INDEPENDENT HOBS WITH HIC ELECTRONIC CONTROL
What is HIC?

- **HIC = Hob Independent Control**
- New touch-control electronic for independent hobs, with new user interface philosophy
- Electronic modules with reduced width and height allow a new build-in philosophy, with higher flexibility in kitchen planning
1 circuit board for control and power supply to the elements = Power Board (PB)

User Interface (UI) with touch control:
- single board (variants 1 and 2)
- double board (variant 3)
HIC Touch Control Principle

- Touch Control is not capacitive, but works with Infrared Reflexion.

Positioning of sensor relative to vitreoceramic surface important for correct function.
Compact Horizontal

60 cm width, UI on R.H. front side
Compact Horizontal

60 cm width, UI on R.H. front side
Split Vertical
68 cm width, split lateral UI
Split Vertical
68 cm width, split lateral UI
Compact Horizontal*
60 cm width, UI on R.H. front side

* split variant possible
Split Vertical
68 cm width, split lateral UI
Compact Vertical
68 cm width, lateral UI on R.H. side

Powerboard

Mylar Folie

Sealing 1
Sealing 2

Electrolux
Service

ESSE-N / A.S.

May 2003
Build-in Philosophy of 68 cm Hob

68cm hob: HIC vertical, split or compact

- **Advantage:** No cut-out required in furniture
- **Disadvantage:** cut-outs in furniture walls

Lateral bays containing the circuit boards not thicker than work plate

Adjacent furniture is fully usable, e.g. for building-in a dishwasher (!)
User Philosophy

Zone hot, booster not possible!

Touch both fields to switch of zone

Decrease setting

Increase setting

Booster active
- touch ON/OFF for about 2 sec
- automatic safety switch-off if:
  - neither a cooking zone nor the timer are switched on within the next 10 sec
  - permanent touch (e.g. object on touch fields) for more than 10 sec
- touch ON/OFF for about 2 sec for manual switch-off
Stop & Go / Keep Warm

- all zones switch to „keep-warm“ setting when touching 2nd „button“ (if configured as „Keep Warm“, or „Stop&Go“)
- back to previous settings at next touch
Function Lock (Key Symbol)

- Neither cooking zone settings nor timer can be changed after touching 2nd „button“ configured as „Function lock“ (key symbol printed on panel).
- Only main switch (ON/OFF) and function lock still active.
- Unlock by pressing key symbol again.
Booster

- Activation depends on model definition:
  - Either with dedicated touch zone,
  - Or automatically if zone setting is selected with + only
- Not possible if zone still hot (H shown)
- For duration see settings table
Timer

- Touch timer symbol repeatedly to select desired zone, set time with + or -
- Acts as switch-off timer for cooking zone indicated by flashing dot,
- Or as minute minder if activated without switching on any cooking zone
Residual Heat Indicator

- duration controlled by software with simple algorithm using preceding ON and OFF times
- Attention: residual heat indicator will not be re-activated after a power failure!
Child Lock

- switch ON hob
- touch 2nd „button“ (which, depending on model, is configured either as „Lock“, „Keep Warm“, or „Stop&Go“) for 3 secs
- touch one of the + „button“
  → L shows in display
- use same sequence with - „button“ to de-activate
- to override once: touch + und - of one cooking zone simultaneously for 1 sec
Demo and Service Mode

- Touch ON/OFF until display will go OFF again.
- Touch + and - for the front zones (→ short beep) simultaneously for 3 sec (→ short beep again).
- Touch timer symbol.
- d and S are shown in display.
- Either of the 2 modes can now be selected as shown on next slides.
Demo Mode

- Touch + adjacent to d → a dot will show in the display (d.)
- Display goes OFF
- Full user interface functionality can be simulated without switching on the heating elements
- Use same input sequence to de-activate demo mode
- DISCONNECTING THE POWER SUPPLY WILL NOT DE-ACTIVATE THE DEMO MODE!
Service Mode

- Touch + adjacent to S → automatic test sequence will start
  - Relays switch on and off for 3 secs each
  - All LEDs ON
  - Timer display shows software versions of the different boards
- No Alarm Codes !!
- Hob switches off at the end of the test sequence
## Settings

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<tr>
<th>Settings (10 steps) &quot;non-AEG&quot;</th>
<th>Settings (15 steps) AEG</th>
<th>MACS power level</th>
<th>Duty cycle [%]</th>
<th>Cycle time normal [s]</th>
<th>on [s]</th>
<th>off [s]</th>
<th>Cycle time paella zone [s]</th>
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Flatpak Block Diagramm
Intelligent Power Board

Power switching
2 APD & 8 Relay max.

Reset circuit

SMPS

μC
ST72314
44 pin QFP
8k ROM

AD

SCI

EMC filter

13 V

20kHz PWM

Board temp

50Hz

5 V

GND

Zero crossing detection

UI Connector 3-pole

Mask μC > 20K
Flash for flexibility
Power Board

- not possible to detect wrong connection (400 V), because power supply circuits are destroyed very quickly

- hob is switched off if power board temperature exceeds 130°C
Communication UI - PB

User Interface Left

User Interface

User Interface Right

Rast 2,5

MACS BUS

earth

+5V

connector

Mains supply

Power Board (Flatpak)

