

ELECTROLUX ITALIA S.p.A.  
Spares Operations Europe  
Corso Lino Zanussi, 30

I - 33080 PORCIA/PN (ITALY)  
Fax +39 0434 394096

Edition: 2016/09

Publication  
number

599 72 48-93

EN

Dishwashers with electronic  
control system

***ProClean  
RealLife***

# CONTENTS

1	Purpose of this manual .....	4
2	Precautions .....	4
3	Styling overview .....	5
3.1	Free Standing .....	5
3.2	Fully Integrated .....	6
3.3	Built In .....	7
4	Location of LEDs and Push Buttons .....	10
4.1	EDW1xxx-2G display boards .....	10
4.2	EDW3000 display boards .....	10
4.3	“New Collection” display boards .....	10
5	Reset .....	11
6	User Mode Settings .....	12
6.1	Entering the User Mode .....	12
6.2	Water hardness .....	13
6.2.1	EDW500 .....	13
6.2.2	EDW503 .....	13
6.2.3	EDW750 .....	14
6.2.4	EDW1850/1950 .....	14
6.2.5	EDW1953 TOUCH .....	14
6.3	Disable/Enable Rinse Aid .....	15
6.4	Disable/Enable Buzzer .....	15
6.4.1	EDW503 .....	15
7	Service Mode Settings .....	16
7.1	EDW500 .....	16
7.1.1	Diagnostics mode, alarm reading and testing .....	16
7.1.2	Deleting alarm memory/LED test .....	17
7.1.3	Functional test cycle .....	17
7.1.4	Quitting diagnostics mode .....	17
7.2	EDW503 .....	18
7.2.1	Diagnostics mode, alarm reading and testing .....	18
7.2.2	Deleting alarm memory/LED test .....	18
7.2.3	Functional test cycle .....	19
7.2.4	Reading alarms and activating components .....	19
7.3	EDW750 .....	20
7.4	EDW1850 .....	20
7.5	EDW1950/1953 .....	20
7.6	EDW3510 .....	21
7.7	EDW2500 SWISS .....	22
7.8	EDW1850/1950 .....	23
7.8.1	LED test and cancelling alarms stored .....	23
7.9	EDW1850/1950 .....	23
7.10	Test programme .....	23
7.11	EDW1850/1950 .....	24
7.12	Enable/Disable additional rinse .....	24
7.13	EDW750 .....	25
7.14	EDW1850/1950 .....	25
7.15	EDW1953 TOUCH .....	25
8	Service Mode Settings for EDW2510 “Touch” .....	26
8.1	Accessing diagnostics mode .....	26
8.2	Alarms and activating individual components .....	27
9	Alarm codes .....	29
9.1	Alarm Management .....	29
9.2	Description of the alarms .....	30
10	Technical details .....	36
10.1	New hydraulic circuit .....	36
10.2	New components .....	38
10.3	Water circuit .....	40
10.4	Single-phase asynchronous washing pump .....	41

10.5	Three-phase washing pump - inverter motor.....	42
10.6	Drain pump.....	44
10.7	Heating element .....	45
10.8	Analogue pressure switch .....	46
10.9	Flowmeter.....	47
10.10	Detergent dispenser .....	50
10.11	Traditional door.....	51
10.12	ON/OFF Switch .....	52
10.13	Beam-on-Floor.....	55
10.14	EDW1xxx-2G operating diagram.....	56
10.15	EDW3000 operating diagram (single-phase motor) .....	57
10.16	EDW3000 operating diagram (three-phase Inverter motor) .....	58
10.17	Components check for AC motor .....	59

# 1 Purpose of this manual

The purpose of this Service Manual is to provide Service Engineers with technical information regarding the new range of “ProClean/RealLife” dishwashers and to give a description of the alarm codes and service functionality of the following families:

- EDW5xx
- EDW750
- EDW1xxx-2G
- EDW2500
- EDW3000
- EDW3510

This Manual describes:

- General characteristics
- Control panel and programmes
- Technical characteristics
- Guide to diagnostics

*For more detailed information regarding the hydraulic circuits and the structural characteristics of the appliances, please refer to the Service Manual for the “ProClean/RealLife” structure.*

# 2 Precautions



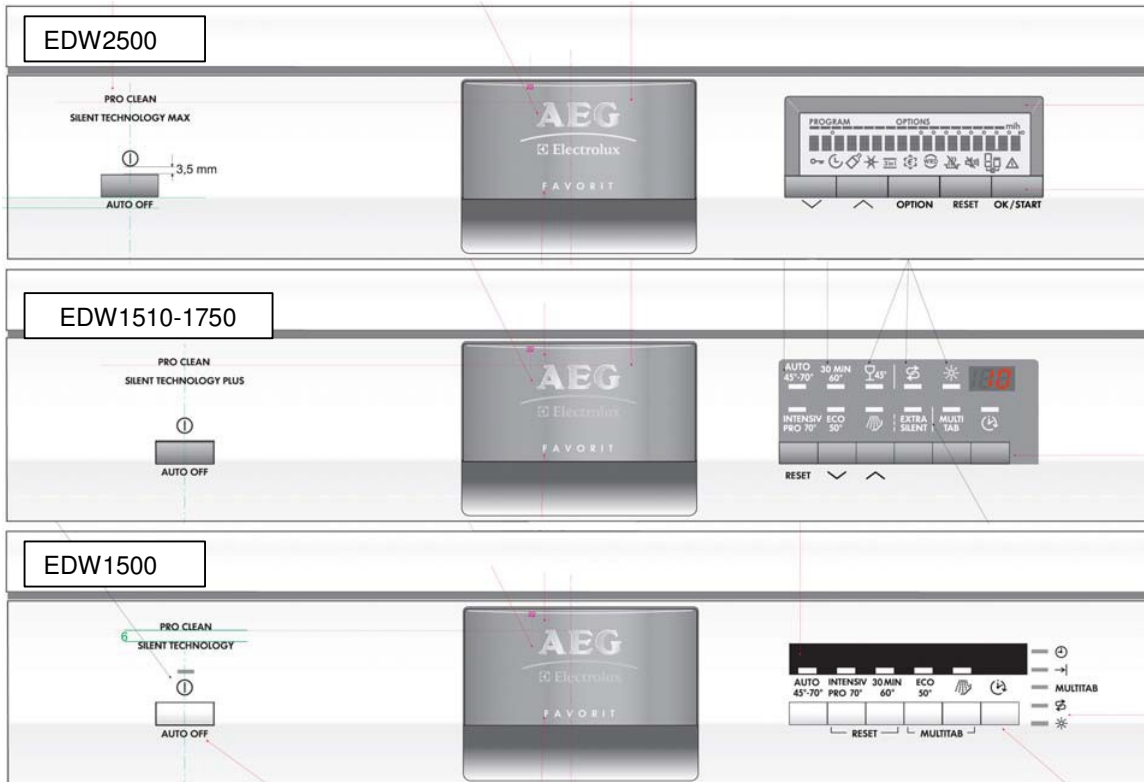
- **Electrical appliances must be serviced only by qualified Service Engineers.**
- **Always remove the plug from the power socket before touching internal components.**

## REVISIONS:

Revision	Date	Description
00	12/2009	Document creation
01	07/2010	Added Service Mode Settings for EDW2510 “Touch”
02	10/2010	Alarm i00 added
03	01/2011	Stylings updated and “Service Mode” variants added
04	09/2016	Alarm codes updated

