is not presently active.

The five-way directional pad in the middle of the panel allows you to navigate between each of the Tanks and access menu items and control options. To interrupt the automatic scrolling of Tank Status, press the **Left/Right/OK** button. You can then use the **Left** and **Right** directional buttons to switch between Tanks – T1 to T4 will be displayed on-screen as appropriate to indicate which is selected. If a Tank has not been configured, you'll not be able to select it here. The Control Status LED will also flash to indicate which Tank is currently on-screen.

Each Tank has similar context-sensitive functions available via the Menu, which is accessible by pressing the **OK** button in the middle. The **Up/Down** buttons are used to scroll between menu items, **Left/Right** to adjust values and **OK** to select the present item in the list.

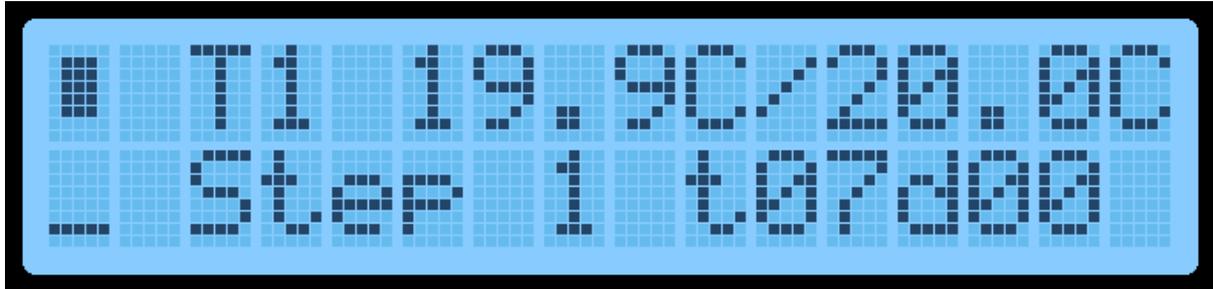
- **Start/Pause/Stop** - Depending on current status, start, pause or stop the control using a recipe.
- **Recipe** – Set the Recipe configuration for the selected vessel.
- **Alarms** – Set Alarms for Hop Insertions, etc and Recurring Alarms for progress checking.
- **Settings** – Configure options for this vessel and the system in general.
- **Exit** – return to normal display.

The menu will also automatically time out after a period of time, returning to the standard status display. **The menu must be exited before you will be allowed to switch to another Tank.**

Each Tank can be controlled independently, with concurrent control available in each.

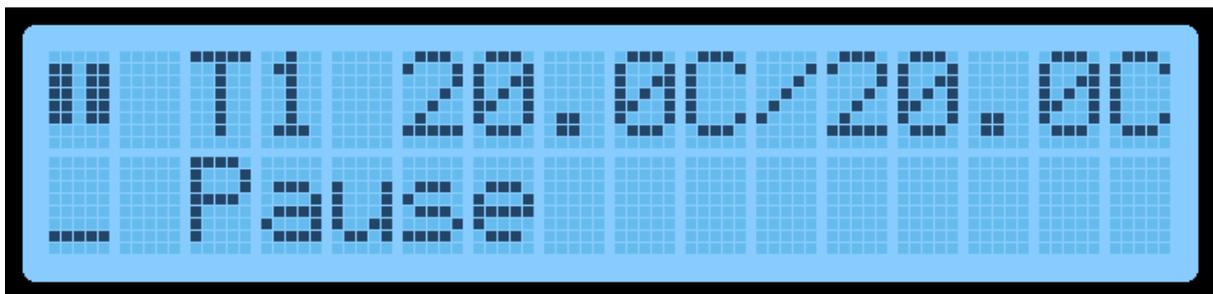
Control Displays (HLT)

Included below are a number of illustrative displays for fermentation status.



