eC-Preheater
User Manual

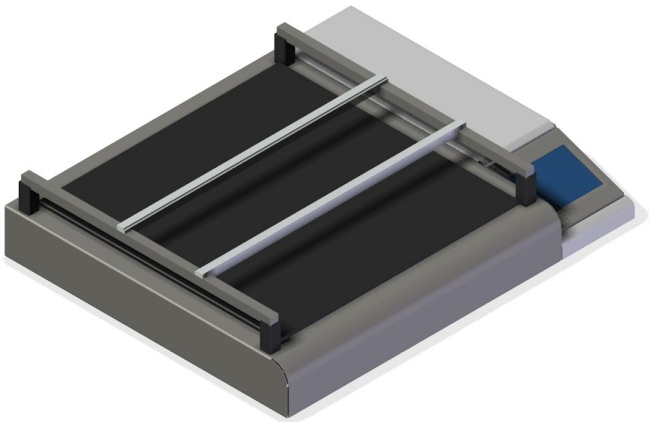


Table of Contents:

Application of this device

Thank you for your trust purchasing this soldering device manufactured by EUROCIRCUITS.

This eC-preheater device is made for only to help repairing and soldering PCBs. Put the PCB being soldered above the ceramic plate using the PCB holding frame as shown on the pictures in the “Placing the PCB” section. By the two sensors you can check the actual temperature of the PCB. The settings can be found at the
“Using the device” section. After reaching the ideal temperature you can solder or desolder the parts on the PCB with a soldering iron or a hot air gun.

The basic principle of the reliable operation is the workmanlike use; we ask you to read this manual carefully and keep it in order to help you anytime.

Placement

• The eC-pre-heater is made for indoor use where the proper power source is provided. The device when it is not in use should be kept in a closed place.
• Do not expose the device to rain or other humidity.
• Place the eC-pre-heater device on a solid, hard, dry, stable surface; ensure good ventilation and pay attention during the work in order to avoid the accidents or burn injuries.

Leave proper clearance around the device (min. 20 cm). Do not place the device on damaged or sensitive surface.

Specifications

Power source:

eC-004V01-120 nominal voltage 120 V, 50-60 Hz
Tested operating range: 120 V±10%, 50-60 Hz

eC-004V01-230 nominal voltage 230-240 V, 50-60 Hz
Tested operating range: 230V-10% - 240 V+10%, 50-60 Hz

Transient overvoltages up to the levels of OVERVOLTAGE CATEGORY II

This equipment may only be connected to a supply network having a lower impedance than specified by EN 61000-3-3 standard.

The equipment shall be connected to a supply network the impedance of which is equal to or lower than 0.305 Ohm.

Operating temperature: ambient temperature-250°C (482°F)
(measured on the top side of the PCB.)
Environment temperature: 5°C -40°C (41°F -104°F)

Power: 1600W

Fuse:
eC-004V01-120: 6,3x32mm 15A 125V, delayed
eC-004V01-230: 6,3x32mm 10A 250V, delayed

CE

Declaration of compliance

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

Product Desciption:
Soldering preheater device
230-240 V, 50-60 Hz, 1600 W
Shock protection class: I.
Type: -eC-004V01-230
-eC-004V01-120

This device complies with the following directives and standards:

Directives:	Standards:
2014/35/EU	IEC/EN 61010-1:2001
2004/108/EC	IEC/EN 61010-2-10:2003
2011/65/EU	IEC/EN 61326-1:2013

CE –sign placement year : 2015

The TÜV authenticates the compliance of this device and its documentations and sample-pieces with the following record numbers:

HU-001637	HU-001638
61010-1: 2001	61326-1: 2012
61010-2-010: 2003	CISPR 14-1: 2005 +A1+A2
	CISPR 14-2: 1997 +A1+A2
	IEC 61000-3-2:2005 +A1+A2
	IEC 6100-3-3: 2013

Based on the above documents we declare the above product comlies with the standards above and has the right to put the CE sign on.