### 3 Styling overview

#### 3.1 Free Standing



EDW750



EDW1850



EDW1950



EDW3510



### 3.2 Fully Integrated



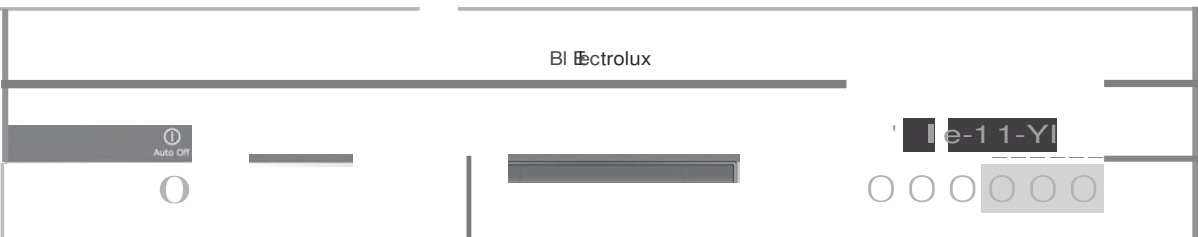
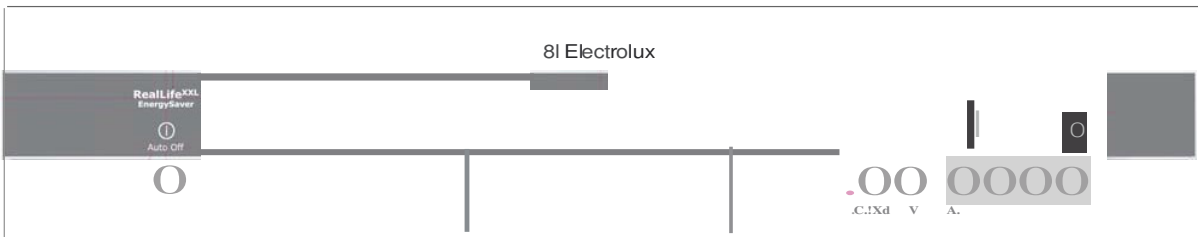
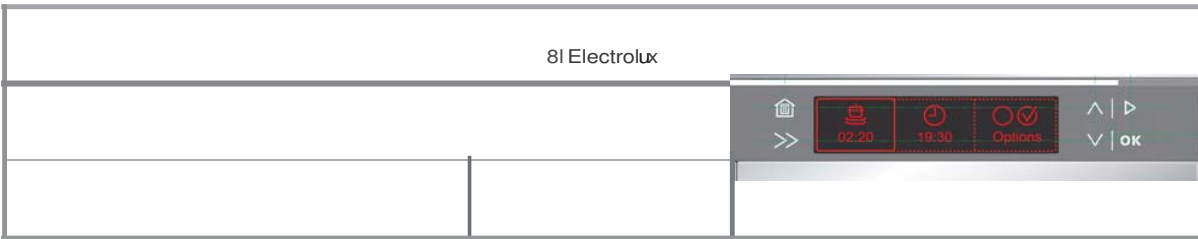
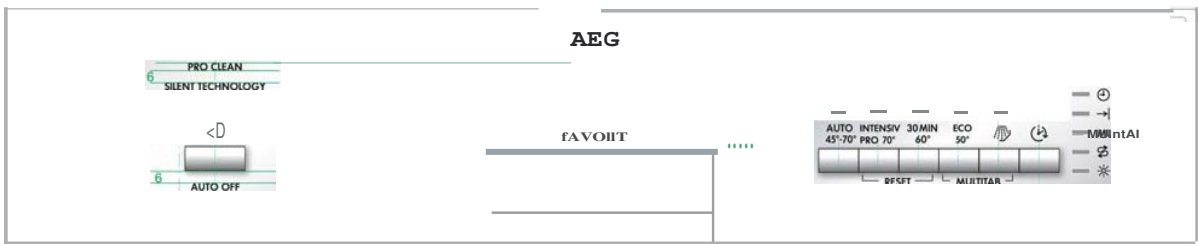
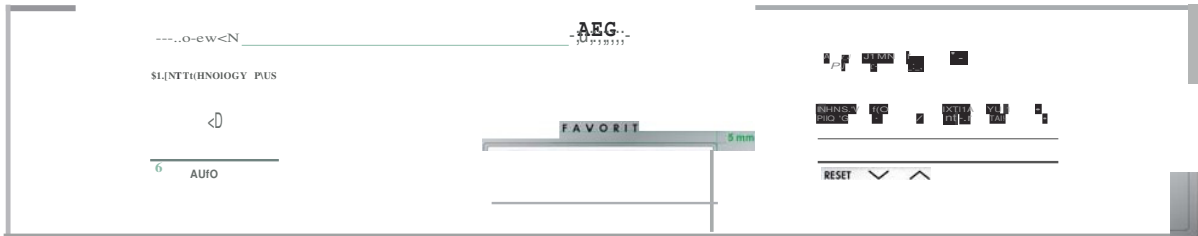
#### EDW1953



#### EDW1103



### 3.3 Built In



EDW750



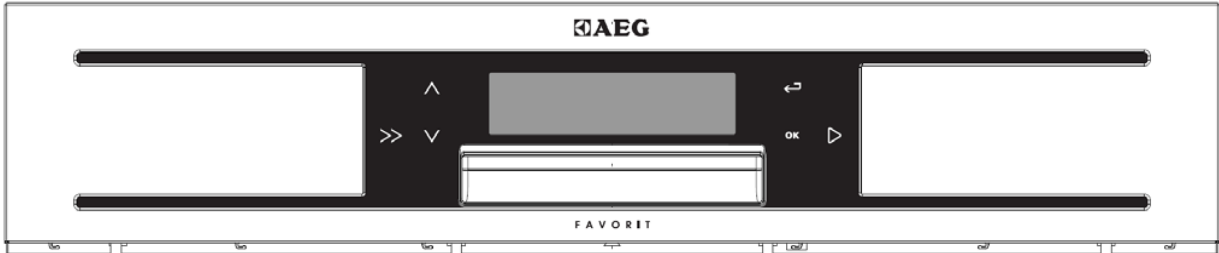
EDW1850



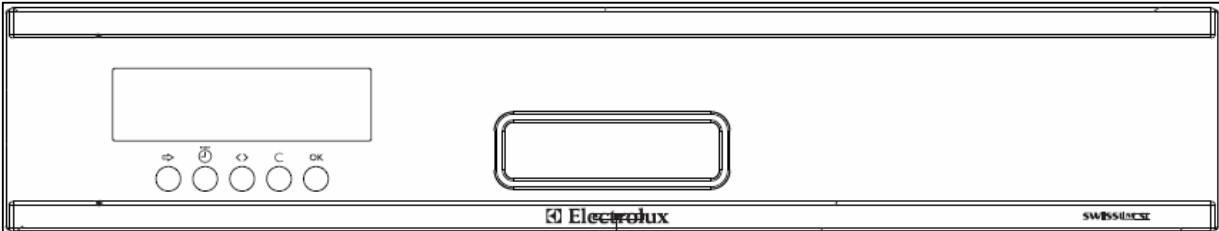
EDW1950



EDW3510

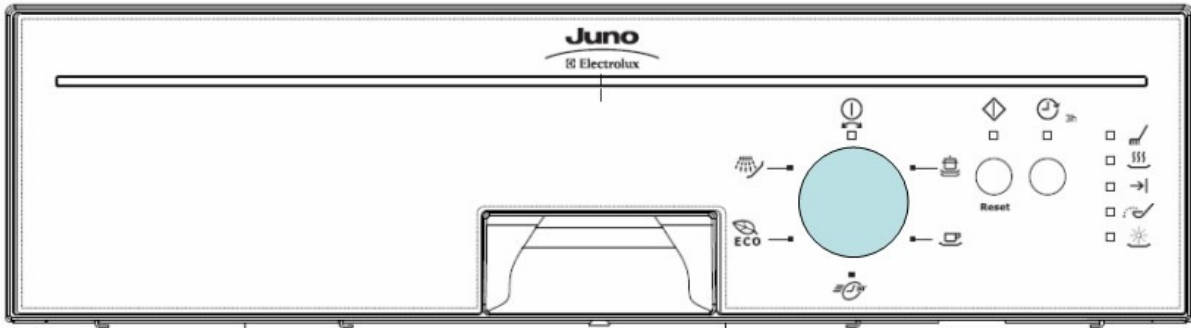


EDW2500 SWISS

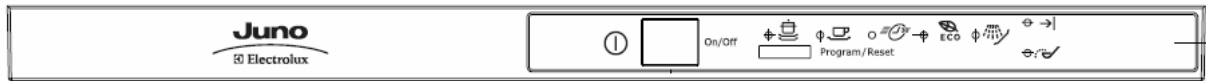




EDW 500



EDW 503



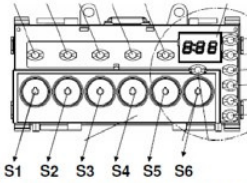
EDW 1503



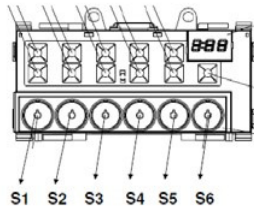
## 4 Location of LEDs and Push Buttons

### 4.1 EDW1xxx-2G display boards

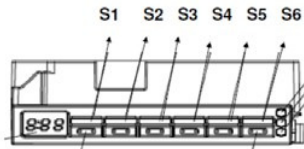
EDW 1500-2G-UI:



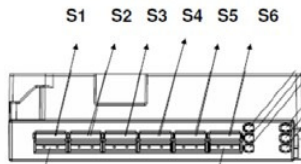
EDW 1510-2G-UI (also used as EDW 1750-2G-UI)