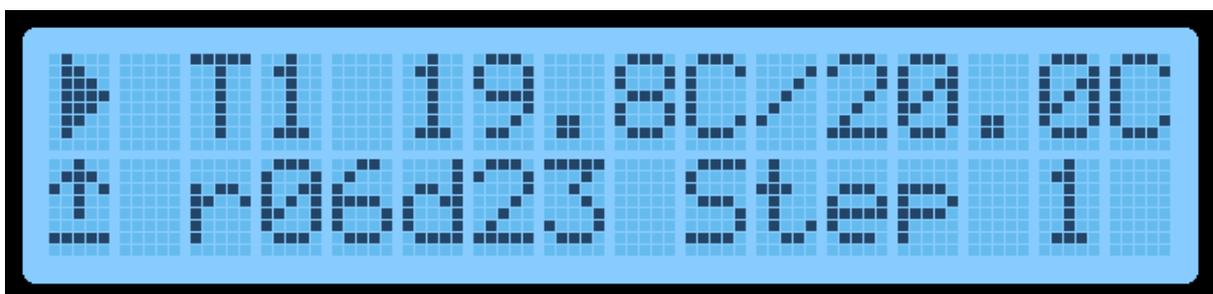
Stop/Standby Mode

information for **T1 (Tank 1)** is being displayed. The current temperature is 19.9C, and the present set temperature for Step 1 is 20.0C. Step 1 will last for 7 days. The **Stop** symbol in the top-left hand corner indicates that control is not presently active for this Tank. The **Heating/Cooling Status** symbol in the bottom-left corner indicates that no heat or cooling is being supplied, which is expected given control is not presently active.



Paused Mode

Displays the current and target set temperature. **Pause** symbol displayed in top-left corner.



Start Mode

Displays the current and target set temperature, along with how long is left on the current fermentation step. Alternatively displays the total time for this Step. The Upward arrow in the bottom-left hand corner denotes that the system is applying heating energy to the Tank.

Control Menu Options (HLT)

The following menu options are available for each Controller:

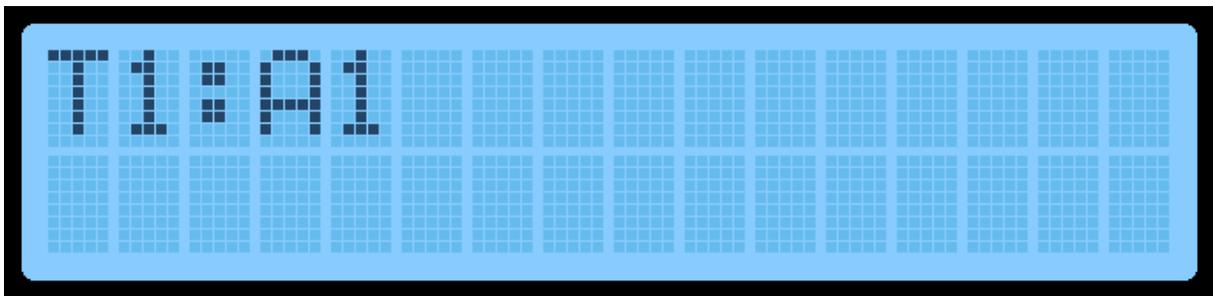
Control Section	Explanation
Play	Begins controlling the fermentation tank using the preset fermentation recipe. Only available when the controller is Paused or Stopped/Standby .
Pause	Pauses the currently operating sequence. Only available when the controller is Started . Can be restarted again by selecting Start .
Stop	Stops the currently operating sequence. Only available when the controller is Started or Paused . All timers and progress will be reset to starting values.
Edit Step	Available when in Started or Paused mode. Displays a screen which allows the user to edit the target time and temperature by pressing the Up/Down/Left/Right keys. Exited by pressing the OK button again.
Recipe	Displays the Recipe menu and allows the user to edit the fermentation times and temperatures. Available when Stopped only.
Settings	Displays the Settings menu for the tank and system. Available when Stopped only.
Alarms	Displays the Alarms menu, allowing Static Alarms to be set for e.g. Hop Insertions, Recurrent Alarms to be set for regular inspection and measurement, and Over/Under Temperature Alarm thresholds. Available when Stopped only.
Exit	Exits the Menu.

Alarm Control

The EINBREW 4F will sound an alarm in various different scenarios:

- End of Fermentation on a Tank Controller
- Static Alarms (e.g. for Hop Inserts)
- Recurrent Alarms (e.g. for fermentation progress checking)
- Tank has exceeded Over/Under Temperature thresholds (if enabled)

