



**Electrolux**

# SERVICE MANUAL FABRIC CARE

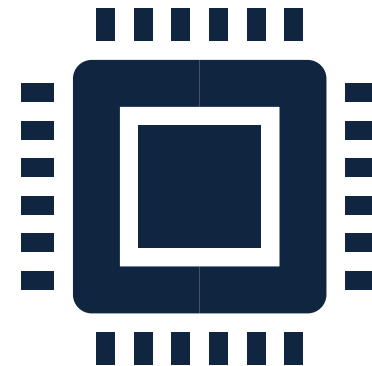
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BA Europe & Technical Support

DRYERS  
User Interface

## ALARMS



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## 1 PURPOSE OF THIS MANUAL

The purpose of this Service Manual is to provide Service Engineers who are already familiar with the repair procedures with information regarding: Tumble dryers fitted with **EDR10, EDR12, EDR14 EU, EDR 16** electronic control systems.

The document no. 599794731 describes the basic functional concepts of all User Interface types designed for: **Pone, Diamond, Ruby**

For each aesthetic level, according to buttons/lights layout, specific electronic boards are provided.

Such boards are separated from the main power board that controls the appliance and communicates with it by means of MACS serial protocol. The compatible main boards are based on:

PCB	EDR10	EDR12	EDR14	EDR16
Pone			X	X
Diamond			X	X
Ruby			X	X

The manual deals with the following topics:

- Guide to diagnostics

Rev.	Date	Description	Author
00	08/2020	Document creation	Marcin Pluta
01	08/2023	Update	Błażej Szot

## 2 SAFETY



### Safety

- All the work to be performed inside the appliance requires specific skills and knowledge and may only be carried out by qualified and authorised Service Engineers
- This platform is not fitted with an ON/OFF switch.  
Before you access internal components, take the plug out of the socket to disconnect the power supply.
- Some of the components in the mechanical part could cause injuries, so wear suitable protection and proceed with caution.
- Always empty the appliance of all the water before laying it on its side.
- If the appliance has to be placed on its side for maintenance or another reason, lie it on its left side, to avoid the risk of any residual water falling onto the main circuit board.

### 3 DIAGNOSTIC PROGRAM DEFINITION

In the **1st selector position** the **User Interface test** is performed; all LEDs or display symbols are **lighted on sequentially** to allow checking the outputs.

**Pressing any button**, the associated LEDs and **display icons** are **lighted on** and the related **position number** is **shown** on cycle time (TTE) digits, till button is released; besides, the buzzer plays a single “beep” sound (mechanical switch) or “click” sound (touch sensor).

When the selector knob is moved the TTE digits **show** the “C” letter followed by the knob position code for about 2 seconds.



#### Positioner spin direction

The appropriate direction of the positioner spin depends on the main board used in appliance:



Clockwise: POne, Diamond



Counterclockwise: Ruby



#### Enter “electric test” or “clear last alarms”

Once in the diagnostic mode, based on the selector position, pressing the key combination "diagnostic mode" leads to:


2 - 9	Diagnostic mode	the machine will set in electric test mode at the next power on
10	Last alarm	the alarm codes that were stored in memory will be reset



#### Enter “Extended diagnostic program” (Ext)

- Extended diagnostic programs can be activated in each selector position simply by pressing the Start/Pause button. TTE digits show the “d” letter followed by the knob position code for about 2 seconds.
- To switch from extended to normal diagnostic programs and vice versa is enough to press the Start/Pause button.

 Selector position and TEST		Version		
1	User Interface Test	Traditional	HP Vario	HP Niagara
2	Condense tank switch + condense tank pump	Traditional	HP Vario	HP Niagara
3	Counterclockwise drum rotation	Traditional	HP Vario	-
3	Counterclockwise drum rotation + steamer heat up	-	-	HP Niagara
4	Clockwise drum rotation (for visual check of the drum)	Traditional	-	-
4	Compressor cooling fan	-	HP Vario	-
4	Compressor cooling fan + steam generation	-	-	HP Niagara
5	Heater ½ power + clockwise drum rotation	Traditional	-	-
5	Clockwise drum rotation	-	HP Vario	HP Niagara
6	Heater full power + clockwise drum rotation	Traditional	-	-
6	Compressor ON + clockwise drum rotation	-	HP Vario	HP Niagara
7	Moisture (conductive or capacitive) sensor: drum open circuit	Traditional	HP Vario	HP Niagara
8	Moisture (conductive or capacitive) sensor: drum short circuit	Traditional	HP Vario	HP Niagara
9	Condense tank switch	Traditional	HP Vario	-
9	Condense tank switch + steamer emptying + steam tank Level	-	-	HP Niagara
9	<b>Ext</b> Niux/WI-FI test	Traditional	HP Vario	HP Niagara
10	Last alarm display and possible reset	Traditional	HP Vario	HP Niagara

