



DIESEL HEATER

USER MANUAL

Contents

01	Introduction	1
	1.1 About This Manual	1
	1.2 Symbols Used In This Manual	1
02	Safety Information	2
	2.1 General Warnings	2
03	Product Overview	3
	3.1 Controller Diagram	3
	3.2 Key Specifications	3
04	Getting Started	4
	4.1 Priming the Diesel Heater	4
05	Basic Operation	6
	5.1 Starting & Operating the Heater	6
	5.2 Manual Heat Mode	7
	5.3 Temperature (Smart) Mode	7
	5.4 Fan Only Mode	8
06	Settings & System Information	9
	6.1 General Settings	9
	6.2 Additional Settings & Information	11
07	Troubleshooting & Error Codes	13
	7.1 Error Code Guide	13

01 Introduction

Thank you for choosing Born To Roam RV Accessories Pty Ltd. This unit is designed to provide efficient, reliable heating for caravans and motorhomes, campers and other rvs giving you a compact diesel-powered heat source for on the road comfort.

This manual covers the safe operation and maintenance of your Born to Roam heater. It assumes the unit has already been installed in your vehicle. Please read it in full before first use, and keep it in the vehicle for future reference.

1.1 About This Manual

This manual is organized to guide you through day-to-day use. Safety information first, then an overview of your heater’s parts and controls, followed by operating instructions, maintenance, and troubleshooting.

If you only read one section closely before you start, make it **Section 2 (Safety Information)**, it covers what you need to know to run the unit safely in your caravan or campervan.

1.2 Symbols Used in This Manual

Warning and note boxes appear throughout to flag important safety information or useful tips.

⚠ WARNING

Indicates a hazard that could lead to heater fault or serious injury if not avoided.

ℹ NOTE

Indicates helpful tips, clarifications, or additional information.

02 Safety Information

⚠ READ BEFORE USE

Please read this section fully before operating your heater. It covers fire, burn and carbon monoxide risks that apply during normal use.

2.1 General Warnings

- Do not place any combustible or flammable dangerous goods near the exhaust pipe.
- Keep a minimum clearance of **100mm** from the heater’s exhaust at all times. Exhaust temperatures are very high. Materials that cannot withstand high heat may be damaged, or may even cause a fire.
- Do not use any fuel other than diesel.
- If the heater is installed indoors, exhaust fumes must be directed to the outside with no leakage. Failure to do so may result in the risk of exhaust gas poisoning or suffocation.
- When turning the heater off, always allow it to run through its full cool-down cycle. Otherwise, remaining diesel will not burn out of the combustion chamber, which can lead to carbon build-up and excessive smoke from the exhaust.
- Do not modify the heater, or use, repair, or replace any component with a non-Born To Roam original part.

Born To Roam is not liable for any accident or damage arising from failure to follow the warnings in this section.

03 Product Overview

3.1 Controller Diagram



3.2 Key Specifications

SPECIFICATION	2KW MZ	5KW MZ
Rated power output	2 kW	5 kW
Fuel type	Diesel	Diesel
Fuel consumption rate	0.36 L/h	0.60 L/h
Operating voltage	12 V	12 V
Rated current draw	36 W	50 W
Main unit dimensions (mm)	310 × 115 × 122	376 × 140 × 150
Main unit weight	2.7 kg	4.5 kg

04 Getting Started

4.1 Priming the Diesel Heater

Before starting your diesel heater for the first time, it is important that the fuel line is full of diesel. This process is called priming. Priming allows the pump to work at a faster rate removing the air from the fuel line and will allow the diesel to reach the heater and ignite efficiently.

- 1 Ensure the heater is **turned off**. The LCD controller should have power, but the heater must not be running.
- 2 Locate the Fuel button on the LCD controller, in the bottom-left corner of the display. Press and hold it for 8 seconds, until the LCD panel illuminates.



The Fuel button sits in the bottom-left corner of the display.

- 3 The LCD screen will illuminate and a large “P” will appear at the centre of the display. This indicates the heater has entered **Prime Mode**.



