



# OLED Controller for BISON Heaters

Version 1.0

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## Table of Contents

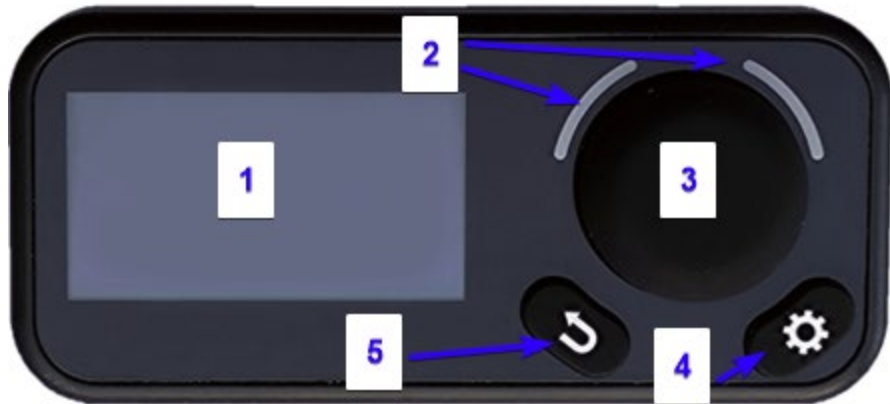
<b>DESCRIPTION .....</b>	<b>1</b>
CONTROLLER COMPONENTS.....	1
LED INDICATORS.....	1
INSTALLATION.....	2
<i>Caution:</i> .....	2
<i>Installation Steps:</i> .....	2
<b>GETTING STARTED.....</b>	<b>4</b>
<b>OPERATING MODES .....</b>	<b>5</b>
VARIABLE HEAT MODE.....	5
THERMOSTAT MODE.....	5
VENTILATION MODE.....	6
<b>MODE SELECTION .....</b>	<b>6</b>
<b>HEATER STATES.....</b>	<b>7</b>
ON STATE .....	7
SHUTTING DOWN STATE.....	7
SHUTDOWN STATE .....	7
STANDBY STATE.....	7
<b>SETTINGS .....</b>	<b>8</b>
LANGUAGE SETTING .....	8
BLUETOOTH SETTING .....	8
SOUND SETTING .....	9
HEATER INFORMATION.....	10
<i>ECU Software Version</i> .....	10
<i>Controller Software Version</i> .....	10
<i>Atmospheric Pressure &amp; Ambient Temperature</i> .....	10
<i>Heater Run Time</i> .....	11
<i>Monitor Mode</i> .....	11
FUEL PRIMING FUNCTION.....	12
FACTORY RESET .....	13
COUNTDOWN MODE.....	14
<b>TROUBLESHOOTING.....</b>	<b>15</b>

## Description

This Controller is compatible with all BISON heaters.

## Controller Components

1. OLED Display
2. LED Indicators
3. Knob
4. Settings Button
5. Back Button



## LED Indicators

Indicator Status	Status
Solid Blue	Initializing
Flashing Blue	Disconnected
Solid Green	ON
Solid Red	Shutting Down
No light	OFF
Flashing Green	Fault Detected

