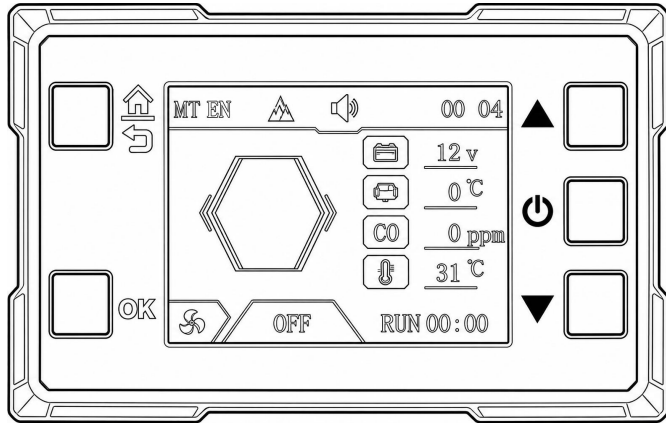
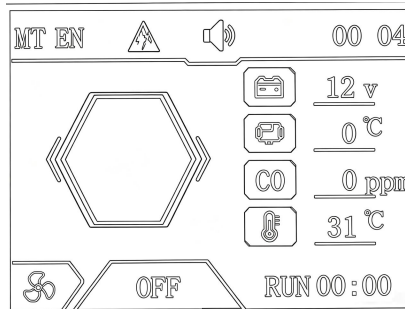


# Operation Instructions for Control Panel

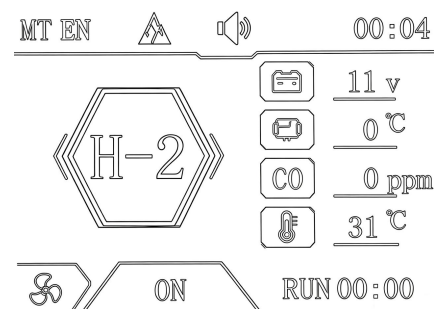
## 1.Control Panel as shown below



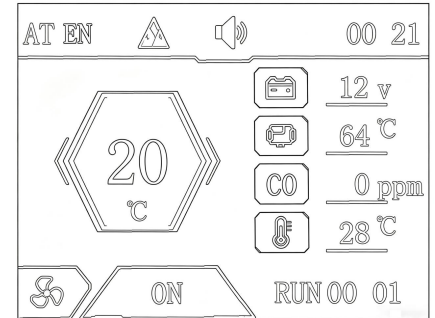
## 2.Operation Procedures



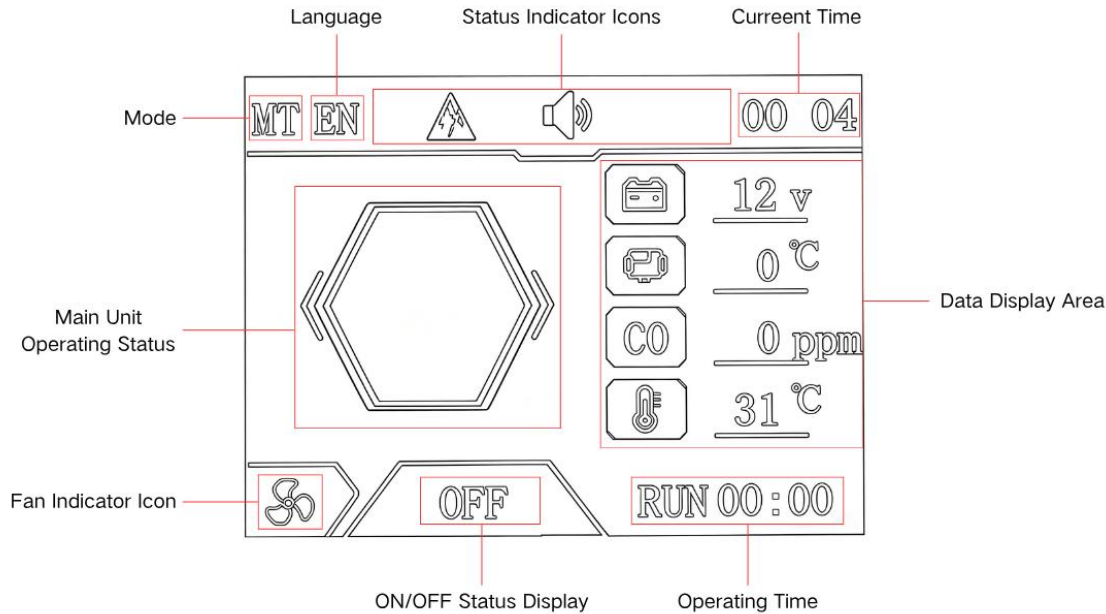
Power Off State



Manual Mode



Constant Temperature Mode



### Menu Button

Main interface:  
Press to enter function menu  
Other interfaces:  
Press to return to previous interface without saving settings