Safety precautions

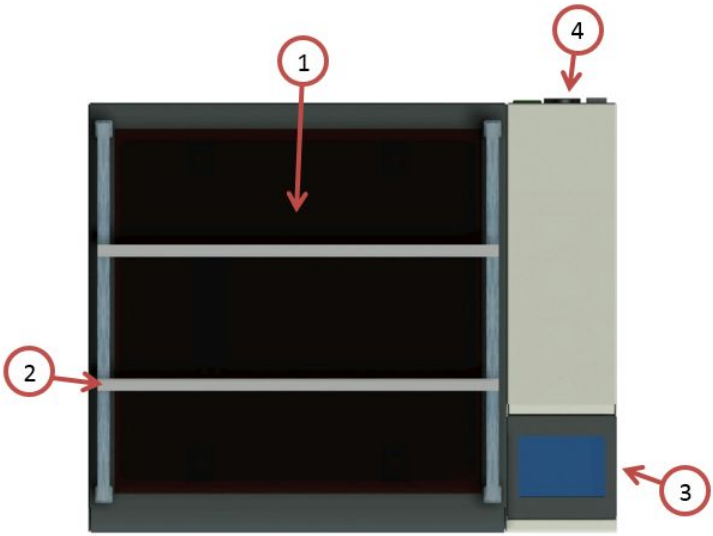
a.) WARNING: After Power Off the device remains hot for 30 minutes. Wait for the device to cool down before touching the heating area. ALWAYS turn off the device before leaving it unattended, and make sure it has cooled down. The heating area is hot and may cause burn injuries.
b.) ALWAYS let the PCB cool down before touching it after heating.
c.) ALWAYS use heat-insulated gloves.
d.) The eC-pre-heater device MUST ONLY be used for soldering PCBs and SMT repairs.
e.) DO NOT use the device if the cover or the ceramic heating plate is cracked, or otherwise damaged or broken.
f.) DO NOT place anything directly on the ceramic heating plate.
g.) ALWAYS mount the PCB to be heated onto the PCB holder.
h.) eC-pre-heater MUST ONLY be used by trained personnel.
i.) DO NOT use the device near flammable materials. DO NOT store flammable materials near the device. ALWAYS consult the data sheet of nearby material to check their flammability.
j.) DO NOT attempt to modify or repair the device yourself. If a fault develops contact us at euro@eurocircuits.com. The case is protected by a hologram seal. If this is damaged, the warranty is automatically voided.
k.) ALWAYS check that the power cable is not damaged before every use.
l.) Maximum ambient temperature: +40°C (104°F)
m.) Minimum ambient temperature: +5°C (41°F)
n.) Up to 80% relative humidity at 31 ° C, which decreases linearly between 31 and 40 ° C until 50%, maximum operating height above sea-level 2000m.
o.) During the soldering process toxic fumes may be released. During continuous operation ALWAYS use exhaust ventilation as specified in the data sheet of the soldering materials used. As with all soldering devices, particularly in industrial use, it may be necessary to measure the emissions; this should be done by an expert.
p.) DO NOT stand the magnetic PCB holder on a hot surface; it may get demagnetized.
q.) eC-pre-heater MUST ONLY be connected to a properly earthed power source. Always check that the earth is working correctly.
r.) The power outlet MUST be easily reachable to cut off the power in case of emergency. The power can only be cut by unplugging the device from the power outlet. Even after you have turned off the device using the ON/OFF switch, it is still connected to live power.

Caution! Hot area! maximum 350°C (662°F)

DO NOT load the cearimc plate!

It is forbidden to heat liquids on the device!

Parts of the device
Main parts



1. Heating plate

Caution, hot surface (maximum **350°C / 662°F**)
Do not load the heating plate directly; use the PCB holdig frame for placing PCBs. Never heat any liquid or other materials on the device.