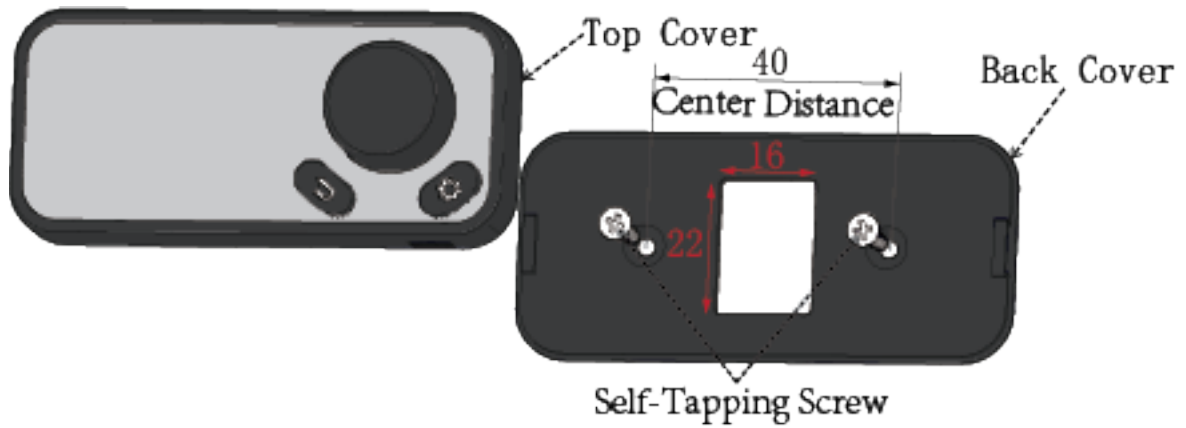
## Installation

### Caution:

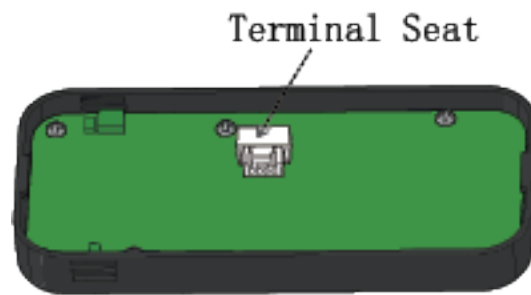
- Controller must be installed in a dry and liquid free environment.
- Controller cable must not be shortened.
- Power must not be connected to the heater's wire harness when installing the Controller.

### Installation Steps:

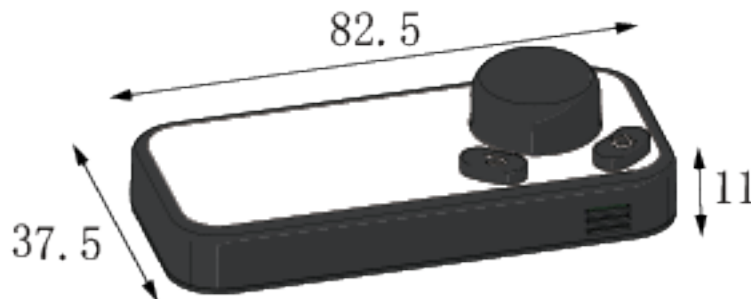
1. Clean the installation surface area to ensure that the surface is smooth and clean with no dust or water vapour.
2. Separate the back plate from the Controller.
3. Reserve a cutout for the Controller cable to go through the installation area.
4. Screw in the provided screws into the back plate as shown in Figure 1 below.
5. Connect the smaller end of the Controller cable to the terminal connector as shown in Figure 2 and pass through the other end of the cable through the reserved cutout in Step 3.
6. Assemble the Controller back together by pressing the Top Cover against the backplate as shown in Figure 3.



**Figure 1**  
(The dimensions are in millimeters and are not to scale)



**Figure 2**



**Figure 3**

## Getting Started

1. Connect power to the controller. Initializing screen will appear.



2. Display will go into the idle screen once initialization has finished.



3. If Initialization has failed, the controller will display No Connection.



4. Press and Hold the knob button for 2 seconds to turn on the heater.

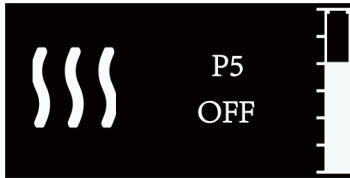


5. Press and Hold the knob button for another 2 seconds to turn off the heater.



## Operating Modes

There are three operating modes: Variable Heat Mode, Thermostat Mode, and Ventilation Mode.



Variable Heat Mode



Thermostat Mode

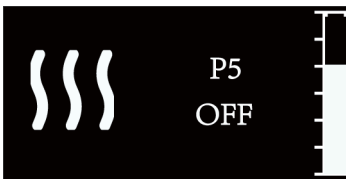


Ventilation Mode

### Variable Heat Mode

In Variable Heat Mode, User can adjust the heat intensity level with the knob ranging from P1 – P7.

(1 is minimum, 7 is maximum)



\*Note: Variable Heat Mode will only ignite the heater once during the ignition phase. Once the flame inside the combustion chamber has been established, the glow pin will not be used again.

