Challenger
DIESEL AUTOHEAT

C2 C4 C6

IGNITE

ADVANCED THERMOSTATIC HEATER CONTROLLER WITH 14 DAY PROGRAMABLE TIMER

USER INSTRUCTIONS

IMPORTANT; To use remote access (out-with your vehicle) you will need internet access at both ends of the connection. I.E 1 that the Challenger is connected to. 2 An internet connection that your control device, (mobile phone) is connected to (3/4g or Wifi) and a correctly configured MQTT broker.

made in scotland

WiFi

LEFT PWR / CENTRE RIGHT

All settings can be set on the actual Ignite controller, however is is easier to navigate and make required changes via the graphical web interface.

Basic Control menu

This menu is always the first menu presented upon powering up the controller, and the default timeout menu unless menu selection has branched from the other core root menus.

The Basic Control menu allows basic operation of the heater to take place:

- Heater On/Off
- Temperature adjustment
- Basic status and fault monitoring
- Thermostat or Fixed power modes
- Celsius or Fahrenheit display

Heater On / Off

The heater can be set to run, or stop, by holding down the PWR keypad button for around 1 second.

Starting the heater

If the heater is off, hold down the PWR keypad button.

A "Starting" message will then appear at the bottom of the screen.

Once fully ignited and running, this will change to "Running", which indicates the heater is now obeying the user's desired thermostat setting, or fixed power demand.

Stopping the heater

If the heater is on, hold down the PWR keypad button.

A "Shutting down" message will then appear at the bottom of the screen.

During this time, the heater will stop the fuel delivery and reheat the glow plug to expel unburnt fuel. The fan will continue to run and may speed up.

This process takes about a minute to complete.

The message then changes to "Cooling" and the fan will continue to run until the heater has cooled sufficiently (about 55°C body temperature).

Finally, the messages will disappear once the heater has completed the shutdown sequence.

Temperature adjustment

The desired thermostat temperature, or fixed power setting, can be altered by pressing UP or DOWN to increase or decrease the setting which is shown at the bottom of the screen. The current setting can also be observed by briefly pressing the PWR button.

Thermostat or Fixed power selection

Holding the DOWN keypad button will enable the selection of Thermostat or Fixed power modes. The active mode will be surrounded by a selection loop, which can then be changed by using the LEFT or RIGHT keypad buttons. If Fixed mode is selected, the power demand is the frequency the fuel pump will run at, in Hertz. eg:

Fahrenheit or Celsius

The displayed temperature can be shown as degrees Fahrenheit, or degrees Celsius. Toggle the presentation by holding the UP button for around 1 second.

Fault reporting

Should a fault be detected by the heater, an error message will be presented at

the bottom of the screen, in two lines.

The 1st line will indicate the error code, eg E-03, the 2nd line a description of the fault, eg: Glow Plug Fault

Detailed Control menu

The detailed control menu allows the operation of the heater to be monitored in close detail. Here the actual pump speed, fan RPM, heat exchanger temperature and glow

plug activity can be observed.

Temperature adjustment

The desired temperature, or fixed heat demand can be altered by pressing the UP / DOWN keys.

When in thermostat mode, the desired value is placed as a small triangle to the left of the measured "temperature bulb" on the left-hand side of the screen. The actual temperature is shown below the bulb. Once started, the desired setting is reported beneath the "target" icon as °C,°F or Hz, depending upon thermostat or fixed demand modes. With the heater idle, the menu will look something like.

Heater On / Off

The heater can be turned on or off by holding the PWR keypad button.

Starting the heater

Hold the PWR key for a second or so, the heater should start and this is reflected in the status message. Shortly thereafter, the fan will begin spinning, and the glow plug will be gently raised in temperature as can be observed by the steady rise in power applied to it. Note that the fan icon rotates to indicate the fan is running, along with the measured RPM!

It takes about a minute for the glow plug to receive full power, at which point the pump then starts. The Pump being active is indicated by an animated fuel droplet, along with the actual pump rate. The pump starts at a slow speed and steadily rises, along with fan speed to get the heater ignited. Ignition tends to be sensed once the body temperature of the heat exchanger has risen by about 5- 10°C.

The heat exchanger temperature is reported in the right hand side "thermometer bulb", and the actual value is shown below.