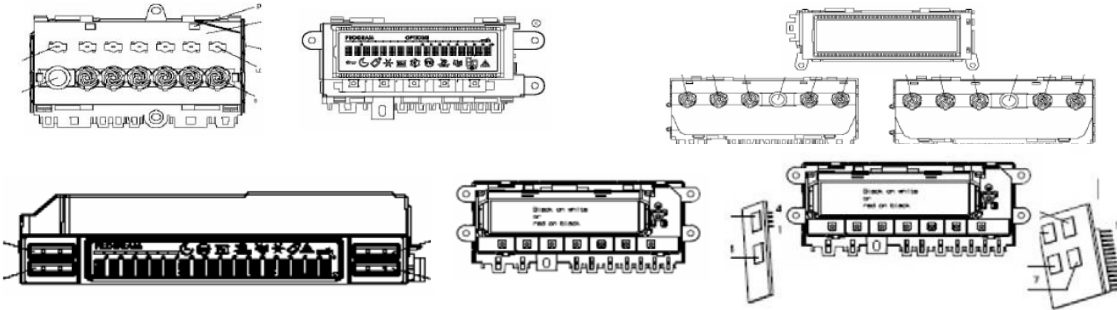
EDW 1503-2G-UI (also used as EDW1753-2G-UI):



EDW 1103-2G-UI (also used as EDW603 user interface):

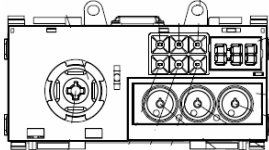


### 4.2 EDW3000 display boards

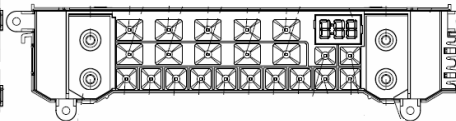


### 4.3 "New Collection" display boards

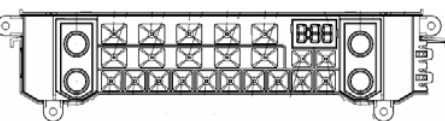
EDW750



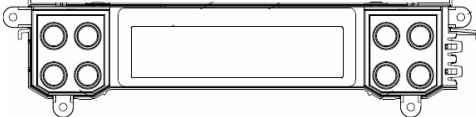
EDW1850



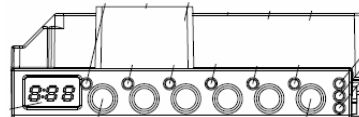
EDW1950 TOUCH



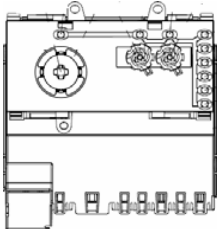
EDW3510



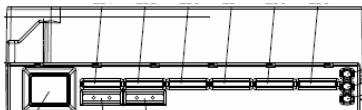
EDW1953 FI



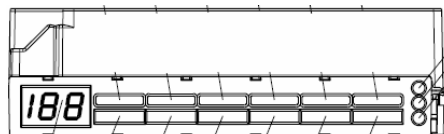
EDW500



EDW 503



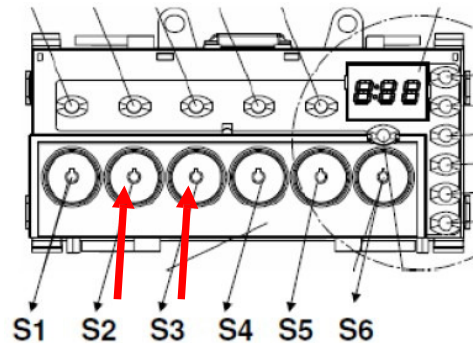
EDW1503 1.5 DIGIT



## 5 Reset

“Reset” is a special kind of User mode to stop or deselect a running programme. When this function is enabled, the appliance will be on stand-by without any selected settings. RESET can only be performed after the washing cycle has started.

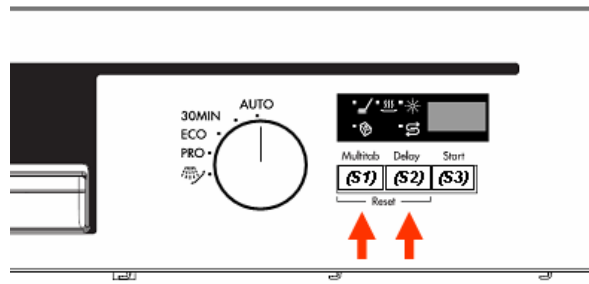
With EDW1xxx-2G display boards: press buttons S2+S3 simultaneously for at least 1 sec or press the specific button dedicated to this function by the custom software.



With EDW3000 display boards: press buttons S3+S4 simultaneously for at least 1 sec or press the specific button dedicated to this function by the custom software.



With display boards from the “New Collection”: press buttons S1+S2 or S3+S4 simultaneously for at least 1 sec or press the specific button dedicated to this function by the custom software.



## 6 User Mode Settings

### 6.1 Entering the User Mode

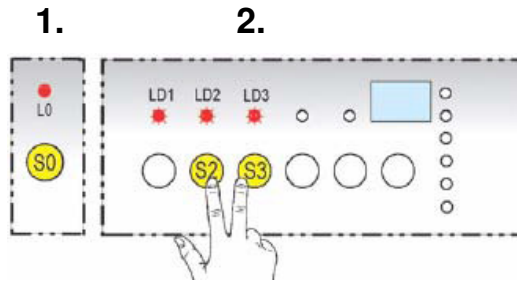
You can enter this Mode by pressing the two configured buttons simultaneously for at least 2 sec after the appliance has been turned on and is on stand-by without any selected programme:

- with EDW1xxx-2G display boards: by pressing buttons S2+S3.
- with EDW3xxx display boards: from the options menu.

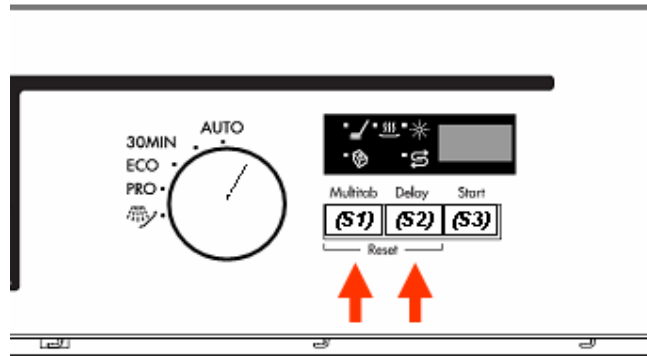
You can quit User Mode by turning off the appliance or after a 60 sec timeout.

When this mode is enabled, it is indicated by the flashing of the LEDs corresponding to the buttons available in this mode. The User mode is incorporated into the options menu on the displays.

Example for a 3-digit display:



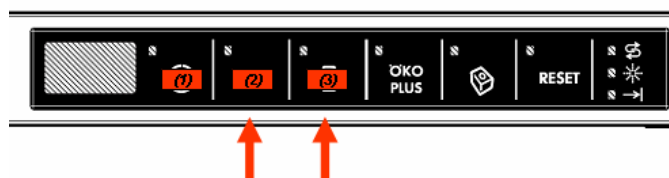
For the EDW750, set the knob to a position without a washing cycle indication, as shown in the figure, and press buttons S1+S2 simultaneously for a few seconds.



For the EDW1850-1950, you can enable it by pressing the two configured buttons simultaneously for at least 2 sec after the appliance has been turned on and is on stand-by without any selected programme:



For the EDW1953 TOUCH, you can enable it by pressing the two configured buttons simultaneously for at least 2 sec after the appliance has been turned on and is on stand-by without any selected programme:



## 6.2 Water hardness

The water hardness setting range is from 1 to 10 (soft to hard).

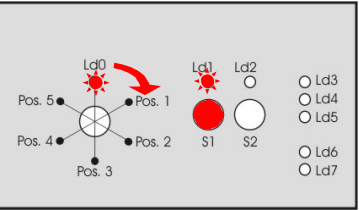
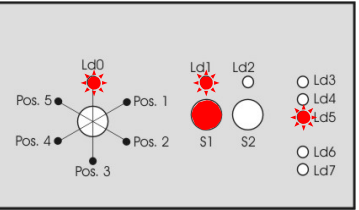
In appliances with a 3-digit display, once you have entered the User mode, press button S1 to display the current water hardness level from "1L" to "10L".

In appliances without a display, once you have entered the User mode, press button S1 to display the current water hardness level from "1L" to "10L" with the flashing of the cycle end LED.

Press button S1 to increase the hardness setting by one.

The new level is displayed accordingly. To store the new setting, press button S0.