### Thermostat Mode

In Thermostat Mode, User can set the temperature by adjusting the knob ranging from 5°C is minimum, 35°C is maximum. The heater will regulate the cabin temperature at the set temperature.



\*Note: In Thermostat Mode, flame will be stopped once the set temperature has been reached. Heater will reignite when the cabin temperature drops below the set temperature.

## Ventilation Mode

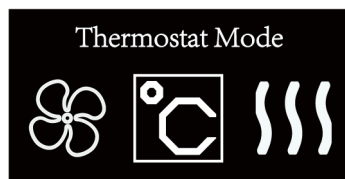


In Ventilation Mode, only the fan will spin, no heat will be outputted. User can change the intensity of the fan by turning the knob to change from P1—P7. (1 is minimum, 7 is maximum)

## Mode Selection

With the heater in Idle mode, Press the knob button once to display the modes selection menu.

Turn the knob to select a different mode, Press the knob to confirm your selection.





## Heater States

### ON State



The heater is on and in Operation.

In this example, the heater is in Ventilation Mode and set to P5.

### Shutting Down State



Heater is in its Shutdown phase.

Glow pin has been turned on to burn off any remaining fuel inside the combustion chamber to prevent carbon buildup.

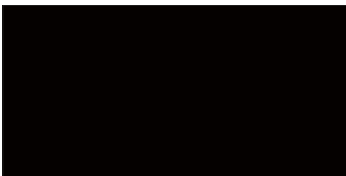
**\*\*Note: DO NOT turn off the main power to the heater. Doing so may permanently damage the heater's ECU and blower motor.**

### Shutdown State



The heater is in its OFF state. Fan and fuel pump should be inactive.

### Standby State



Heater is in its idle/standby state.

Press any button on the controller to exit out of Standby state.

## Settings

Press the “Setting” icon to enter the Settings menu. Turn the knob to select different sub-settings.

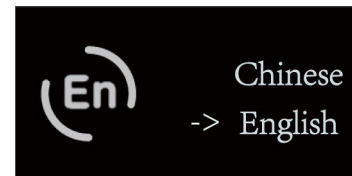
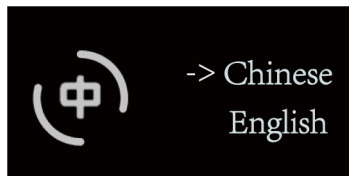
Press the knob to enter the sub-setting menu.

### Language Setting



Language Setting allows the user to change the language of the controller between Chinese and English.

Use the knob to select your language and press the knob to confirm selection.

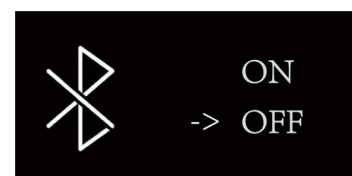


### Bluetooth Setting

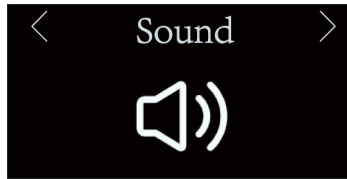


Bluetooth Setting enables or disables the Bluetooth function on the controller.

Use the knob to select ON or OFF and press the knob to confirm selection.

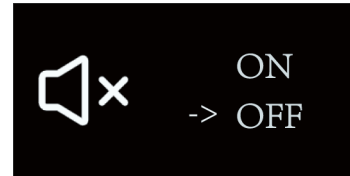


## Sound Setting



Sound Setting controls the beeping sound of the controller.

Use the knob to select ON or OFF and press the knob to confirm selection.



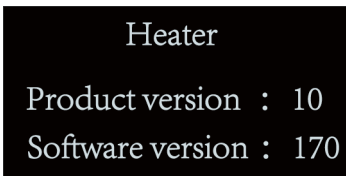
## Heater Information



The heater information menu stores the heater ECU Software Version, Controller Software Version, Atmospheric Pressure and Ambient Temperature, Heater Run Time and Ignition times, and Monitor Mode.

Use the knob to select a sub-menu and press the knob to confirm selection.

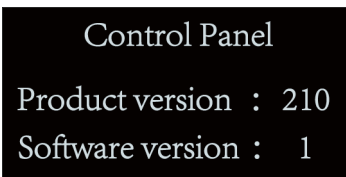
### ECU Software Version



This sub-menu displays the ECU product version and the ECU software version.