Once the body temperature has risen above 65°C or so, the glow plug is shut down, all the while the fuel pump and fan speeds are progressively increasing until at full speed.

The heater runs in this state for quite a few minutes getting the internals nice and hot.

After running at full speed for a while, the heater transitions to the running state, and now obeys the desired setting being either a thermostat setting, or a fixed heat demand. This occurs about 5 minutes after the initial start was demanded:

Thermostat or Fixed demand modes

Hold the DOWN key to toggle from Thermostat to Fixed demand modes. The changed operating mode is reflected in the units reported below the target icon. °C or °F for thermostat, Hz for fixed demand.

The set temperature indicator also disappears from the left-hand thermometer when in fixed demand mode.

Stopping the heater

Heater shutdown is initiated by holding the PWR key for a second or so. The status will then change to Shutting down. The pump speed is quickly lowered and eventually shut off.

The glow plug is gently re-powered to assist in drying the heat exchanger of unburnt fuel. About a minute later power is removed from the glow plug and the heater transitions to cool down mode.

Only the fan is now running.

It stays in cool down mode until the heat exchanger is observed to have dropped below 55°C, at which point it then returns to the initial idle state.

Clock menu

The clock menu presents the current time and date, as maintained by the Real Time Clock (RTC). This time is non-volatile, time is maintained if the power is out by an integrated lithium coin cell. This menu is basically passive, just showing the

time, but from here the clock can be set, or timers defined by pressing the UP or DOWN keypad buttons respectively.

Set Time

Press the UP keypad button from the Clock menu. The Root Menu Loop is left and the Set Time menu is presented. Pressing CENTRE will return to the Root Menu Loop's Clock menu. Press UP again to enter clock setting mode. The day field will first be surrounded by a loop.

When any field other than SET is selected UP or DOWN adjusts the selected value.LEFT or RIGHT will move to another edit field. CENTRE will abort the clock setting mode.Applying the new Time and Date To apply the new time/ date setting, press LEFT or RIGHT until SET is selected.

Pressing the CENTRE button will then upload the new settings into the RTC chip. Note that the time settings are maintained during power down by the CR1220 lithium battery.

Returning to parent menu (Clock)

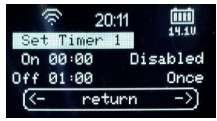
To return to the Root Loop's Clock menu, we must not be in edit mode. i.e. "Exit" will the selected at the bottom of the screen. To abort edit mode, not altering the actual time, press the CENTRE key when over any edit field. To set the time, you must press CENTRE when the SET field is selected.

Either usage of the CENTRE key will then select the "Exit" field.Press the CENTRE keypad button once again to return the Root Menu Loop's Clock Menu.

Timers *

Pressing the DOWN keypad button from the Root Menu Loop's Clock menu will enter the Set Timer Menu Loop. The initial menu is a graphic chart showing the coverage for the entire week of any timers that are enabled. In this example, Timer 1 is enabled for Monday and Wednesday, starting around 19:00, stopping around 23:00. The bar being solid indicates this *timer repeats.The numeric within the bar shows which timer definition applies.There are 14 timers available.They can be navigated to by pressing* the LEFT or RIGHT keypad buttons.

Selecting and setting fields *



After navigating to a timer, a screen something like the following will appear. The actual timer being identified in the Set Timer header. To return to the Root Menu Loop's Clock menu, press the CENTRE button. To start editing the timer, press the UP button.

LEFT and RIGHT keys to select the field to be edited. UP or DOWN keys to alter the value.Note that holding these buttons down will enable auto repeat mode.

Enabling or Disabling the timer *

Using the LEFT / RIGHT keys, navigate to the Timer Enable field The timer can operate in simple or advanced mode. Simple mode allows you to just enable or disable the timer by using the UP / DOWN keys.Advanced mode allows you to select which specific days the timer will be enabled for.Advanced mode is entered by holding down the UP key until a list of days appears instead of just Enabled or Disabled When "per day mode" is enabled, the selection loop shrinks to only select one day. LEFT or RIGHT select the day.UP or DOWN enable or disable the day.

A day is enabled when shown in inverse text.CENTRE leaves per day edit mode. Assuming specific days were selected, the base selection menu now indicates which days are enabled.