### 6.2.1 EDW500

<ol style="list-style-type: none"> <li>Hold down button <b>S1</b></li> <li>Turn the knob clockwise to <b>Position 1</b> <ul style="list-style-type: none"> <li>LEDs LD0 and LD1 flash</li> <li>release button <b>S1</b></li> </ul> </li> </ol>	
<ol style="list-style-type: none"> <li>Press button <b>S1</b> <ul style="list-style-type: none"> <li>the level of regenerating is displayed through a series of flashes, interrupted by pauses, emitted by the <b>Cycle end LED</b></li> </ul> </li> </ol>	
<ol style="list-style-type: none"> <li>Press button <b>S1</b> again to increase the regenerating level</li> </ol>	

### 6.2.2 EDW503

Hold down the programmes button.

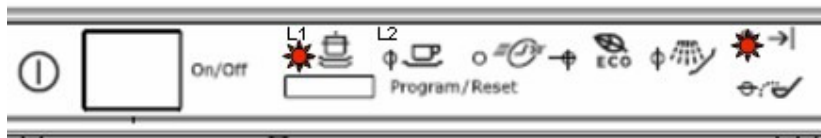


LED L1 flashes and L2 is turned on permanently.



Release the button.

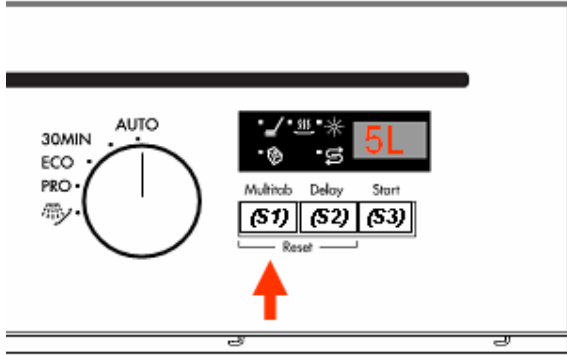
LED L1 flashes, LED L2 is turned off and the CYCLE END LED flashes to indicate the regenerating level set.



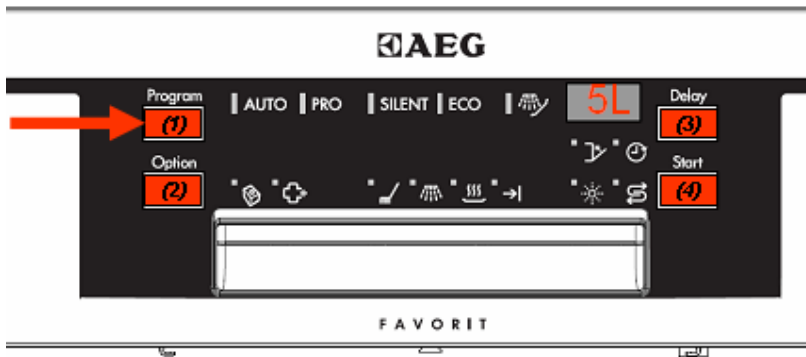
To modify the regenerating level, press the programmes button.

The CYCLE END LED will flash to indicate the new level set.

### 6.2.3 EDW750



### 6.2.4 EDW1850/1950



### 6.2.5 EDW1953 TOUCH



### 6.3 Disable/Enable Rinse Aid

This function allows you to disable the rinse aid dosing.

In appliances with a 3-digit display, once you have entered the User mode, press button S2 to display the current status where "0d" indicates it is disabled and "1d" that it is enabled.

To modify the enabled/disabled status, press button S2.

The new setting is then displayed.

### 6.4 Disable/Enable Buzzer

This function allows you to disable the cycle end buzzer.

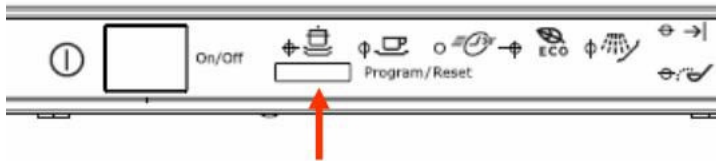
In appliances with a 3-digit display, once you have entered the User mode, press button S3 to display the current status where "0b" indicates it is disabled and "1b" that it is enabled.

To modify the enabled/disabled status, press button S3.

The new setting is then displayed.

#### 6.4.1 EDW503

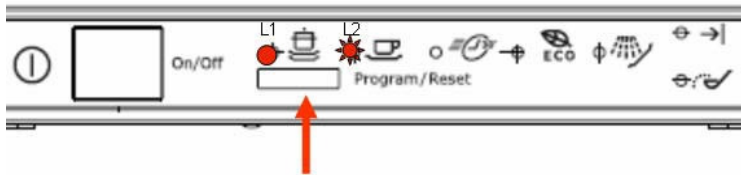
Hold down the programmes button



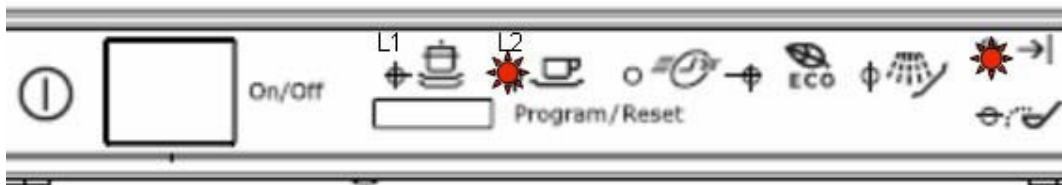
LED L1 flashes and L2 is turned on permanently



Release the button and press it again: LED L1 is lit permanently and L2 flashes



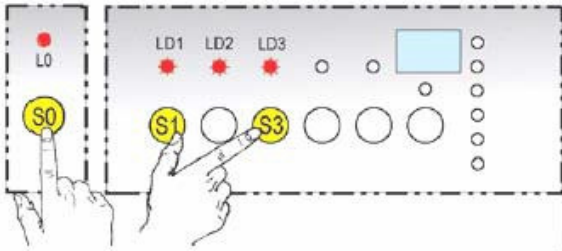
After a few seconds, LED L1 is turned off and L2 flashes;  
the CYCLE END LED will indicate whether the buzzer is enabled.



To enable or disable the BUZZER, press the programmes button (cycle end on = buzzer enabled).

## 7 Service Mode Settings

Only if the appliance is on stand-by awaiting instructions, hold down the two configured buttons simultaneously, turn on the appliance and wait for at least 4 sec.  
 With EDW1xxx-2G display boards: by pressing buttons S1+S3.



With EDW3xxx display boards: by pressing buttons S1+S3 (EDW2500) or S3+S4 (EDW2503).

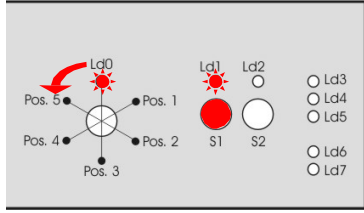
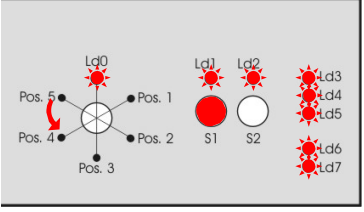
### 7.1 EDW500

#### 7.1.1 Diagnostics mode, alarm reading and testing

<ol style="list-style-type: none"> <li>1. Hold down button <b>S1</b></li> <li>2. Turn the knob anti-clockwise to <b>Position 5</b></li> <li>◆ LEDs LD0 and LD1 flash</li> <li>◆ release button <b>S1</b></li> </ol>	
<ol style="list-style-type: none"> <li>3. Press button <b>S1</b></li> <li>◆ the first alarm stored is displayed: the <b>Cycle end</b> LED flashes in sequence, interrupted by pauses, corresponding to the alarm: for the alarm code, please see the alarms summary table.</li> </ol>	
<ol style="list-style-type: none"> <li>4. Press button <b>S1</b> again to display the second alarm</li> </ol>	
<ol style="list-style-type: none"> <li>5. Press button <b>S1</b> once more to display the third alarm</li> </ol>	
<ol style="list-style-type: none"> <li>6. Press button <b>S1</b> for the fourth time to move on to enabling the appliance's actuators, the <b>CYCLE END</b> LED is on:                     <ul style="list-style-type: none"> <li>◆ 4th activation: regenerating solenoid valve</li> <li>◆ 5th activation: drain pump</li> <li>◆ 6th activation: water fill to level solenoid valve</li> <li>◆ 7th activation: heating (only if the level of water is reached)</li> <li>◆ 8th activation: washing pump</li> <li>◆ 9th activation: detergent/rinse aid dispenser</li> <li>◆ 10th activation: drying fan (if turbo-dry)</li> </ul> </li> </ol>	
<ol style="list-style-type: none"> <li>7. All the positions can be repeated by pressing button S1 in sequence</li> </ol>	
	<p><i>The components are powered if the appliance door is shut: open the door to select another actuator then shut it again.                  If button S1 is not pressed for 60 seconds, you automatically quit diagnostics mode.</i></p>