 Test cycles	
<p>The test cycles are working only if:</p> <ul style="list-style-type: none"> <li>• There is <b>no communication error</b> between main board and user interface.</li> <li>• The machine is configured with a <b>valid configuration</b> (no configuration alarm).</li> </ul> <hr/> <ul style="list-style-type: none"> <li>• In case of MB-UI communication alarm, the only test available is the user interface test, because the user interface can be tested alone only supplying the 12 Volts.</li> <li>• Pressing another valid key combination (the ones configured for Child Lock, Extra Rinse...) during one of the diagnostic cycles (from position 2 to 10) the factory default settings are restored, that is:             <ul style="list-style-type: none"> <li>○ disable permanent modes/options such as Child Lock, Buzzer;</li> </ul> </li> </ul> <hr/> <p>During the test the display will show some data concerning the cycle being performed. The details are explained in the following tables, which also specify, for each selector position, the purpose of the associated test, the components activated and the conditions under that the test is performed.</p>	

## C01

### USER INTERFACE TEST POSITION 1

Traditional  
HP Vario  
HP Niagara

Purpose of test:	To test the functionality of all lights, switches and buzzer.
Activated components:	LED module display and buzzer
UI behaviour:	LED module displays light on all symbols, pushing a button correspondent LED is lighted on, the key code is showed on the time digit display and the buzzer sound.
Working conditions:	There isn't any control to run the test (always active).

### TEST OF OUTPUTS

POne / Diamond / Ruby

The displays are LED modules (not LCD displays with backlight LEDs) and all the icons are switched on together. There is no backlight diffusion test. Each time a button is pressed the buzzer plays a "beep" and the display shows only the key code on the time digit display. The buzzer plays a "beep" sound each time a button is pressed, and the display shows only the key code on time digits.

### TEST OF INPUTS

Pressing a button the LEDs icons sequence stops, the associated button LEDs are lighted on, the button position is displayed; if program LEDs present (Hi-Fi selector), also the light corresponding to button position is switched on (e.g. button 1 - top right LED, button 8 - bottom right LED, button 9 - bottom left LED...).

Moving the selector the LEDs icons sequence stops, the display clears and shows only on TTE digits the "C" or "d" letter, according to diagnostic test selected (normal "C" or extended "d") followed by the knob position code, and if program LEDs present (Hi-Fi selector), also the light corresponding to knob position is switched on.

After about 2 seconds the LEDs icons sequence restarts if knob left in position 1 or after the 11th, diagnostic info is showed if other position selected.

C02 CONDENSE TANK SENSOR + PUMP Position 2		Traditional HP Vario HP Niagara
Purpose of test:	Test condense tank sensor and pump.	
Activated components:	<ul style="list-style-type: none"> <li>▪ Line safe relay</li> <li>▪ The pump is switched on (if the basement is full of water and the tank sensor recognizes the condition)</li> </ul>	
UI behaviour:	Water level high: 000 Blinking Water level low: 111 Steady	
Working conditions:	Door closed (time out 10 min)	

C03 CCW DRUM Position 3		Traditional HP Vario -
Purpose of test:	Test drum motor in counter-clockwise direction.	
Activated components:	<ul style="list-style-type: none"> <li>▪ Line safe relay</li> <li>▪ CCW motor relay</li> <li>▪ Tank pump</li> </ul>	
UI behaviour:	---	
Working conditions:	Door closed (time out 10 min)	

C03 CCW DRUM + STEAMER HEAT UP Position 3		- - HP Niagara
Purpose of test:	Test drum motor in counter-clockwise direction.	
Activated components:	<ul style="list-style-type: none"> <li>▪ Line safe relay</li> <li>▪ FCV power relay</li> <li>▪ Tank pump</li> <li>▪ Steamer heater</li> </ul>	
UI behaviour:	Steamer NTC temperature Steam phase icon steady on	
Working conditions:	Door closed (time out 10 min)	



C04 CW DRUM Position 4		Traditional
Purpose of test:	Test drum motor in clockwise direction.	
Activated components:	<ul style="list-style-type: none"> <li>▪ Line safe relay</li> <li>▪ CW motor relay</li> </ul>	
UI behaviour:	---	
Working conditions:	Door closed (time out 10 min)	

C04 FAN COOLING Position 4		HP Vario
Purpose of test:	Test compressor cooling fan.	
Activated components:	<ul style="list-style-type: none"> <li>▪ Line safe relay</li> <li>▪ Cooling fan triac</li> </ul>	
UI behaviour:	---	
Working conditions:	Door closed (time out 10 min)	

C04 FAN COOLING + STEAM GENERATION Position 4		HP Niagara
Purpose of test:	Test compressor cooling fan.	
Activated components:	<ul style="list-style-type: none"> <li>▪ Line safe relay</li> <li>▪ Cooling fan triac</li> <li>▪ Steamer heater</li> <li>▪ Steam pump</li> </ul>	
UI behaviour:	Steamer NTC temperature Steam phase icon steady on	
Working conditions:	Door closed (time out 10 min)	