Timer Repeat or One Shot *

Timers can be set to repeat every day, or self-cancel once expired.Navigate to the bottom right edit field then press UP or DOWN to toggle the setting.

Saving the timer *

Press the CENTRE key to save the timer's settings, there is no abort function.Before the Challenger accepts the new timer settings, a check is made against all other timers that may have already been enabled.It is illegal for two timers to overlap.

If the new settings do conflict with another timer, the current timer is forcibly disabled, and a notification appears about which timer it conflicted with.Irrespective of the timer being accepted, the settings are always stored to non-volatile memory. The timer may however end up being disabled due to a conflict.

If no conflict occurs the following message appears.

Returning to Root Menu Loop (Clock menu)

When the navigation line is selected, press the CENTRE key to return to the Main Menu Loop's Clock menu.

Note: If the keypad left idle for minute, the Root Menu Loop's Clock menu will be activated.

When back in the Main Menu Loop, if any timers have been set, the next timer that is scheduled to run will appear at the top of the screen, the embedded numeric being the ID of the specific timer that will next operate:

If the timer is set to repeat, the icon will gain an arrow looping about the icon. The number within the icon indicates which timer is defined, not how many times it will repeat.

Mode Selection menu

The Mode Selection menu allows:

Thermostat / Fixed Hz mode to be toggled

Temperature to be reported as °C or °F

Fuel pump to be primed. Initially enter the options by pressing UP. LEFT / RIGHT alter the selected option. UP / DOWN selects the other options. If the selection reaches the top line, fuel pump priming becomes possible.

Pump priming is always disabled by default and can only be enabled if the heater is not already running. Enable the fuel pump by pressing RIGHT, the current pump speed is then reported. Stop the fuel pump by pressing UP, DOWN or LEFT. The fuel pump will also be automatically stopped after 1 minute, and control will be returned to the Basic Control menu due to the inactivity timeout.

Wi-Fi Mode menu

The Wi-Fi mode menu presents the current operating state of the Wi-Fi Interface and the associated web server interface.

IP addresses The Wi-Fi interface host's its own AP (Access Point). It can also connect to another network via that network's Access Point. This known as Station mode (STA).

ie AP only, or STA+AP modes. If Wi-Fi is enabled, the IP address for the inbuilt Access Point is shown, always 192.168.4.1. If also connected to another network, the IP address for that network is shown against STA.

Web Server

Two possible web pages can be presented when a user browses to port 80 (default HTTP port):

Heater control page Configuration Portal to connect to an existing Wi-Fi network. Therefore, there are 4 possible web server modes:

CFG AP only: STA configuration portal. Only available on 192.168.4.1.

AP only: Heater control. Only available on 192.168.4.1.

CFG STA+AP: STA configuration portal. Available on both IP addresses.

STA+AP: Heater control. Available on both IP addresses.

Selecting Wi-Fi operation mode

To change the Wi-Fi operation mode, press the UP key.

Then use the LEFT / RIGHT keys to select which mode to use in future. **To disable Wi-Fi entirely, keep pressing left until DISABLED appears.**

NOTE:

You cannot select an STA mode if no stored credentials exist to connect to another network. Selecting an AP only mode will erase any stored credentials for another network.

(i.e. STA capability will be lost).

If you wish to connect to another network, or change existing credentials, you must select a Configuration Portal enabled mode; CFG AP only or CFG STA+AP To switch to the selected Wi-Fi mode, press the CENTRE key.

The new Wi-Fi settings will be saved to non-volatile memory and the system will reboot after approximately 5 seconds.

(OTA) firmware updates.

The standard method of uploading new firmware uses the embedded ESP32 processor's debug serial port. For convenience, firmware can also be updated via the Wi-Fi Interface if the OTA feature is enabled. By default, OTA mode is enabled, but in the interests of security it is preferable to only enable OTA mode when new firmware is to be uploaded. Always leaving OTA enabled runs the risk of a 3rd party uploading unwanted firmware rendering the Challenger unserviceable. Firmware can however always be installed using the serial port

option. As a reminder, “OTA” is reported against the Wi-Fi icon at the top of the screen when enabled. To change the OTA setting, press UP from the Wi-Fi Mode selection mode:

Press:

- RIGHT to enable OTA
- LEFT to disable OTA
- CENTRE to save the OTA mode to non-volatile memory, the system will reboot in 5 seconds.
- DOWN to return to the Wi-Fi Mode selection mode.

