

ETC Temperature Setting Manual

The Electronic Thermal Chamber (ETC) is designed to deliver optimum performance when operating within a temperature differential (ΔT) of up to 15°C below the ambient room temperature. For example, when the surrounding ambient temperature is 25°C, a 40-liter ETC can maintain an internal temperature of approximately 10°C, while a 100-liter ETC can maintain approximately 15°C under the same conditions.

The lowest achievable chamber temperature is approximately **-5°C**, provided the ambient temperature does not exceed **10°C**. Conversely, the chamber can heat its contents to a maximum temperature of **60°C**, depending on the selected operating conditions.

For reliable and energy-efficient operation, the ETC should be used within its specified ambient temperature range and recommended temperature differential.

Mainly, the panel fixed on the side of the chamber offers 3 sets of settings helping users to obtain the optimized output appropriately.

1. 1°C to 40°C (Default Setting)
2. -5 to 1°C
3. 40°C to 60°C

The default temperature on the machine will be 1°C to 40°C.

Temperature Setting Procedure:

3 sets of temperature settings are scheduled in the system.

- 1) 1°C to 40°C set

Temperature Setting (Default Range: 1°C to 40°C)

The temperature range of 1°C to 40°C is programmed as the default setting range, allowing users to quickly and easily select the desired temperature from the control panel located on the side of the unit.

The upper LED display indicates the current chamber temperature, while the lower LED display shows the set temperature.

To adjust the temperature, press the "+" or "-" button lightly until the desired temperature is displayed on the lower LED.

- Press the "+" button to increase the set temperature.
- Press the "-" button to decrease the set temperature.

Each light press changes the setting incrementally, making it easy to select the required temperature between 1°C and 40°C.

2) 1°C to -5°C set (F2)

- (a) Concurrent hold of the plus & minus (“+”, “-”) button for about 10 seconds prompts the setting panel, with appearance of F3 on top LED and a numeric “1” on the lower side.
- (b) Upon appearance of the F3, press once the “+” button to navigate the selection from F3 to “F2” key to establish setting of temperature between -1°C to -5°C set. Note, while there is F2 key on top LED appears, the lower LED remains empty with full black screen.
At this stage, press the (“+”, “-”) button simultaneously to effect numeric “1” on the below LED, and in an appearance of numeric “1” with blinks, press “-” button to set one desired temperature from the set of “1°C to -5°C in descending order.

3) 40°C to 60°C set (F1)

Setting the Extended Low-Temperature Range (-1°C to -5°C)

- (a) Press and hold the "+" and "-" buttons simultaneously for approximately 10 seconds. The settings menu will open, displaying F3 on the upper LED and 1 on the lower LED.
- (b) While F3 is displayed, press the "+" button once to change the menu from F3 to F2. The F2 menu is used to enable the extended low-temperature setting range of -1°C to -5°C.

Note: When F2 is displayed on the upper LED, the lower LED will remain blank.

Press the "+" and "-" buttons simultaneously once again. The lower LED will display a blinking 1, indicating that the setting can be adjusted.

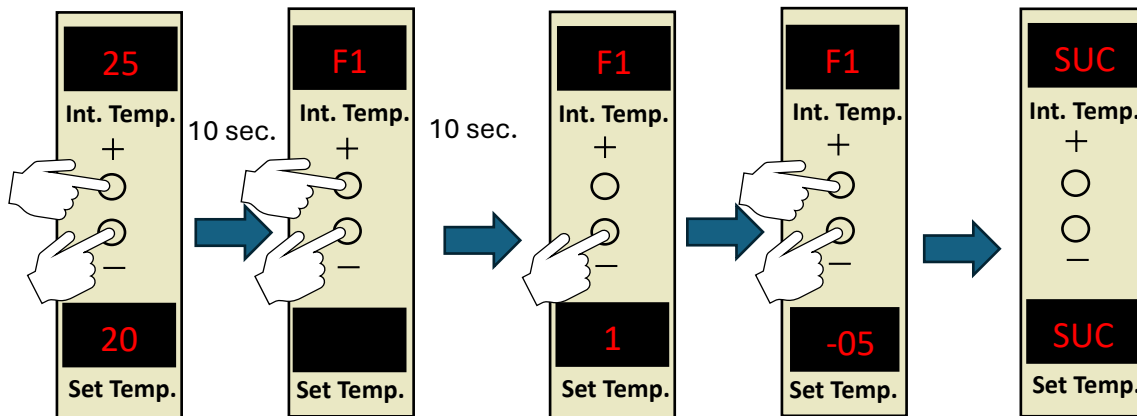
While the 1 is blinking, press the "-" button repeatedly to select the desired minimum temperature from -1°C to -5°C. Each press decreases the setting by 1°C until the required value is displayed.

4) “OFF” to revert by default into normal.

- (a) When the “F3” key appears on the upper LED display, press the “-” (minus) button once or the “+” (plus) button three times to display the “OFF” option. Select “OFF” to exit the settings menu and return to the normal operating mode without saving any changes. This option is useful if the settings menu was entered accidentally.

The appearance of F1 on the upper LED together with the value “1” on the lower LED indicates that the temperature setting mode is ready for selection. At this stage, the temperature can be set anywhere between 18°C and -5°C.