The LCD Displays “P” when its Priming.

- 4 While “P” is displayed, the fuel pump runs for 17 seconds, then briefly reverts to the home screen before repeating. The full cycle runs three times total.

! IF THE “P” DOES NOT APPEAR

If the “P” does not appear and the heater proceeds to start normally, disconnect power to your heater and start over from Step 1.

- 5
- Allow the priming process to finish. Once complete, the “P” will disappear from the display.
- 6
- The heater will then begin its normal start-up sequence automatically. You’ll notice the flame icon appear on the LCD screen, indicating the glow plug has ignited.



The flame icon confirms the glow plug is lit.

- 7
- After a short period, warm air should begin flowing from the outlet duct.

! DON'T RUN OUT OF FUEL

Keep an eye on the fuel level and top up before it gets low. If the heater runs out of diesel, repeat Steps 1 - 7 to re-prime it.

05 Basic Operation

5.1 Starting & Operating the Heater

To switch the heater on or off, press the **Power button** once.

When turning the heater off, it will not stop immediately, as it enters an automatic cooldown cycle. During this time the fan keeps running while the heater safely cools itself down. This is completely normal, and protects the heaters internal components.

! STARTUP CYCLE

When starting, the heater runs through a cycle to ignite the glow plug and prepare the combustion chamber. A flame icon appears shortly after startup to confirm the glow plug is lit, and you'll start to feel heat from the duct shortly after.

- Your diesel heater has three operating modes.
- **Manual Heating Mode** - You choose the heat output directly. With a fan speed of 1 through 10, you manually control the fan speed and heat output.
 - **Temperature (Smart) Mode** - The heater automatically maintains your chosen set temperature, turning off once it's reached and restarting once the room temperature drops **2°C** below it.
 - **Fan Only Mode** - Circulates air without burning any diesel.

Press the **round dial** once to switch between Manual Heat Mode and Temperature (Smart) Mode. To switch to Fan Only Mode, press and hold the **power** button and the **round dial** together while the unit is turned off.

You can identify the current mode by the symbol in the bottom-right of the LCD screen, each mode has its own symbol.



Manual Mode

Fixed fan speed and heat output, set by you.



Smart Mode

Automatically holds your target room temperature.



5.2 Manual Heat Mode

Manual Heat Mode allows you to manually control how much heat the heater produces. Rather than maintaining a specific room temperature, the heater will continue operating at the heat level you select until you change it or switch the heater off.

To use Manual Mode:

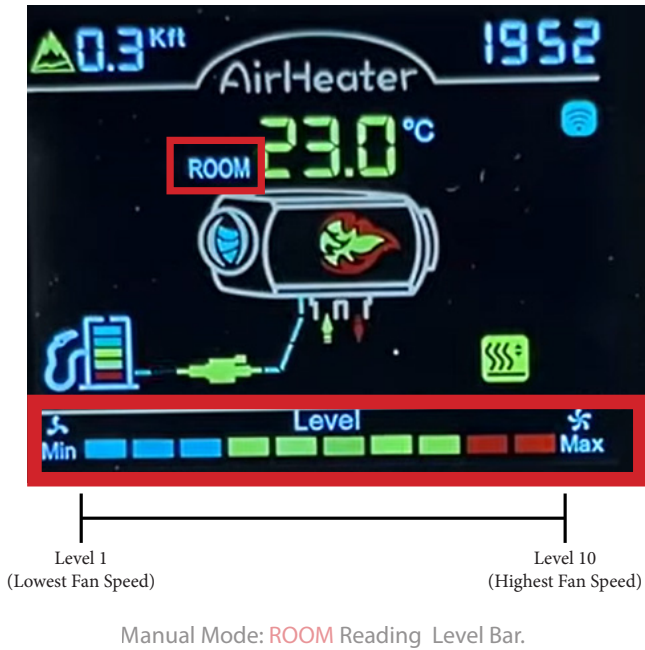
- Ensure the heater is in **Manual Heat Mode** (the LCD will display **ROOM**).
- Turn the **round dial clockwise** to increase the heat output.
- Turn the **round dial anticlockwise** to decrease the heat output.