MAC address discovery

In some circumstances it is useful to know the MAC address of the TCP/IP interfaces.

Especially useful if you wish to configure a fixed IP address on another network for the Challenger controller.

OLED Menu Structure

The Challenger hosts a local user interface comprising of a 1.3” 128x64 resolution OLED display, and a 5 button keypad beneath the OLED display. The keypad buttons are referred to in the menu descriptions as LEFT, RIGHT, UP, DOWN & CENTRE. The OLED display can present several menus used to monitor/control the heater, or alter settings such as fuel mixture, timers etc.

The general topology of the menu flow is as follows:

When first powered, the initial menu is always the Basic Control menu. This menu provides basic control of the heater and will be described later.

Menu Navigation

The Basic Control menu lies within the Root Menu Loop.

Each screen in the loop can be navigated to by using the LEFT or RIGHT keys.

From some screens, navigation can move away from the Root Menu Loop, and enter a different loop.

e.g.: pressing DOWN from the Clock menu will shift control to the Timer Settings Loop. Pressing LEFT and RIGHT now will select the available menus within that loop. If values need to be applied, this is generally achieved by pressing the CENTRE keypad button.

Inactivity timeout

By default, if keypad has been idle for a minute, the display is dimmed.

Additionally if the currently selected menu is not associated with one of the core root menus (Detailed Control, Basic Control, or Clock), menu selection will revert to a core root menu. The timeout behavior can be altered within the User Settings menu loop. Importantly, once the display has dimmed (or disabled), the initial press of any button is not passed onto the user interface. Instead the display is immediately restored to normal brightness. Consequential keystrokes will then be delivered to the user interface, unless the inactivity timeout once again elapses.

User Settings Menu Loop

The User Settings menu loop can be accessed via either the Heater Settings, GPIO status or Pump Priming menus of the Root Menu loop.

Pressing down upon any of those root menus will take you to the User Settings loop, either direct to the Advanced Thermostat modes, GPIO Configuration or Version Information menus.

Advanced Thermostat modes Menu (User Settings menu loop)

The standard thermostat employed by the heater uses the set point defined by the controller and sent over the communications protocol.

Standard Thermostat mode

Starting from cold, the heater will run at the maximum fuel rate until the room temperature exceeds the set-point by 1°C.

Once this threshold is crossed, the heater then runs at the minimum fuel rate. When the temperature drops 1°C below the set-point, the heater once again runs at the maximum fuel rate. i.e. a 2 degree hysteresis.

Standard thermostat mode

The Challenger can modify this behavior in one of two ways:

- Modify the actual temperature sent to the heater, controlling the width of the dead-band.
- Operating the heater in a linear Fixed Hz mode.

Dead-band mode - modified hysteresis

Dead-band mode still uses the heater’s internal thermostat algorithm, but the Challenger modifies the room temperature value that is communicated to the heater. If the current room temperature lies within a user definable window about the set-point, the set-point temperature is sent to the heater. If outside the window, the temperature sent will be at least 1 degree higher or lower than the set-point.

Thereby the dead-band, or hysteresis of the thermostat is controlled.

Comfort mode

Comfort mode is a cunning method to remove the thermostat function entirely from the heater. The heater instead is told to run using Fixed Hz, or "heat demand" mode. If the room temperature is below the limits of the user defined window about the set-point, the maximum fuel rate is requested by the Challenger. If the room temperature is above the window's limit, the minimum fuel rate is requested. Within the window, the fuel rate demand is linearly adjusted between the maximum and minimum fuel rates according to the deviation from the set-point.

Cyclic Thermostat (override)

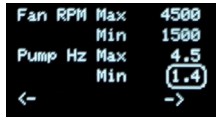
The cyclic thermostat mode can be used to shut the heater down when a maximum temperature threshold is exceeded, and automatically turn the heater back on when the temperature falls below a minimum temperature threshold. This will cause the glow plug to be cycled during both shutdown and restart, so consideration should be given to this higher electrical energy load when using a battery based system.

