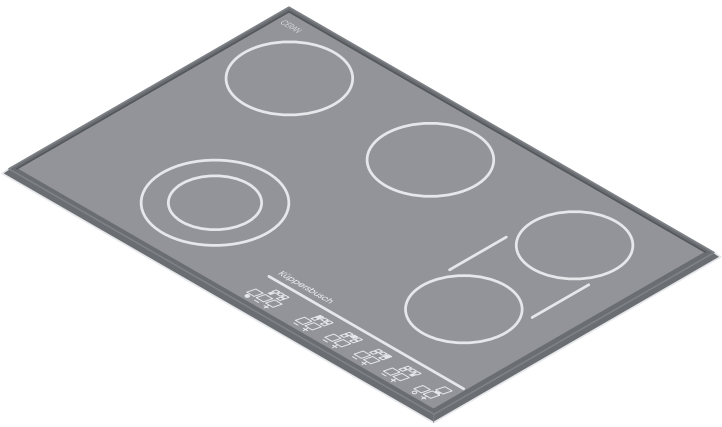

Electric hob with touch controls EKE 854.2

Küppersbusch

THE HEART OF A GOOD KITCHEN

GB

Service Manual: H1-50-01-03

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Contents

1. Safety instructions

Danger!

Repairs may only be carried out by a qualified electrician! Inexpert repairs may lead to risks and damages for the user!

To prevent electric shocks, please observe the following tips:

- In the event of faults, housing and frame may be live!
- Touching live components inside the appliance may cause dangerous currents to flow through your body!
- Prior to repairs, disconnect the appliance from the mains!
- When inspecting live parts, a residual current operated device must be used at all times!
- The ground wire resistance must not exceed that specified in the standard! It is of vital importance for ensuring the safety of people and the functioning of the appliance.
- On completion of repairs, an inspection must be carried out in accordance with VDE 0701 [Association of German Electrical Engineers] or the corresponding regulations for your country!
- On completion of repairs, a function and impermeability inspection must be carried out.

Caution!

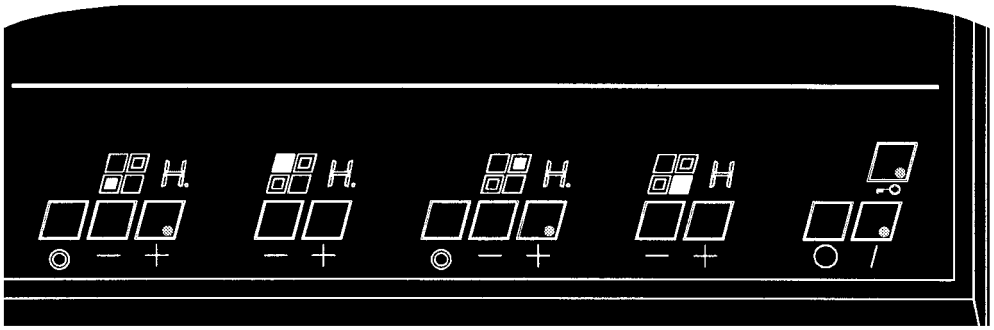
Make sure you observe the following instructions:

- The appliances must be disconnected from the mains prior to all repairs. If inspections must be carried out on live appliances, make sure you use a residual current operated device.

Sharp edges: Use protective gloves.

Components may be electrostatic!
Observe handling precautions!

2. Touch control with a pan sensor



Controls for a glass ceramic hob with 5 cooking zones, e.g.

- 4 single-circuit cooking zones
- 1 dual-circuit cooking zone

Infra-red technology
without irritating moisture, external lighting and electromagnetic radiation influences

14 infra-red sensor-touch controls
(a maximum of 16 possible) for operating the hob (switching on, switching off, changing the cooking settings, activating and deactivating the childproof lock and activating the second circuit), with an acoustic confirmation signal

5 seven-segment displays
for indicating the cooking setting, the heating-up function, the residual heat function and the activation of the second circuit

The arrangement of control and display sensors can be adapted to customers' individual requirements

All-pole switch-off
when the controls are switched off

Demonstration mode
(relay deactivated) for demonstrations in studios (can also be activated with the sensor code)

9 different settings with an automatic heat-up function

Residual heat display
by determining the degree of residual heat on switching the cooking zone on and off; hence no thermal contacts required