As you adjust the dial you'll notice the **Level Bar** at the bottom of the LCD screen increase or decrease.

The heater can be set anywhere from:

- **Level 1** - Lowest heat output and fuel consumption
- **Level 10** - Maximum heat output and heavy fuel consumption

Once selected, the heater will continue running at that level, maintaining a consistent fan speed and heat output until another setting is chosen. This mode is ideal when you want complete control over the heater's performance rather than maintaining a fixed room temperature.



5.3 Temperature (Smart) Mode

Temperature Mode automatically maintains your desired room temperature. Instead of selecting a heat level, you choose the temperature you'd like the room to reach and the heater does the rest.

To use Temperature Mode:

1. Depending on what mode you're in, **press the round dial** until the LCD displays SET and the temperature displayed will be flashing.
2. Turn the dial clockwise or anticlockwise to select your desired temperature. The temperature can be adjusted between **8°C and 36°C**.
3. Once you've selected your desired temperature, stop turning the dial.



The selected room temperature will flash before the display automatically changes back to showing the **current room temperature**. If the room is colder than your selected temperature, the heater will increase its heat output and fan speed to warm the room as efficiently as possible. As the room reaches your selected temperature, the heater will gradually reduce its heat output.

Once the selected temperature has been reached, the heater will enter a standby or “hibernation” state.

During this time:

- The heater will stop consuming diesel.
- The glow plug stays lit.
- The controller will continue monitoring the room temperature.

When the room temperature falls approximately **2°C** below your selected temperature, the heater will automatically turn back on and begin heating again.

This cycle repeats automatically, helping maintain a comfortable and consistent room temperature while minimising fuel consumption.

5.4 Fan Only Mode

Fan Only Mode circulates air at the current room temperature without burning any diesel. This is useful when you want airflow without heat.

- **To Enter:** With the heater powered off, press and hold the dial and the Power button together.
- **To Exit:** Power the unit off, allow it to complete its shutdown cycle. Then power it on again as normal.

06 Settings & System Information

6.1 General Settings

The general settings menu allows you to configure the heater’s operating preferences, including the clock, timer functions, language, fuel tank settings, and temperature calibration.

To access general settings:

- 1 Ensure the heater is switched on.
- 2 Press and hold the **Settings** button until an F0 appears, then release the button.
- 3 Rotate the round dial to scroll through the available settings, **F0** - **F8** .
- 4 Press the round dial once to enter a setting.
- 5 Rotate the dial to adjust the value.
- 6 Press the round dial again to save your selection.
- 7 To exit the settings at any time, press the power button once.



Press & Hold the Settings to open the menu.

F0

Clock

Displays the current time, shown in the upper right corner of the LCD. Use this setting to adjust the hour and minute.

Note: The clock resets to 12:00 whenever power to the controller is disconnected.

F1

Automatic Start Timer

Sets a time for the heater to start automatically. Once enabled, the heater starts at the programmed time each day until the timer function is turned off.

F2

Automatic Run Time

Sets how long the heater runs before shutting down automatically. Works together with the Automatic Timer function (F3).

F3

Automatic Timer

Turns the Automatic Timer feature on or off. When enabled, the heater follows the start time (F1) and run time (F2) you’ve programmed.

ON - Automatic Timer Enabled OFF - Automatic Timer Disabled

F4

Language & Voice

Selects the display language and voice prompts.

E English C Chinese R Russian - Voice Prompts Off

F5

Room Temperature Calibration

Adjusts the displayed room temperature by ± 9°C. The temperature shown on the LCD is measured by a sensor inside the controller, so because of its location and environmental aspects, the displayed value may vary slightly from the actual room temperature. Use this setting to fine-tune it for improved accuracy.

Tip: Compare the displayed temperature with an external thermometer before adjusting.