**** Best used in standard mode, heater needs to be switched on to commence operation.***

Thermostat settings adjustment

From the Root Loop Heater Settings menu, press the DOWN key. To set and save the settings, the CENTRE key must be pressed whilst one of the settings is selected. You must then confirm the changes by pressing the UP key.

Heater Settings menu



The heater settings menu is the gateway to being able to edit the heater's tuning settings. It also enables access to the User Settings menu loop.

The currently active heater tuning settings are shown on the display.

To de-mystify SN-x and PF-x, their actual effect is toggled into view on a regular basis.

To edit the heater settings, you need to enter a password to gain access.

The password is "4682".

Press UP, a password entry menu is then presented.

- UP / DOWN adjust each digit's value.
- LEFT / RIGHT select the next digit.

Only when "4682" is displayed, press the CENTRE key.

If any other value is shown, control returns to the Root Menu Loop's Heater Settings menu.

When the password is accepted, we leave the Root Menu Loop and gain access to the Heater Settings Loop.

Heater Settings Menu Loop

The first menu is the Fuel Mixture settings menu:

Fuel Mixture edit menu

Press UP to enable edit mode:

- LEFT / RIGHT adjust each setting.
- UP / DOWN select another setting.

Abort by pressing DOWN until the navigation line is re-selected, then move away using LEFT or RIGHT. To set, save and apply the settings, the PWR key must be pressed whilst one of the adjustable settings is selected. You must then confirm the changes by pressing the UP key. STORING will then appear as the settings are saved to non-volatile memory:

Heater Settings edit menu

When at the navigation line of the Fuel Mixture menu, press LEFT or RIGHT to access the Heater Settings menu

Press UP to enter edit mode.

LEFT / RIGHT adjust the selected setting.

UP / DOWN select another setting.

Abort by pressing DOWN until the navigation line is selected then move away using LEFT or RIGHT. To set, save and apply the settings, the PWR key must be pressed whilst one of the adjustable settings is selected. You must then confirm the changes by pressing the UP key. STORING will then appear as the settings are saved to non-volatile memory:

Version Information (User Settings menu loop)

The version information menu allows the current installed software version to be inspected. From this menu you can also Perform/authorize automatic web updating of the firmware. The first two lines show the current installed version,

and its release date. Provided WiFi is connected to an Internet enabled network, when the version menu is opened a check is made for a possible firmware update being available from the Challenger web server. If there is an new update, a download animation from the world to the device is shown to the left of the software icon.

Automatic update

If the Challenger is connected to a WiFi network, which itself is connected to the Internet, it is possible for the Challenger to interrogate the Challenger web site and determine if a newer firmware version is available.
Initially the Challenger will animate an "Update available" icon upon the display's header area.
It will NOT automatically start the new firmware download unless authorized by the user.
To authorize the upgrade, navigate to the Version Information menu, located in the User Settings menu loop.
Presuming an update is available, a larger animation takes place to the left side of the menu.
To authorize the download, press UP, CENTRE, UP.
The Challenger will then download the new firmware, showing the progress on the display.
Once the download completes, the checksum is verified and the system reboots into the new firmware. Should the download fail, the Challenger still reboots, but the existing version will be retained.

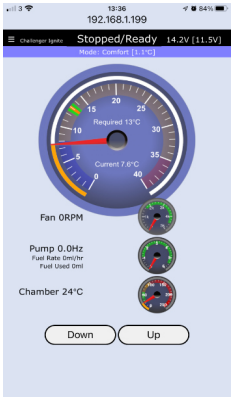
Standby mode

When your new heater is in standby mode (off and displaying the clock), it will dim the display or go blank (depending on settings). To awaken, press any key.

Ignite power draw

Your new Challenger Ignite controller is an active communications device and requires power to provide the network connections In standby mode Ignite controller with wifi enabled will draw between 150ma to 210ma depending on settings. This should not be an issue with properly maintained leisure batteries with a regular charging routine. Power draw can be reduced by disabling the wifi communications. Without wifi enabled the standby power draw drops to approx 35 - 50ma.

Wi-Fi Connectivity



The Challenger can communicate over a Wi-Fi connection. Available features currently being:

- Inbuilt Access Point - a Wi-Fi device can directly connect to the Challenger.
- Station mode – The Challenger connects to an existing Wi-Fi network.