Maximal operating time limit
for each individual cooking zone depending on the setting

Sensors are protected against incorrect operation
so that invalid sensor combinations are cut off

Monitoring the temperature surrounding the controls
Surrounding temperature > 90°: standby

Childproof lock

High degree of safety
thanks to two microprocessors with reciprocal controls **in a series interface** (both of the processors can intervene in the relay drive)

Saucepan sensor

- A supplementary module functioning on the basis of an inductive gauge principle for precise, drift-free recognition of pan dimensions for the dual-circuit zone too.
- Single-coil sensors with a simple geometry (triangle) and four-wire connections for minimizing the supply inductance and for enlarging minimal principle-related effective travel.
- Statistical gauging procedure without moving the pan.
- The same degree of sensitivity for all standard pan materials (magnetic and non-magnetic metals).
- The pan sensor can be deactivated for each individual cooking zone in order to be able to use pans made of materials unsuitable for the pan sensor.

Three-year experience with the above-mentioned technology

2.1 Putting the hob into operation

One second after the power supply has been switched on, the cooking zone display will indicate *CAL*. During this phase basic calibration is carried out.

Important: The sensors must not be covered up!

Once calibration has been carried out, the cooking zone displays will indicate rotating zeros. This means that the operator needs to press the OFF sensor in order to confirm that the sensors were not covered up. Should this not have been ensured, calibration should be repeated by means of switching the power off and then on again.

If the surroundings were too bright on calibration, the CAL display will be followed by vertical stripes moving downwards in the cooking zone displays. The hob has locked. The degree of brightness of the environment must be reduced and calibration must be repeated by switching the power off and then on again.

2.2 Switching the hob on

The hob is switched on by pressing the  sensor for approx. 2 seconds. The respective LED will light up.

If no cooking zone is activated within 10 seconds of being switched on, a continuous signal will sound for another 10 seconds. If no cooking zone is activated within this time either, the hob will switch off completely.

2.3 Settings

2.3.1 Start-up with the plus sensor

The hob automatically switches onto setting 5 immediately. If the sensor is still pressed, the setting will go up to setting 9. If you continue to press a sensor key after having set the highest cooking setting, a continuous signal will sound after 10 seconds. The hob will switch itself off completely after 20 seconds.

If setting 9 has been selected and the plus sensor is pressed once again, the heating-up mode will be activated.

2.3.2 Start-up with the minus sensor

The hob switches onto setting 9 immediately and at the same time the heating-up mode is activated.

2.3.3 Switching off the hob

If the setting is still switched down after setting 1 has been reached, switching on again will be prevented for 2 seconds. The display will indicate *0*. The hob can only be switched on again if the sensor has previously been recognized as having been “released”.

Pressing the plus and minus sensors simultaneously will switch the cooking zone off. Function as specified above.

2.4 Heating-up function

Should, subsequent to activating the heating-up function, no setting under 9 be selected within 5 seconds, the heating-up function will be switched off again. If a setting under 9 is selected within the 5 -second limit, an “A” will blink in alternation with the selected cooking setting for a period of time which depends on the respective cooking zone. 30 seconds after activation, the heating-up function can be switched off again by turning the cooking setting down. Selecting setting 9 will also switch off the heating-up function.

Heating-up times (times rounded off in seconds)

Cooking setting	Time
1	1:22 minutes
2	2:44 minutes
3	4:06 minutes
4	5:27 minutes
5	6:50 minutes
6	1:22 minutes
7	2:44 minutes
8	2:44 minutes
9	-

2.5 Dual-circuit cooking zones

The outer cooking zone circuit of a dual-circuit cooking zone is also activated by pressing the  sensor. This is only possible if a cooking setting has previously been selected. On switching off the cooking zone, the information on the activation of the outer cooking zone circuit is deleted. Activation of the outer cooking zone circuit is shown by means of the decimal point on the 7-segment display. Pressing the cooking zone symbol once more will deactivate the dual-circuit zone.

2.6 Childproof lock

The childproof lock is activated by pressing the  sensor for approx. 3 seconds. The LED which corresponds to this sensor and the LEDs in the plus sensor of the dual-circuit cooking zones will blink. If a cooking zone has been activated, it can only be turned down or switched off.

The plus sensors and the sensors for adding the outer cooking zone circuits have been deactivated. The lock can either be released by switching off the power supply or by pressing the three sensors in which the LEDs are blinking.