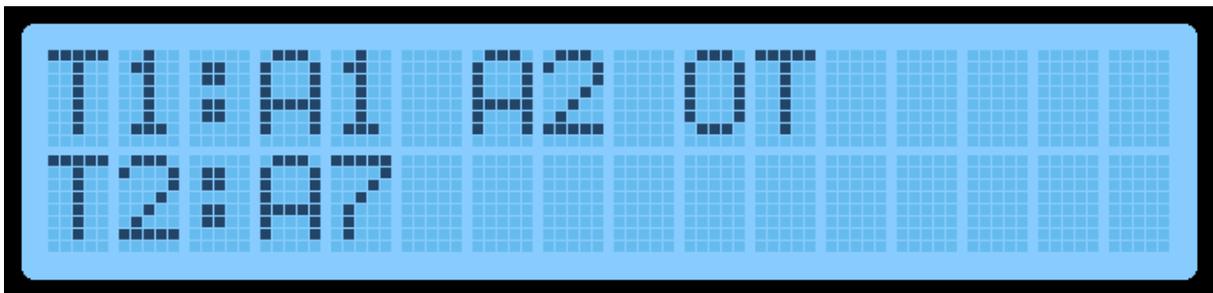
Whenever an alarm is active, the blue Alarm indicator will flash, an audible buzzer will sound, and it will be indicated on-screen, along with the associated Tank. For example, if Static Alarm 1 has triggered on Tank 1, the following would be displayed:



To acknowledge an alarm, press the **Alarm** button. If there are multiple alarms queued, you will need to press the **Alarm** button once for each alarm that is active on that Controller. The Alarm Buzzer will keep sounding until all active alarms have been acknowledged.

The Alarm display will attempt to show all active alarms for as many Tanks as possible, with up to 2 Tanks on-screen at any time. If e.g. 3 Tanks have active alarms, you will have to clear the alarm for the first Tank before the last one will be fully displayed.

In the example below, we can see that Static Alarm 1 and Static Alarm 2, along with the Over Temperature Alarm for Tank 1 is being displayed, along with Static Alarm 7 for Tank 2.



SETTINGS MENU

EINBREW 4F has a number of configuration options you can customise your system. These settings are not normally changed beyond the initial configuration of EINBREW 4F.

Settings are primarily configured on a per-controller basis, with some system wide settings also accessible. To configure settings for a controller, select it using the **Left** and **Right** buttons, ensure that it is in **Stop/Standby** mode, and then press OK to display the Menu. Use the **Up** and **Down** buttons to select **Settings**, and press **OK**.

You can then use the **Up/Down** buttons to navigate between the menu options, press **Left** or **Right** to alter the selected value, or press **OK** to enter a submenu or run a command.

If you do nothing, the menu will automatically time out and EINBREW 4F will return to normal operation. For some menu options (particularly Time and Temperature settings) you can press and hold the **Left** or **Right** buttons to move the selected value to the minimum or maximum value respectively.

Each menu also has **Reset Settings** (reset all Settings for all Controllers, to Factory Default), **Save** (exit settings and save changes) and **Exit** (exit settings without saving changes) options.

Tank/Controller Settings

These settings are configured on a per-Tank basis unless noted otherwise.

Menu Option	Default	Min	Max	Explanation
Temp Units Temperature Units	Celsius	N/A	N/A	Toggle the Temperature Units between Celsius and Fahrenheit. All displayed values and settings will be converted accordingly after switching. Affects entire system.
DeadBand Temperature Dead Band	0.5° (C)	0.0° (C)	2.0° (C)	This defines the dead band applied to the Set Temperature for the selected Tank. By default, this is 0.5°. It can be varied from 0.0° to 2.0°. This is the amount of variation allowed in the Measured Temperature from the Set Temperature, before heating/cooling is applied to correct any deviations.
TOffset Temperature Probe Offset	0.0° (C)	-2.0° (C)	2.0° (C)	If you would like to alter the temperature reading for the selected Tank to match another probe you are using for reference, you can utilise the Temperature Probe Offset setting to do so. This should not normally be required.
MinHeat Minimum Heat On Cycle Time	1 min	0 min	30 min	Set the Minimum cycle time that the Heater will be turned on for. This anti-cycling measure is designed to safeguard the lifespan of any connected equipment.
MinCool Minimum Cool On Cycle Time	1 min	0 min	30 min	Set the Minimum cycle time that the Cooler will be turned on for. This anti-cycling measure is designed to safeguard the lifespan of any connected equipment.
MinOff Minimum Off Cycle Time	1 min	0 min	30 min	Set the Minimum cycle time that the Heater/Cooler will be turned off for. This anti-cycling measure is designed to safeguard the lifespan of any connected equipment.
Edit TankSet... Edit Tank Settings	N/A	N/A	N/A	Edit the present Tank and Output Settings/Mappings. Affects entire system. WARNING: Will require a controller restart, so do not utilise when carrying out fermentation control.
Chk TankSet... Check Tank Settings	N/A	N/A	N/A	Display the present Tank Settings on-screen.
Rst Settings... Reset Settings	N/A	N/A	N/A	Reset all Settings to Factory Defaults for all Tanks. Confirmation required.