This information is often used for troubleshooting and diagnostic purposes.

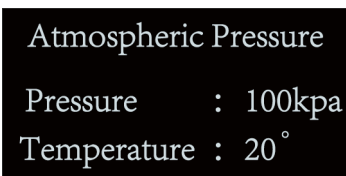
### Controller Software Version



This sub-menu displays the Controller product version and the Controller software version.

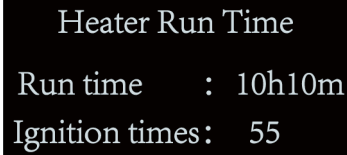
This information is often used for troubleshooting and diagnostic purposes.

### Atmospheric Pressure & Ambient Temperature



This sub-menu displays the atmospheric pressure and the ambient temperature of where the Controller is located.

## Heater Run Time

A screenshot of a menu titled 'Heater Run Time' with a black background and white text. The text shows 'Run time : 10h10m' and 'Ignition times: 55'.

This sub-menu displays the Heater Run Time and the Ignition times of the heater.

Heater Run Time is used for warranty purposes.

Ignition times is how many times has the glow pin turned on, and how many times has the heater entered ignition phase.

If Heater Run Time is low and Ignition times is high, most likely the heater experienced short cycling.

## Monitor Mode



This sub-menu is to be used by General Components Ltd only.

## Fuel Priming Function

To access the Fuel Priming Function,

1. Navigate to the [Heater Run Time](#) screen that is under “Settings” -> “Information” -> “Heater Run Time”.
2. Hold down the <Back> button and the <Settings> Button until you see the following screen.



Press the Knob once to activate Fuel Priming Function.

Fuel Priming Function will activate the fuel pump for 90 seconds, sucking and pumping fuel into the fuel lines on either side of the fuel pump. It should also eliminate as many air bubbles in the fuel line as possible.



Once activated you will see a countdown of 90 seconds on the display. Once the countdown of 90 seconds finishes, the fuel pump will stop pumping.

You can exit the Fuel Priming Function before the end of the 90 seconds by pressing once on the Back Button.

You may need to activate the fuel priming function more than once if you have a long fuel line installed.

## Factory Reset



Factory Reset will reset the Language, Bluetooth, Sound settings back to its default setting.

Press the knob once to enter the Factory Reset menu.

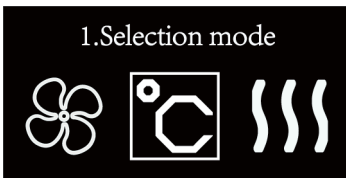


Press the knob once more to confirm your intention to reset your settings back to default.

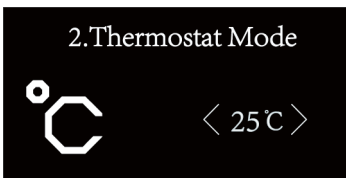
## Countdown Mode



Countdown Mode is a function that can delay the start time of the heater.



1. Select which mode you would like to use for your delay start.

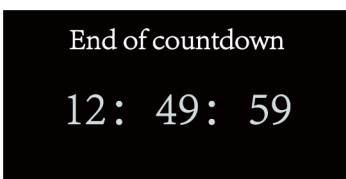


2. Configure the settings for the mode you selected in the previous step.



3. Set how many hours and minutes you would like to delay start the heater by.

If set the same as the image to the left, the heater will start 12 hours and 50 minutes after Countdown Mode has been activated.



4. Once you get to this screen, Countdown Mode has been activated. 12:49:59 means there's 12 hours 49 minutes and 59 seconds left until heater starts up.



## Troubleshooting



If you see “Disconnect” on the display, then it means the Controller has been disconnected from the heater.

Troubleshooting Steps:

1. Try unplugging and re-plugging the Controller Cable to remedy this issue.
2. Replace the Controller Cable.
3. Replace the Controller



When a fault displays on the screen, please refer to the [BISON Fault Code Table](#) for more details in resolving the fault.

Press and hold the knob for 2 seconds to exit the fault screen.



\*Note: After dismissing the fault screen, only proceed to restart the heater after it has completely shut off.