2. Magnetic PCB holdig frame

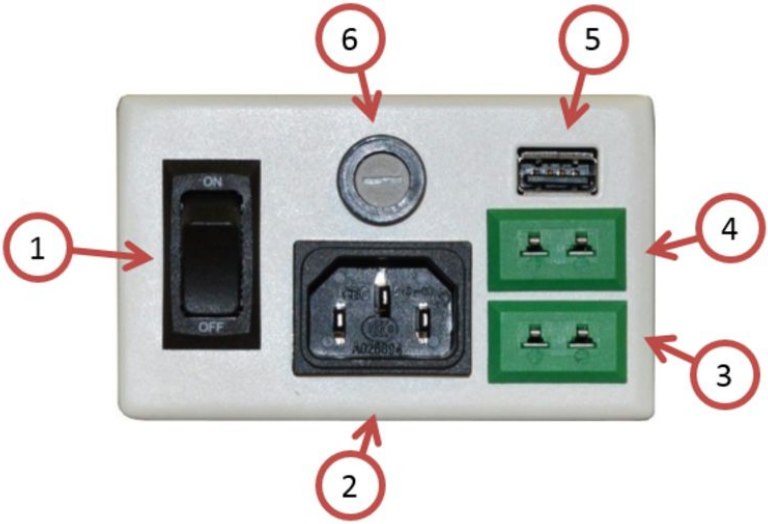
Never put magnets on hot surface because they may demagnetized.

3. Touch screen display

Resistive touch screen without multitouch support.
Do not expose it to heat or sharp objects; doing so it may damaged.

4. Rear connector panel

Rear connector panel



1. Main switch
Does not the device from power.
2. Power Connector
Use cord

Region	Type	Manufacturer
EU	6004.0215	Schurter
USA / Canada	312019-01	Qualtek
UK	6044.0215	Schurter

3. Bottom thermocouple connector
4. Top thermocouple connector
5. USB Host connector
USB 2.0 FS (and/or USB 1.1) compatible
6. Fuse socket
eC-004V01-120 type: 6,3x32mm 15A use slow fuse
Recommended type: 632.329 Eska

eC-004V01-230 type: 6,3x32mm 10A use slow fuse
Recommended type: 189140.10 Siba

Placing the PCB

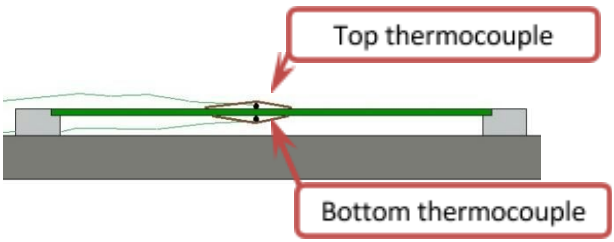
Low: The PCB is about 9mmm above the ceramic plate.
Use the aluminum and steel holders without support.

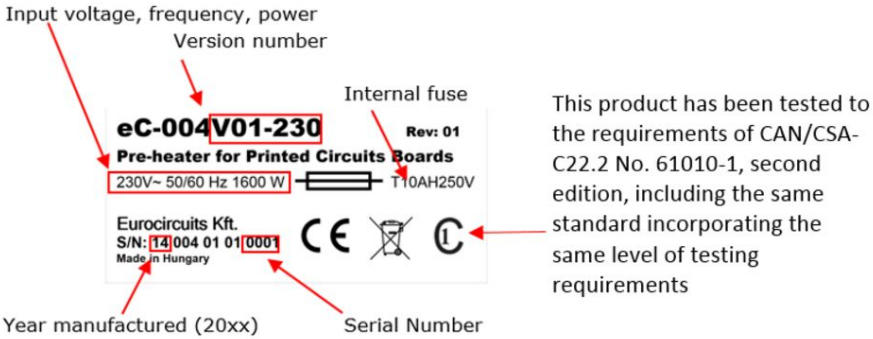
Medium: The PCB is about 22mm above the ceramic board.
Use the aluminum and steel holders with 15 mm support.

High: The PCB is about 37mm above the ceramic board.
Use the aluminum and steel holders with 30 mm support.

When you need precise temperature readings on the PCB put the thermocouples directly to the PCB in order to measure the temperature in its surface. Secure it with Kapton tape on the top or the bottom of the PCB.

When the set temperature is not above 150°C use the XF-323 thermocouple. This setting provides proper temperature for the most working progress on the PCB. If you want to set extreme high temperature use the XF-321 thermocouple. This can be purchased separately.