The web server interface operates as either:

- An interface to control and monitor the heater
- A Configuration Portal to enable connection to another Wi-Fi network.

Connecting to the inbuilt Access Point

A mobile device is best used to connect to the Challengers AP (Access Point).
When browsing for available Wi-Fi networks, it will be named Ignite.

- Select the **Ignite** network.
- Enter the password - It is located on controller case.

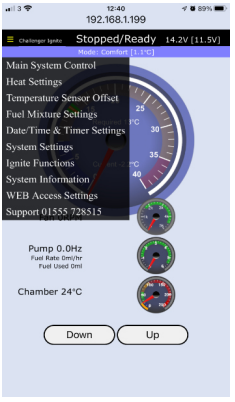
The connecting device should then be given an IP address. The Challenger's AP IP address will always be **192.168.4.1.**
Your device will also probably warn there is no Internet connectivity (which there isn't).
Open you local browser on your device and enter 192.168.4.1 in the address bar. This will take you to the Ignite interface. Best advice is to save this to your desktop, thus next time you simply need to press the desktop icon.

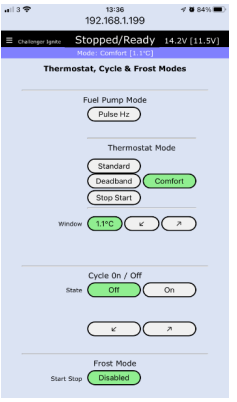
When opened the main screen will be displayed. To adjust the temperature, simply press either the up or down buttons.

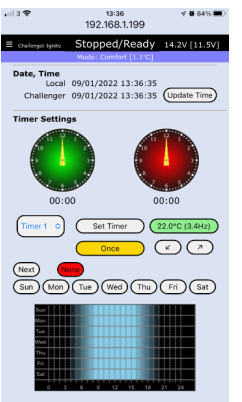
- To turn heater on / off simply press the centre dial on the temperature

needle.

- On the upper left of the screen is the menu, to access it simply press the icon. This will then list the available function / display screens.







Each screen is self explanatory.

Cyclic Thermostat (override)

The cyclic thermostat mode can be used to shut the heater down when a maximum temperature threshold is exceeded, and automatically turn the heater back on when the temperature falls below a minimum temperature threshold. This will cause the glow plug to be cycled during both shutdown and restart, so consideration should be given to this higher electrical energy load when using a battery based system. **** Best used in standard mode, heater needs to be switched on to commence operation.***

WARNING - this mode and also start /stop frost mode should only be used if consideration has been given to potential battery drain, multiple on / off cycles can deplete your leisure battery unless on mains hookup with a battery charger fitted and running.

Temperature probe

Your new Ignite controller has a built in temperature sensor, this will need calibrated on first installation. This is achieved by matching the Ignite controller to an independent temperature display. To match, you need to adjust the Ignites sensor offset, thus the sensor will better match the real world temperature.

Additional temperature sensors can be added / located to give optimum temperature readings. The standard on board sensor can detect heat from the CPU within the actual casing, thus why the offset needs to be adjusted to give a more accurate room temperature display. The additional external sensor can be placed anywhere within the vehicle within 1m of the controller. For best readings it should be located at approx standing head hight.

With regards to temperature setting,.

The most common question is what is the best temperature to set within our vehicle? Every vehicle is different, every person is different, best advice is to set your heater to max and when it get to a comfortable temperature, reduce the required temperature to approx 5 degrees below the current displayed temperature. On doing this you should hear the heater fan cycle back to a slow tick over, when the temperature then drops below your required temperature the fan will up cycle to provide more heat. You may need to perform this a few times to achieve the desired result. Please bear in mind 22 degrees in your home will feel a lot different to 22 degrees within your vehicle.

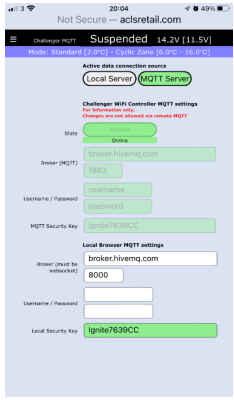
Fuel usage information

Approx fuel usage is displayed on the main home screen of the web interface, this can be reset by clicking on the usage information and resetting.