PREPARING FOR FERMENTATION

EINBREW 4F lets you focus on what you do best – brewing beer! It'll take care of the temperature control and timing, along with all the electrical control. All you have to do is enter your recipe!

You can focus on preparing the wort and optimising your recipe.

Before fermenting, please ensure that you've sanitised all your equipment – this will help prevent infection.

This is also a good point to ensure that you've connected everything you need to EINBREW 4F, and that all electrical connectors are firmly seated. Ensure that the Temperature Probes are connected and that their readings appear to be correct.

For demonstration purposes we'll go through the process of entering and brewing a single fermentation recipe on a single Tank controller – although of course in practise you'll likely be running several Tanks at once!

Entering your Recipe

The last step before you start brewing is to enter your Recipe into EINBREW 4F! We'll take an example recipe below with timings and temperature for each fermentation stage, and show you how to enter it for Tank 1.

Stage	Temperature	Time
Fermentation Step 1 (S1)	22°C	7 Days 0 Hours
Fermentation Step 2 (S2)	15°C	14 Days 0 Hours
Static Alarm 1/A1 (Hop Insertion 1)	-	0 Days 0 Hours
Static Alarm 2/A2 (Hop Insertion 2)	-	1 Days 0 Hours
Static Alarm 3/A3 (Hop Insertion 3)	-	3 Days 0 Hours
Recurrent Alarm		Holdoff Period: 48hrs Repeat Period: 24hrs

As we can see, this recipe has 3 Static Alarms set (for hop insertions). Up to 9 static alarms are supported, although of course you can always manually time any additional if needed.

Ensure that the green **Active** indicator is not lit on each Controller and that they're in **Standby/Stop** mode before entering the recipe settings – if you've just turned on the system you'll not have to worry about doing anything. This means that none of the Controllers have started yet.

Setting Recipe Parameters

Use the Left and Right buttons to select **T1** on the LCD Display. Ensure that the green Active indicator marked **T1** is not lit, signifying that the Controller is not running.

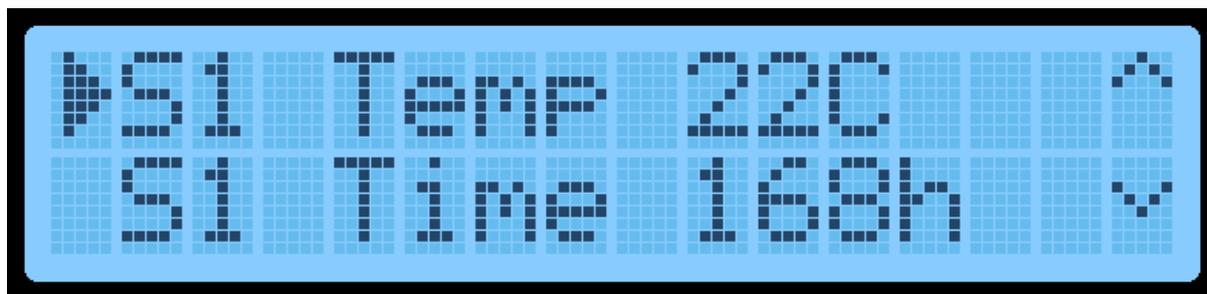
Press **OK** to enter the Menu, then use the **Up** and **Down** buttons to select the **Recipe** menu option. Select the **S1 Temp** option then use the **Left/Right** buttons to adjust the temperature to 22°C. Then go on to set the parameters for S1 Time, S2 Temp, S2 Time.

When you move to Fermentation Step 3, since we aren't actually utilising this Step, we'll do something slightly different. Select the **S3 Time** then press and hold the **Left** button for about a second – you'll hear a short beep and the displayed value will be set to **off** where it previously indicated the time. This signifies that Fermentation Step 3 will not be used.