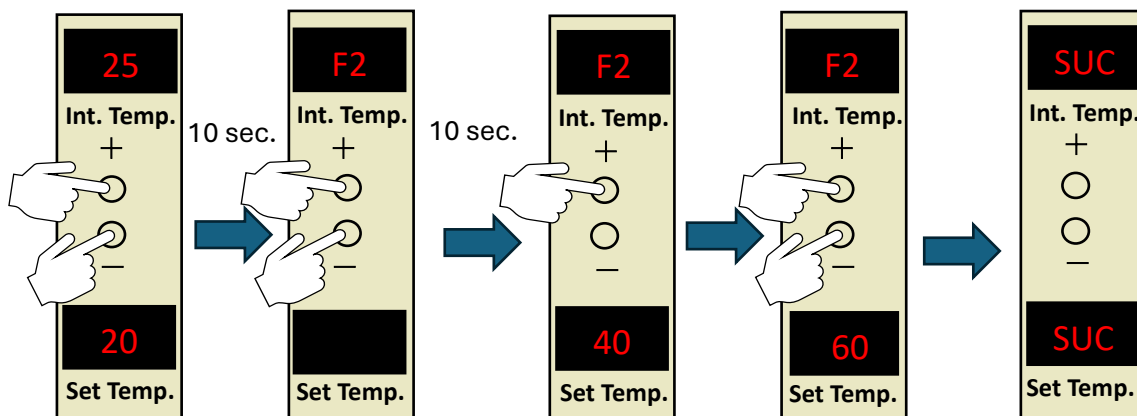
Starting from the displayed value “1”, press the “+” button to increase the setting up to 18°C, or press the “-” button to decrease the setting down to -5°C, as illustrated in Image 1.



(Image-1)

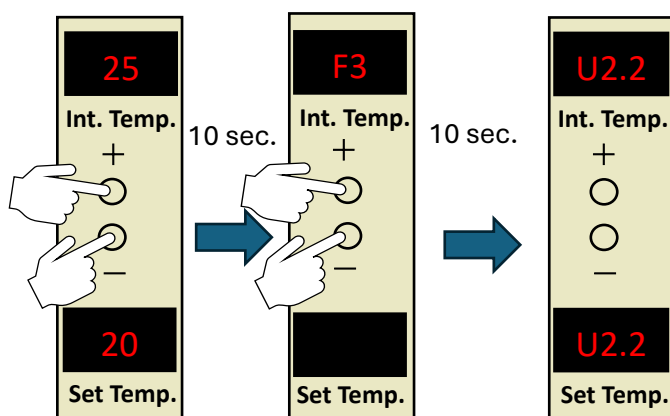
F2:

The appearance of F2 on the upper LED enables temperature setting in the opposite mode of F1, allowing the user to increase the chamber temperature above the existing ambient temperature. For example, if the room temperature is 25°C, users can press the "+" (plus) button to select and confirm any desired temperature between 26°C and 40°C, as displayed on the lower LED (refer to Image-2). Although the setting panel allows selection up to 40°C, the unit is capable of achieving temperatures as high as 60°C under suitable operating conditions.



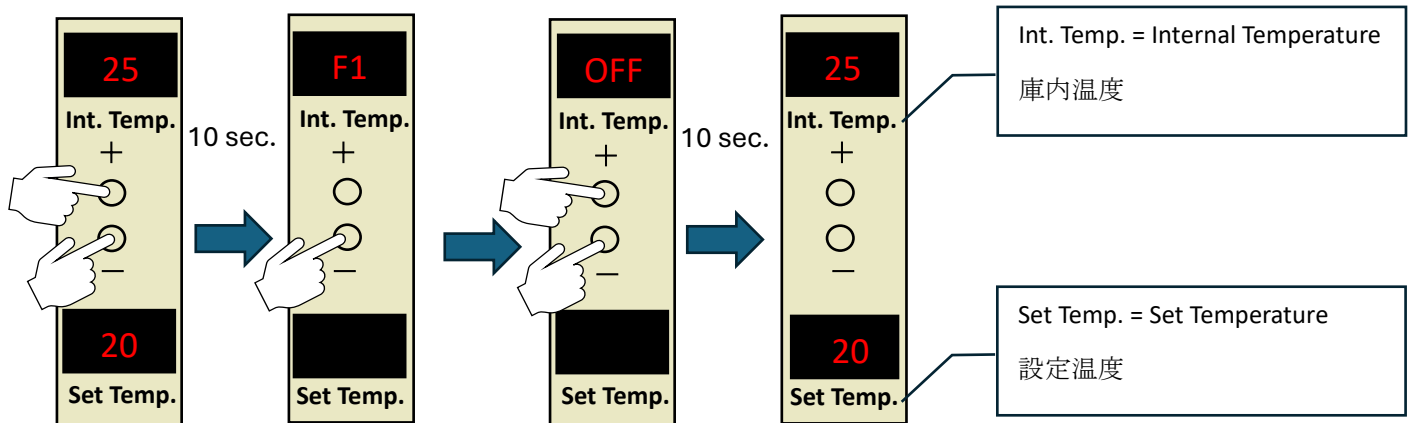
(Image-2)

F3: In F3 setting option, it displays CPU version of the Software in upper and lower LED (See Image-3)



(Image-3)

OFF: The “OFF” setting option allows users to return to normal mode from setting pad with safe setting of all newly values for execution as shown in image-4.



(Image-4)

The below should be in the record of the company is however to not to establish to the record of users.

Error Code Detail:

Error No.	Error Name	Error Explanation
E1	NTC2 overheat	Heartsink's overheating
E2	NTC1 overcooling	Chamber's overcooling status
E6	NTC1 INVALID	Connection failure or malfunction of NTC1
E7	NTC2 INVALID	Connection failure or malfunction of NTC2
E9	NTC1 overheating	Detection of overheating in the chamber