In order to do so, the plus sensors in which the LEDs are blinking and the locking sensor are pressed simultaneously, or the two plus sensors are pressed first (signal as recognition) and then the locking sensor (disabled switch) is pressed within 3 seconds.

If more sensors than these three are pressed, the lock will not be released (exception: the ON sensor). The childproof lock is deactivated by switching off the power supply.

2.7 Operating time limit

The time limit function operates individually for each cooking zone.

The time will re-commence on changing a setting.

When a cooking zone is switched off, the operating time limit will cause a short signal to sound.

Cooking setting	Cooking zone switches off after
9	2 hours
8	2 hours
7	2 hours
6	2 hours
5	3 hours
4	4 hours
3	5 hours
2	5 hours
1	10 hours

2.8 Residual heat display

Display of an "*H*" for a switch-on and switch-off time projected in the relay during which the cooking zone remains hot after having been switched off.

The residual heat meters are switched off when the power supply is switched off.

2.9 Sensor locks

The sensor lock switches itself on as soon as sensors are improperly activated. The hob reacts to such improper activation with an ongoing signal after 10 seconds and complete switch-off after 20 seconds. When the sensors are locked control commands are not processed.

Reasons why the sensors lock:

1. More than one sensor is pressed.

   Exceptions:

   - Switching off the hob by pressing the plus and minus sensors simultaneously:
     If the cooking zone is switched on, the sensor will lock if the plus and minus sensors are not released after deactivating the cooking zone.
   - Activating/deactivating the childproof lock:
     Activating or deactivating the childproof lock is not carried out with the ON switch. If the childproof lock has been activated, the sensor will lock if the respective sensors are not released after the childproof lock has been deactivated.
   - Pressing the OFF sensor will always switch the hob off completely.
     If the OFF sensor is pressed on its own or at the same time as another sensor, except for the childproof lock sensor, the ON sensor or the plus sensor of cooking zone 1, the sensor will be delayed for approx. 500 ms.
     If the OFF sensor is pressed at the same time as the childproof lock sensor, the ON sensor or the plus sensor of cooking zone 1, the sensors will be delayed for approx. 2 seconds.

2. On deactivating a cooking zone, sensors other than the respective plus and minus sensors are pressed.
3. On deactivating the childproof lock, more sensors than the corresponding sensors are pressed (exception: the ON sensor).
4. The plus sensor is pressed when the childproof lock is activated (exception: the plus sensor for cooking zones 2 and 4 due to switch-off).
5. The sensor for switching on the second circuit is pressed when the childproof lock is activated.
6. The corresponding minus sensor is pressed when the childproof lock is activated and the cooking zone is deactivated.
7. The sensor for switching on the second circuit is pressed when the cooking zone is deactivated.
8. When a cooking zone is switched on, sensors other than the respective plus and minus sensors are pressed.
9. The childproof lock has already been activated and the locking sensor is still pressed or is pressed again.
10. The hob has already been switched on and the ON sensor is still pressed or is pressed again.
11. The second circuit has already been switched on and the respective sensor is still being pressed.
12. The cooking zone has already reached setting 9 or the heating-up setting and the plus sensor is still being pressed or is pressed again.
13. The minus sensor is not released once the cooking zone has been turned down to 0.
14. If sensors are not recognized as having been pressed within 2 minutes for a period of approx. 38 seconds, the control unit will presume that a fault has occurred. The sensors will be locked (apart from the OFF sensor). After approx. 10 seconds a signal will sound for approx. 10 seconds. The hob will then be switched off completely. The hob will still be switched off, even if the fault is rectified within these 20 seconds. This function is only activated 10 minutes after the power supply has been switched off and it is deactivated when the demonstration sensor is activated (left stop).

2.10 Miscellaneous

- The appliance does not automatically switch on again after a power failure.
- Cooking zone cycle times (cycle time 47 seconds)

Cooking setting	Switch-on time
1	1.25 s
2	3.5 s
3	5.75 s
4	8.75 s
5	11.25 s
6	14.0 s
7	21.25 s
8	28.25 s

If no cooking zone is on for 1 minute, the hob will switch off completely. A short signal will sound.

In the event of overheating the hob will switch off, the 4 LEDs in the sensors will blink and at the same time a regular signal will sound.