C05 HEATER ½ POWER + CW DRUM Position 5		Traditional
Purpose of test:	Test higher power heater element.	-
Activated components:	<ul style="list-style-type: none"> <li>▪ Line safe relay</li> <li>▪ CW motor relay</li> <li>▪ Heater 1 (higher power heater element)</li> </ul>	-
UI behaviour:	Digits on LCD show NTC1 (drum outlet) drying temperature.	
Working conditions:	Door closed (time out 10 min)	

C05 CW DRUM Position 5		HP Vario HP Niagara
Purpose of test:	Test drum motor in clockwise direction.	-
Activated components:	<ul style="list-style-type: none"> <li>▪ Line safe relay</li> <li>▪ FCV power</li> </ul>	
UI behaviour:	Digits on LCD show NTC2 (drum outlet) drying temperature. If the NTC2 is not mounted the NTC1 (compressor) temperature is displayed.	
Working conditions:	Door closed (time out 10 min)	

C06 HEATER FULL POWER + CW DRUM Position 6		Traditional
Purpose of test:	Test both power heater elements.	-
Activated components:	<ul style="list-style-type: none"> <li>▪ Line safe relay</li> <li>▪ CW motor relay</li> <li>▪ Heater 1 (higher power heater element)</li> <li>▪ Heater2 (lower power heater)</li> </ul>	-
UI behaviour:	Digits on LCD show NTC2 (heater) drying temperature.	
Working conditions:	Door closed (time out 10 min)	

<b>C06 COMPRESSOR + CW DRUM Position 6</b>		HP Vario HP Niagara
Purpose of test:	Test compressor.	
Activated components:	<ul style="list-style-type: none"> <li>▪ Line safe relay</li> <li>▪ FCV power</li> <li>▪ Compressor relay (compressor driven at 750W)</li> </ul>	
UI behaviour:	Digits on LCD show NTC1 (compressor) drying temperature.	
Working conditions:	Door closed (time out : <ul style="list-style-type: none"> <li>▪ models produced before 2019: 30sec</li> <li>▪ models produced after 2019: 20min).</li> </ul>	

<b>C07 CONDUCTIVE/CAPACITIVE OPEN CIRCUIT Position 7</b>		Traditional HP Vario HP Niagara
Purpose of test:	Verify conductive/capacitive sensor (open circuit condition for conductive sensor).	
Activated components:	<ul style="list-style-type: none"> <li>▪ Conductive/capacitive sensor reading</li> </ul>	
UI behaviour:	Test Running: 000 Blinking Test Completed: 111 Steady	
Working conditions:	Conductive: open circuit between two sensor bars Capacitive: empty drum, no items in front of the sensor	

<b>C08 CONDUCTIVE SHORT CIRCUIT Position 8</b>		Traditional HP Vario HP Niagara
Purpose of test:	Verify conductive/capacitive sensor (short circuit condition for conductive sensor).	
Activated components:	<ul style="list-style-type: none"> <li>▪ Conductive/capacitive sensor reading</li> </ul>	
UI behaviour:	Test Running: 000 Blinking Test Completed: 111 Steady	
Working conditions:	Conductive: short circuit between two sensor bars Capacitive: empty drum, no items in front of the sensor	

C09 CONDENSE TANK SENSOR Position 9		Traditional HP Vario -
Purpose of test:	Test the tank switch (for assembly line only).	
Activated components:	<ul style="list-style-type: none"> <li>▪ Line safe relay</li> <li>▪ The pump is switched on (if the basement is full of water and the tank sensor recognizes the condition)</li> </ul>	
UI behaviour:	Water level high: 000 Blinking Water level low: 111 Steady	
Working conditions:	Door closed (time out 10 min)	

C09 CONDENSE TANK SENSOR + STEAMER EMPTYING + STEAM TANK LEVEL Position 9		- - HP Niagara
Purpose of test:	Test the tank switch (for assembly line only).	
Activated components:	<ul style="list-style-type: none"> <li>▪ The pump is switched on (if the basement is full of water and the tank sensor recognizes the condition)</li> <li>▪ Steamer heater</li> </ul>	
UI behaviour:	Water level high: 000 Blinking Water level low: 111 Steady Steam phase icon steady on	
Working conditions:	Door closed (time out 10 min)	

d09 NIUX/WI-FI TEST Position 9 Ext		Traditional HP Vario HP Niagara
Purpose of test:	To test the Niux board ( <i>if present</i> )	
Activated components:	<ul style="list-style-type: none"> <li>▪ Niux board (Wi-fi On/Off).</li> </ul>	
UI behaviour:	The display shows "---" <i>Refer to document number 599 81 19-37 paragraph 11. WIFI TEST IN DIAGNOSTIC MODE</i>	
Working conditions:	In the Diagnostic Mode it is possible for the Service to test the Wi-Fi module.	