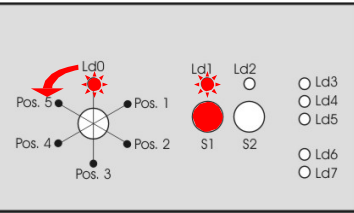
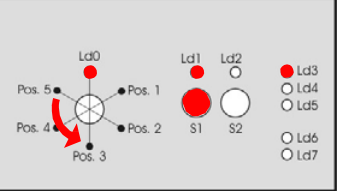


### 7.1.2 Deleting alarm memory/LED test

<ol style="list-style-type: none"> <li>1. Hold down button <b>S1</b></li> <li>2. Turn the knob anti-clockwise to <b>Position 5</b></li> <li>◆ LEDs LD0 and LD1 flash</li> <li>◆ release button <b>S1</b></li> </ol>	
<ol style="list-style-type: none"> <li>3. Turn the knob to <b>Position 4</b></li> <li>4. Press button <b>S1</b></li> <li>◆ all LEDS flash for 30 sec</li> </ol>	

### 7.1.3 Functional test cycle

#### 7.1.3.1 Cycle setting

<ol style="list-style-type: none"> <li>1. Hold down button <b>S1</b></li> <li>2. Turn the knob anti-clockwise to <b>Position 5</b></li> <li>◆ LEDs LD0 and LD1 flash</li> <li>◆ release button <b>S1</b></li> </ol>	
<ol style="list-style-type: none"> <li>3. Turn the knob to <b>Position 3</b></li> <li>◆ press button <b>S1</b></li> <li>◆ the cycle starts: during its progress, the programme behaves like a normal cycle</li> <li>◆ LED LD1 flashes</li> </ol>	

**N.B.:** at the beginning of the next programme after the test cycle, the resins are washed. The overall duration of the cycle is approximately 50 minutes.

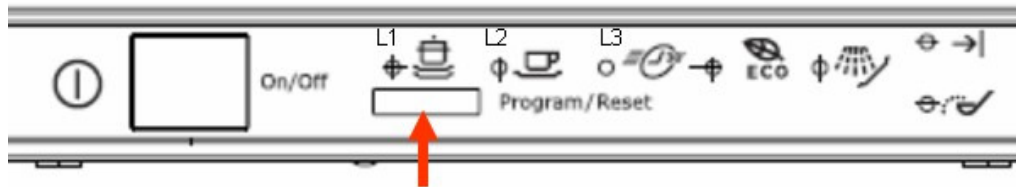
### 7.1.4 Quitting diagnostics mode

To quit diagnostics mode, press button **S0** and turn off the appliance or wait **60 seconds**: the LEDS are turned on and the appliance is on stand-by awaiting your selection

## 7.2 EDW503

### 7.2.1 Diagnostics mode, alarm reading and testing

1. Hold down the **PROGRAMMES** button



2. Turn the appliance on at the **ON/OFF** button
  - ❖ LED **L1** flashes
  - ❖ LEDs **L2** and **L3** are turned on
3. Wait for LEDs **L2** and **L3** to be turned off
4. Press the **PROGRAMMES** button
  - ❖ the **CYCLE END** LED shows the first alarm stored with a sequence of flashes
5. Press the **PROGRAMMES** button twice more to display the other two alarms stored
  - ❖ the **CYCLE END** LED shows the alarms
6. From the 4th activation, the individual components testing begins according to the defined sequence
  - ❖ LED **L2** is turned on permanently for the duration of the components test
    - ❖ 4th activation: regenerating solenoid valve
    - ❖ 5th activation: drain pump
    - ❖ 6th activation: water fill to level solenoid valve (level of water reached)
    - ❖ 7th activation: heating (only if the level of water is reached)
    - ❖ 8th activation: washing pump
    - ❖ 9th activation: detergent/rinse aid dispenser
    - ❖ 10th activation: drying fan
    - ❖ 11th activation: the cycle is repeated from the first alarm

All the positions can be repeated by pressing button **S2** in sequence.



*The components are powered with the appliance door open and shut.  
If the **PROGRAMMES** button is not pressed for 60 seconds, you automatically quit diagnostics mode.*

### 7.2.2 Deleting alarm memory/LED test

1. Hold down the **PROGRAMMES** button
2. Turn the appliance on at the **ON/OFF** button
  - ❖ LED **L1** flashes
  - ❖ LEDs **L2** and **L3** are turned on
3. Press the **PROGRAMMES** button before LEDs **L2** and **L3** are turned off
  - ❖ LED **L2** flashes
  - ❖ LEDs **L1** and **L3** are turned on
4. Wait for LEDs **L1** and **L3** to be turned off
5. Press the **PROGRAMMES** button
  - ❖ all LEDs flash and the buzzer sounds

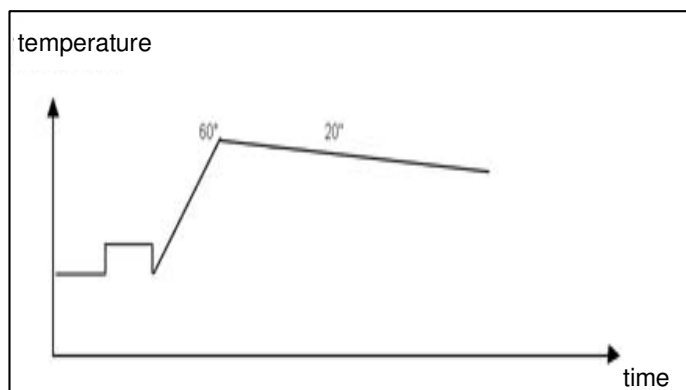
## 7.2.3 Functional test cycle

### 7.2.3.1 Cycle setting

1. Hold down the PROGRAMMES button
2. Turn the appliance on at the ON/OFF button
  - ◆ LED **L1** flashes
  - ◆ LEDs **L2** and **L3** are turned on
4. Press the PROGRAMMES button twice before LEDs **L2** and **L3** are turned off
  - ◆ LED **L3** flashes
  - ◆ LEDs **L1** and **L2** are turned on
5. Wait for LEDs **L1** and **L2** to be turned off
6. Press the PROGRAMMES button to start the test cycle
  - ◆ LED **L4** is turned off
  - ◆ LED **L2** flashes for the duration of the cycle

### 7.2.3.2 Cycle phases

Phase	Duration
Water fill, Turbo activation	30"
Washing continuously, dispenser opening	45"
Drain	dilution
Water fill	---
Washing continuously	60"
Drain	dilution
Water fill	---
Controlled washing at 2600 rpm, heating at 60 °C	
Controlled washing at 2600 rpm, temperature kept at 60 °C	1200"



**N.B.:** at the beginning of the next programme after the test cycle, the resins are washed. The overall duration of the cycle is approximately 50 minutes.

## 7.2.4 Reading alarms and activating components

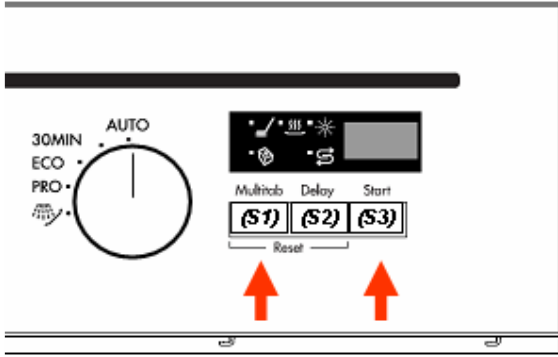
Once in Service mode, the reading of alarms and the activation of individual components is possible using button S1. After the last component in the list has been activated, the sequence will be repeated.

The sequence is defined as follows:

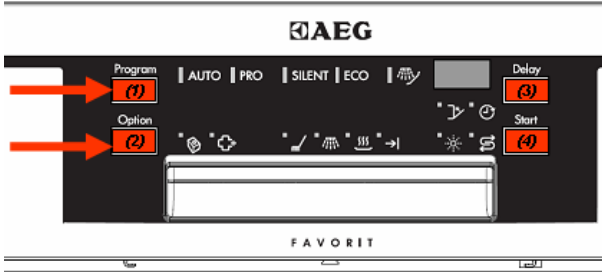
1. Alarm 1
2. Alarm 2
3. Alarm 3
4. Regenerating solenoid valve
5. Drain pump
6. Fill solenoid valve
7. Heating element (if the level of water is reached)
8. Washing pump (at 2800 rpm)
9. Detergent dispenser
10. Drying fan

If a display is available, the activated component is indicated by its own number in the list (starting with number 4).