Using MQTT remote access

MQTT allows control of your Challenger via a MQTT broker.

The exciting possibility this enables is true remote control and monitoring of the Challenger from anywhere in the world, provided Internet access is available at each end. The Challenger connects to an MQTT broker via a conventional MQTT protocol. All brokers support such a connection.



Setting up for first time **Please see detailed separate instructions to proceed with setup and connecting your Ignite controller to you wifi router. It is a simple 4 stage process.**

Remote access has a limited menu system, this ensures that no system settings can be changed with the exception of adding and deleting timers. You can of course switch on and off.

Heater information / maintenance

Low temperature running As demonstrated on installation day, your heater uses a conjoined fan to circulate the hot air within your vehicle and also within the sealed combustion chamber. When running at lower temperatures for prolonged periods it is essential that you increase the heater temperature to maximum and let it clear the combustion chamber build up via the exhaust. This should be carried out every few days for approx. 5 minutes. Failure to follow this procedure can lead to an E10 error code, this means combustion error normally associated with a blocked exhaust. This will need to be cleared.

Normal power usage On start up and shut down your new heater will draw approx 9 - 10 amps for approx 3 minutes, thereafter dropping to 1- 2 amps during normal use.

Fuel **As best advice we advise that you DO NOT drop below ¼ tank at any time, even if not using your heater as it is possible for any fuel in the standpipe / fuel lines to back syphon in to the tank below the ¼ tank level. ** Your heater should be started and ran at least once per month to keep the fuel within the narrow fuel line fresh. Diesel can go stale and cause starting issues**

Manual re fuelling After refuelling on receiving an E08 attempt to start your heater 3- 4 times, this should fill the lines with fresh fuel and allow the heater to start. However, diesel can air lock with the fuel line and will need to be cleared via the following procedure to prevent damage and over fuelling. Firstly, refuel your vehicle to above quarter tank level. From the WiFi interface select system functions and then press prime fuel pump. Ensure that all the trapped air is expelled from the fuel filter by manipulating it whilst pump is pumping. Monitor disconnected fuel pipe and stop manual pump mode when clear fuel is being expelled from the pipe. Re connect fuel line to heater and start.

Error codes

Common user errors

E01 – Low voltage – your heater is not receiving enough power from your connected batteries, recharge battery or use your split charge if available via starting the engine to increase power availability.
E08 – No fuel – place more fuel within your vehicle fuel tank
E10 – Combustion error, see low temperature running.

Actual heater errors

E02 – Over voltage – decrease voltage supply
E03 – Damaged glow plug
E04 – Damage fuel pump
E05 – Overheat sensor tripped, check for blockages
E06 – Fan error, ensure case has not been knocked and nothing is on top of heater
E07 – Data fault, check wiring to controller has not been damaged.
E09 - Onboard sensor warning

Heater starting on it's own randomly This can be an indication of a fault in the heat protection sensor, however it can also be caused by a voltage spike. If this occurs, remove in line fuse to reset heater CPU. Once fuse is replaced monitor and If issue persists, contact support for warranty assistance and sensor replacement.

Blank screen (after pressing PWR button) Normally indicates a power supply issue, check battery connections, both positive and negative. Check in line fuse on positive wire. Locate and check negative wire, this is normally either connected to your vehicle battery or underneath where the heater exhaust exits the floor of your vehicle. It will be a black single wire which should be connected to your vehicle chassis. (Ground)

New installation / replacement of existing controller Please refer to guidance sheet for installation of your new Challenger Ignite WiFi controller.

Invoking WiFi manager (to change Wifi network)
If you require to change WiFi network you will need to ensure that your mobile device is connected to the Challenger WiFi network. Open **192.168.4.1/wmconfig** on your device and select the available network of your choice. The controller will now reboot in to new WiFi network. To discover it's new IP address you will need to check for the STA address within the controllers settings under network details

MQTT BROKER (FREE) You can use any MQTT Broker, but as a free option we recommend:-

broker.hivemq.com

Port 1883

Websocket 8000

Free broker does not need username or password.

WARNING

Do NOT attempt to load any 3rd party software (Afterburner or similar) to this controller. It will NOT function.

The unit will need to be returned to us for a chargeable reprogram / reset.

Motorhome & Marine

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