F6

Fuel Tank Size & Fuel Level

Sets the capacity of your fuel tank (5L, 10L, 15L, etc). Once configured, the controller estimates the remaining fuel level and displays it on the LCD. The fuel level indicator has five bars, each representing one-fifth of the selected tank capacity.

F7

Fuel Pump Rate

Selects the fuel pump calibration used by the heater, 16U or 22U. For exmaple, 22U delivers approximately 22mL of diesel per 1,000 pulses.

Important: Aufocus heaters are factory-preset to 22U for normal operation. Only change this setting if instructed by technical support.

F8

Smart Mode Restart (Constant Heating)

Controls heater behaviour in Smart Mode. When enabled, the heater stops burning fuel once the target temperature is reached, and automatically restarts once the room temperature falls 2°C below target.

AUoN - Automatic Restart Enabled AUoF - Automatic Restart Disabled

6.2 Additional Settings & Information

A second menu, accessed separately from general settings, gives you system diagnostics plus remote and bluetooth pairing.

To access additional settings:

- 1 Ensure the heater is switched on.
- 2 Press and hold the **Settings and Power buttons** until an EN00 appears, then release the button.
- 3 Rotate the round dial to scroll through the available settings, **EN00** - **EN10** .
- 4 Press the round dial once to enter a setting.
- 5 Rotate the dial to adjust the value.
- 6 Press the round dial again to save your selection.
- 7 To exit the settings at any time, press the power button once.



EN00	Software Version Displays the LCD Controller’s software version.
EN01	Last Error Code Displays the most recently recorded fault code.
EN02	Body Temperature Displays the current body temperature of the main unit.

EN03	Supply Voltage Displays the current input voltage supplied to the heater.
EN04	Current Heat Level Displays the units current running heat level.
EN05	Room Temperature Displays the current room temperature measured by the controller.
EN06	Altitude Displays the current altitude compensation value being used by the heater
EN07	Fuel Priming Runs the fuel pump continuously for 90 seconds to assist with initial installation, or after the heater has run out of fuel. If fuel hasn’t reached the heater after one cycle, another priming cycle may be performed. The heater ignites automatically once fuel reaches the combustion chamber. Tip: Disconnect and reconnect power to the heater (Anderson Plug or Main Connection), then press and hold the fuel level button until “P” appears. The priming cycle begins automatically. - See Section 4.1 for more information on priming.
EN08	Remote Pairing Pairs a remote control with the LCD Controller. Only one remote can be paired at a time. Press the buttons in order: + > - > M > Power . The display steps through P1 - P4 during paring before returning to normal.
EN07	Bluetooth Information Displays the Bluetooth password. Default 1234 . The default password is changable within the mobile app. To display the Bluetooth ID: while in Smart Mode, press and hold the Settings button and control dial together for 3 seconds. The display shows bLE , combine the two digits on the left with the four digits on the right to get the six-digit Bluetooth ID used when searching for the controller in the mobile app.
EN10	Ventilation Mode Displays vEN, indicating Fan (Ventilation) Mode is available.

07 Troubleshooting & Error Codes

If the heater detects a fault during operation, an error code will be displayed on the LCD controller. Use the table below to identify the fault, then follow the recommended checks.

!

IMPORTANT

Allow the heater to cool down before inspecting components around the heater, exhaust, or combustion system.

7.1 Error Code Guide

CODE	FAULT	DESCRIPTION
E01	Startup Failure	The heater failed to start or ignite correctly.
E02	Lack of Fuel	The heater has detected insufficient fuel.
E03	Supply Voltage Error	The supply voltage is outside the required operating range.
E04	Outlet Temperature Sensor Fault	The temperature sensor is disconnected, incorrectly connected, or faulty.
E05	Inlet Temperature Sensor Fault	The ECU is faulty, and will need to be replaced.
E06	Fuel Pump Fault	The fuel pump is not receiving power correctly, or the pump wiring may be damaged.
E07	Fan Fault	The fan is blocked, obstructed, or not operating correctly.
E08	Ignition Unit Fault	The glow plug / ignition unit is not operating correctly.
E09	Overheating	The heater has detected an excessive operating temperature.
E10	Overheat Sensor Fault	The temperature sensor is disconnected, incorrectly fitted, or faulty.