Usage Tips

Do not put the PCB directly to the ceramic board because the surface temperature might above the required temperature and this can lead damage in certain elements of the circuit.

The higher the temperature gets on the PCB the total temperature stress gets higher on the panel. However at the soldering point the mechanical stress will be less.
For general soldering to set 130°C is enough.

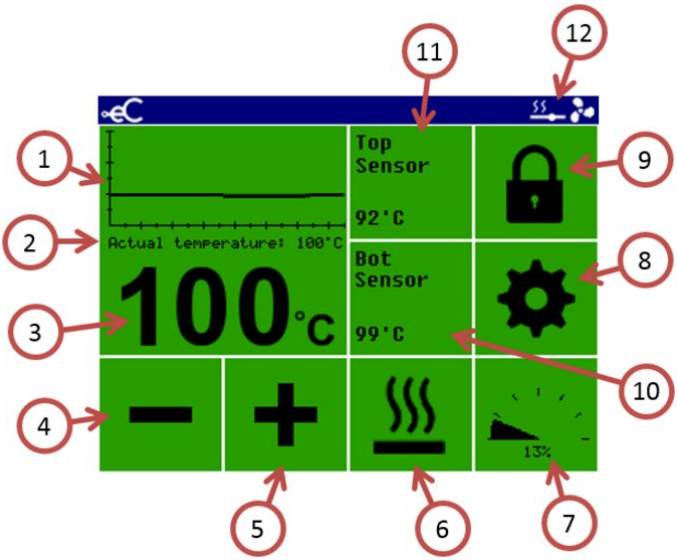
When the soldering is finished do not take the PCB away immediately. Set the temperature low (40°C) and leave the PCB on. By this process the mechanical stress caused by rapid cool down can be reduced.

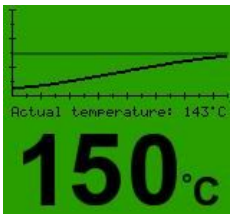
Using external sensor is not necessary but it indicates when our PCB has reached the required temperature.

In case of temperature sensitive panels always use external sensor control in order to avoid overheating.

Using the device

Elements of the main screen





1. Temperature curve
Slight line indicates the set temperature, the strong line the temperature changes of the heating board. If you use internal control, temperature of the plate appear; if you use external-top control, on the top you will see the temperature of the top side of the PCB, if you use external-bottom control, you will see the temperature of the bottom side of the PCB as the strong line.

2. Actual temperature of the heating board
It indicates the actual temperature of the heating board if the device is set to inside-sensor control. *In case of external sensor control it does not appear. In this case the value of the selected sensor has to be used.*

3. Set temperature (20..200 °C / 68..392 °F):
The device heats up to this temperature. Tap the number to set the temperature with a numpad.
4. Decrease temperature (hold for quick setting).
5. Increase temperature (hold for quick setting).
6. Open heat setting menu
Detailed description in the "**Heater settings**" section.
7. Power meter.
Tap the button to set the power consumption of the device. You may choose between the maximum 1600W and the limited 800W.
8. Settings of the device
Detailed descrition in the "Device settings" section.
9. Screen lock and Unlock
Tap on the button to lock the screen. Now on the icon bar a lock appears which indicates the locked state. The unlock code is 7223.
10. This button shows the bottom sensor temperature.
11. This button shows the top sensor temperature.
12. Icon bar
Here appears other operating information during the operation of the device.

Meaning of the icons:

 Inner cooling is operating

 Screen locked

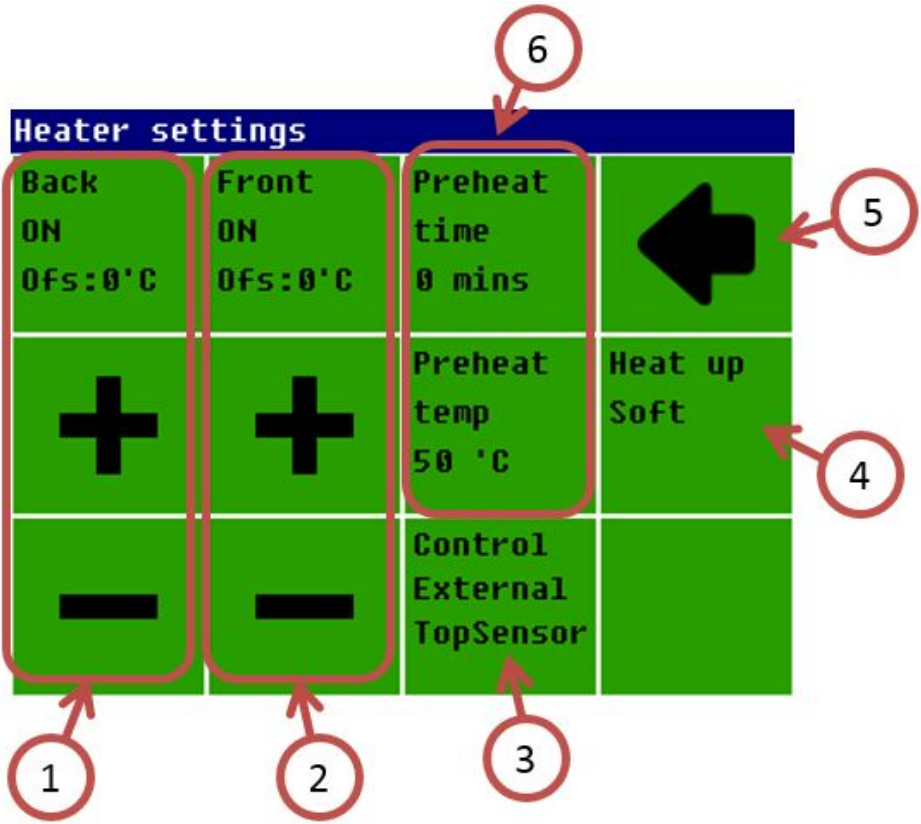
 Heating is controlled by the inner sensor

 Heating is controlled by the top sensor

 Heating is controlled by the bottom sensor

Limited heating power

Heater settings

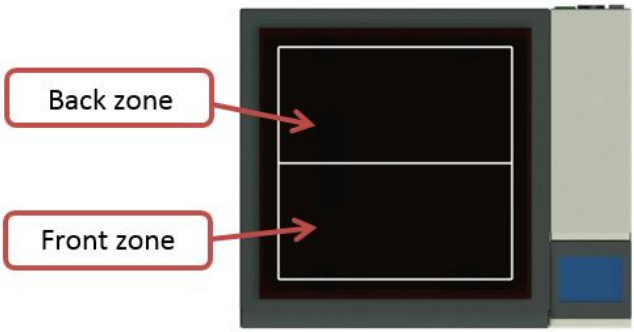


1. Heating panel rear zone
Only available in “Advanced” mode see the “**Device Settings**” section
2. Heating panel front zone
Only available in “Advanced” mode see the “**Device Settings**” section

Note that if internal sensor is selected, the offset cannot be set; the + and minus buttons are disabled and the offset becomes zero.

The two zones may turned off and on separately if you do not need to the whole heating surface. By the +/- buttons the difference can be set

between the two zones. (-10 and +50 °C or 0°F and 108°F (in absolute value)).



3. Control
Available in both „Advanced" and „User" mode (see „**Device settings**" section.)
By pushing the button we can select three settings:
Internal – internal sensor control.
External TopSensor – external top sensor control. The offset becomes 0.
External BotSensor – external bottom sensor control. The offset becomes 0.

In case of external sensor control when no thermocouple is attached the device operates automatically with inner sensor control.

The offset is the offset from the value you set in the Set temperature for the back and front side.

4. Heat up
Only avalilable in "Advanced" mode (see „**Device settings**" section.)

In case of inner sensor control you may choose between two heat-up presets by tapping the button:

Soft – Heat up with precise control
Rough - Heat up with rough control; here the heating up process is quicker however temperature fluctuation may occur during the heating up process.

In case of external sensor control the setting has not any use; the device always heats up the PCBs as quick as possible according to the actual sensor.