You can use as many or as few Fermentation Steps as you like up to the limit of 3 – just set their Time to **off** to disable them, or set a time of 0 minutes or greater to enable.

The last setting to confirm is **S2 Ctrl**. This has two settings – **Norm** (Normal Control) or **Timer** (Timer Only). Normal Control means that the value specified for **S2 Temp** will be controlled to as usual. Timer Only means that the **S2 Temp** value will be ignored and only the timer will be applied; this is typically used if you want to let the Tank temperature regulate itself naturally for this stage rather than being actively controlled.

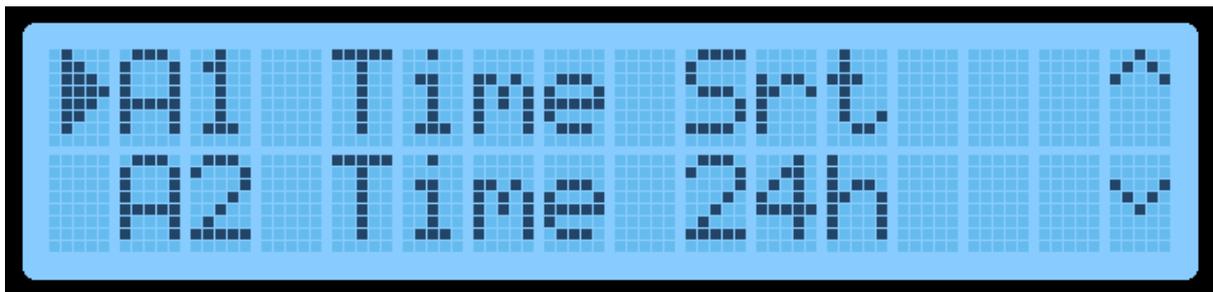
Select **Save** and press **OK** to exit and save changes.



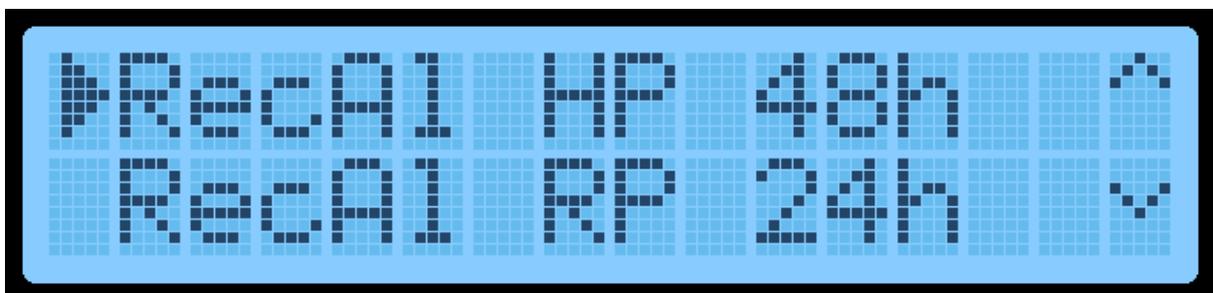
Setting Alarms

Press **OK** to enter the Menu, then use the **Up** and **Down** buttons to select the **Alarms** menu option. Select the **A1 Time (Static Alarm 1)** option then use the **Left/Right** buttons to adjust the time to **Srt** (found by going below 0h) – this means the Alarm will trigger right at the start of the fermentation step. Then go on to set the parameters for A2 and A3 Time.

After this cycle through the rest of the Static Alarms A4 to A9 and set them to **off**, since we're not using them. If they're not already **off**, then press and hold the **Left** button for about a second – you'll hear a short beep and the displayed value will be set to **off** where it previously indicated the time.



Finally, we will set the Recurrent Alarm. Navigate to the **RecAl** settings at the bottom of the menu. These parameters stand for Recurrent Alarm Holdoff Period and Recurrent Alarm Repeat Period. The Holdoff Period is the time before which the first alarm notification will be triggered. The Repeat Period is the time before which the next and subsequent alarm notifications will be triggered. For example, these current settings will trigger an alarm 2 days after starting, and then every 1 day thereafter.