<b>C10</b>	<b>LAST ALARM DISPLAY AND POSSIBLE RESET</b>		Traditional HP Vario HP Niagara
	Position 10		
Purpose of test:	Display last alarm and possible reset.		
UI behaviour:	<ul style="list-style-type: none"> <li>Alarm complete code is showed in the format Exx (E42) on Time to End digits</li> </ul>		

<b>2-9</b>	<b>STEAMER EMPTY TANK</b>		Traditional HP Vario HP Niagara
	Position 2-9		
Detailed description	If the reed of steam tank is on void position, related icon on LCD blinks		

## 4 ALARMS

One of the main requirements of the diagnostic system is to be transparent to the final user except for some most common warning related to the door handling and water inlet and drain management.

To increase the flexibility of the system it was introduced the possibility to enable/disable the alarms display by the machine configuration in order to cover requirement as field test context, particular countries requirement ...

All alarms display is enabled during diagnostic test/cycles. They are displayed on the TTE digits of the display.

If the WM/WD is in normal mode and an alarm must be displayed according to the configuration:

- The START Led blinks regularly with a cadence of 0.5s on - 0.5s off.
- If a display is present the error code is drawn in the TTE digits using the format "E" + alarm family digit + "0".

If the TD is in diagnostic mode and an alarm is raised, its code is always shown regardless of the configuration.

On platforms provided with an LCD the "Exx" code (E20, E30, etc) indication is shown in the TTE digits area.



"Eb3" is shown like "EH3"

Please note that writing an alarm code on the LCD panels, all occurrences of "b" are replaced by "H" in order to avoid mistaking the "6" symbol, so for instance "Eb3" is shown like "EH3".

## LAST ALARM READING AND RESET

The alarm indication is also used when the user interface (UI) enters LAST ALARM mode, that is when the user pushes the “special key” combination while the board is in normal mode or when the main knob is set to the 11th position while the board is in diagnostic mode.



### Last alarm reading and reset

- While this mode is set in diagnostic mode, it's possible to read the code of the three latest alarms, starting from the most recent.
- Each time the leftmost key in the “special key” combination is pressed, the UI starts displaying the following alarm code among those stored in memory. So, if this button is pressed once while the last alarm was being displayed, the last but one alarm is displayed instead; after the key is pressed again, the last but two alarm code is shown.
- Pressing at any time the rightmost key START/PAUSE button in the “special key” combination the displayed sequence comes back at once to the latest alarm.
- If the mode is entered by pressing the “special key” while the board is in normal mode, the UI displays only the last alarm. The mode exits if any of the keys from “special key” combination is pressed.

It's possible to reset Last alarm pressing the defined key combination (START/PAUSE and the closest one for every UI) when in Diagnostic mode with selector in 11th position.

## 5 ALARMS TABLE

The alarm codes listed in the table below are divided by platform: EDR10, EDR12,EDR14, EDR16.



### Enable In setup / Enable / Display

- Enable in setup – an alarm can be active during cycle selection
- Enable – an alarm can be available or not
- Display – an alarm can be displayed to end user or not

Enable in setup	Enable	Display	Description
YES			an alarm is active also when machine is in idle (during cycle selection, before cycle start) not only during cycle execution
	NO		an alarm is not available, it is not saved neither shown to both end user and service
		NO	end user - an alarm is not shown service - if alarm is enabled it is saved in the history and shown in service mode
	YES	NO	an alarm is available: end user - an alarm is not shown service - an alarm is saved in the history and shown in service mode
	YES	YES	an alarm is available, saved in the history and shown to both end user and service