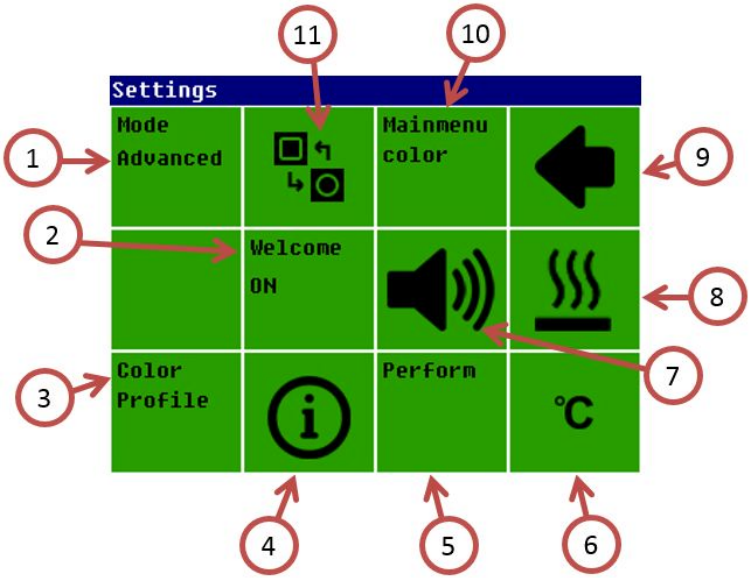
5. Back to main screen

6. Timed heat-up
Only available in *advanced mode* (see „**Device Settings**" section.)
The device keeps the preset temperature for a preset time. After the time is up, the device returns to the temperature was initially set.

The temperature can be set between 20 and 200 °C.

The time could be set between 1 and 60 minutes.

Device Settings



1. Set the Mode
Tapping the button you may choose between two options:

Advanced – in this mode you can adjust more settings related to heating.

User – in this mode you may not adjust some settings related to heating.

2. Welcome screen
You can enable or disable the Welcome screen appearing at startup.

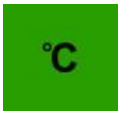
3. Color Profile change and setting
Here you may choose the color profiles of the device. For detailed description see the **Color Profile change and setting** section.

4. Device information
You can get basic information about your device; e.g. software version
5. Set the power
Tap the button to set the power consumption of the device. You may choose between the maximum 1600W and the limited 800W.

6. Set the unit

You can choose the displayed temperature unit.

° Celsius



° Fahrenheit

7. Sound setting

Button sound: none

Button sound: short

Button sound: long

8. Open the Heating Settings

Detailed description in the **“Heating settings”** section.

9. Back to the main screen

10. Set the colors of main screen

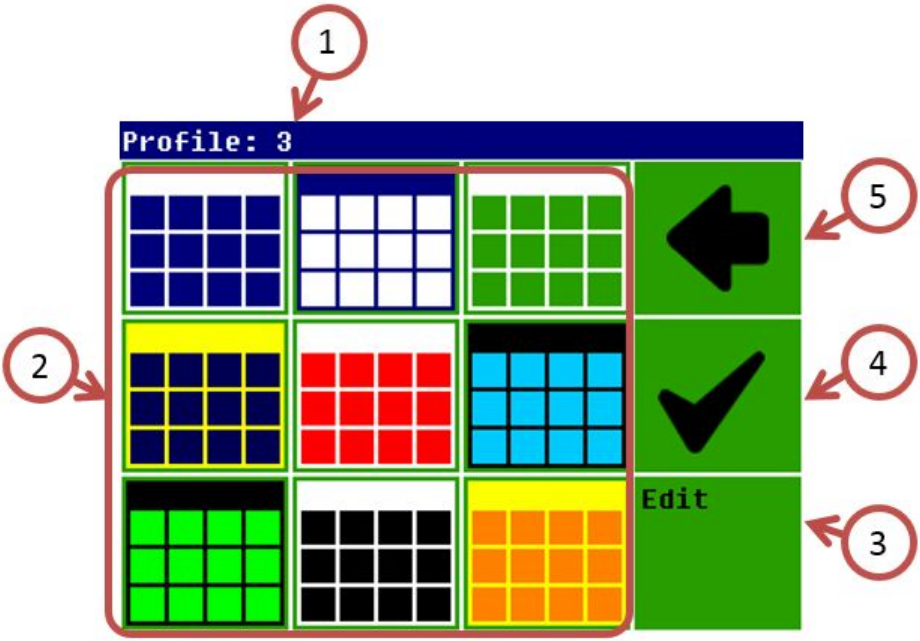
Here you can change the color settings of the buttons on the main screen.