Heaters

Rast 2,5 connector

Neutral

Heaters

L2

Heaters

Heaters

Heaters

Heaters

Heaters
## Variants

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**Max. relay current**

- **BR10**: 5.2A
- **BR9**: 16.0 A
- **BR8**: 10.0 A
- **BR7**: 10.0 A
- **BR6**: 5.2A
- **BR5**: 5.2A
- **BR4**: 16.0 A
- **BR3**: 10.0 A
- **BR2**: 10.0 A
- **BR1**: 5.2A

### Labels:

**L2**: 14.8 A  
**L1**: 15.2 A  
**L1**: 15.2 A

**RHL1**: 5.2 A  
**RHLZ7-s**: 6.5 A  
**RHLZ7-d**: 3.0 A  
**RHLD3-s**: 3.5 A  
**RHL1**: 5.2 A  
**RHLD3-d**: 3.5 A  
**RHLD3-t**: 3.0 A

### Symbols:

- **RHL 1**
- **RHLZ7**
- **RHL 3**
- **RHL 2**
## Variants

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**Max. relay current**

- **BR10**: 5.2A
- **BR9**: 16.0 A
- **BR8**: 10.0 A
- **BR7**: 10.0 A
- **BR6**: 5.2A
- **BR5**: 5.2A
- **BR4**: 16.0 A
- **BR3**: 10.0 A
- **BR2**: 10.0 A
- **BR1**: 5.2A

**Variants**

- **RHL1**
- **RHL2**
- **RHL2D3**
- **RHL2D3**
- **RHL2D3**
- **RHL2D3**
- **RHL2D3**
- **RHL2D3**
- **RHL2D3**
- **RHL2D3**
## Variants

### Max. relay current

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- **RHL1**
- **RHL2**
- **RHL3**
- **RHL4**

### Variations

- **L2**: 12.6 A, 13.0 A
- **RHL1**: 5.2 A, 5.2 A
- **RHL2**: 4.3 A, 7.8 A
- **RHL3**: 8.3 A
- **RHL4**: 2.6 A

- **L1**: 16.1 A, 15.2 A
- **RHL1**: 5.2 A
- **RHL3**: 10.0 A
- **L1**: Leer
- **RHL1**: Leer
- **RHL3**: Leer
# Variants

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- **RHL1**
- **RHL7**
- **RHL3**
- **RHL2**

Values:
- **L2**: 14.8 A
- **RHL1**: 5.2 A
- **RHL7-s**: 6.5 A
- **RHL7-d**: 3.0 A
- **RHL3-s**: 3.3 A
- **L1**: 14.8 A
- **RHL1**: 5.2 A
- **RHL3-d**: 6.3 A

**Electrolux Service**

ESSE-N / A.S. 32 May 2003
Variants

Max. relay current

BR10  5.2A
BR9   16.0 A
BR8   10.0 A
BR7   10.0 A
BR6   5.2A
BR5   5.2A
BR4   16.0 A
BR3   10.0 A
BR2   10.0 A
BR1   5.2A

RHL
Z2
Z3
Z2

RHL1
Z2
Z3
Z3

RHLZ2-s
3.0 A
L2  17.0 A
RHLZ2-d
4.3 A
RHLZ3-d
6.3 A
RHLZ3-s
3.3 A
RHLZ7-s
6.5 A
RHLZ7-d
3.0 A

RHLZ3-s
3.3 A
L1  17.0 A
RHLZ3-d
6.3 A
RHLZ2-d
4.3 A
RHLZ2-s
3.0 A

RHLZ3-d
6.3 A
RHLZ3-s
3.3 A
RHLZ3-d
6.3 A
RHLZ7-s
6.5 A
RHLZ7-d
3.0 A

leer
0.0 A
L2  12.6 A
RHL1
5.2 A
RHLZ2-d
4.3 A
RHLZ2-s
3.0 A
RHLZ3-s
3.3 A
L1  17.0 A
RHLZ3-d
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ESSE-N / A.S.

May 2003
## Variants (Heater Codes)

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Power Management

- duty cycles of cooking zones are interlaced as far as possible
Faults
Zones still active after switch off

- Reset possible by switching on and off
  - Communication error (possibly EMC problem)
- UI inactive, zones on
  - Low sensitivity of touch fields
  - Permanent touch detected
  - Presumably faulty PB
- UI active, zones do not react to inputs:
  - Presumably faulty PB

UI = User Interface
PB = Power Board
Faults
Zones went off, UI still on

- Reset possible by switching on and off
  - Communication alarm caused relays to switch-off elements
- Reset NOT possible by switching on / off
  - EEPROM fault, change PB
- UI can’t be switched off:
  - presumably faulty PB
  - possibly faulty UI,
  - or wrong positioning* of UI

* N.B.: if UI is replaced, always use complete unit with new plastic support. Bending of old support can cause wrong position
Faults
Zones and UI went off

- Hob active again after approx. 30 secs.
  - PB or UI reset
  - Touch zones covered → safety switch-off (beep)
  - Permanent touch detected although touch zones not covered → safety switch-off (beep).
  - Touch zones re-calibrated after switch-off.

- Hob doesn’t react any more:
  - presumably faulty PB
  - possibly faulty UI
  - or wrong positioning* of UI

- Hob active again after some time
  - PB overheat
Faults

UI went off, zones still on

- Reset possible by switching on and off
  - switch-off caused by timer, auto switch-off. or permanent touch; not transmitted due to communication error

- UI active, zones don’t react:
  - presumably faulty PB

- UI not active, zones still on
  - low sensitivity of touch fields
  - permanent touch detected
  - presumably faulty PB
  - possibly faulty UI