CODE	FULL NAME	ACTION	EDR10			EDR12			EDR14			EDR16			DESCRIPTION
			Enabled in setup	Enable	Display	Enabled in setup	Enable	Display	Enabled in setup	Enable	Display	Enabled in setup	Enable	Display	
E21	Condense Pump Alarm	Stops cycle execution	YES	YES	YES	YES	YES	NO	YES	YES	NO	YES	YES	NO	1. Tank Pump Disconnected (Wiring or Connector Failure) 2. Tank Pump Failure 3. Tank Pump Triac Failure (Short Circuit, Diode Mode, Open Circuit) (Main Board Failure)
E22	Condense Pump Sensing Alarm	No Action	YES	YES	YES	YES	YES	NO	YES	YES	NO	YES	YES	NO	Pump Triac Sensing Circuit Failure (Main Board Failure)
E23	Capacitive level sensor alarm	Stops cycle execution	YES	YES	YES	YES	YES	NO	YES	YES	NO	-	-	-	Capacitive Level Sensor frequency out of range. 1. Sensor Disconnected (Wiring or Connector Failure) 2. Level Sensor Failure 3. Main Board Failure
E24	HP Fan Sensing Alarm	No Action	-	-	-	YES	YES	NO	-	-	-	-	-	-	Compressor Cooling Fan Sensing Circuit Failure (Main Board Failure)
E31	Conductimetric Sensor Frequency too HIGH	No Action		YES	YES		YES	NO	NO	YES	NO	NO	YES	NO	Active only during HUMIDITY SENSOR SHORT CIRCUIT diagnostic. The oscillation Frequency is out of Range (Main Board Failure)
E32	Conductimetric Sensor Frequency too LOW	No Action		YES	YES		YES	NO	NO	YES	NO	NO	YES	NO	Active only during HUMIDITY SENSOR SHORT CIRCUIT diagnostic. 1. The Drum is not Shortcuted 2. Wiring Failure 3. The oscillation Frequency is out of Range (Main Board Failure)
E32	Conductimetric Sensor Frequency too LOW	No Action		YES	YES		YES	NO	NO	YES	NO	NO	YES	NO	Active only during HUMIDITY SENSOR SHORT CIRCUIT diagnostic. 1. The Drum is not Shortcuted 2. Wiring Failure 3. The oscillation Frequency is out of Range (Main Board Failure)
E33			-	-	-	-	-	-		YES	NO	-	-	-	Not implemented
E34	signal read by the sensor is out of range	no action	-	-	-	-	-	-	NO	YES	NO	NO	YES	NO	The alarm is set if values read by the sensor exceed the thresholds configured in the GCF. Possible causes: 1. sensor board failure 2. wrong assembly of the sensor board
E35	capacitive moisture sensor board communication alarm	no action	-	-	-	-	-	-	NO	YES	NO	NO	YES	NO	The alarm is set when the communication between power board and sensor is interrupted for more than 2 seconds. Possible causes: 1. sensor board Failure 2. power board Failure 3. harness/connector failure

CODE	FULL NAME	ACTION	EDR10			EDR12			EDR14			EDR16			DESCRIPTION
			Enabled in setup	Enable	Display	Enabled in setup	Enable	Display	Enabled in setup	Enable	Display	Enabled in setup	Enable	Display	
E36	capacitive sensor version incompatible with power board version	no action	-	-	-	-	-	-	NO	YES	NO	NO	YES	NO	wrong HW/FW version of the sensor board
E45	Door Closed Sensing Alarm	Stops cycle execution	YES	YES	YES	YES	YES	NO	YES	YES	NO	YES	YES	NO	Door Closed Sensing Circuit Failure (Main Board Failure)
E51	Drum Motor Short Circuit Alarm (only for Async Motor)	Stops cycle execution	YES	YES	YES	-	-	-	YES	YES	NO	-	-	-	With Line Safe Relay Open, motor sensing detects voltage on motor. 1. Motor Short Circuit to ground (Motor or Wiring) 2. Electrical Noise 3. Line Safe Relay Problem (Main Board Failure)
E52	Drum Motor Alarm (only for Async Motor)	Stops cycle execution	YES	YES	YES	-	-	-	YES	YES	NO	-	-	-	1. Drum Motor Disconnected (Wiring or Connector Failure) 2. Drum Motor Capacitor (disconnected or broken) 3. Drum Motor Failure 4. Drum Motor Triac Failure (Short Circuit, Diode Mode, Open Circuit) (Main Board Failure)
E53	Drum Motor Sensing Alarm (only for Async Motor)	Stops cycle execution	YES	YES	YES	-	-	-	YES	YES	NO	-	-	-	Drum Motor Triac Sensing Circuit Failure (Main Board Failure)
E54	Drum Motor Blocked Alarm (only for Async Motor)	Pauses cycle execution		YES	YES	-	-	-	NO	YES	NO	-	-	-	1. Too much load into the drum 2. Too low power supply voltage 3. Drum/Motor mechanical abnormal frictions 4. Drum Motor Capacitor (disconnected or broken) 5. Drum Motor Failure
E55	FCV Safety Alarm	Stops cycle execution		YES	YES		YES	NO		YES	NO	NO	YES	NO	Not implemented
E56	FCV motor plug not connected	Stops cycle execution		YES	YES		YES	NO	NO	YES	NO	NO	YES	NO	1. Motor Wiring 2. Motor Windings 3. FCV Board
E57	FCV Current Trip Failure	Stops cycle execution		YES	YES		YES	NO	NO	YES	NO	NO	YES	NO	1. FCV Board - Motor Wiring 2. Motor Connector 3. FCV Board
E58	FCV over current Failure	Stops cycle execution		YES	YES		YES	NO	NO	YES	NO	NO	YES	NO	1. FCV Board - Motor Wiring 2. Motor Connector 3. Motor mechanical blockage 4. FCV Board