### OK Button

In menu options, press to enter the corresponding function page  
In function settings interface:  
Press to select the corresponding row for value adjustment  
After adjustment, press to exit the value adjustment  
Press and hold for two seconds to save all settings on the current page



### Up Button

Press to increase value  
Press to select previous option



### Power Button

Press and hold for two seconds to turn on/off



### Down Button

Press to decrease value  
Press to select next option

## Usage Rules

1. Do not use in environments with high humidity, conductive dust, flammable and explosive gases/dust/materials, corrosive media, strong light, or near equipment with strong magnetism, high voltage, or large current.
2. Power supply voltage range: DC 24V controller is applicable (18~32) V; DC 12V controller is applicable (9~16) V; controllers with different voltages are not universal. Do not use beyond the applicable voltage range.
3. 5kW controller can only be used on 5kW main unit; 2kW controller can only be used on 2kW main unit.
4. If the controller or external devices are damaged, must use devices of the same model and parameters, and replace by professionals.
5. Do not open the controller case without permission.
6. The equipment must be installed strictly according to requirements and used under safe conditions.
7. Our company is not responsible for losses and liabilities caused by wrong connection, short circuit, or damage of external devices or lines.
8. When the main unit is overheated and the fan cannot operate normally, must quickly cool the main unit. Blow cold air into the combustion air inlet to cool it down to below 80°C. Prevent high temperature from damaging components or causing fire.
9. When heating, ensure all air ducts are unobstructed (no folding, pressing, or blocking of pipes) to effectively ensure heating efficiency and normal operation. Blocked ducts will cause overheating of the main unit, reduce heating efficiency, shorten service life, or damage the equipment. Use qualified fuel to ensure normal use and service life of the equipment.

**\*Our company is not responsible for losses and liabilities caused by failure to install and use according to the above rules.**

\*Ignition point of cotton and sponge: 150°C; ignition point of paper: 130°C; ignition point of cloth: 270°C; ignition point of diesel: 220°C. Hot air outlet temperature can be higher than 150°C, and exhaust pipe outlet temperature can be higher than 270°C.

Fault Table

| Fault Code | Fault Cause                                             | Troubleshooting                                                                                                                                                                                                                                                                                                   | Fault Code | Fault Cause     | Troubleshooting                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| E-2        | Power Supply Voltage Range                              | Normal range: 24V (18-32V), 12V (9-16V),<br>Check if the battery or generator is normal, check if the fuse is aged                                                                                                                                                                                                | E-9        | Sensor Fault    | Check if the temperature sensor connection wires and connectors are damaged or loose, and if the sensor is damaged                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| E-3        | Spark Plug Fault                                        | 1) Check if the spark plug connector is loose or the wire is short-circuited with the case<br>2) Check if the spark plug is damaged                                                                                                                                                                               | E10        | Failed to Start | 1) The case temperature is too high, and the case cannot be cooled down within 3 minutes of startup<br>2) A large amount of white smoke in the exhaust<br>2.1) Check if the filter screen next to the spark plug is clean; if not, clean or replace it<br>2.2) Check if the oil pump sprays oil strongly<br>2.3) Check if the spark plug is aged<br>3) A small amount of white smoke or no smoke in the exhaust<br>3.1) Check if there is lack of oil, oil circuit frozen or blocked<br>3.2) Check if the oil pump is stuck or damaged and has weak oil pumping<br>3.3) Check if the combustion air inlet and exhaust channels are unobstructed<br>3.4) Check if the spark plug is damaged<br>3.5) Check if the gap of the inner fan wheel is too large<br>4) Ignition is normal but still reports ignition failure fault<br>Check if the case temperature sensor is fully in contact with the case, if the pressure spring is strong enough, and if the sensor is normal. |
| E-4        | Oil Pump Fault                                          | Check if the oil pump connection wires and connectors are damaged, loose, oxidized, short-circuited, or open-circuited.                                                                                                                                                                                           |            |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| E-5        | High Temperature Alarm (Inlet Air > 50°C; Case > 230°C) | 1) Check if the heating air duct is unobstructed<br>2) Check if the fan is operating normally<br>3) Check if the temperature sensor is normal                                                                                                                                                                     |            |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| E-6        | Fan Fault                                               | 1) Check if the impeller is stuck<br>2) Check if the connector is loose<br>3) The gap between the magnet on the fan wheel and the Hall sensor on the controller is too large<br>4) Check if the line is short-circuited or open-circuited; motor leakage                                                          |            |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| E-7        | Communication Fault                                     | Check the connection wires                                                                                                                                                                                                                                                                                        |            |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| E-8        | Flameout                                                | 1) Check if there is lack of oil, oil solidification at low temperature, oil circuit blockage, or oil pump stuck<br>2) Check if the oxygen inlet and exhaust air ducts are unobstructed<br>3) Check if the case temperature sensor is fully in contact with the case and if the pressure spring is strong enough. | E11        | CO alarm        | 1) Inspect the sealing of the heater body<br>2) Ventilation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception,

which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction