

# eC-reflow-mate V4

## User Manual



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## Introduction

Thank you for purchasing the **eC-reflow-mate V4** designed and manufactured by **EUROCIRCUITS**

Please, read these instructions carefully before operating your **eC-reflow-mate V4**.

**The eC-Reflow-mate V4** is the latest member of our reflow-mate family. The new and improved V4 replaces the highly popular V3 version. We have designed the new eC-reflow-mate oven based on feedback from our customers to add additional features and continue our program of continuous improvements. This allows us to meet the latest expectations of the electronics industry when reflow soldering a PCB.

Below we would like to highlight the main changes:

- Improved isolation to give more static processes and homogenous thermal dispersion
- 32 bit ARM processor for more precise calculations
- 3,5" colour display with touch sensor
- High precision sensors interface with linearizing algorithm
- Extraction connector to control discontinuous operation of extraction system
- Inclusion of the extraction hood (**eC-reflow-mate hood**) compatible with **eC-fumeCube (please see website or contact one of our sales team for details)**

## Redesigned furnace of eC-reflow-mate V4



This graph demonstrates the improved heat up and cool down efficiencies of the **eC-reflow-mate V4** compared to the previous **V3** version.

Thanks to the better isolation and redesigned inner parts, the PCB reaches the desired temperature more quickly and efficiently, meaning that the reflow process requires less time, resulting in energy and time savings for our customers.

### Application of this device

The **eC-reflow-mate V4** device is exclusively designed for PCB reflow soldering with SMD parts.

Please follow the instructions within this Instruction Manual carefully and store for future reference. The manufacturer shall not be held legally responsible for any equipment damage or personal injury caused by incorrect installation or operation other than that covered in this manual.

## **Before starting**

### **Unpacking**

The oven is heavy, so you will need 2 people to safely remove it from its box.

### **Placement**

- The **eC-reflow-mate V4** is designed for indoor use where suitable power sources are available. Please store in a cool dry place when not in use.
- Do not expose the device to rain or other humidity.
- Place the **eC-reflow-mate V4** on a solid, hard, dry, stable surface; ensure good ventilation and pay attention during operation in order to avoid any accidents or burn injuries.
- Leave proper clearance around the device (min. 20 cm).
- Do not place the device on damaged or sensitive surfaces.

As with all electronic equipment, when installing the oven in a new location the oven should be left for a sufficient time to allow any accumulated moisture in the machine to evaporate before use.

## Technical Specifications

Heating method: Infrared heating

Maximum operating height: 2000mm

Power: 3000W

Net weight: 35kg

Dimensions of the oven: 62,5cm x 48,5cm x 23,5cm

Dimensions of the oven with hood: 62.5cm x 66,0cm x 26,0cm

Control options: via display or via computer (Windows) connected with USB

Maximum PCB size: 350 x 250mm (L x W)

Operational voltage: 230V

Type: **eC-015V04** nominal voltage: 230 V, 50-60 Hz

Tested operating range: 230 V-10% - 240 V+10%, 50-60 Hz

The device belongs to the OVERVOLTAGE II category.

The equipment shall be connected to a supply network where the impedance is equal to or lower than ( $Z_{sys} = Z_{max} = 0.305 \text{ Ohm}$ ); as it is described in the 61000-3-3 standard.

Above this value, the screen may flicker using the same phase

Operating temperature: 260°C (500°F)

(measured on the top side of the PCB)

Ambient temperature: 5°C - 40°C (41°F - 104°F)

Fuse: ESKA : 6,3x32mm 16A 230V, delayed

Netto size: 61,8cm x 66,0cm x 26,0cm, 35 kg

Brutto size: 79,5cm x 59,5cm x 47cm, 42,6 kg





## Declaration of compliance

**Producer:**

Eurocircuits Kft.  
Berva-völgy HRSZ.: 2401/9.  
3324 Felsőtárkány  
Hungary

**Product description:**

Reflow device for soldering PCBs.

Shock protection class: I.

Type: -eC-015V04

This device complies with the following directives and standards:

**Directives:**

2014/35/EU  
2004/108/EC  
2011/65/EU

**Standards:**

IEC/EN 61010-1:2001  
IEC/EN 61010-2-10:2003  
IEC/EN 61326-1:2013

61010-1: 2001

61010-2-010: 2003

**Regulations:**

3/2002. (II.8) SzCsM-EüM

25/2000.(IX.30) SzCsM-EüM

CE - mark placing - 2017

Based on the above documents we declare the above product complies with these standards and has the right to be marked CE.

## Safety precautions

ONLY use the **eC-reflow-mate V4** for reflow soldering the SMT components onto Printed Circuit Boards.

The use of the **eC-reflow-mate V4** for any other purpose can lead to serious damage to the machine or its environment. Misuse of the **eC-reflow-mate V4** may cause electric shock, fire, and other hazards. Any unauthorized dismantling, repair attempts or misuse of the **eC-reflow-mate V4** will automatically invalidate the warranty. We accept no liability for any damage of any sort caused by the incorrect use of the **eC-reflow mate V4** or by failure to follow these safety instructions.

The **eC-reflow-mate V4** is constructed according to the European CE regulations.

- DO NOT place your hands inside the oven. A hot oven does not cool instantaneously.
- DO use heat proof gloves when handling a board that has just been soldered. It remains hot for some time.
- DO make sure that the PCB materials you are using are suitable for lead-free reflow soldering.
- DO NOT leave a PCB in the heated oven for an extended period. The board could be damaged by the high temperatures inside the oven.
- DO NOT put inflammable or explosive materials into or near the oven as they could constitute a fire or explosion hazard.
- DO NOT place anything on top of the oven.
- DO NOT allow children access to, or near the oven.
- DO stand the oven on a strong, heat resistant bench or table
- DO use the oven, like any soldering equipment, in a well-ventilated area or under a fume extractor
- Use the furnace only with extraction hood. Recommended extraction:  
**eC-FumeCube**

Eurocircuits has tested the harmful effect on human health and the environment of **eC-reflow-mate V4** / code XCIII 1993 / for the purpose of risk analysis.

report: BM009265

The test has been made for 8 hours continuously, waiting for the device cooling down to 80°C between the soldering.

used paste : **eC-solderpaste**

extraction head : **eC-FumeCube**

During the test in the 50m<sup>3</sup> room, there was no additional ventilation.

Notwithstanding that the measured harmful emissions have been significantly under the limits for the entire 8 hours.

The test has been made with **eC-FumeCube** extraction head. Eurocircuits accepts no liability of using other extraction heads.

**eC-reflow-mate V4** has complied with the requirements set out in codes 3/2002 II. 8 SZCSM EuM and 25/2000 (IX.30) EüM-SzCsM.

- ONLY use the oven with the power cord supplied. If it becomes damaged in any way contact us for a replacement.
- ONLY plug the power cord to grounded main socket!

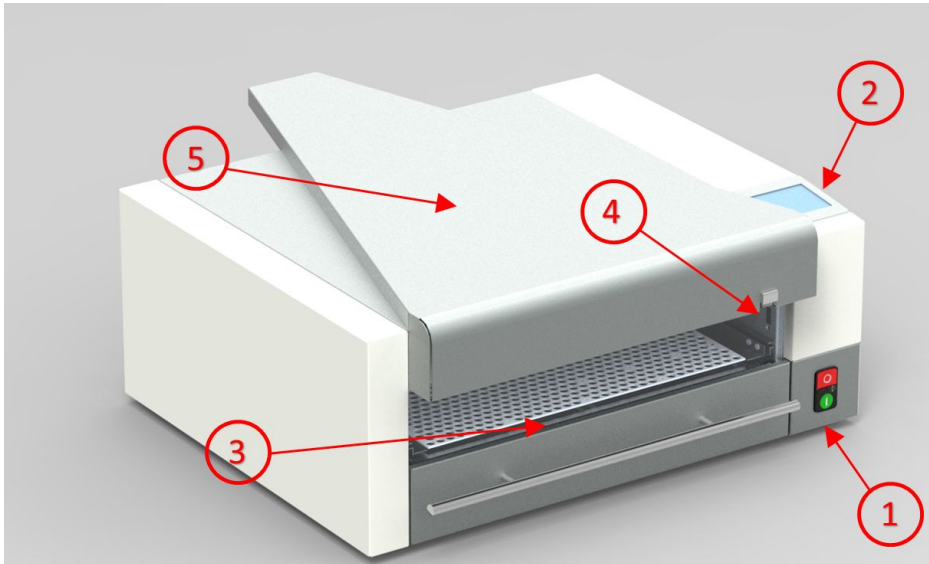
### **Cleaning the eC-reflow-mate V4**

- DO make sure that the oven is not switched on and that it is completely cooled before cleaning.
- DO wait for the oven to cool for 30 minutes before any manual intervention.
- DO NOT make any internal adjustments or repairs by yourself. Contact our Support Services at [euro@eurocircuits.com](mailto:euro@eurocircuits.com)
- DO use only soft clothes and a non-aggressive detergent to clean the outside of the oven.
- DO NOT use cleaning solvent or sprays.

- DO NOT try to clean the inside of the oven. Contact our Support Services at [euro@eurocircuits.com](mailto:euro@eurocircuits.com).
- DO check the oven thoroughly after any cleaning or other intervention to make sure that it is safe to be operated. Any cleaning product residue may smell as it is burned off when the oven is first switched on following cleaning.

## Parts of the device

### Main parts



#### 1. Main power switch

This switch serves to power on or off the device. The 'on' state of the device is indicated by the built in lamp of the switch. This switch additionally serves as the emergency stop button.

#### 2. Touch Display

The user can monitor the process and modifying settings through the touch display. All functions are available from the menu without having to use the pc software.

### 3. Drawer

PCB's are placed here for reflow soldering to take place.  
Its lock is electrically operated.

Caution, hot surface!



This sign means hot surface. The opening  
drawer may reach



up to 280 °C.

The front window may reach up to 280 °C.

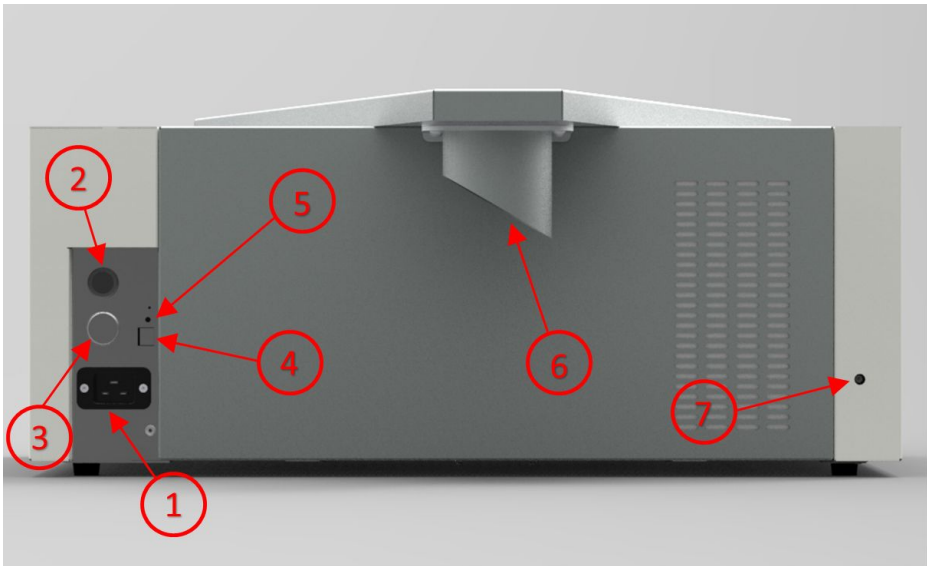
### 4. Internal sensor connector

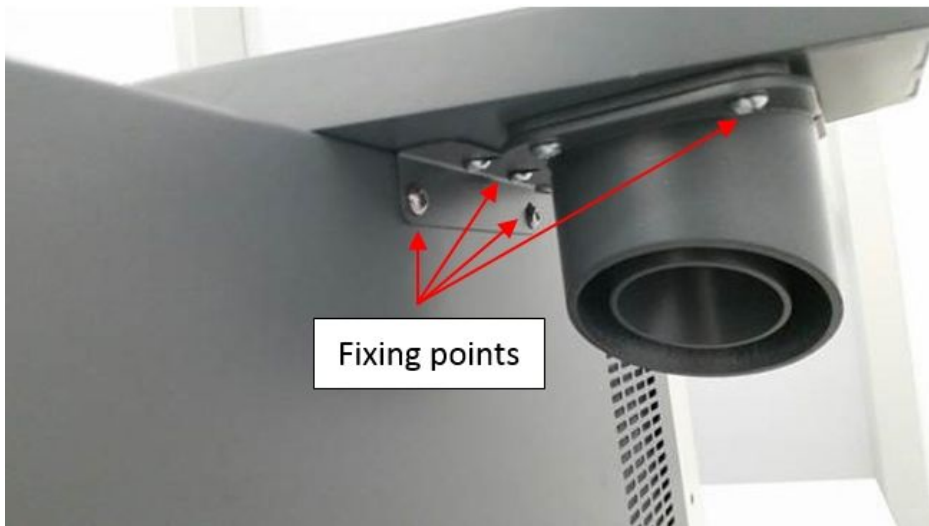
This connects the internal thermocouple that measures the PCB's  
temperature.

### 5. Extraction hood

To remove hot air and smoke from the furnace after the reflow process.

### Rear connector panel





**1. Power Connector**

Type of cords

Region	Type	Producer	Device
EU	SN25-3/15/2BK	BQ Cable	eC-015V04

**2 Fuse socket**

eC-015V04-230 type 6,3x32mm 16A use slow fuse

**3. Exhaust control connector**

This is used to connect **eC-FumeCube** which can be controlled by the **eC-reflow-mate V4**

Maximum load: 32 VAC 1 A



#### **4. USB PC connector (USB B type)**

The reflow oven communicates with your PC by USB A to USB cable (included)

#### **5. DFU button**

This button is used in the firmware update process. (see below)

#### **6. Exhaust adapter**

The hot air is directed through here from the oven which can be connected to an extraction system.

#### **7. Drawer spring tension adjuster**

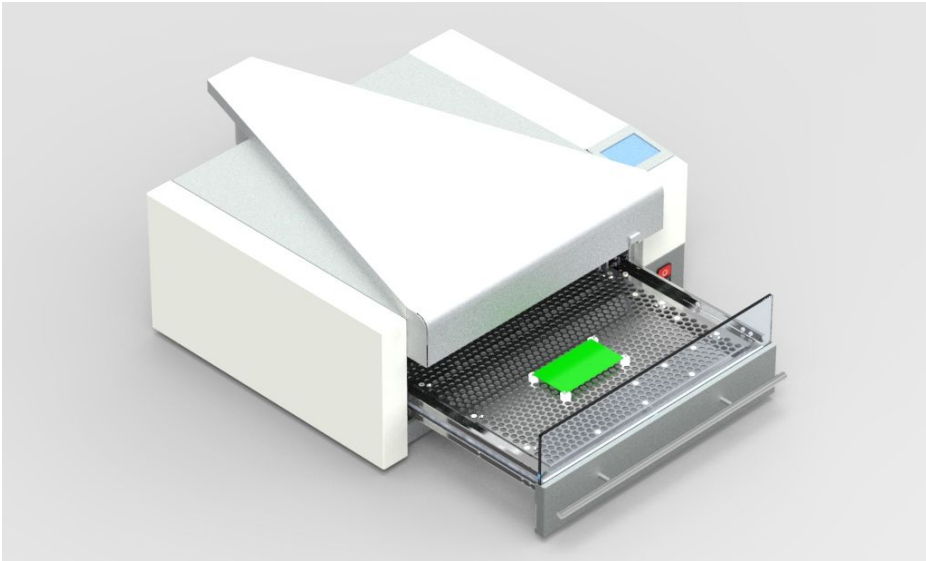
This is used for adjusting the tension of the drawer spring.

### **Placing the PCB**

You need to place the PCB centrally in the oven between the top and bottom sensors. It is very important that the PCB is placed under the sensor so that the sensor does not receive any radiated heat from the preheater (bottom) IR-lamps. This ensures that the temperature control will function properly. (Very small boards can be placed on an older larger PCB or FR-4 piece of material.)

When precise temperature readings on the PCB are required, place the external sensor thermocouple directly to the PCB in order to measure the temperature on its surface. Secure it with Kapton tape or solder it using solder wire with high melting temperature to the top or the bottom of the PCB.

Type : **eC-solder-wire-high-temp**



**Data plate**

Input voltage, frequency, rated power

Type identifier

Type of fuse

**eC-015V04**

**Rev: 00**

**Reflow Oven for Printed Circuits Boards**

230 VAC 50/60 Hz 3000 W ——— T16A



Eurocircuits Kft.

S/N: 16 015 0002

Made in Hungary

Manufacturing year (20xx)

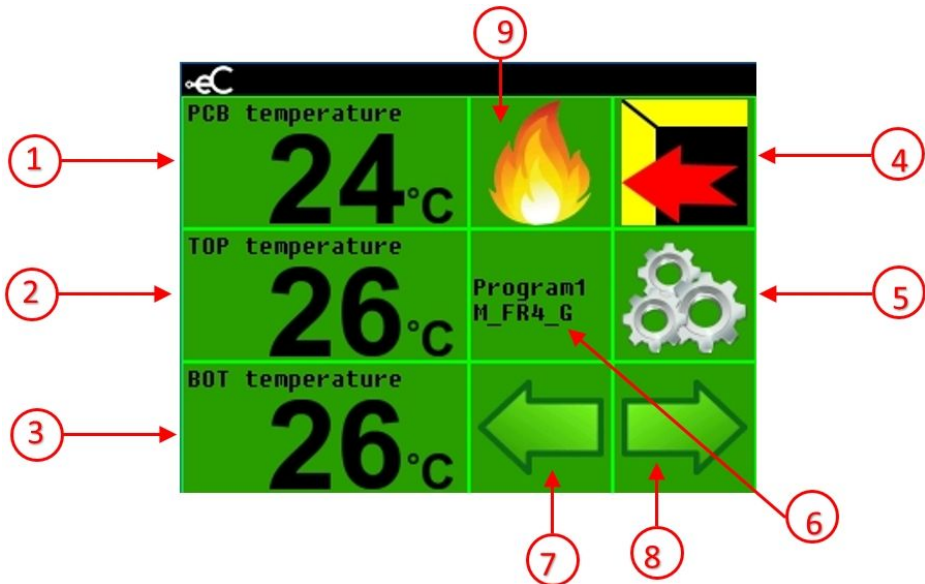
Serial number





## Using the device

### Elements of the main screen



#### 1. PCB sensor temperature:

Temperature at the touching point of the PCB sensor and the PCB.

#### 2. Top sensor temperature:

Air temperature measured by the Top sensor above the PCB.

#### 3. Bottom sensor temperature:

Air temperature measured by the Bottom sensor under the PCB.

#### 4. Door opening button:

Either open the door by pushing this button or use the door handle to open it. Either action causes the running process to stop.

#### 5. Set up screen

Setup your **eC-reflow-mate V4** device.

## 6. Process editing menu

Displays the current stored program

## 7-8. Program selection buttons

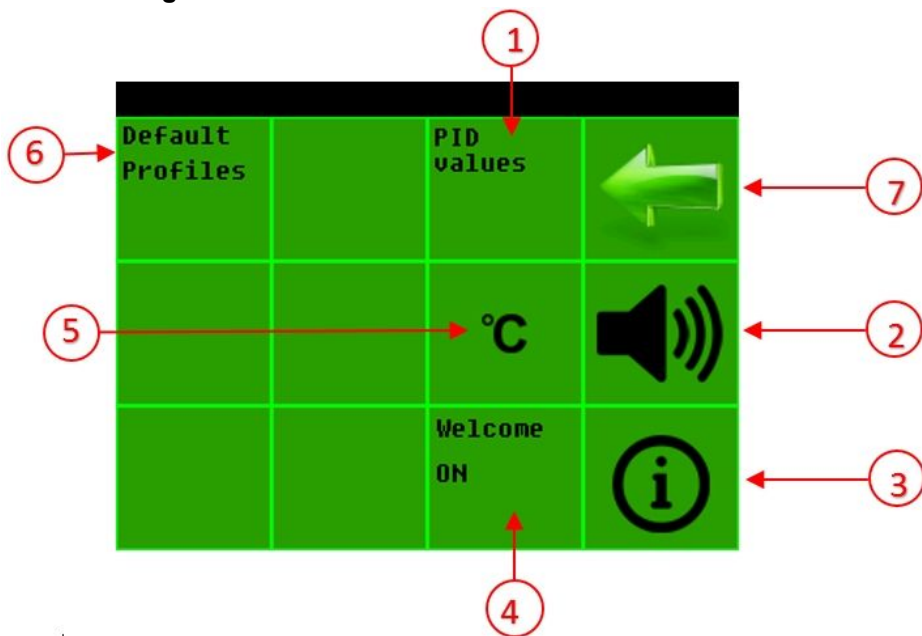
With the left arrow button you can select a lower numbered stored program.

With the right arrow button you can select a higher numbered stored program.

## 9. Start

Starts the selected program

## Device settings



### 1. Set PID values

Set the heating control parameters

### 2. Touch sounds

Mute/short/long

### 3. About device

Serial number, Software version, EEPROM version

### 4. Welcome screen

Switch on or off the welcome screen

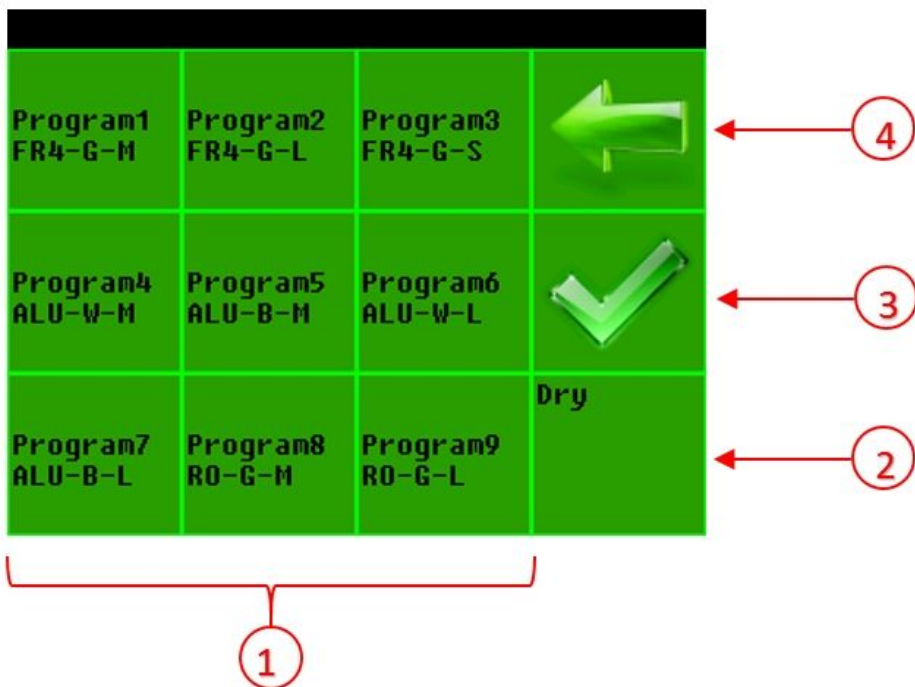
### 5. Set temperature unit

Celsius/Fahrenheit

### 6. View of predefined profiles and import as users profile

### 7. Back

#### Program selection



#### 1. Program selection

Select the required program and accept it with the tick to edit the preferences

#### 2. Select the drying process

Set a specific process with lower temperature and longer time period typically for PCB/parts drying tasks.

This is important because parts may have be stored for long periods, absorbing the moisture.

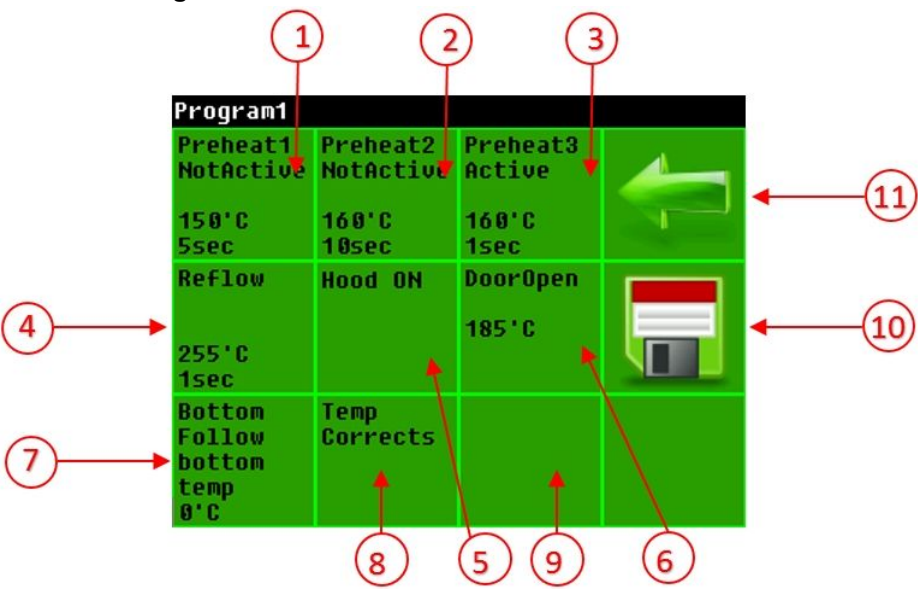
**3. Control screen for the selected program**

Accept the selected program and move to the control screen

**4. Back**

**These predefined profiles may not be suitable for every PCB configuration!**

**Process editing**



**1-2-3-4. Set up the preferences of different process zones(temperature required and dwell time)**

After starting the process, the device warms up the PCB to the "Preheat1" temperature, and holds it for the specified "Preheat1" time.

Once "Preheat1" is completed, the device proceeds device proceeds to the "Preheat2" phase.

This process is repeated for "Preheat2" , "Preheat3" and "Reflow Zone".

Maximum temperature and time settings for each zone is 260°C and up to 30 seconds.

### **5-6. Extraction hood/Door opening**

The time of Door Opening depends upon whether the extraction hood is installed. If the extraction hood is installed, the door opens immediately after the Reflow zone has completed.

If the hood is not installed, then the door opens after the set “Reflow Time” and only when the PCB temperature is lower than the set Door Opening temperature.

### **7. Bottom side temperature offset**

A different temperature can be set for the bottom side heating elements to the top side heating elements temperature.

### **8. Set temperature offset**

Sets the offset temperature.

### **9. Heat up conditions**

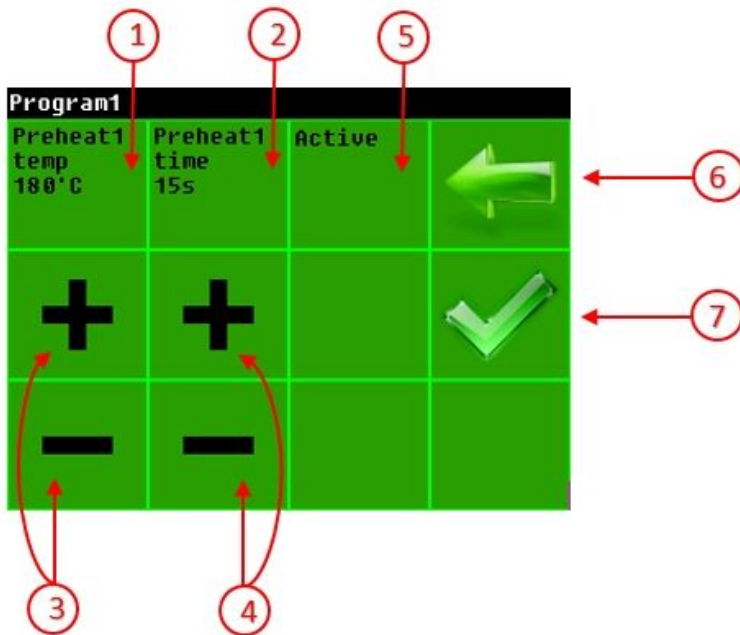
This is when all of the Preheat Zones are inactive and in a state of “Slow heat up”, the temperature reaches the 190°C level in 2 minutes.

In the same scenario but in the state of “Normal heat up” consider only the “Reflow” zone

### **10. Back**

### **11. Save process settings**

## Set "Zone" settings



### 1. Set PreheatX zone temperature with numeric pad

The range of temperatures for all zones are between 80°C-260°C. The temperature is measured on the PCB's surface. On this screen numeric values can be set. Use the tick to accept the selected values.

### 2. Set PreheatX zone time with numeric pad

The maximum time period is between 1 - 30 sec's for all zones. On this screen numeric values can be set. Use the tick to accept the selected values.

### 3. Set PreheatX zone temperature

Use the + button for increasing, or the - button for decreasing the values. Tap and hold the button for faster change. Use the tick to accept the selected values. Values must be between 80°C-260°C.

### 4. Set PreheatX zone time

Use the + button for increasing, or the - button for decreasing the values. Tap and hold the button for faster change. Use the tick to accept the selected values. Values must be between 1-30 seconds.

### 5. Active/NonActive zones

If we have an active zone, the process will run according to the given time and temperature settings. If the status is NonActive, this zone will be skipped. It is possible to de-activate Preheat1, Preheat2, Preheat3, but the Reflow zone is always active.

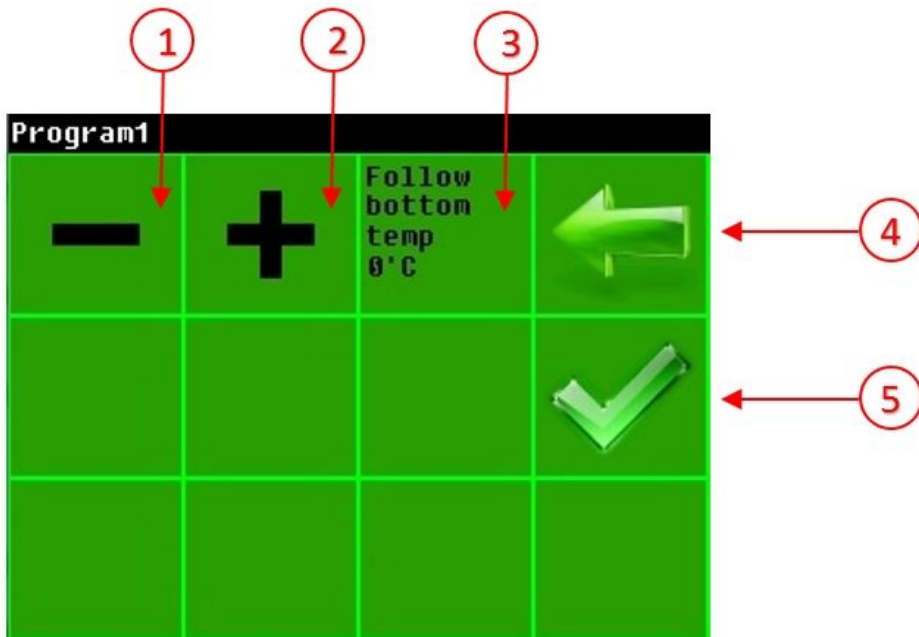
### 6. Back to the previous screen without save

Return to the previous screen without save, keeping the original settings.

### 7. Back to the previous screen with save

Return to the previous screen saving the new zone settings.

#### Set BOTTOM temperature



Selection modes for the lower heating element:

- Bottom element heating mode 0°C: in this mode there is no difference between the bottom heating temperature and the PCB temperature so the offset is 0°C
- Negative offset: For this mode the bottom heating temperature follows the PCB's temperature with the offset value.  
Offset values can be between 0°C-180°C.
- Independent mode: in this mode a specific value for offset is set e.g. 150°C.  
Please note!! The bottom temperature will not be able to maintain a higher offset temperature than the top temperature.  
The Top heating elements have more effect on the entire inner temperature than the Bottom heating elements.

### **1-2. Increase or decrease the specified values**

If the selected value is 0, then Bottom element heating mode is selected.

If the selected value is negative, then negative offset mode is selected

If a specific value is set then independent mode is selected.

### **3. Bottom Heating mode**

On this screen the type of heating along with the set values can be seen.

### **4. Back**

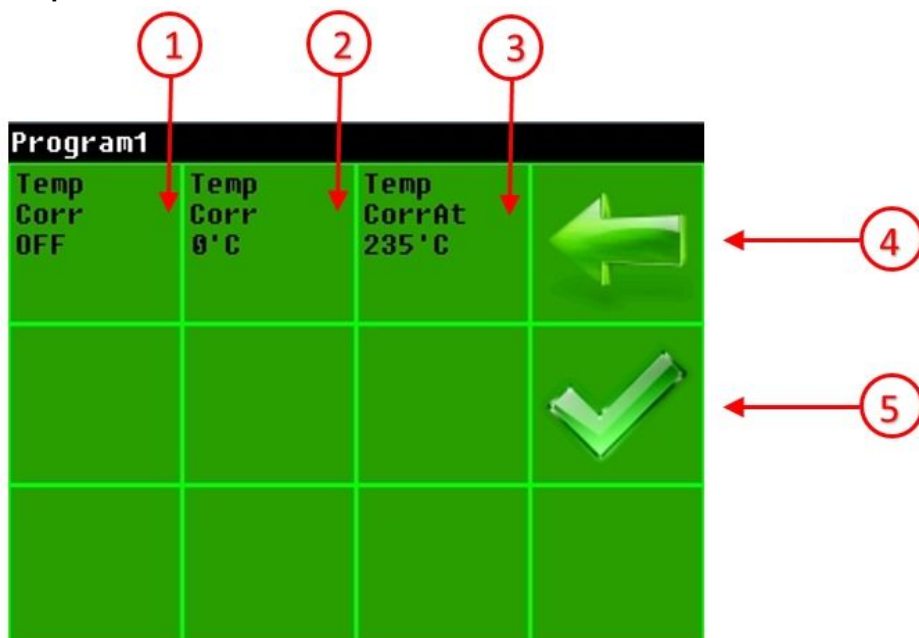
Return to the previous screen without saving, maintaining the original settings.

### **5. Save**

Save the selected values for Bottom heating.



## Temperature offset



### 1. Enable temperature correction

If the selected value is 0, the device uses Bottom heating element heating mode.

### 2. Temperature correction difference

The temperature correction difference between main and external sensors.

### 3. Activation temperature

If the temperature reaches this value, then the external sensor readings are ignored and the internal temperature sensors will be used this would normally occur if the external sensor is defective or has poor contact to the PCB.

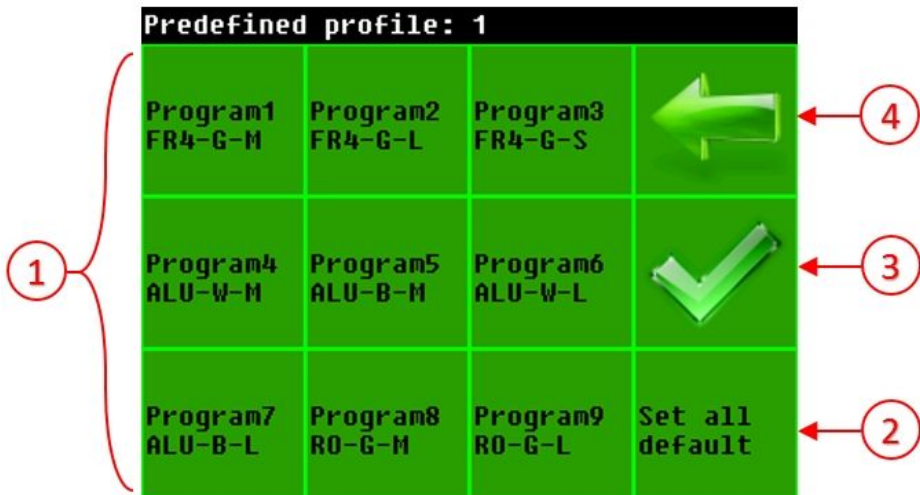
### 4. Back

Return to the previous screen without saving, keeping the original settings.

## 5. Save

Save the selected values for Bottom heating.

**Predefined Profiles /see in Settings menu/**



### 1. **Predefined profiles**

Predefined profiles for the most frequently used PCB's.

### 2. **Set default profiles**

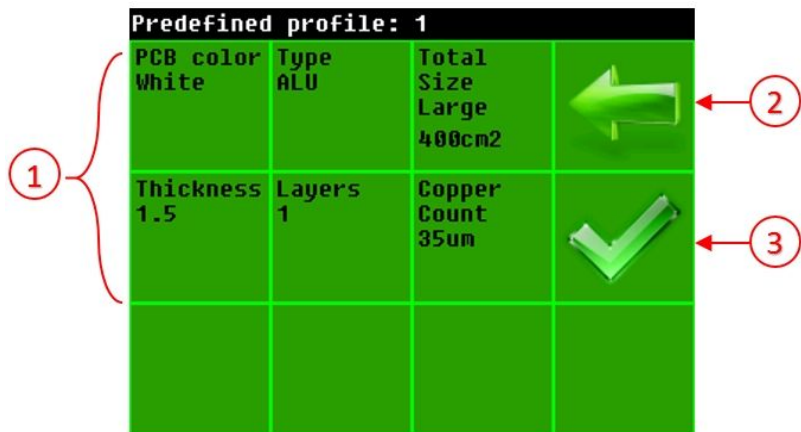
All the user profiles can be set as default profiles and be edited in profile editing menu

### 3. **View PCB preferences and profile**

With this button the preferences of selected predefined profiles can be monitoring

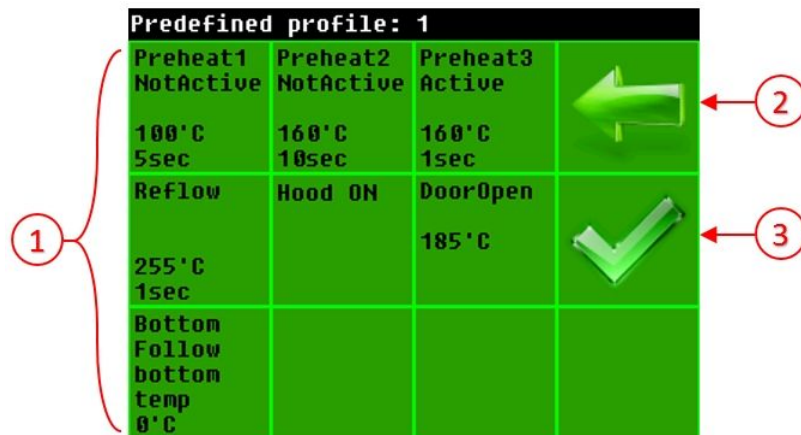
### 4. **Back**

**Predefined preferences to the selected predefined process**



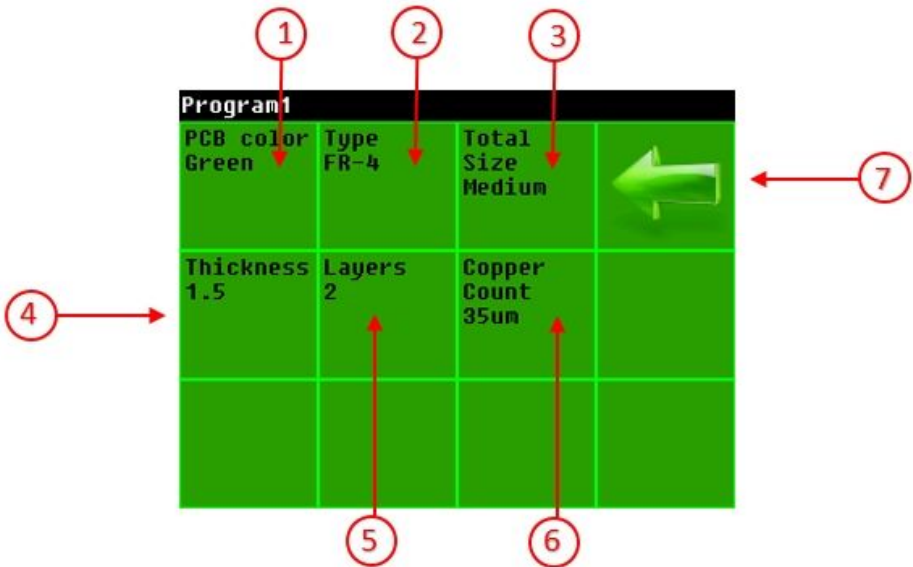
- 1. **PCB preferences**  
Type of PCB
- 2. **Back**
- 3. **PCB profile settings**

**Details to predefined profiles and import**



- 1. **Values to predefined profiles**
- 2. **Back**
- 3. **Import to users selected profile**  
Values can be edited

## PCB settings



### 1. PCB colour:

- Green
- Black
- White
- Red
- Blue
- Yellow
- Transparent
- No Soldermask

### 2. PCB type:

- FR-4
- ALU
- Rogers

### 3. The largest PCB size:

- Mini
- Small
- Medium
- Large
- Extra

**4. PCB thickness: /mm/**

0.5  
1.0  
1.5  
2.0  
2.4  
3.2

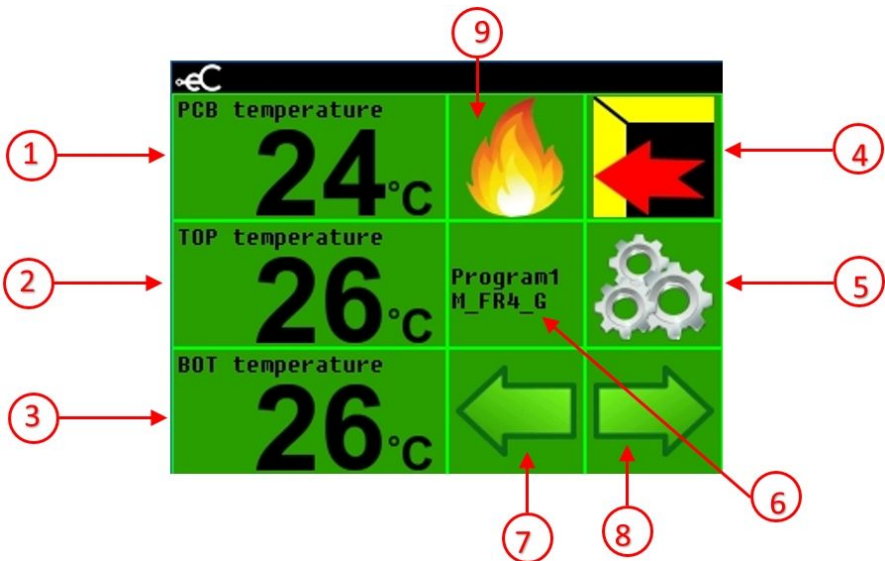
**5. PCB layout numbers:**

1-16

**6. PCB copper thickness:**

12μm  
18μm  
35μm  
70μm  
105μm

**The soldering process**



After configuring the program in your required process, return back to the main screen. Program selection can be made with buttons 7 & 8.

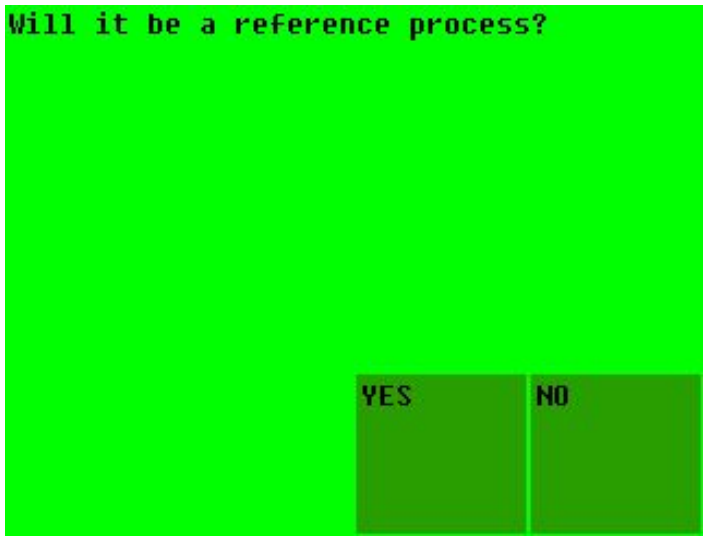
The selected program is indicated in area 6.

Ensure the oven drawer is closed.

If all conditions are met, then the soldering process can be started by pressing the 9th button.

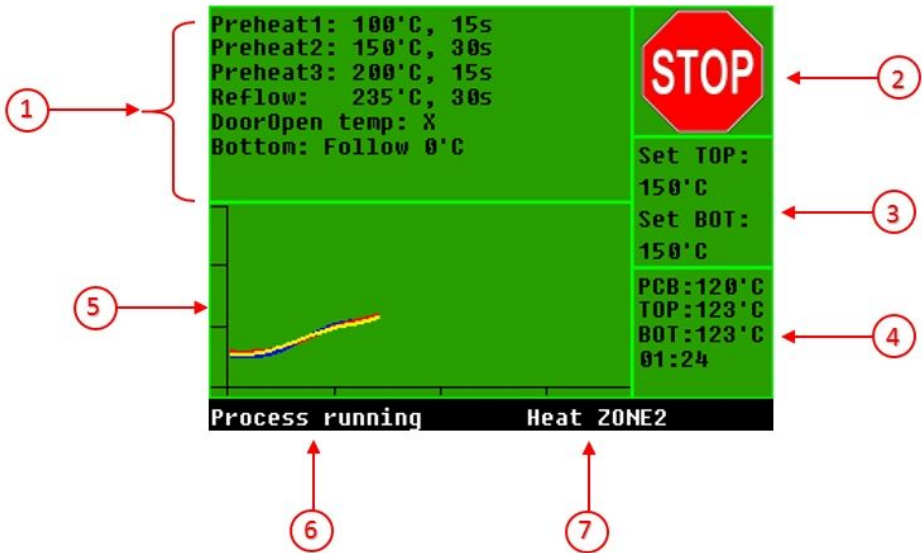
### Soldering with PCB sensor

It is possible to choose this method in two cases: If we would like to control the PCB's temperature during the process, or would like to create a reference process for soldering without sensor.



After choosing soldering with PCB sensor option (PCB sensor is connected), the above option will be displayed.

Selecting YES, the process will start at 30°C (TOP sensor temperature)



## 1. Parameters of selected program

## 2. Stop button

Stops the running process without opening the door.

## 3. Temperature preferences

Current temperature set for TOP and BOT heating

## 4. Actual temperature values

This shows the actual TOP, BOT temperatures, and the elapsed time for the running process

## 5. Graph

Displays the real time values of the measured temperatures

PCB sensor : yellow

TOP sensor : red

BOT sensor : blue

## **6. Possible statuses of running process**

1. *DATA ERROR!:*  
Process failed to start because of incorrect data.
2. *DOOR ERROR!:*  
If the door should be open, and not open, I give error message.
3. *OVERHEAT!:*  
If the TOP sensor spends more than 5minutes above 200°C,  
the process stop.
4. *TEMP.DIFF.HIGH!*  
If the temperature difference is more than 70°C between the TOP and  
PCB sensor, the process stop.
5. *Preprocess Running:*
6. In case of soldering with PCB sensor and reference process the  
starting temperature is 30°C measured at TOP and BOT sensors.
7. In case of soldering with PCB sensor but not reference process, the  
process can be started if the TOP and BOT temperature is
8. lower than 80°C.
9. In case of soldering without PCB sensor, the starting temperature of  
TOP sensor should be lower than 80°C.
10. *Process Running:*  
In case of running process
11. *Reflow*  
Reaching the highest temperature zone / Reflow /
12. *Cooldown*  
Using the device without extraction head, after the Reflow zone, the  
door of the furnace will open, when the temperature of PCB sensor is  
lower than the temperature value set for door opening. In this case  
*Cooldown* status can be seen until the door can be opened.

## **7. Zone Status**

1. Idle State: No running process
2. Heat ZONE1 : Heating up to the Preheat1 zone temperature
3. Hold ZONE1 : Holding the Preheat1 zone temperature
4. Heat ZONE2 : Heating up to the Preheat2 zone temperature
5. Hold ZONE2 : Holding the Preheat2 zone temperature
6. Heat ZONE3 : Heating up to the Preheat3 zone temperature
7. Hold ZONE3 : Holding the Preheat3 zone temperature
8. Heat REFLOW : Heating up to the Reflow time zone temperature
9. Hold REFLOW : Holding the Reflow time zone temperature

In the case of soldering without a PCB sensor, there will only be the “HEAT”  
and “HOLD” statuses indicated.



Click on the 'curves' or the 'process data' the graphs will be zoomed, as picture below.



DO NOT OPEN THE DOOR!  
DO NOT TOUCH THE PCB!  
THE PCB IS HOT!

Do you want to repeat  
this profile later?

YES NO

At the end of the process the device questions, whether to save the running process for a reference process.

If the process was correct, select YES.

If the process was incorrect / e.g.non-connencted PCB sensor / or incorrect soldering curve, select NO.

**It is forbidden to open the furnace door or to touch the PCB until the temperature of TOP and BOT sensors are higher than 80°C!  
It can be hot and cause serious burns!**


## **Soldering without PCB sensor**

Select this method, if a reference process has been saved in the PCB sensor program.

Without a reference program, the furnace cannot execute a PCB soldering process.

Examples of cases where no reference programs for a specified profile or PCB are available

1. There has not been a reference process made for the profile
2. There were modifications made on the profile in the menu
3. Upload the modifications, made by **eC-reflow-pilot** software
4. Reset EEPROM



**The PCB sensor is not connected and  
there is not reference process.  
The process cannot start!**

The results of the two soldering options are the same.

These options are available to enable the user to solder multiple batches of the same PCB, the PCB sensor is not required to be connected, which is more convenient and can save time.

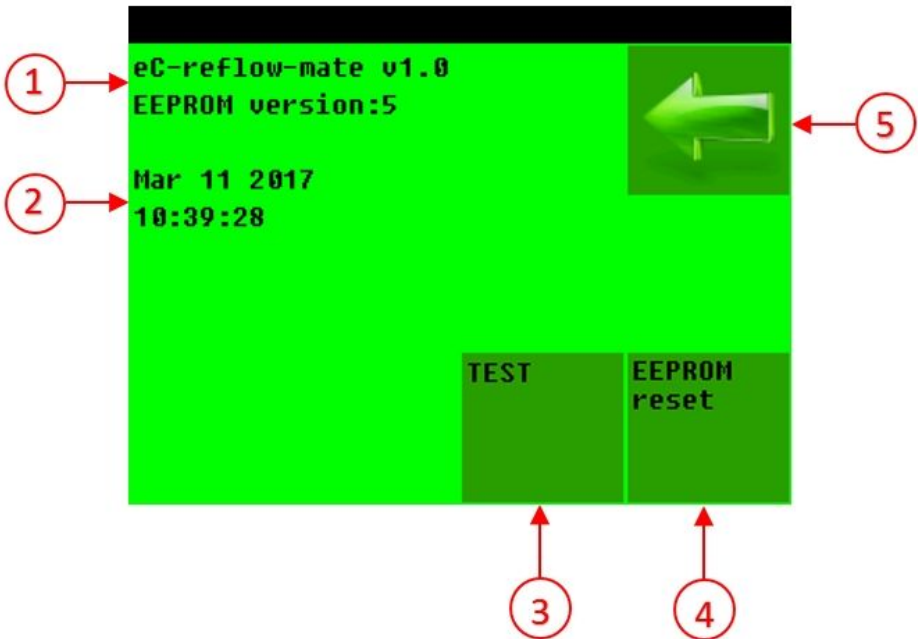


At the end of the soldering program, the door will open and be stopped by the door latch.

Whilst the display shows as pictured above, it is forbidden to open the door or touch the PCB, because it can be hot and cause serious burns!

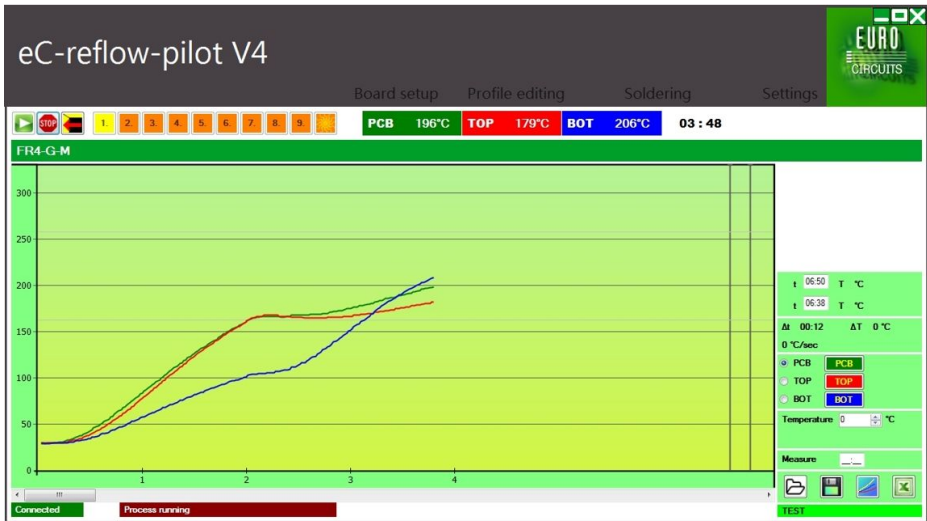
This caution is valid at all times, not just before soldering, but after restart as well, if the PCB or the TOP sensor temperature is warmer than 80°C.

## Information window



1. Version
2. Finished
3. Start test
4. EEPROM reset - restore the default EEPROM settings
5. Back

## Testing



Test process:

1. Top heating 100% power  
Bot heating 0% power  
Duration: 2 minutes
2. Top heating 0% power  
Bot heating 100% power  
Duration: 2 minutes

If during the test the operational conditions were correct - Top and Bot lights, Top and Bot sensors, PCB sensor, the same results can be seen.

If one of the sensors cools instead of heating so it was connected with replaced polarity in a failure mode.

If the Top and/or Bot sensors' graphs are inconsistent, it may be sensor fault.

This can not be judged at PCB sensor, because may the sensor lost the connection to the PCB.

Duration of tests are 2-2 minutes.



```
TOP sensor connected
TOP sensor works well
BOT sensor connected
BOT sensor works well

TOP and BOT heating works well!

THE OVEN AND THE PCB CAN BE HOT!
```

## Use of PC software (**eC-reflow-pilot**)

### System requirements:

Supported operating systems: Windows7 or newer.

