TERRABLOOM SMART SPEED CONTROLLER WITH THERMAL PROBE

FOR USE WITH TERRABLOOM EC MOTOR FANS

TerraBLOOM

AUTO

5

🌡 **77**°F

ROOM TEMP

PLEASE READ THESE INSTRUCTIONS BEFORE USE
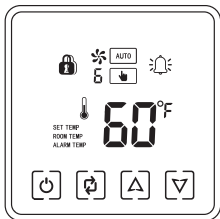
SMART CONTROLLER

THERMAL PROBE

USER MANUAL

TERRABLOOM SMART SPEED
CONTROLLER WITH THERMAL PROBE
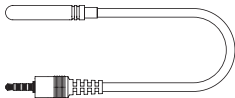
FOR USE WITH TERRABLOOM EC MOTOR FANS
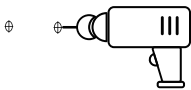
PLEASE READ THESE INSTRUCTIONS BEFORE USE

MOUNTING HARDWARE

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STEP 1

Disconnect the fan mounting bracket from the back wall of the smart controller. Using the holes in the mounting bracket as a stencil, mark 2 dots on the wall and pre-drill two holes for the included screws.
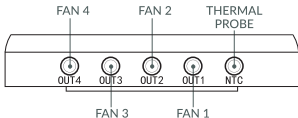
STEP 2

Use screws to attach the mounting bracket to the wall with the two round mounting knobs pointing out and away from the wall.
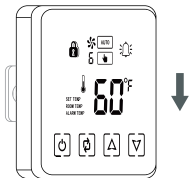
STEP 3

Slide the controller onto the round mounting knobs to secure it in place.

CONNECT UP TO 4 FANS

This smart speed controller can manage up to 4 TerraBloom EC fans simultaneously regardless of their duct diameter.

THERMAL PROBE

Each smart controller comes equipped with a thermal probe, which allows the controller to register temperature changes in the surrounding environment.

FAN 4   FAN 2   THERMAL
                   PROBE

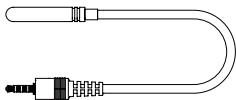OUT4   OUT3   OUT2   OUT1   NTC

FAN 3   FAN 1

AUTO MODE

In auto mode, this smart controller can maintain your desired temperature level by automatically adjusting the speed of all connected fans.
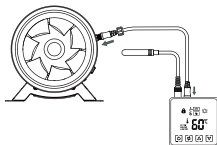
MANUAL MODE

In manual mode, this smart controller can maintain a constant speed on all connected fans.

OPERATION WITH 1 FAN

Connect thermal probe to NTC port. Connect fan to port OUT1 using the 3.5mm jack wire included with your fan.

OPERATION WITH 2 FANS
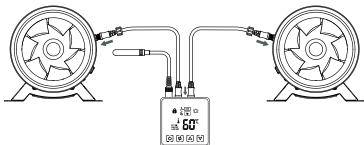
Connect thermal probe to NTC port. Connect fans to ports OUT1 and OUT2 using the 3.5mm jack wires included with your fans.

OPERATION WITH 3 FANS
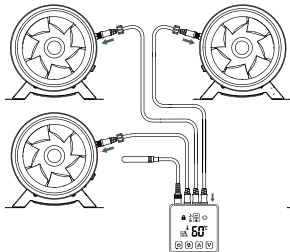
Connect thermal probe to NTC port. Connect fans to ports OUT1, OUT2 and OUT3 using the 3.5mm jack wires included with your fans.

OPERATION WITH 4 FANS
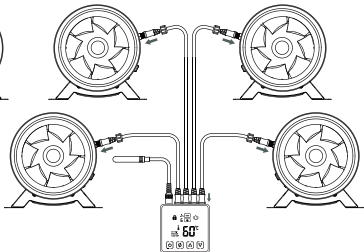
Connect thermal probe to NTC port. Connect fans to ports OUT1, OUT2, OUT3 and OUT4 using the 3.5mm jack wires included with your fans.

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FAN SPEED ICON

CONTROLLER LOCK ICON

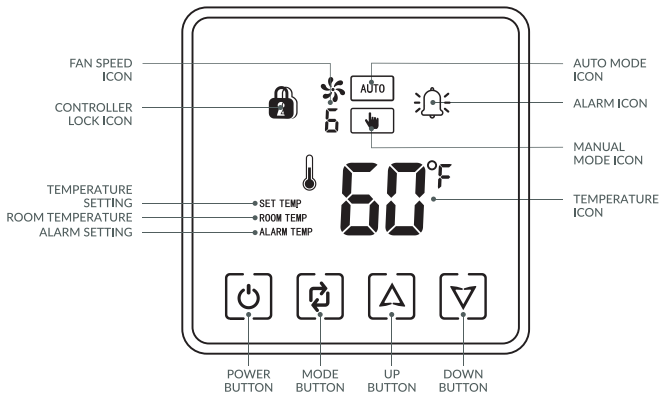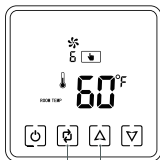AUTO MODE ICON