### 7.3 EDW750

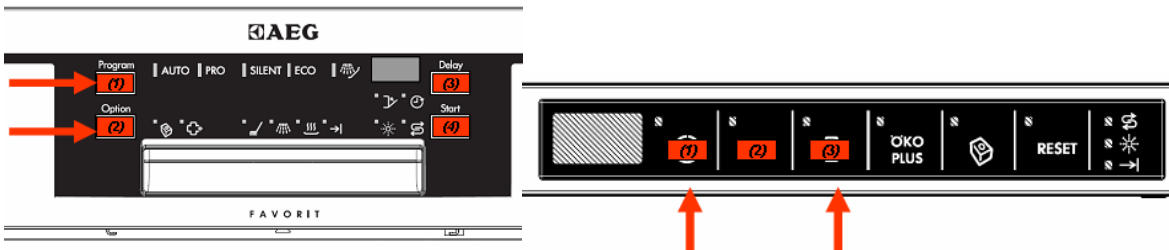


### 7.4 EDW1850



### 7.5 EDW1950/1953

In the EDW1950/1953 version, you can only enter service mode with the appliance turned ON and on stand-by awaiting instructions. Hold down the two configured buttons and wait at least 4 sec.



## 7.6 EDW3510

In the edw3510 touch version, you can only enter service mode with the appliance turned ON and on stand-by awaiting instructions. Hold down buttons 1 and 2 simultaneously as configured and wait a few seconds.



After 3 seconds, the display prompts the Alarms check

- Touch (3) to enter the alarms menu/activate individual components



The sequence is defined as follows:

1. Alarm 1
2. Alarm 2
3. Alarm 3
4. Regenerating solenoid valve
5. Drain pump
6. Fill solenoid valve
7. Heating element (if the level of water is reached)
8. Washing pump (at 2800 rpm)
9. Detergent dispenser
10. Drying fan

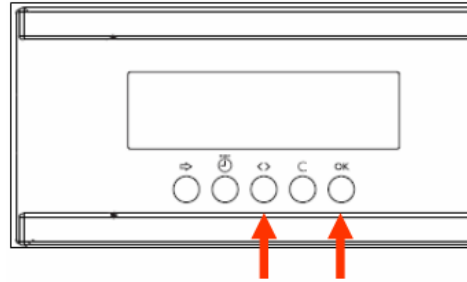
- Touch (4) followed by (3) to test the LEDs



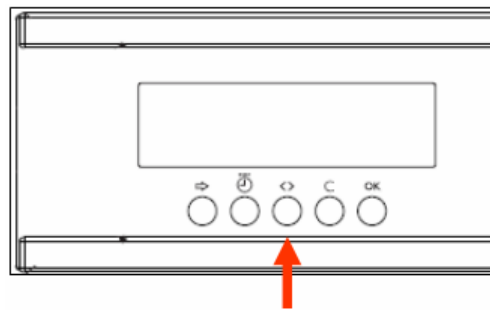
- Touch (4) twice followed by (3) to Select the Test Cycle (15')
- Touch (4) 3 times followed by (3) to Enable/Disable the extra rinse
- Touch (4) 4 times followed by (3) to Set the Brightness
- Touch (4) 5 times followed by (3) to Set the Contrast
- Touch (4) 6 times followed by (3) to Set the Regenerating Level

## 7.7 EDW2500 SWISS

In the EDW2500 Touch SWISS version, you can only enter service mode with the appliance turned ON and in "CHOOSE PROGRAM" mode; hold down the two OPTION and START buttons as configured and wait a few seconds.



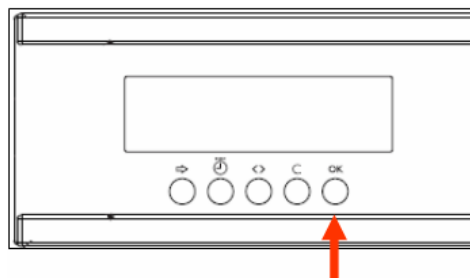
Press the OPTION button to select the menu



The sequence is defined as follows:

1. Alarm 1
2. Alarm 2
3. Alarm 3
4. Regenerating solenoid valve
5. Drain pump
6. Fill solenoid valve
7. Heating element (if the level of water is reached)
8. Washing pump (at 2800 rpm)
9. Detergent dispenser
10. Drying fan

press the OK button to enter the desired function.



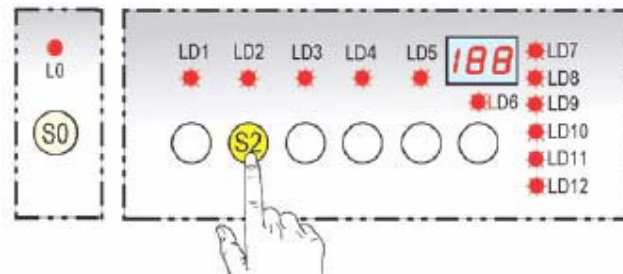
## 7.8 EDW1850/1950

Alarms and activated components check button 1



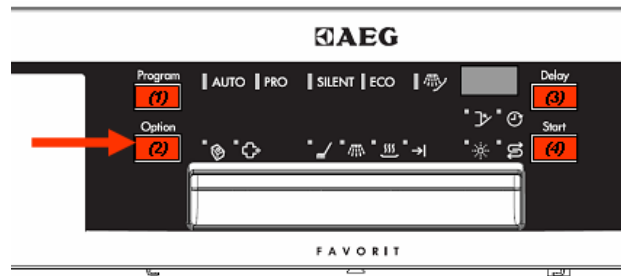
### 7.8.1 LED test and cancelling alarms stored

Once in Service mode, the LED test and the cancelling of alarms stored is possible using button S2. All LEDs flash for 30 sec. The memory of alarm codes is cancelled.



## 7.9 EDW1850/1950

LED check

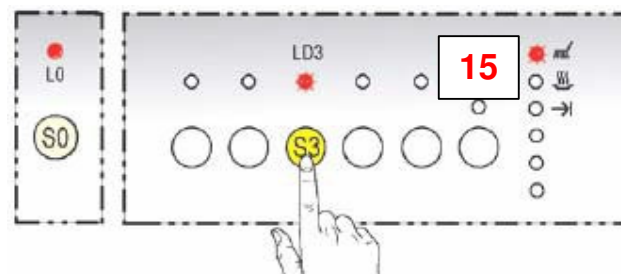


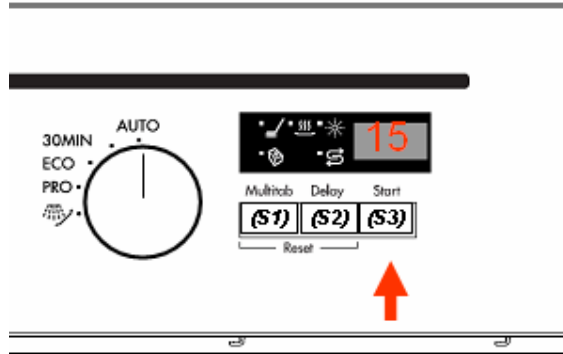
### 7.10 Test programme

Once in Service mode, activate the test programme using button S3. The test programme starts immediately and lasts approximately 15 minutes.

The test programme progress is shown by the LED relating to button S3.

At the end of the test cycle, the LED relating to button S3 is turned off while the cycle end LED is turned on and the display shows 0.





**7.11 EDW1850/1950**

Test programme



**7.12 Enable/Disable additional rinse**

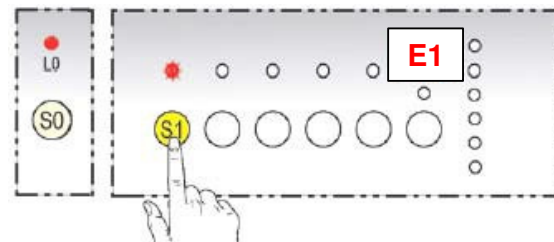
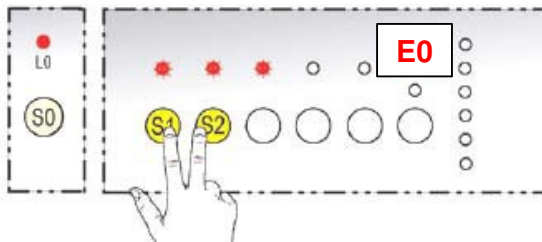
Once in Service Mode, the current status is shown by pressing buttons S1+S2 simultaneously.

