



**HeaterX – C3 Controller**  
Installation & Operation Guide 1.4



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## 1.0 Installation - C3 Controller



### PLEASE READ BEFORE STARTING:

- Mount the controller on a clean flat surface. The mounting pad is designed for single use. Take your time to position correctly.
- The controller should be mounted in a dry area away from direct sunlight. The display may be hard to read in direct sunlight or in bright environments.

## 1.1

Mark a position for mounting the controller.



## 1.2

Drill a Ø 3 mm pilot hole. Then drill a Ø 11 mm hole for the controller cable.



# 1.3

Feed controller cable through Ø 11 mm hole.



# 1.4

Remove the protective film from one side of the adhesive mounting pad and apply to controller.



# 1.5

Remove the protective film from the other side of the adhesive mounting pad and apply to a flat clean surface.



# 1.6

Remove the screen protector.



# 1.7

Connect controller cable to heater harness. Carefully align pins and screw up the locking collar.



# 1.8

Connect power. The controller is now ready to be used.



## 2.0 Setting Time – C3 Controller



### 2.1

Press the **function** button once to activate.



### 2.2

Use the **up** and **down** arrows to select the time, pressing the **ok** button to accept each change.



### 2.3

To accept all and exit press the **ok** button to get to the timer screen, press the **ok** button to get to the **workshop code** screen, press the **function** button to get to the home screen.



### 3.0 Pre-Start – C3 Controller

#### PLEASE READ BEFORE STARTING:

- The heater may need to be pre-primed when starting for the first time.
- If total fuel line is <1 m the auto prime mode is not required. Turn the heater on and if it doesn't start the first time it will automatically attempt a second time. If the heater still hasn't started turn on a third time.
- If total fuel line is >1 m we recommend using the auto prime mode to speed up the priming process. Remove the fuel line from the base of the heater, start priming until you can see fuel. The auto prime mode will operate for 2 min before switching off. Repeat if more time is needed.
- Do not use the auto prime mode while the fuel line is connected to the heater as this could cause the heater to fill with fuel. If this happens the heater may need to be dismantled and cleaned by a service agent.
- You will only need to prime the fuel line once if the heater is used regularly. We recommend starting the heater once a month over summer to keep the fuel line primed. If you run out of fuel and the pump continues to operate, you may need to pre-prime the system.

## 3.1

**Auto Prime.** Press **function** button and **down** arrow to enter the fuel pump priming mode.



## 3.2

**Turn On.** To activate the fuel pump press the **up** arrow.



## 3.3

**Turn Off.** To deactivate the fuel pump press the **down** arrow.



## 3.4

**Finish.** Press the **function** button to exit and return to the home screen.





## 4.0 Operation – C3 Controller



### PLEASE READ BEFORE STARTING:

- The heater takes 4-6 min to reach a stable operating temperature, during this time it will run up to maximum temperature. The heater will then automatically slow down and become quieter if the set temperature is lower and in auto mode. If in manual mode it will return to the last set temperature.
- The heater will take 4-6 min to automatically cool down safely. Please don't disconnect the power while the heater is running. This may damage the heater.
- When pressing **on** or **off** buttons the heater has been committed to a controlled startup or shut down process. You will need to wait 4-6 min for the heater to finish.

## 4.1

**Turn On.** Press and hold **power** button until the display shows on.



## 4.2

**Turn Off.** Press and hold **power** button until the display shows off.



## 5.0 Temperature Control – C3 Controller

### 5.1 Auto - Temperature Control

#### PLEASE READ BEFORE STARTING:

- **Auto Mode.** Temperature control is automatic. The heater can be set between 8-35 °C (46-95 °F). The display will show set temperature for 3 seconds and then return to home screen. Press the **up** or **down** arrow again to view or select a new temperature.
- Automatic temperature is generally accurate to +/- 2 °C (35.6 °F) at the heater when used as designed.
- Temperature is measured at the heater. If the controller is set to 8-35 °C (46-95 °F) the heater will only reach the set temperature if the ambient air temperature is lower than that set.

# 5.1

**Increase Temperature.** Press the **up** arrow to increase the temperature.



## 5.1.2

**Lower Temperature.** Press the **down** arrow to lower the temperature.



## 5.2 Manual - Temperature Control

**PLEASE READ BEFORE STARTING:**

- **Manual Mode.** Temperature is manually controlled by the operator.
- Temperature is increased or decreased by controlling the fuel pump frequency (Hz). The fan speed cannot be independently controlled.
- Display will show set pump frequency for 3 seconds and then return to the home screen. Press the **up** or **down** arrow again to view set pump frequency or select a new pump frequency.