CODE	FULL NAME	ACTION	EDR10			EDR12			EDR14			EDR16			DESCRIPTION
			Enabled in setup	Enable	Display	Enabled in setup	Enable	Display	Enabled in setup	Enable	Display	Enabled in setup	Enable	Display	
E59	FCV - motor not following	Stops cycle execution		YES	YES		YES	NO	NO	YES	NO	NO	YES	NO	1. FCV Board - Motor Wiring 2. Motor Connector 3. Motor mechanical blockage 4. FCV Board
E5A	FCV Board overheating	Stops cycle execution		YES	YES		YES	YES	NO	YES	YES	NO	YES	YES	1. Motor mechanical blockage 2. FCV Board
E5B	FCV under voltage Failure	Stops cycle execution		YES	YES		YES	NO	NO	YES	NO	NO	YES	NO	1. Main Board - FCV power supply wiring 2. FCV Board Failure
E5C	FCV over voltage Failure	Stops cycle execution		YES	YES		YES	NO	NO	YES	NO	NO	YES	NO	1. FCV BOARD Failure
E5D	FCV Failure	No Action		YES	YES		YES	NO		YES	NO	NO	YES	NO	Not implemented
E5E	FCV unknown message Failure	Stops cycle execution		YES	YES		YES	NO	NO	YES	NO	NO	YES	NO	1. Main Board - FCV communication wiring 2. Main Board - FCV power supply wiring 3. Motor Thermal Cut-off 4. Main Board or FCV Board Failure
E5F	FCV Failure motor control board fault	Stops cycle execution		YES	YES		YES	NO	NO	YES	NO	NO	YES	NO	1. FCV BOARD Failure
E61	Compressor Hardware Failure	Stops cycle execution	-	-	-		YES	NO		YES	NO	NO	YES	NO	VSC Board
E62	Heater/compressor Short Circuit Alarm	Stops cycle execution	YES	YES	YES	YES	YES	NO	YES	YES	NO	YES	YES	NO	With Line Safe Relay Open, motor sensing detects voltage on heaters. 1. Heater Short Circuit to ground Heaters or Wiring) 2. Electrical Noise 3. Line Safe Relay Problem (Main Board Failure)
E63	Heater (or compressor) Alarm	Stops cycle execution	YES	YES	YES	YES	YES	NO	YES	YES	NO	YES	YES	NO	1. Heater/compressor Disconnected (Wiring or Connector Failure) 2. Heater/Compressor Failure 3. Heater/Compressor Relay Failure (Short Circuit, Open Circuit)
E64	Heater/compressor Sensing Alarm	Stops cycle execution	YES	YES	YES	YES	YES	NO	YES	YES	NO	YES	YES	NO	Heater/Compressor Sensing Circuit Failure (Main Board Failure)
E65	VSC Safety Alarm	Stops cycle execution	-	-	-		YES	NO	-	-	-	NO	YES	NO	
E66	VSC motor plug not connected	Stops cycle execution	-	-	-		YES	NO	-	-	-	NO	YES	NO	1. Motor Wiring 2. Motor Windings 3. VSC Board

CODE	FULL NAME	ACTION	EDR10			EDR12			EDR14			EDR16			DESCRIPTION
			Enabled in setup	Enable	Display	Enabled in setup	Enable	Display	Enabled in setup	Enable	Display	Enabled in setup	Enable	Display	
E67	VSC Current Trip Failure	Stops cycle execution	-	-	-	-	YES	NO	-	-	-	NO	YES	NO	1. VSC Board - Motor Wiring 2. Motor Connector 3. VSC Board
E68	VSC over current Failure	Stops cycle execution	-	-	-	-	YES	NO	-	-	-	NO	YES	NO	1. VSC Board - Motor Wiring 2. Motor Connector 3. Motor mechanical blockage 4. VSC Board
E69	VSC - motor not following	Stops cycle execution	-	-	-	-	YES	NO	-	-	-	NO	YES	NO	1. VSC Board - Motor Wiring 2. Motor Connector 3. Motor mechanical blockage 4. VSC Board
E6A	VSC Board overheating	Stops cycle execution	-	-	-	-	YES	YES	-	-	-	NO	YES	YES	1. Motor mechanical blockage 2. VSC Board
E6B	VSC under voltage Failure	Stops cycle execution	-	-	-	-	YES	NO	-	-	-	NO	YES	NO	1. Main Board - VSC power supply wiring 2. VSC Board Failure
E6C	VSC over voltage Failure	Stops cycle execution	-	-	-	-	YES	NO	-	-	-	NO	YES	NO	1. VSC BOARD Failure
E6D	VSC Failure	No Action	-	-	-	-	YES	NO	-	-	-	NO	YES	NO	
E6E	VSC unknown message Failure	Stops cycle execution	-	-	-	-	YES	NO	-	-	-	NO	YES	NO	1. Main Board - VSC communication wiring 2. Main Board - VSC power supply wiring 3. Main Board or VSC Board Failure
E6F	VSC Failure	Stops cycle execution	-	-	-	-	YES	NO	-	-	-	NO	YES	NO	1. VSC BOARD Failure
E71	Drying NTC Alarm	Stops cycle execution	YES	YES	YES	YES	YES	NO	YES	YES	NO	YES	YES	NO	NTC1 reading out of Range 1. Wiring Failure 2. NTC Failure 3. NTC reading circuit Failure (Main Board Failure)
E72	Drying NTC Alarm	No Action	-	-	-	YES	YES	NO	YES	YES	NO	YES	YES	NO	NTC2 reading out of Range 1. Wiring Failure 2. NTC Failure 3. NTC reading circuit Failure (Main Board Failure)
E73	Steamer NTC Alarm	Stops cycle execution	-	-	-	YES	YES	NO	-	YES	NO	YES	YES	NO	NTC3 reading out of Range 1. Wiring Failure 2. NTC Failure 3. NTC reading circuit Failure (Main Board Failure)
E82			-	-	-	-	-	-	-	YES	NO	-	-	-	Not implemented