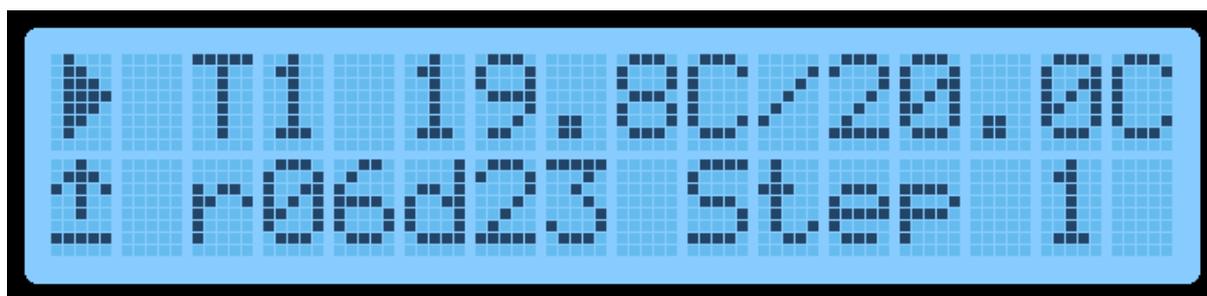
Select **Save** and press **OK** to exit and save changes.

FERMENTING WORT

Fermentation

Now that you've entered your recipe, you're ready to start! Move your wort to the fermentation vessel, and select the **Start** option to begin in the **Tank 1** menu!

The heater and cooling system will automatically operate as required until the temperature matches the one you've set. If you need to, you can open the runtime menu and select the **Edit Step** option to use the **Up/Down/Left/Right** buttons to change the time and temperature for the current Step.



When Heat is being applied you'll see an Up Arrow icon in the bottom-left corner, and when Cooling is being applied you'll see a Down Arrow icon in the bottom-left corner. If there's no arrow displayed, that means neither heating or cooling is being applied. If the icon is flashing, that means the system is preparing to heat/cool/switch off, but waiting for the Minimum Heat/Cool/Off anti-cycle values to be surpassed before doing so.

EINBREW 4F will automatically run through the Fermentation Phases that you've setup previously. You'll see that the timer will start counting down.

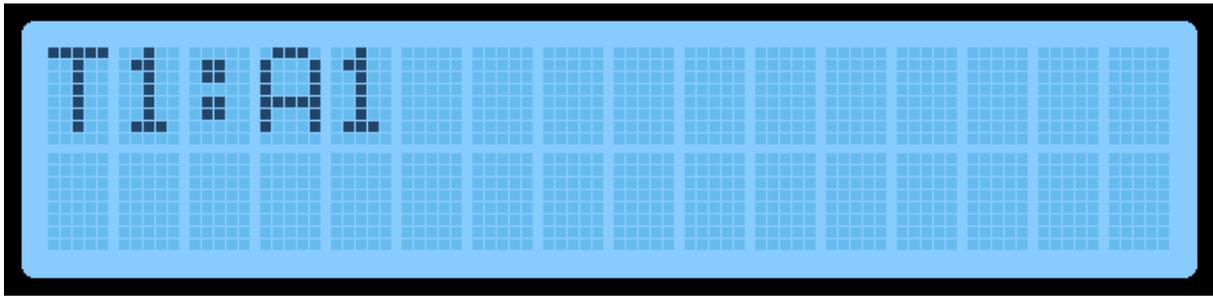
The LCD display will show you the remaining time and alternate between showing you the Fermentation Step (Step 1 to Step 2) and the total time you've set for the Step.

When Fermentation Step 1 is completed, it will automatically move onto Step 2.

Once all the phases that you've setup have been completed, the LCD display will indicate 'T1:END' and the alarm will sound. Press the **Alarm** button to silence the alarm.

Static Alarms

If you've selected to have Static Alarms/Hop Insertions as per our example, then when they're triggered the LCD display will indicate the alarm triggered— e.g. A1 will be shown right at the start. When this is displayed, the Alarm will also sound. Press the **Alarm** button once to acknowledge the alarm, and the display will return to normal.



If you've configured multiple alarms to be triggered at the same time, or if you missed an earlier alarm and more have triggered, you'll need to press the button once to acknowledge each in turn.

Once all steps have been completed, the LCD display will indicate 'END' and the alarm will sound. Press the **Alarm** button to silence the alarm, then select **Stop** in the menu to end control.

Recurring Alarms

Recurring Alarms will behave in much the same way as the Static Alarms, however they will trigger repeatedly throughout the fermentation sequence. The LCD display will show "RA1" when this is active. Press the **Alarm** button once to acknowledge the alarm, and the display will return to normal, and setup the next alarm for the specified repeat period.