### Supported architectures:

x86, x64

### Hardware requirements:

- min. 1GHz Pentium processor
- min. 512 MB RAM
- min. 2GB free space on hard disc

### Program installation:

1. Unzip the files
2. If your system does not have .NET environment, choose the .NET4 installing file and run it
3. Start the **eC-reflow-pilot V4**.msi or setup.exe program
4. Install the **eC-reflow-pilot V4** program
5. Run the file

You will find the **eC-reflow-pilot V4** shortcut on your desk

### Program uninstall:

Reinstall the program or

In this menu choose uninstall:

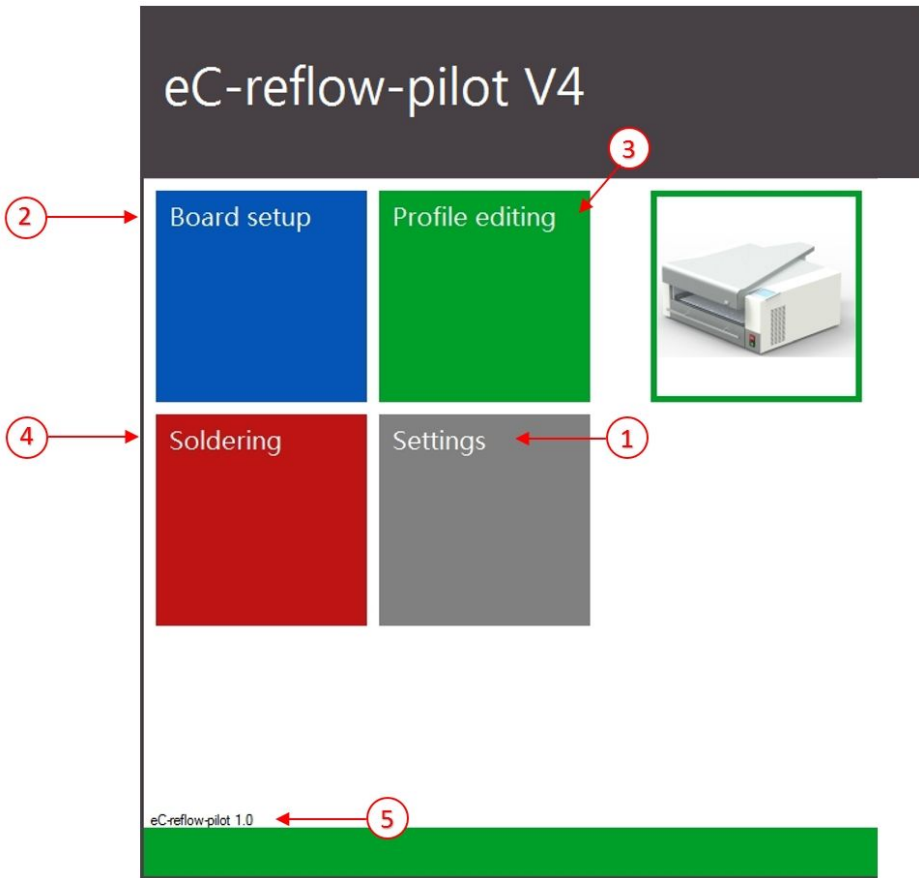
Menu/Control Panel/Uninstall a Program/**eC-reflow-pilot V4**

### Warnings;

**Do not delete the eC-reflow-pilot V4 folder!**

**Do not delete/move files from the eC-reflow-pilot V4 folder!**

## Welcome screen



### 1. Settings

Colour profile settings, language settings

### 2. Board setup

Select a program

### 3. Profile editing

Edit/open/save the soldering processes

### 4. Soldering

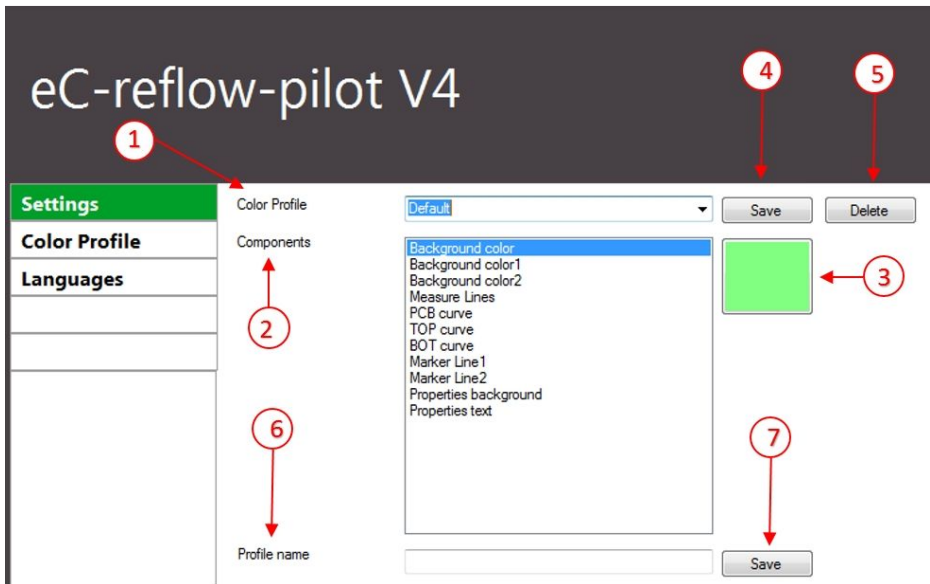
Start/monitor, analyse soldering

### 5. Version



## Settings

### Colour profile settings



#### 1. Colour profile name

Set the profile name for using or editing

#### 2. Colour profile components

- background colour
- background colour 1
- background colour 2
- measure lines
- PCB curve
- Top curve
- Botton curve
- Marker line 1
- Marker line 2
- properties background
- properties text

### 3. Mix colours

The operator can mix the colours for the components

### 4. Save

Save the mixed colour components to the profile

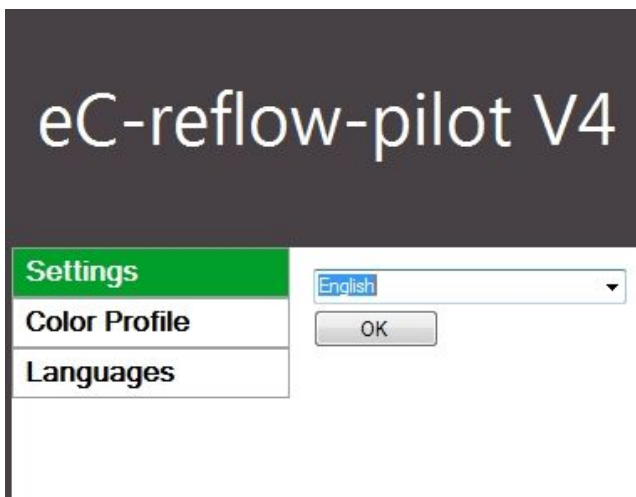
### 5. Delete

Delete the selected colour profile

### 6. Create a colour profile name

### 7. Create a new colour profile name

## Language settings

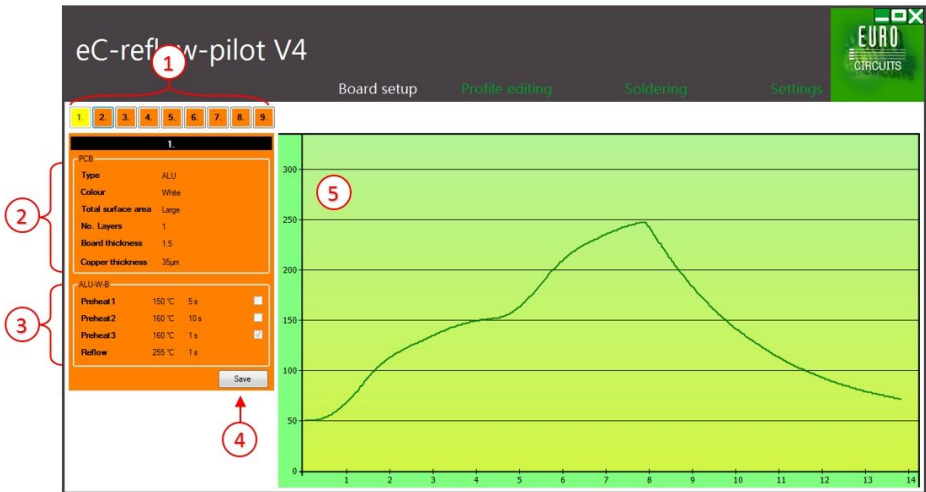


Choose your language from the above list, then click the OK button.  
After that the text will be shown in your selected language.

Making a language file: Everybody can create their own language file. The language files can be found in the User\Language\ directory. Make a copy of any of the files in this directory, open it, modify as required for your language and save it.