CODE	FULL NAME	ACTION	EDR10			EDR12			EDR14			EDR16			DESCRIPTION
			Enabled in setup	Enable	Display	Enabled in setup	Enable	Display	Enabled in setup	Enable	Display	Enabled in setup	Enable	Display	
E83	Selector Position Code Alarm	Stops cycle execution	YES	YES	YES	YES	YES	NO	YES	YES	NO	YES	YES	NO	The code read on the selector is not supported by the configuration data (UI Board Failure)
E86	Selector configuration table error	No Action	YES	YES	YES	YES	YES	NO	YES	YES	NO	YES	YES	NO	1. wrong selector configuration (MCF) 2. User Interface Failure
E87	UI board microcontroller self test failure	No Action	YES	YES	YES	YES	YES	NO	YES	YES	NO	YES	YES	NO	UI board microcontroller defective
E91	User Interface Communication Alarm	No Action	YES	YES	YES	YES	YES	NO	YES	YES	NO	YES	YES	NO	1. Wiring Failure 2. User Interface Board Failure 3. Main Board Failure
E92	User Interface Protocol Incongruence Alarm	Stops cycle execution	YES	YES	YES	YES	YES	NO	YES	YES	NO	YES	YES	NO	The User Interface mounted is not compatible with the Main Board connected
E93	MCF Checksum Alarm	No Action	YES	YES	YES	YES	YES	NO	YES	YES	NO	YES	YES	NO	wrong Machine Configuration File
E94	CCF Checksum Alarm	No Action	YES	YES	YES	YES	YES	NO	YES	YES	NO	YES	YES	NO	wrong Cycle Configuration File
E97	Missing Program on CTF Alarm	Stops cycle execution	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	1. wrong selector configuration (MCF) 2. missing cycle on cycle table (CCF)
E98	FCV/Power Board protocol incongruence	Stops cycle execution		YES	YES		YES	NO	NO	YES	NO	NO	YES	NO	1. FCV Board 2. Main Board Configuration
E99	Coin meter absent (removed) alarm	Don't allow cycle execution	-	-	-	YES	YES	NO	-	-	-	YES	YES	NO	1. Wiring Failure 2. Coin meter Board Failure 3. Main Board Failure
E9C	User Interface configuration checksum alarm	No Action	YES	YES	YES	YES	YES	NO	YES	YES	NO	YES	YES	NO	
E9E	User Interface touch sensor not working	No Action	YES	YES	YES	YES	YES	NO	YES	YES	NO	YES	YES	NO	One or more touch buttons have calibration problems. 1. Electrical noise 2. Humidity/water on UI board 3. UI board defective
E9F	FCV protocol version and/or load detection algorithm incongruence alarm	Stops cycle execution	-	-	-	-	-	-	-	-	-	YES	YES	NO	The FCV protocol version and/or the load detection algorithm selected in GCF are not congruent with the hw configuration of the machine
EAA	NIU SSH serialization alarm	NIU board disabled	-	-	-	-	-	-	YES	YES	NO	YES	YES	NO	missing NIU serialization: PNC/ELC/SN data missing (from Factory or Service) or manufacturing not ok: SSH protocol of NIU is not "sealed" (NIU cannot leave Electrolux factory)