11. Changing the position of the main screen button

You can change the positions of the buttons of the main screen
As you enter the sample of the main screen appears. Only the “Main menu position settings” indicates you are in the position setting menu.

Choose the button you want to move; then tap the area where you want to place it. Now the swap of the buttons is done; the device returns to the settings menu.

Choosing color profile and setting



1. The number of the chosen profile

2. Selectable profiles showing the real colors

3. Edit the selected profile
Detailed description in the “Edit color profile” section

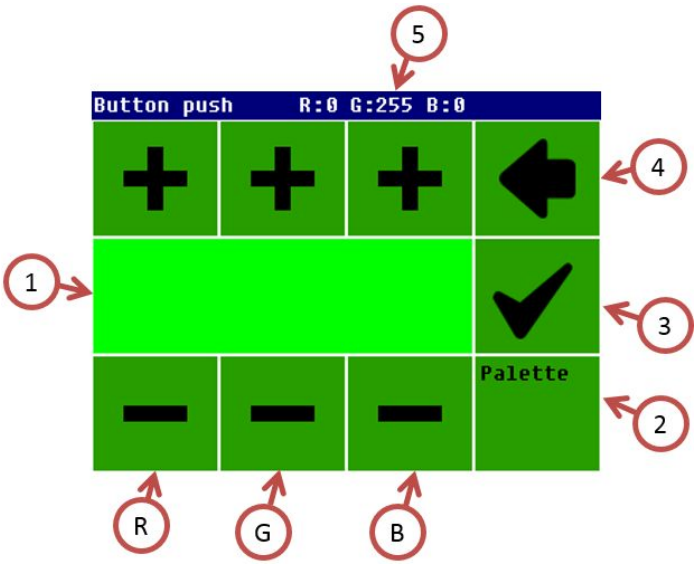
4. Set the selected Color profile

5. Return to the main screen

Edit color profile

The edit color profile section you can choose the following areas color settings:

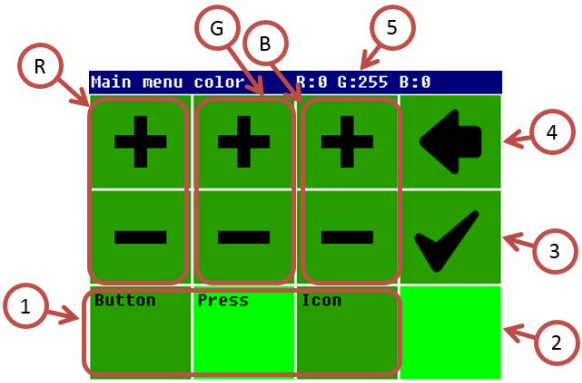
Backgrnd – Background
Button – Default button color
Push clr – Pushed button color
Icon – Text and Icon color
Infobar – Background color of the Infobar on the top of the screen
Info txt – Text and Icon Color in the Infobar on the top of the screen



1. Shows the new color
2. Color palette where you can choose from predefined colors
3. Accept the colors
4. Go back
5. The RGB code of the new color
R (Red) - Change the value of Red component (0..255)
G (Green) - Change the value of Green component (0..255)
B (Blue) - Change the value of Blue component (0..255)

Change the colors of the main screen

You can change the color settings of the main screen. You can change the positions of the buttons of the main screen.
As you enter the sample of the main screen appears. Only the “Main menu color settings” indicates you are in the position setting menu. Tap on the element you want to modify.