- Demonstration switch Right stop: Heaters can be activated by means of the relay.
  Left stop: Heaters cannot be activated (relay switched off).
- Blanking out “paper reflections”: Any object on a sensor that reflects better than a finger will result in the pressing of the sensor being ignored.

3. Touch control with pan sensor function specification

3.1 General adjustments to the software / hardware of the touch control without a pan sensor used until now

An additional LED has been installed below the dual-circuit sensor. It signals that the second circuit has also been activated for cooking zone 5.

The decimal points in the display indicate the pan sensor situation should the touch control have been configured for the pan sensor.

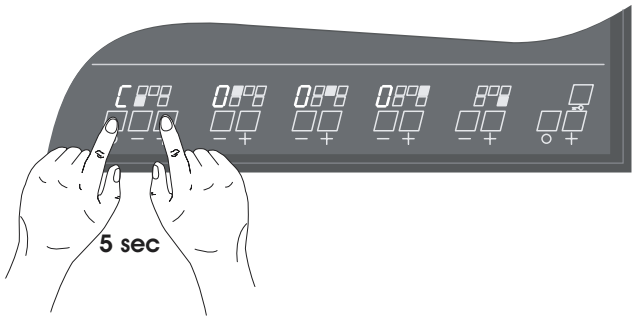
- Decimal point does not light up: pan sensor active
- Decimal point lights up: pan sensor for the respective zone deactivated
- Decimal point blinks: pan sensor fault recognised

Should all of the cooking zones be switched off without switching off the hob with the off sensor, the hob will now switch off after only 1 minute (hitherto 10 minutes).

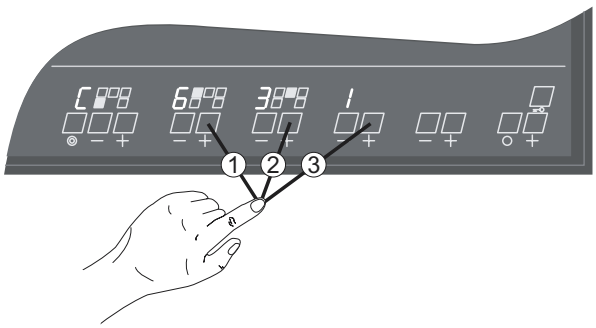
3.2 Code functions

Certain functions can now be activated or deactivated by entering a code.

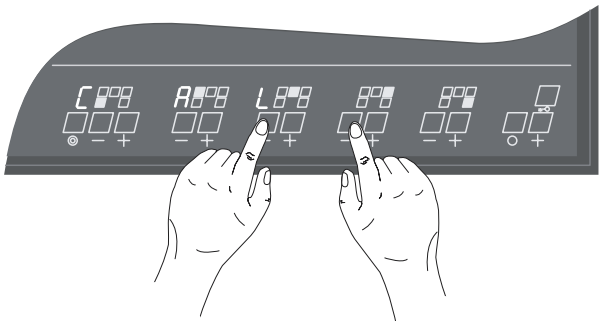
A code entered is activated when the hob is switched off by pressing both (approx. 5 seconds) the plus sensor and the dual-circuit sensor of zone 5 simultaneously. A short signal will sound and the display will indicate C.00.0. In this case C stands for Code and the next two zeros stand for the code number of the respective function. The last zero stands for the point at which the function is activated or deactivated.



The code numbers are set by pressing the plus sensor of the respective zone. In the display for zones 3 and 4 a number from 1 to 9 can be set and in the display for zone 2, either a 0 or a 1 can be set.



Once the required code number has been set, it is confirmed and the respective action is carried out by pressing the minus sensors for zones 2 and 3 simultaneously. A short signal will also sound.



Codes:

- Operation in Europe: C.10.0
- Operation in the USA: C.10.1
- Activating pan sensor calibration: C.63.1
- Switching off the pan sensor: C.72.0
- Switching on the pan sensor: C.72.1
- Switching off the demonstration mode: C.81.0
- Switching on the demonstration mode: C.81.1

If an incorrect code number is set, the code setting will be deactivated again and the display will go off. If the code setting has been activated and no corresponding sensor is pressed for approx. 10 seconds, the code setting will also be deactivated.