Batch Complete!

You've now finished your first batch of beer with EINBREW 4F! You can now switch it off if you've nothing else being controlled, dispense to kegs/bottles and clean the fermentation vessel ready for the next batch.

Cleaning

One last thing to take care of - cleaning! It's important to clean immediately after fermentation, as leaving it as-is will encourage growth of mould and other unpleasant effects. Whilst EINBREW 4F doesn't have any built-in cleaning functions, you can use the heating control to help you clean up – for example, you could boil/heat water to sterilise with if your heater is powerful enough.

TROUBLESHOOTING

- Controller is beeping
 - It is alarming because a fermentation recipe has ended, or Static/Recurring/Overtemp/Undertemp Alarms have triggered, and human intervention is required to proceed. Press the Alarm button to cancel the alarm.
 - If there are multiple alarms, you will need to press the Alarm button to cancel each one in turn.
- Turning the Control Panel On/Off
 - Use the dedicated on/off switch to turn the Control Panel On/Off.
- Control Panel does not turn on
 - Please ensure that the power inlet cable is inserted securely, and the supplying power socket is turned on.
 - If using an **RCD/GFCI/RCBO device** as recommended, please ensure that it is activated and not in TEST mode. It will not provide power in this state.
 - Please check that the fuses (accessible via the external fuse holders) have not blown. Ensure that the system is disconnected from mains electricity whilst removing or replacing the fuses.
- Brew taking a long time to reach Set Temperatures
 - It can be normal for it to take a reasonable length of time to heat or cool to a temperature. How long will depend on your system – how much wort, and how powerful the heating/cooling systems are. This will differ depending on the ambient temperature also. Adding insulation to the vessels may help, or adding a more powerful heating or cooling system. Heat generated by Fermentation can also offset efforts to provide cooling, which may require more cooling power to compensate for.
- The Brew Temperature changes a lot when trying to maintain temperature
 - It is normal that there will be some variation in temperature. Typically, you will see a small overshoot when trying to obtain a particular set temperature, and may see some oscillations below and/or above the set temperature when controlling. This is to be expected, and totally normal. How much this occurs is entirely down to your system, and will depend on things like volume of water, element size, and vessel insulation – and also the set temperature, as you will have bigger ambient losses at higher temperatures.
 - If you are seeing larger swings than you would like, there are some things you can do to improve system stability.
 - Ensure that you keep the tank sealed at all times (with pressure release valve!). Continually removing and replacing the lid will cause fluctuations in temperature.
 - Add insulation to the vessel. This will help to remove ambient losses and make things more stable.

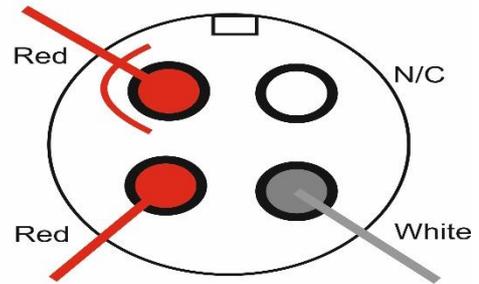
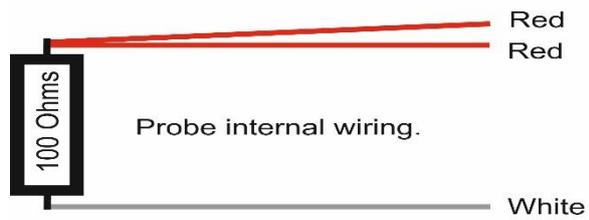
- Consider if where you have positioned the temperature probe is appropriate – for example, if it is very near a heating element, it will read an artificially high temperature when the heater is running.
- Error Indicators
 - If you see an unusual temperature reading, this may be due to an incorrectly placed, incorrectly connected or damaged temperature probe.
 - If the LCD display is showing 'Err', this means there is a problem with the temperature probe. Please ensure that it is connected correctly. It may also provide an error code – e.g. 'Err1'. Please communicate this to Support if you cannot resolve yourself. If a momentary error occurs but it recovers, this may only be displayed briefly.
 - If the fault does not go away on its own, try resetting the power on the system to see if that clears it.
 - Please note any information and communicate it to Support if necessary. For example, did it occur at the same time as a Pump or Heater was activated, or any other potentially relevant data.
- Heating/Cooling does not operate
 - Ensure that the device is electrically connected correctly.
 - Check the LCD display for the appropriate Tank to ensure that it showing the Heating/Cooling should be operating, and that the control icon is not flashing – this indicates that the system is holding off due to your anti-cycling settings.
- Power Failure during Brewing Process
 - If a power failure occurs, please switch off EINBREW 4F at the plug.
 - Once power has been restored, turn on EINBREW 4F again. Depending on the duration of the outage, you may be able to pick off close to where you left off for each Controller.
 - Move to the relevant Fermentation Step and confirm that the time/temperatures are correct. Depending on when the power cut occurred, you may e.g. need to use the End Step option to skip to the appropriate Fermentation Step to start with. You should also reduce the time for that stage to reflect the time remaining at that temperature level. Once you're ready, select the **Start** menu option to commence.
 - If the outage has been for a substantial period of time, you may need to adjust your recipe accordingly to compensate, or unfortunately dispose of the batch of wort.
- System continually resets itself
 - Ensure that the power lead is firmly plugged in. Consider replacing the main power lead with an alternative, to ensure that it is not faulty.
 - If you are having regular power fluctuations at your premises, this may be causing resets due to low supply voltage. Please contact your electricity company to report the fault.
 - Check to see if the reset occurs at particular times, e.g. when you are turning a cooler on/off, or a heater on/off, or something else.
 - If the problem persists, please note any information and communicate it to Support if necessary.