1. Select the color of particular button states
The selected state of the button has a different color.
Button – Button color
Push clr – Pushed button color
Icon – Text and icon color on the buttons

2. Shows the color you mixed.
3. Accept colors
4. Go back
5. The RGB code of the mixed color

R (Red) -Modify the Red component (0..255)
G (Green) -Modify the Green component (0..255)
B (Blue) - Modify the Blue component (0..255)

Firmware update

The firmware is in the image.bin file. This could be downloaded from our website.

www.eurocircuits.com

1. Copy the image.bin file to a USB 2.0 compatible flashdrive.

2. Turn the device off.

3. Connect the flashdrive to the USB port on the device.

4. Turn on the device and in the same time press and hold the display.

5. When the firmware update screen appeared you may release the display.

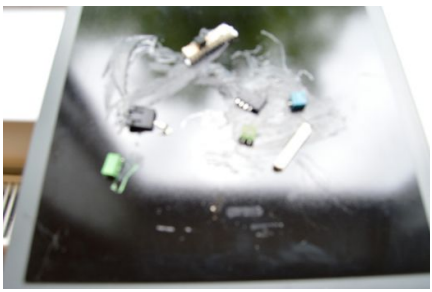
6. When the update is complete remove the flashdrive.

7. The device restarts with the new firmware.

Cleaning and maintance the device

Clean with a dry cloth if the device is not so dirty!
If the device is not severely greasy its cleaning may be done with a dry cloth; before cleaning make sure the device is disconnected form the wall outlet. When the power cable wears out use a new one recommended on page 10 section 2. Check the protective earth of the device as specified in the local law. In case of liquid spilling against the prohibition disconnect it from the wall outlet immediately; wipe it dry, remove the power cable, wipe its inside dry. Wait at least one day until the humidity evaporates from the device.
Disconnect the power cord before the cleaning.
For the network cable wear, use the cable on page 8. point 2. or equivalent. Check the protective bounding as the lows write.

DO NOT make any internal adjustments or repairs by yourself.
Contact our Support Services at euro@eurocircuits.com

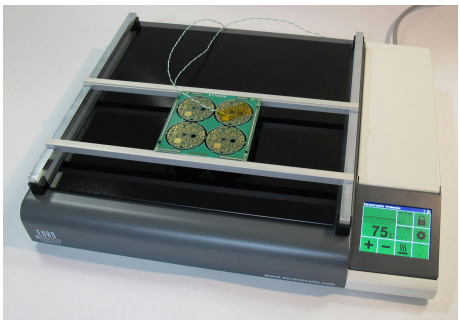


During the operation parts may fall on the hot surface and melt on the ceramic plate. These need to be removed.

Set the device to 200°C and wait until it heats up. Remove the most remains with a metal spatula.

Set the device to 60°C and wait until the temperature descends.

For cleaning use cold degreasing stove cleaner liquid. Use proper protecting equipment; consult the user manual or the data sheet of the material.



After cleaning you can use the device again.

Contents of the package

Type	Item	pcs	Identifier
EU-UK	eC-pre-heater 230-240 V	1	eC-004V01-230
USA	eC-pre-heater 120 V	1	eC-004V01-120
EU	Power cord	1	6004.0215
USA	Power cord	1	312019-01
UK	Power cord	1	6044.0215
Optional	Thermocouple	x	XF-324-FAR
USA/EU/UK	Thermocouple	2	XF-321-FAR or equivalent
USA/EU/UK	PCB holder1	2	eC-004-104
USA/EU/UK	PCB holder2	2	eC-004-105
USA/EU/UK	Support1 - 15mm	4	eC-004-106
USA/EU/UK	Support2 - 30mm	4	eC-004-107
USA/EU/UK	User manual	1	eC-004-999

Netto size: 430mm x 353mm x 70mm, 8 kg
Gross size: 665mm x 485mm x 195mm, 10 kg

Waste management

The 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 recycle system.

Always obey the local law: give you old, non-working electric devices to recycle center.

After 13/08/2005 you can hand down your used device in the place of purchase; it will be disassembled and recycled properly.

The environment is the heritage our grandsons, its protection is a common interest and responsibility. Help us with this endeavor.

Do not throw away your used device; send it back to the manufacturer or hand down to a recycle center.

Warranty Conditions

We support the eC-preheater soldering device with 12 months warranty. Please send us the defected device to the Eurocircuits.

We will do our best to check and repair the device.

Contact

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