Information on the code functions:

- **Pan sensor calibration**

  If this function is activated, CAL will be shown on the display for as long as calibration is in progress. No objects may be placed on the cooking zone until calibration has been completed. Should it not be possible to activate pan sensor calibration within 5 seconds, the calibration request and the display will be deleted. Pan sensor calibration can also be activated once the power has been switched on by pressing the “childproof lock” sensor while the zeros are circling on the display.

- **Switching the pan sensor on and off**

  The pan sensors can generally be switched on and off here. When a pan sensor is switched off, the control function will operate fully without pan recognition. The dual-circuit LED will however still be used to display the dual-circuit function (not the decimal point).
  This configuration is stored in the EEPROM and is maintained in the event of a power cut.

- **Switching the demonstration mode on and off:**

  If the demonstration mode was deactivated when the appliance was configured, it can still be activated with the hardware demonstration mode switch. If the demonstration mode was activated with the code, the relays will have been deactivated irrespective of the position of the hardware demonstration mode switch.

  This configuration is stored in the EEPROM and is maintained in the event of a power cut.

3.3 The functions and the pan sensors

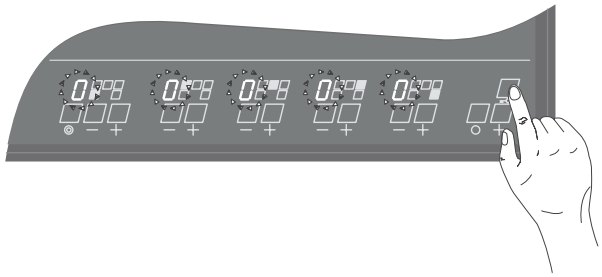
When the hob is switched on a small **u** will be displayed for those cooking zones that recognize a pan. If a zone is switched on and no pan is recognised, a small, superscripted, underlined **u** will be shown. If no pan is placed on this zone within 10 minutes, the zone will deactivate itself and a short signal will sound.

The heating-up time and the operation time limit will only lapse when the pan sensor is activated if a pan is recognized on the respective cooking zone. If a pan is removed before the heating-up time has lapsed, the heating-up time will be interrupted and will recommence at the same point when a pan is placed on the cooking zone again.

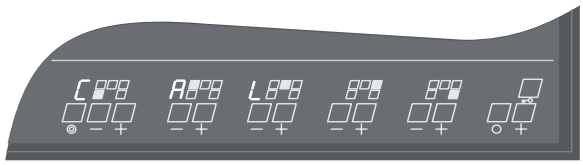
The dual-circuit temperature setting of zone 5 can always be adjusted independently from the pan sensor by pressing the dual-circuit sensor, provided that, when the pan sensor is activated, the zone is switched on and a pan has been recognised. Pressing the dual-circuit sensor now will switch the second circuit on or off, irrespective of whether a large pan has been recognised or not. Once the zone has been switched off or if there is no longer pan recognition, activating the second circuit will once again depend on the pan sensor.

3.4 Pan sensor calibration after the power has been switched off

Select calibration
after switching on the power supply.



The pan sensors are calibrated.



3.5 Current program number

Version 01177 from 28.01.1997

Version 01277 Configurability installed for use in the EKE 604.2 or the EKE 804.2.

Note! The clamped connection schedule applies to the EKE 604.2 only!

In the case of the EKE 804.2 the relay functions for zones 1 and 3 have been exchanged, i.e. on activating zone 1 K8 will switch and on activating zone 3 K4 will switch (no function specification available).

Version 01377 from 17.09.1997

Diagnosis function installed: The relay and the display can be activated with a PC.

The operating cycle, the heating period meter and the operation time meter are stored in the EEPROM. The data is added up in the EEPROM every time the hob is switched off, i.e. in the event of a power cut, data hitherto collected in the processor will be lost.

The following are also stored in the EEPROM:

- PIC 73 + PIC 54 power-up resets
- PIC 73 + PIC 54 watch-dog resets
- PIC 73 + PIC 54 I2C bus error resets
- Excessive temperature cut-off by means of PIC 54
- Resets for faulty calibration data: PIC 73
- Hob cut-off procedures in the event of impermissible sensors: PIC 73

Version 01477 from 7.10.1997

Software maintenance (no function specification available).

Version 01577 from 10.10.1997

Unintentional overwriting of the operating cycle meter for zone 1 eliminated.

4. Clamped connection schedule