With this setting, you can select an additional rinse.

On appliances without a display or with a 1-digit display, the current status is shown by the cycle end LED. If it is on, the function is enabled, if it is turned off, then the function is disabled.

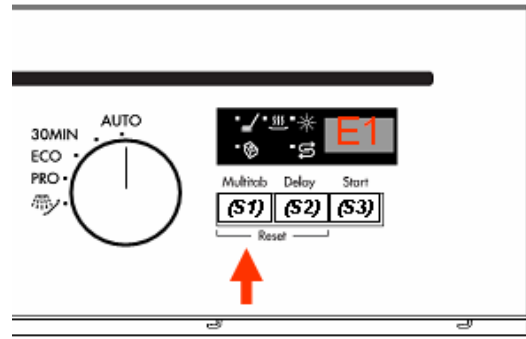
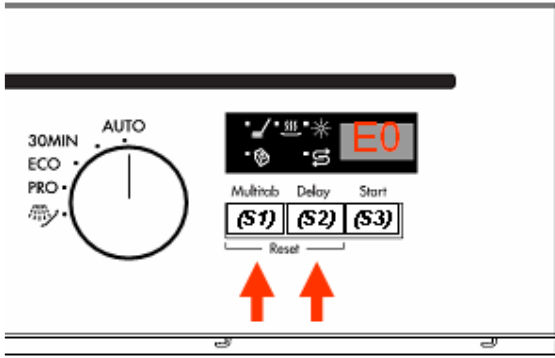
On appliances with a 3-digit display, the current status is shown by “E1” if the function is enabled and by “E0” if the function is disabled.

To modify the enabled/disabled status, press button S1.

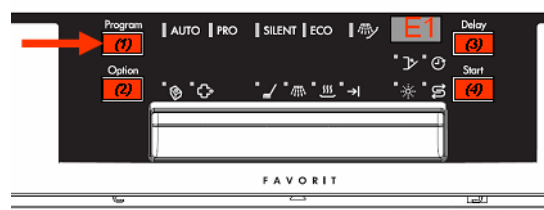




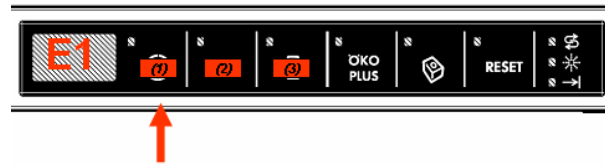
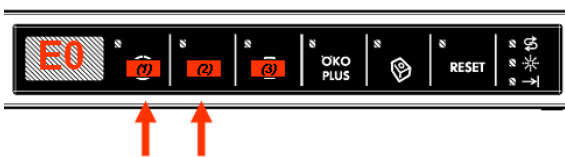
7.13 EDW750



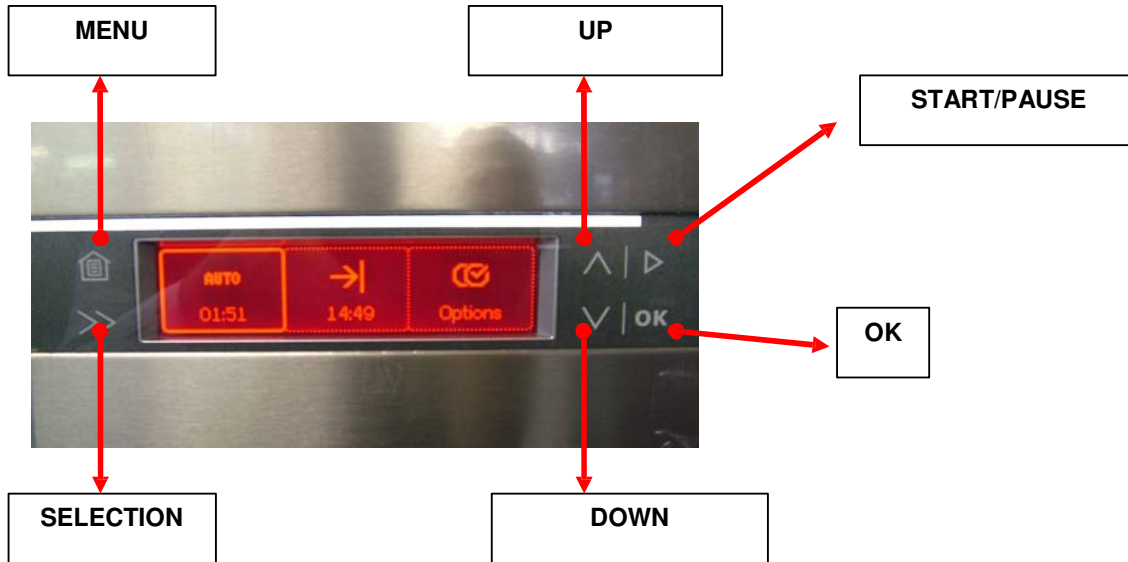
7.14 EDW1850/1950



7.15 EDW1953 TOUCH

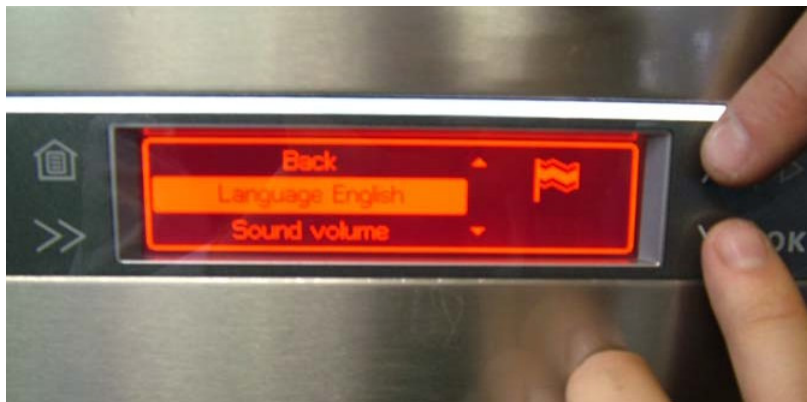


## 8 Service Mode Settings for EDW2510 “Touch”



### 8.1 Accessing diagnostics mode

1. Turn on the appliance by pressing button **S0**
2. Select: Options/Settings/Language
3. Hold down the UP and DOWN buttons simultaneously for 6 sec



4. The first diagnostics mode message is displayed



Press the “Start/Pause” button repeatedly to scroll through the list of the diagnostics mode:

Activations	LCD display	Feature
--	1 ALARM CODE <i>ixx</i>	<ul style="list-style-type: none"> <li>Shows the alarms stored and activation of the system</li> </ul>
1	3 LED TEST	<ul style="list-style-type: none"> <li>Test of all LEDs and the display</li> <li>Cancellation of all alarms stored</li> </ul>
2	4 LINE TESTS <i>Alternates with NUMBER OF CYCLES</i>	<ul style="list-style-type: none"> <li>Selection of test cycle</li> <li>Count of all cycles carried out</li> </ul>
3	5 PULSE WASHING YES	<ul style="list-style-type: none"> <li>Enables/disables pulse washing</li> </ul>
4	6 EXTRA RINSE NO	<ul style="list-style-type: none"> <li>Enables/disables the extra rinse</li> </ul>
5	BRIGHTNESS 10	<ul style="list-style-type: none"> <li>Brightness setting</li> </ul>
6	CONTRAST 6	<ul style="list-style-type: none"> <li>Contrast setting</li> </ul>
7	HARDNESS 5	<ul style="list-style-type: none"> <li>Adjustment of the regenerating level depending on the water hardness</li> </ul>

Press the **OK** button to enter a specific Service Option.

Press **Start/Pause** to change the current setting.


Press **OK** to confirm the modification.

To quit diagnostics mode, press button **S0** to turn off the appliance.

## 8.2 Alarms and activating individual components

- Enter diagnostics mode
- Press the **OK** button to display the alarms:
  - ◆ The display shows the last alarm that occurred (to decode the alarm, please see the table of “Alarms”).
- Press the **OK** button again to display the second alarm that occurred
- Press the **OK** button once more to display the third alarm that occurred
- Press the **OK** button repeatedly to scroll through the list of electronic components, as shown in the table below.