### 5.2.1

**Select Modes.** To select manual mode press the **ok** button and **up** arrow at the same time. In manual mode temperature is controlled by the operator.



## 5.2.2

**Increase Temperature.** Press the **up** arrow to increase the temperature.



## 5.2.3

**Lower Temperature.** Press the **down** arrow to lower the temperature.



## 5.2.4

**Set Units.** Press the **up** and **down** arrows at the same time to toggle between °C and °F (Not available on all models).



## 6.0 Functions – C3 Controller



### 6.1

**Home screen.** Press the **function** button to toggle between timer, workshop pin and the home screen.



### 6.2

**Timer.** Press the **function** button once to access the timer. Note: The timer function has been disabled. Using a heater without an operator present is unsafe practice.



### 6.3

**Workshop Pin.** Press the **function** button twice to access the workshop functions. We do not provide customers with the workshop pin number. **Note: Changing the factory settings could damage the heater and/or render it unusable.**



## 6.4

**Heater ambient temperature.** Press **ok** button once to see the ambient temperature at the heater.



## 6.5

**Set Temperature.** Press **ok** button twice to see the set temperature.



## 6.6

**System Voltage.** Press **ok** button three times to see the system voltage.  
Note: voltage at the controller may be different to voltage at the battery.



## 6.7

**Altitude.** Press the **ok** button four times to see altitude. Note: Altitude is factory set and can't be changed by the user.



## 6.8

**Error Codes.** Press the **ok** button five times to see the current error code status. For trouble shooting and error codes see pages 17-18.



## 6.9

**Home Screen.** Press the **function** button to return to the home screen.



## 7.0 Display – C3 Controller

### 7.1

**Home Screen.** Shows the time. The clock is 24hr only. It can't be programmed to read 12hr. Next to time is the timer icon. The timer function has been disabled.



### 7.2

**Battery.** Shows power to the controller.



### 7.3

**Blower Fan.** The icon will spin when the heater is turned on.





# 7.4

**Glow Plug.** The glow plug icon will show when it has been activated.



# 7.5

**Temperature.** A sliding scale indicates the heater combustion temperature through a series of coloured bars (1-6). Start up 1-2 (blue), mid temperature 3-4 (yellow), full operating temperature 5-6 (red).



# 7.6

**Fuel Pump.** The fuel pump icon will show when it has been activated.



# 7.7

**Temperature Sensor.** The temperature sensor icon shows when it is connected.



# 7.8

**Combustion Circuit.** The combustion icon shows when the heater has been turned on.



# 7.9

**Remote Connected.** The signal icon shows if the optional remote control has been paired. **Note: Remote must be paired by a factory technician.**



## 8.0 Trouble Shooting – C3 Controller



**All HeaterX repairs must be carried out by a qualified technician**

# 8.1

**Error Codes.** An error code will appear if a fault prevents it from starting safely. The heater will not start until the fault has been fixed.



### E-01 Low power

Heater requires 4-8 amps of current on start/stop for approximately 20-30 seconds to get the glow plug up to temperature. A low power error means your battery is too low in power.

- Check the batteries are fully charged. Use a battery charger. Your voltmeter may show >12.5/24.5 V DC, but the battery must be able to deliver >8 amps (12 V), >4 amps (24 V) on start and stop (auto clean).
- Check current to heater by using a clamp amp meter over the red power cable at the ECU. Carefully open the top cover of the heater by unscrewing air intake grill at the back of the heater, lifting both tabs to release. Start the heater and measure amp draw.
- If extending factory supplied harness power cable to battery use a min 4 mm<sup>2</sup> < 2 m, 6 mm<sup>2</sup> <6 m, 8 mm<sup>2</sup> <10 m. If the surface area of the cable used is too small the heater will not operate due to loss in current.
- Check you have not connected a 24 V system to a 12 V power supply. Check and measure power supply.

## **E-02 High power**

- Check that you are not using a 12 V system on a 24 V power supply. Check and measure power supply.

## **E-03 Glow Plug Open Circuit**

- Carefully open the top cover of the heater by unscrewing air intake grill at the back of the heater, lifting both tabs to release. Check glow plug is correctly seated, and the glow plug cable is fastened to the ECU.
- Replace glow plug.