ALARM ICON

MANUAL MODE ICON

TEMPERATURE SETTING

ROOM TEMPERATURE

ALARM SETTING

SET TEMP

ROOM TEMP

ALARM TEMP

AUTO

60°F

TEMPERATURE ICON

POWER BUTTON

MODE BUTTON

UP BUTTON

DOWN BUTTON

MODE   UP

SCREEN LIGHT ON/OFF (NIGHT MODE)
- When the controller is powered **ON**, the screen light can be turned off by pressing the **MODE** button and **UP** arrow button simultaneously. The light will turn back on once any button is pressed.
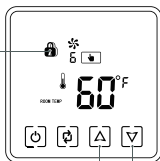
CONTROLLER
LOCK ICON   UP DOWN

LOCK CONTROLLER BUTTONS
- To prevent any changes to your settings, you may lock the controller. You can **LOCK** and **UNLOCK** the controller by holding the **UP** and **DOWN** arrow buttons simultaneously. The **LOCK** icon will flash on the screen when the controller is in the locked state.
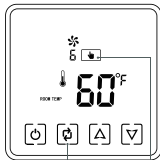
MODE   MANUAL
MODE ICON

MANUAL/AUTO MODE
- To select the smart controller's operating mode, press and hold the **MODE** button for 3 seconds. In **AUTO** mode you will see the **AUTO** icon displayed in the top central section of the display. In **MANUAL** mode, you will see the **HAND** icon displayed in the top central section of the display.

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POWERING THE CONTROLLER

* This speed controller receives power through its connection to the fan.
* Once the thermal probe and at least one TerraBloom EC fan is connected to the controller, the **POWER** button will illuminate on the screen.
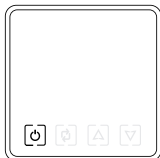
NO FAN CONNECTION   CONTROLLER POWERED OFF

CELSIUS/FAHRENHEIT

* When the controller is powered off (and connected to the fan), press and hold the **MODE** button for 3 seconds. Once the temperature appears on the screen, use the **UP** and **DOWN** arrows to select Celsius or Fahrenheit. Press the **POWER** button to save your preference.

MODE   MODE

AUTO MODE BASELINE SPEED

- **BASELINE (DEFAULT)** speed level is the speed level maintained by the controller when your desired temperature has been reached.

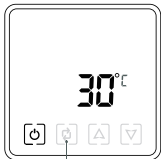- Select the **BASELINE** speed level by pressing the **MODE** button once again when **AUTO MODE** is already activated. The number displayed under the spinning propeller icon will start blinking, allowing you to select a value from 0 to 6.

- In applications which require moving air even when your target temperature is reached, we recommend the **BASELINE** speed be set at level 1-3, so that the fan maintains low to medium airflow while the temperature is already at your desired level.

- If your application requires the fan to be turned off when your target temperature has been reached, the **BASELINE** speed must be set at level 0. This effectively means that you want the fan to be blowing only when the temperature in your ventilated space exceeds your target level.

AUTO MODE SPEED ADJUSTMENT LOGIC

- When the room temperature increases over your desired level, the controller will automatically accelerate the speed of all connected fans to reduce the temperature to your desired level.

- The fan's speed will increase by 1 additional speed level for every 2°F difference over your desired temperature level.

- In the scenario when your desired temperature level selected for **AUTO MODE** is 70°F and your baseline speed level is 1. Once the room temperature increases to 72°F the fan's speed will increase to level 2. If the temperature increases to 74°F, the fan's speed will increase to level 3 and so on until the fan's speed reaches level 6 at 80°F or above.

- The fan speed will decrease by 1 speed level for each 2°F reduction in difference over your desired temperature level.

MANUAL MODE

- **MANUAL MODE** allows you to keep your fan at a constant speed level, regardless of the current room temperature.
- **MANUAL MODE** is indicated with the **HAND** icon in the top center section of the screen.
- To select your desired speed level, press the **UP** or **DOWN** arrow buttons on the controller.
- You can select between 6 speed levels, which correspond to the following percentages from the maximum fan motor output:
  - **Level 0** corresponds to the output of 0% from the maximum speed
  - **Level 1** corresponds to the output of 15% from the maximum speed
  - **Level 2** corresponds to the output of 32% from the maximum speed
  - **Level 3** corresponds to the output of 50% from the maximum speed
  - **Level 4** corresponds to the output of 67% from the maximum speed
  - **Level 5** corresponds to the output of 83% from the maximum speed
  - **Level 6** corresponds to the output of 100% from the maximum speed
- The selected speed level is indicated on the controller's screen by the rotating impeller icon and the number between 0-6.