E01 & E02 Startup Failure / Lack of Fuel

POSSIBLE CAUSES

- Insufficient Fuel
- Empty Fuel Line
- Blocked Fuel Filter
- Blocked or Kinked Fuel Line
- Fuel not reaching the Combustion Chamber
- Blocked Exhaust

TROUBLESHOOTING

- Check there is sufficient diesel in the fuel tank.
- Check that diesel is moving through the fuel line when the pump is operating.
- Check the fuel pump is installed correctly. (45 Degree Angle, Power Side facing up).
- If recently installed or run out of fuel, prime the heater before restarting (See Section 4.1).



E03 Supply Voltage Fault

POSSIBLE CAUSES

- Battery Voltage Too Low
- Poor Battery Condition
- Loose Power Connections
- Wires Cut During Installation
- Heater connected to BMS or Isolator Switch

TROUBLESHOOTING

- Check battery voltage with multimeter.
- Recharge or replace the battery, ensure the battery is at 100%.
- Inspect all power connections.
- Check Anderson Plug, Fuses and terminals.
- Ensure heater is connected directly onto battery terminals.
- Ensure cables aren't cut or damaged.



E04 Outlet Temperatrue Sensor Fault

POSSIBLE CAUSES

- Temeperature sensor has a loose connection or isn't connected
- Damaged Sensor Wiring
- Faulty Sensor

TROUBLESHOOTING

- Check the sensor connection on the motherboard.
- Inspect the sensor wiring for any damage.
- Ensure the sensor is firmly mounted to the aluminium body.
- Reseat the connector.
- Replace the sensor if the fault remains.



E05 Inlet Temperature Sensor Fault (ECU)

POSSIBLE CAUSES

- Loose connection at the ECU
- Faulty ECU

TROUBLESHOOTING

- Inspect the ECU wiring and connectors.
- Check the connection at the ECU.
- Ensure the ECU is correctly installed.
- If all above fail, the ECU will need to be replaced.



Scan for the E05 Troubleshooting Video.

E06 Fuel Pump Fault

POSSIBLE CAUSES

- Fuel pump disconnected
- Damaged Pump Wiring
- Faulty Fuel Pump
- Poor Electrical Connection

TROUBLESHOOTING

- Confirm the pump is clicking during operation.
- Verify correct pump installation.
- Inspect wiring for damage.
- Check the fuel pump electrical connection.
- Replace the fuel pump if required.



Scan for the E06 Troubleshooting Video.

E07 Fan Fault

POSSIBLE CAUSES

- Fan obstructed by debris
- Fan seized or damaged.
- Loose fan connection
- Faulty fan motor
- Fan magnets may have come loose.
- Rear duct clamped onto main unit during operation.

TROUBLESHOOTING

- Turn off the heater and disconnect power.
- Inspect the fan for dirt, debris or foreign objects.
- Check that the fan rotates freely by hand.
- Remove Rear Duct if installed.



Scan for the E07 Troubleshooting Video.

E08 Ignition Fault

POSSIBLE CAUSES

- Faulty Glow Plug
- Heating Mesh is Dirty
- Glow Plug not mounted properly

TROUBLESHOOTING

- Check that the glow plug is screwed in tightly.
- Inspect the glow plug by removing the rubber cover.
- If the above fail, it could



Scan for the E08 Troubleshooting Video.

E09 & E10 Overheating

POSSIBLE CAUSES

- Rear Duct is Attached
- Obstacle Blocking the Cold Air Intake on the heater
- Temperature sensor is faulty.

TROUBLESHOOTING

- Check that the rear ducting is not attached to the heater.
- Make sure there are no obstacles blocking the rear of the heater. As this will cause it to overheat.
- If all of the above have been troubleshooted and checked, the temperature sensor could be faulty.



Scan for the E09 & E10 Troubleshooting Video.



BORN TO ROAM