## **E-04 Fuel Pump Failure**

- Check wiring to fuel pump.
- Check pump is working using the auto prime function.
- Replace fuel pump.

## **E-05 Overheat**

- Carefully open the top cover of the heater by unscrewing air intake grill at the back of the heater, lifting both tabs to release. Check that the temperature sensor is seated correctly and fastened to the ECU.
- Replace temperature sensor.

## **E-06 Blower Motor**

- Check blower motor cable is connected to the ECU.
- Replace blower motor.

## **E-07 Wiring**

- Check all connections to ECU, fuel pump, controller, fuse, and battery.
- Perform a continuity test. Repair broken connections. Replace wiring.

## **E-08 No Start**

- Remove fuel line connection at base of heater. Start auto fuel pump prime to test fuel is being delivered to heater. Check and replace fuel filter if required. Check fuel line joiners are secure. Check there isn't excess air in the fuel line. The fuel filter doesn't have to be 100% full to work correctly.
- Carefully open the top cover of the heater by unscrewing air intake grill at the back of the heater, lifting both tabs to release. Check temperature sensor, glow plug, glow plug screen.
- Check and measure power supply.
- Replace the temperature sensor.

## **E-09 ECU/Temperature Sensor Error**

- Carefully open the top cover of the heater by unscrewing air intake grill at the back of the heater, lifting both tabs to release. Check ECU wiring is correctly fastened.
- Replace ECU.
- Replace temperature sensor.

## **E-10 Ignition Failure**

- See E-08.

Fault errors will disappear from the controller home screen once repaired.

**Heatspace is not responsible for faults caused by installation, operator error, power supply and/or fuel.**

**Please read diagnostics before contacting Heatspace for support.**

## 9.0 Frequently Asked Questions – C3 Controller



**Does the heater have automatic and manual temperature control?** Yes

**Does the heater have automatic start/stop?** No, the HeaterX does not have an auto start/stop function. Auto start/stop designs don't provide accurate temperature control (+/- 5°C) and are less energy efficient (8 amps (12 V) / 4 amps (24 V) required for 20-30 sec on startup and shutdown)

**Why won't the heater turn on or off?** When turning the heater on or off it needs to go through an operational sequence which requires 4-6 min. You may have to wait for the heater to finish before turning on or off again.

**Why am I getting too hot?** The lowest operating temperature of the HeaterX is 1 kW. Turn the heater off using the controller or open a vent or window.

**How do I get the best heating performance?** Open a window or hatch while using the heater to let fresh air into the cabin and hot stale air out.

**Can this heater keep the room dry?** Yes. As air heats up it absorbs moisture. Open a window or vent while using the heater. By allowing hot air to escape in a controlled way, you are removing moisture and condensation.

**Can I use the heater while driving?** Yes, the HeaterX can safely be used while moving. The heater is designed to turn off if it gets too hot (temperature sensor) or there is a power/fuel error.

Do not use the heater unattended. The HeaterX does have a safety shutdown, but we don't recommend leaving it running unattended.

Do not operate the heater if the user/s are not able to safely turn the heater off.

**Is the screen hard to see in sunlight?** Yes, the screen may be difficult to see in direct sunlight. Press any key to activate screen brightness and place hand over the display if required.

**Is there an Auto dim function?** Yes, the screen brightness will dim if the controller has not been used for 120 seconds. Screen brightness will re-active after any button is pressed.

**Is the controller wireless?** No. The controller is wired to the heater.

**Does the controller always need to be connected to power?** Yes, if you require the controller to be powered off, you will need to fit a switch (not supplied), remove the heater fuse, or disconnect controller. Power must be isolated before making changes. The controller doesn't have a built-in battery. Clock settings will be lost if power is disconnected.

**Is there a 12/24hr clock?** No, only 24hr.

**Does the controller have a built-in temperature sensor?** No, temperature is measured at the heater.

**Does the controller have a timer function?** No.

**Are there diagnostics?** Yes. See trouble shooting (pages 17-19).

**Is there a remote control?** Yes, an optional extra remote control is available. The remote control should be purchased with the heater as it needs to be paired to the heater ECU by Heatspace. We can retro fit, but the heater will have to be returned to Heatspace.

**Is the controller 12V and 24V heater Compatible?** Yes.

**Is the controller waterproof?** No, the controller is designed for use indoors, it does not have an IP (Ingress Protection) rating.

**Will the heater use power when turned off?** Yes, the controller display is always on. This requires a small amount of power.

## 10 Disclaimer & Warranty - C3 Controller



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