- I've changed a menu parameter and the system isn't working as well as it did anymore!
 - You may have inadvertently made a change that has caused something to go wrong. To correct this, you can go into the **Settings Menu** and select the **Reset Settings** option. Select it, then confirm the choice. All options (including recipe settings) will be reset to factory defaults on all Controllers, not just the currently active one.
 - You can also reset your parameters and recipe settings by holding down the **Left and Right buttons** when powering up the system – you will hear 2 short beeps to acknowledge the reset, then the rest of the start-up sequence will continue as normal.
- I try to start a controller but another vessel starts heating up/cooling down!
 - Ensure that you have the correct temperature probe in the correct vessel.
 - Confirm that you have selected the Tank on the LCD Display corresponding to the vessel you're trying to control – and not another one by accident.
 - Ensure that you've wired the correct heating/cooling system into the right Output, and that the liquid side is also connected correctly.

PT100 TEMPERATURE SENSORS

Wiring of 3 wire PT100 probe to the Redel-4 plug. Should you wish to use your own PT100 sensors, we can supply you with plugs to solder the probe leads to.

PT100 3-wire probe to REDEL-4 plug connection, rear view of plug.



WARRANTY

All EINBREW 4F products carry a 1 year back to base warranty covering manufacturing defects and component failures. The product has no user-serviceable parts except where otherwise stated, and must never be opened or disassembled, and as such should only be repaired by skilled and authorised personnel. Failure to comply could result in unsafe operation and should not be attempted under any circumstances. Contact below for a list of approved service agents. Note: Any unauthorised repair or adjustment will automatically render the warranty invalid.

The only user serviceable parts are the externally mounted electrical fuses. These can be replaced as needed. Please ensure that the system is completely disconnected from the electrical supply before attempting to remove or replace these fuses.

MAINTENANCE

Prior to each use of the unit, check the casing for signs of damage or misuse. Check the leads for signs of damage, ensure the outer insulation is not broken. If the unit is damaged it must NOT be used and should be returned to the supplier. The unit must not be used for any purpose than for that recommended by the manufacturer. The unit must not be submerged or exposed to liquid.

RETURNING EINBREW 4F FOR REPAIR

If returning a product to the manufacturer for repair, it should be sent freight pre-paid to the appropriate address. A copy of the Invoice and of the packing note should be sent simultaneously by airmail to expedite clearance through Customs, if relevant. A repair estimate showing freight return and other charges will be submitted to the sender, if required and applicable, before work on the device commences.

Manufacturer Address for Repair and Spare Parts:

EINBREW

BT37 0AW - United Kingdom

Or an approved repair company.

WEEE REGULATIONS

For EU customers EINBREW offer a product take-back service. For customers within the European Union (only) and products manufactured or sold by us; when those products reach the end of their life, simply send them back to us at your expense, we will dispose of them according to the relevant legislation. WEEE Registration Number WEE/DD2117VU.