CODE	FULL NAME	ACTION	EDR10			EDR12			EDR14			EDR16			DESCRIPTION
			Enabled in setup	Enable	Display	Enabled in setup	Enable	Display	Enabled in setup	Enable	Display	Enabled in setup	Enable	Display	
EAH EAB	NIU communication alarm	No Action	-	-	-	-	-	-	YES	YES	NO	YES	YES	NO	1. NIU Board Failure 2. UI board Failure
EAC	NIU always ON	No Action	-	-	-	-	-	-	YES	YES	NO	YES	YES	NO	NIU board always powered: - UI or NIU board failure
EAD	serialization mismatch	Connectivity disabled	-	-	-	-	-	-	YES	YES	NO	YES	YES	NO	Serialization data not aligned between boards
EH1 EB1	Power Supply Frequency out of Range	Pauses Cycle execution	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	1. Power Supply Problems 2. wrong MCF 3. Main Board failure
EH2 EB2	Power Supply Amplitude out of Range (too HIGH)	No Action	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	1. Power Supply Problems - Too HIGH VOLTAGE 2. wrong MCF 3. Main Board failure
EH3 EB3	Power Supply Amplitude out of Range (too LOW)	Pauses Cycle execution	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	1. Power Supply Problems - TOO LOW VOLTAGE 2. wrong MCF 3. Main Board failure
EH4 EB4	Zero-Watt Relay Alarm	No Action	YES	YES	YES	YES	YES	NO	YES	YES	NO	YES	YES	NO	Zero Relay does not open the power supply (Main Board Failure) The machine functionality is not affected by this fault, on the consumption in standby is higher
EHD EBD	Line Safe Short Circuit Alarm	Stops cycle execution	YES	YES	YES	YES	YES	NO	YES	YES	NO	YES	YES	NO	With Line Safe Relay Open, motor sensing detects voltage coming from any load. 1. Any Load Short Circuit to ground (Motor, Heaters or Wiring) 2. Electrical Noise 3. Line Safe Relay Problem (Main Board Failure)
EHE EBE	Line Safe Alarm	Stops cycle execution	YES	YES	YES	YES	YES	NO	YES	YES	NO	YES	YES	NO	Line Sage Relay Problem (Main Board Failure)
EHF EBF	Line Safe Sensing Alarm	Stops cycle execution	YES	YES	YES	YES	YES	NO	YES	YES	NO	YES	YES	NO	Line Safe Sensing Circuit Failure (Main Board Failure)
EC3	Steamer Heating Timeout	No Action	-	-	-	NO	YES	NO	-	-	-	NO	YES	NO	
EC4	Steamer Heater Short Circuit Alarm	Stops cycle execution	-	-	-	YES	YES	NO	-	-	-	YES	YES	NO	
EC5	Steamer Heater Alarm	Stops cycle execution	-	-	-	YES	YES	NO	-	-	-	YES	YES	NO	
EC6	Steamer Heater Sensing Alarm	Stops cycle execution	-	-	-	YES	YES	YES	-	-	-	YES	YES	YES	Steamer Heater Sensing Circuit Failure (Main Board Failure)
EC7	Steamer Pump Alarm	Stops cycle execution	-	-	-	YES	YES	NO	-	-	-	YES	YES	NO	

CODE	FULL NAME	ACTION	EDR10			EDR12			EDR14			EDR16			DESCRIPTION
			Enabled in setup	Enable	Display	Enabled in setup	Enable	Display	Enabled in setup	Enable	Display	Enabled in setup	Enable	Display	
EC8	Steamer Pump Diode Alarm	No Action	-	-	-	YES	YES	NO	-	-	-	YES	YES	NO	
EC9	Steamer Pump Sensing Alarm	Stops cycle execution	-	-	-	YES	YES	NO	-	-	-	YES	YES	NO	Steamer Pump Sensing Circuit Failure (Main Board Failure)
ECA	Possible Empty Steam Tank	No Action	-	-	-	YES	YES	YES	-	-	-	YES	YES	YES	
ED1	HP fan alarm (only for HP version)	Stops cycle execution	-	-	-	-	-	-	YES	YES	NO	-	-	-	
ED2	HP Fan Sensing Alarm (only for HP version)	No Action	-	-	-	-	-	-	YES	YES	NO	-	-	-	Compressor Cooling Fan Sensing Circuit Failure (Main Board Failure)
ED3	HP Fan Alarm	Stops cycle execution	-	-	-	-	-	-	-	-	-	YES	YES	NO	
ED4	HP Fan Sensing Alarm	No Action	-	-	-	-	-	-	-	-	-	YES	YES	NO	Compressor Cooling Fan Sensing Circuit Failure (Main Board Failure)
ED5	low gas pressure in compressor circuit	no action	NO	YES	YES	NO	YES	YES	NO	YES	YES	NO	YES	YES	possible gas leak in the compressor circuit. The alarm is active only in diagnostic mode for service test. The alarm is set during compressor test (in diagnostic mode) if the compressor or machine temperature, after about 15 minutes, doesn't increase as expected
EF6	Safety Reset	No Action	YES	YES	YES	YES	YES	NO	YES	YES	NO	YES	YES	NO	Certification protection failure.
EF8	Coin meter communication alarm	No Action	-	-	-	YES	YES	NO	-	-	-	YES	YES	NO	1. Wiring Failure 2. Coin meter Board Failure 3. Main Board Failure

## DEFINITION OF TERMS, ACRONYMS AND ABBREVIATIONS

CCF	Cycle Configuration File
FCV	Field Control Vectorial, generally used to indicate motor control board
HP	Heat Pump
HW	Hardware
MB	Main board, Motherboard
MCF	Machine Configuration File
NIU	Network Interface Unit
NIUX	NIUX is only a specific type of NIU (NIU Linux version).
NTC	Negative Temperature Coefficient
PCB	Printed Circuit Board
TD	Tumble Dryer
UI	User Interface
VSC	Variable Speed Compressor