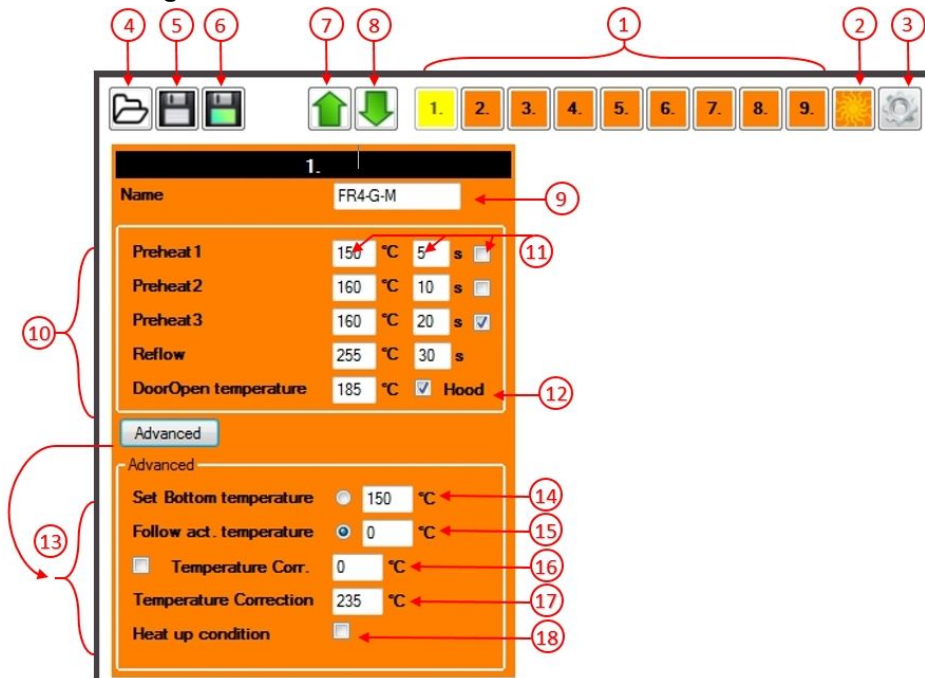
## Profile Selector

In this window can the predefined profiles seen or import to users profiles.



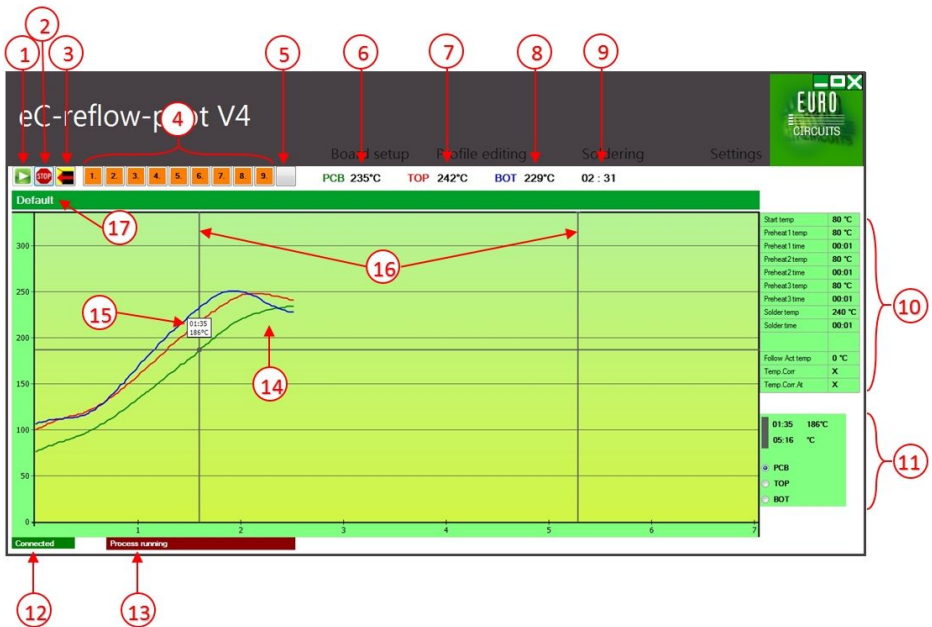
1. Select the required number of the process
2. Set the parameters of the PCB
3. Predefined process to the set PCB
4. Import the set profile to the users profile
5. Soldering graph of the predefined profile on the PCB

## Profile Editing



1. Table of profiles
2. Drying
3. Settings
4. Open
5. Save
6. Save as
7. Synchronising PC->Reflow
8. Synchronising Reflow->PC
9. Profile Name
10. Profile settings
11. Zone temperature, time, activity
12. Extraction hood
13. Advanced settings
- 14-15. Set or offset used BOT heating
- 16-17. Temperature correction
18. Heat up condition without Preheat Zone (normal/slow)

## Reflow Process



### 1. Start the process

The set process synchronises and starts

After starting the process, all buttons will be disabled, except for STOP and door opening buttons

### 2. Stop the process

The running program will abort, the door opens, and collection of data will be aborted

### 3. Door open

Opens the door. If there was a running process it will be aborted.

### 4. Program Selection

Program selection

### 5. Drying function

Start the drying process.

### 6. PCB sensor temperature

### 7. TOP sensor temperature

### 8. BOT sensor temperature

### 9. Process Time

### 10. Program parameters

## **11. Marker values**

Temperatures and time values for markers. Setting a specified time value, the marker will show the requested time and temperature values.

## **12. Marker status**

Shown the differences between two markers

## **13. Display and measurement**

By switching On and OFF, selects the graph that is followed

## **14. Pick analysis**

View how much time the PCB has spent above a specified level

## **15. X-Axis size**

Set a period to be viewed during the process

## **16. Exports**

Open an earlier process for analysing

Saving a graph for analysing

Save a graph as picture

Save a graph as xls format

Save graph as pdf report

## **17. Zone status**

## **18. Markers**

By moving the markers on the selected curve the temperature values belong to the marker's time can be viewed.

These appear in the measure box to the right side of the analyzing box.

The curve on the analyzing box must be specified.

## **19. Measuring box and measurement point**

In this box the temperature and time values can be seen belonging to active markers.

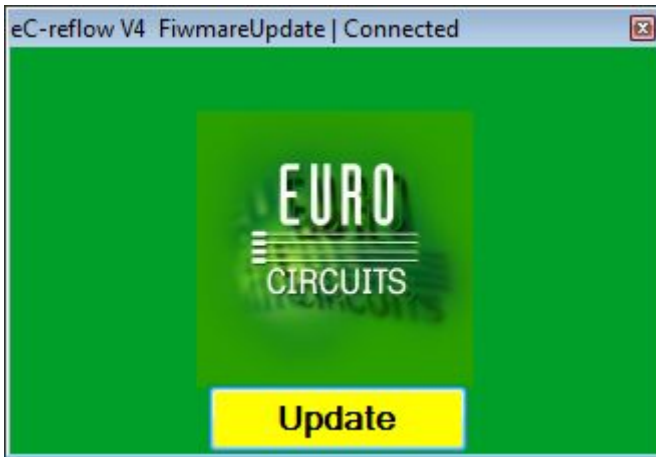
Only existing graph's with valid markers will give valid data.

## **20. Zone Marker**

## **21. Furnace connection status**

## **22. Furnace status**

## **Firmware update**



The **eC-reflow-mate V4** The latest firmware can be downloaded from our website.

1. Switch on the device
2. Connect the device to the computer via USB cable
3. Start the **eC\_reflow\_V4\_FU.exe**
4. After the program started, push the "Update" button
5. Wait for "Loading OK!" message
6. Switch off then switch on the device
7. Sometimes the device needs EEPROM update.

It indicates the "EEPROM update" message. This process may take several minutes. During this process do not switch off the device.

[www.eurocircuits.com](http://www.eurocircuits.com)

**Contents of the package**

Type	Item	pcs	Identifier
EU/UK	eC-reflow-mate V4	1	eC-015V04
EU/UK	eC-reflow-mate-hood	1	eC-002V01_R04
EU	Power cord	1	SN25-3/15/2BK
EU/UK	Purex control cable	1	eC-015-042_R00
EU/UK	Thermocouple	1	XF-324-FAR
EU/UK	PCB mounting pin	2	eC-015-117
EU/UK	PCB support pin	6	eC-015-118
EU/UK	User manual	1	eC-015-999



## Waste management

This device may contain harmful parts for the environment.  
Do not put it into communal waste because it may harm the environment.  
Used electric devices are collected separately; use the recycling system in your area.

Since 13/08/2005 you can return used devices to the place of purchase; it will be disassembled and recycled properly.

Environmental protection is very important to our company and our childrens' futures. Please help us to protect our environment for future generations.



Do not throw away your used device; send it back to the manufacturer or return to a recycling center.

## Maintenance

Any unauthorized dismantling, repair attempts of the **eC-reflow-mate V4** will automatically invalidate the warranty.

After the warranty has expired, it is recommended to have repair carried out by the manufacturer.

Check the drawer in the case of regular use monthly, clean it if it is necessary and finish it with teflon spray.

Clean the door monthly with home detergent product.

DO check the power cord before every use.

DO NOT make any internal adjustments or repairs by yourself.

Contact our Support Services at [euro@eurocircuits.com](mailto:euro@eurocircuits.com)

DO make sure that the oven is not switched on before maintenance.

## **Warranty conditions**

We support the **eC-reflow-mate V4** soldering device with 12 months warranty.

Please send the defective device to **Eurocircuits** in the original package.

Only the original packaging can warrant the safe return postage of the device.

The transport cost must be paid by the sender.

## **Contact**

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3324 Felsőtárkány,

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