PROGRAMMABLE AUTO MODE

- **AUTO MODE** allows the controller to automatically adjust the speed of the connected fans to maintain your pre-determined target temperature (based off of the temperature reading of the thermal probe).
- To set up **AUTO MODE** ensure that the **AUTO** icon is displayed in the center of the top row of the controller's screen. If you see the **HAND** icon instead, press and hold the **MODE** button for 3 seconds until the icon switches to **AUTO**.
- Use the **UP** and **DOWN** arrows to select the desired temperature. This temperature represents the level that you want to maintain in your ventilated space. The desired temperature can be selected from 32°F (0°C) up to 140°F (60°C).

ALERT ICON

FAN FAILURE CODE

FAN FAILURE DETECTION NUMBER

DOWN

FAN 4   FAN 2
OUT4 OUT3 OUT2 OUT1 NTC
FAN 3   FAN 1
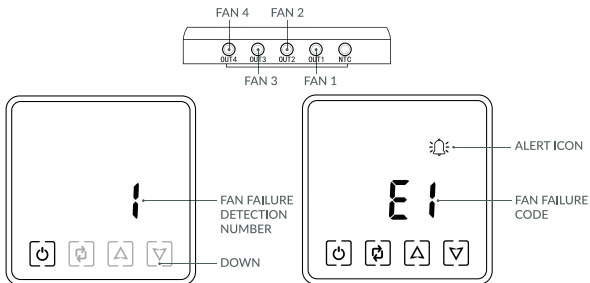
FAN FAILURE DETECTION AND ERROR MESSAGES

- TerraBloom EC Fans send frequent tachometer signals to the controller. These signals are used to detect fan failures and alert the user by beeping and displaying error notifications.

- To use this feature, please make sure to connect your fans to consecutive OUT ports on the controller. For instance, if you run 1 fan only, then connect it to OUT 1 port. If you run 2 fans on the same controller, then connect them to OUT 1 and OUT 2 ports. Similarly, if you run 3 fans on the same controller, then connect them to OUT 1, OUT 2 and OUT 3 ports. If one of the OUT ports won't have a working fan connected to it, but the alerts for that port are activated, it will result in false error alerts. Only activate these alerts for the number of OUT ports currently in use.

- To activate the fan failure detection and error alerts features, when the controller is powered **OFF** (and connected to the fan) press and hold the **DOWN** arrow button for 3 seconds. Using the **UP** and **DOWN** arrows select a number from 0 to 4 to match the amount of fans currently connected to controller's OUT ports.

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TEMPERATURE ALARM

- **TEMPERATURE ALARM** feature allows the user to select the temperature level, which once reached, triggers the fan to immediately accelerate to the maximum speed.

- The fan will override the current speed setting and blow at maximum speed until the temperature reduces below the **TEMPERATURE ALARM** level or unless the **TEMPERATURE ALARM** is deactivated by the user.

- To access the **TEMPERATURE ALARM** setup, when the controller is powered **OFF** (and connected to the fan), press and hold the **UP** arrow button for 3 seconds. Press the UP or **DOWN** arrows to select the temperature in which you would like the alarm to be triggered. Once you've selected the **TEMPERATURE ALARM** trigger level, press the **POWER** button to save it and power **ON** the controller.

- Once the controller is powered **ON**, activate the **TEMPERATURE ALARM** feature by pressing and holding the **MODE** and the **DOWN** arrow buttons simultaneously until the **BELL** icon illuminates on the controller's screen.

- To deactivate the **TEMPERATURE ALARM** feature press and hold the **MODE** and the **DOWN** arrow buttons simultaneously until the **BELL** icon disappears from the controller's screen.

WARRANTY

- This smart controller is guaranteed to be free from any manufacturing defects for the period of two years. If this product malfunctions or becomes defective within two years from the purchase date, we will replace your product free of charge or provide a full refund.

- The warranty program does not cover any damage as a result of normal wear (such as scratches), physical impact, water damage and damage resulting from operation with unsupported equipment.

- For more information or for warranty service please email us at **warranty@terra-bloom.com**. All customer requests are processed within 24 hours.

- **0 -** This mode indicates that fan failure detection is disabled for all ports.
  - **1 -** This mode indicates that fan failure detection is enabled on port OUT 1.
  - **2 -** This mode indicates that fan failure detection is enabled on ports OUT 1 and OUT 2.
  - **3 -** This mode indicates that fan failure detection is enabled on ports OUT 1, OUT 2 and OUT 3.
  - **4 -** This mode indicates that fan failure detection is enabled on ports OUT 1, OUT 2, OUT 3 and OUT 4.

- If your controller is connected to 4 EC fans and the fan connected to OUT 1 port becomes disabled, the controller will beep and display error message "E1" indicating the problem is on port OUT 1. Similarly, "E2" will indicate failure of the fan on port OUT 2, "E3" will indicate failure of the fan on port OUT 3 and "E4" will indicate failure of the fan on port OUT 4. If multiple fans will fail at the same time, multiple error messages will be displayed in sequence.

- Error message, "Er", indicates a connection problem with the thermal probe. The smart controller cannot operate without a working thermal probe. Contact TerraBloom Customer Service for a replacement.