Activations	LCD display	Function enabled
1	1 ERR CODE i 0	c> Displays the last alarm that occurred (for example, no alarm)
2	1 ERR CODE i 0	c> Displays the last but one alarm that occurred (for example, no alarm)
3	1 ERR CODE i 0	c> Displays the last but two alarm that occurred (for example, no alarm)
4	2 TEST ACTIVAT. 4	c> Regenerating solenoid valve activated
5	2 TEST ACTIVAT. 5	c> Drain pump activated
6	2 TEST ACTIVAT. 6	c> Fill to water level solenoid valve activated
7	2 TEST ACTIVAT. 7	c> Heating element activated ( <i>only with water at full level!</i> )

<b>8</b>	2 TEST ACTIVAT. 8	c> Washing pump at 2800 rpm activated
<b>9</b>	2 TEST ACTIVAT. 9	c> Detergent dispenser cycling
<b>10</b>	2 TEST ACTIVAT. 10	c> Drying fan activated ( <i>if turbo-dry</i> )
<b>11</b>	2 TEST ACTIVAT. 11	c> Auto-dosing activated (currently not used)
<b>12</b>	2 TEST ACTIVAT. 12	c> Water hardness sensor activated (currently not used)
 <p><i>The components are powered when the appliance door is shut. If no button is pressed within 60 seconds, the system automatically quits diagnostics mode.</i></p>		

N.B.: All functions can be accessed repeatedly by pressing the **OK** button repeatedly.

## 9 Alarm codes

### 9.1 Alarm Management

In “ProClean/RealLife” appliances, the alarm codes are defined in families of alarms and current alarms, displayed as:

**iXY**

i = alarm indication      X = family of the alarm      Y = Current alarm

#### **Caution:**

Only the alarm family codes are displayed to the user.

The complete alarm code will be stored among the three alarms that can be stored by the appliance.

A new alarm code is only stored if it differs from the last one stored.

The three most recent alarm codes can be displayed only in Service Mode or using the Sidekick tool.

Appliances with a display will show the alarms by a number of flashes of the cycle end LD, such as in “DIVA”: i10=1 flash, i50=5 flashes, iB0=11 flashes

### Alarm Code Description

#### **“i10” Code - family : Water Tap Closed**

##### ***“i10” code: during static filling***

This alarm code is used to display problems with the water inlet tap being closed at the beginning of the program. It is set up to detect problems during the static water filling. A drain phase is performed before the error is displayed to the user.

- Acoustic signal and visual alarm, depending on the appliance customization; the program can be restarted.
- The water level defined is not reached within the time limit set.
- The time limit set starts when the fill solenoid valve is opened.
- The time limit set is reset when the fill solenoid valve is closed.
- The water will first be drained before an error is displayed to the user.
- Time limit set: Normal 90 sec; Test cycle = 30 sec (times could differ as they are defined in the MCF)

##### ***“i11” code: during dynamic filling***

- Acoustic signal and visual alarm, depending on the appliance customization; the program can be restarted.
- The water level defined is not reached within the time limit set.
- The time limit set starts when the fill solenoid valve is opened.
- The time limit set is reset when the fill solenoid valve is closed.
- The water will first be drained before an error is displayed to the user.
- Time limit set: Normal 120 sec; Test cycle = 60 sec (times could differ as they are defined in the washing cycle specifications)

## **“i20” Code - family : Draining Problem**

### ***“i20”-Code : Fails to drain***

- Acoustic signal and visual alarm, depending on the appliance customization; the program can be restarted.
- The level switch restore point is not reached within the time limit set.
- The time limit set starts when the drain pump is activated.
- The time limit set is reset when the drain pump stops normally.
- Time limit set: Normal 90 sec; Test cycle = 60 sec

## **“i30” Codes - family: Aqua Control**

### ***“i30” code: water detected from aqua control sensor***

- Acoustic signal and visual alarm, depending on the appliance customization; the program is restarted automatically in this alarm condition.
- If this alarm condition occurs, the drain pump is activated.
- Time limit set: 10 sec.

## **“i40” Codes - family: Analogue pressure sensor problem**

### ***“i41” – code: No pressure sensor signal***

- the error is set if the sensor signal is lost for more than 1s
- abort program and display error

### ***“i42” – code: Calibration invalid, pressure signal too noisy***

- the warning is set if the sensor signal is not stable enough for calibration or if the signal is out of range for an empty sump.
- the signal noise level for calibration is defined in MCF

### ***“i43” – code: Pressure sensor signal too high***

- the error is set if the sensor signal is out of range, signal high for more than 1 s
- the signal range is defined in MCF
- abort program and display error

### ***“i44” – code: Pressure sensor signal too low***

- the error is set if the sensor signal is out of range, signal low for more than 1 s
- the signal range is defined in MCF
- abort program and display error

**“i45” – code: Calibration invalid, pressure signal too low**

- the warning is set if the sensor signal is out of range for an empty dw, signal low.
- the signal range for calibration is defined in MCF

**“i46” – code: Calibration invalid, pressure signal too high**

- the warning is set if the sensor signal is out of range for an empty dw, signal high.
- the signal range for calibration is defined in MCF

**“i50” Code - family: Washing Motor Problem**

**“i51” – code: Asynchronous motor problem**

- Acoustic signal and visual alarm, depending on the appliance customisation; the programme is suspended.
- The washing pump runs without being activated by the software, the cause is a short-circuit.
- The heating element is not activated.
- If the alarm occurs, the fill solenoid valve is activated up to the level pressure switch tripping point, then the cycle is suspended.
- Time limit set: 8 sec.

**“i52” – code: bldc motor – abnormal extra current detected**

- MCB hardware supervising – will be set when abnormal extra current of about 1.3 amps are detected.

**“i53” – code: bldc motor – over current**

- alarm will be set when the max. allowed current will be detected higher.
- max. allowed current is set to 1.3 A

**“i54” – code: bldc motor rotor locked**

- alarm will set when the motor locked condition is detected during start of motor and also during the running motor; reasons can be dirt, too high load, mechanical problems on impeller

**“i55” – code: mcb Vbat overvoltage**

- alarm is set when the Vbat voltage on motorcontrolboard will be detected greater the 400Vdc

**“i56” – code: mcb Vbat undervoltage**

- alarm is set when the Vbat voltage on motorcontrolboard will be detected lower than 255Vdc

**“i57” – code: mcb Vbat voltage plausability**

- alarm will be set if Vbat is detected higher than 440V or lower than 215V.  
rem.: with Vbat voltage the calculation of the motor resistance is executed

**“i58” – code: motor plug connection**

- alarm will be set if motor connection is detected wrong based on motor currents measurements.  
if currents are inside the thresholds (+/- 10mA); debounce is set to 2 seconds

**“i59” – code: mcb current read adc - fault**

- alarm is set if there is detected a fault in the current reading chain on mcb; incl. adc conversion
- it's verified by the current sum of the three motor phases which should be nearly zero; if the sum is higher than 40mA for longer than 300 ms than the assumption is that something is wrong.

**“i5A” – code: over temperature motor windings**

- internal warning is set when the internal calculations based on the measured currents lets expect that the temperature are out of standard limits (200 °C – with 40 °C margin due to measurement and calculation tolerances).
- the threshold value for the warning is 200 – 70 (max. ambient temperature inside the dishwasher) - 10 (activation margin) = 120 °C → warning level is given
- if the warning is set, than the motor is stopped and a new winding resistance calculation is performed .  
in this way the real temperature can be calculated – temp. calculation is based on ref. resistance of motor windings at 22 °C.

- **the alarm is set if the value is greater than the threshold 178 °C (200 – 22).**  
**rem.: the alarm is reset by MCB after verification procedure with baseboard.**

**“i60” Code - family : Heating Element Problem**

**“i60” – code: heating**

- The alarm is stored and displayed only in service mode; the washing programme continues without the activation of the heating element.
- During the heating phases, the rise in temperature is monitored with an update every 3 min.
- Within these 3 minutes, the temperature must rise by at least 1 °C.

**“i61” – code: heating over temperature**

- if water temperature is detected higher than 78 °C, cycle is stopped.  
(rem.: origin of this alarm is problem on visi plastic doors)

**“i70” Code - family : Thermistor problem**

**“i70” – code: NTC sensor value out of range**

- The alarm is stored and displayed only in service mode; the washing program continues without the activation of the heating element.
- Monitoring starts immediately after the program has been started.
- The voltage measured at the ends of the NTC must be between 0.04 and 4.7 V.



- Time limit set: 10 sec.

**“i80” Code - family : Auto Door Opener**

**“i80” – code: Auto door opener malfunction**

- the error is set if the auto door opener sense signal indicates that it has left the normal position unintentionally while running a cycle,
- or if the auto door opener times out without reaching starting position three times while retracting.
- Timeouts are defined in MCF
- abort program and display error

**“i81” – code: Auto door opener warning**

- the warning is set if the auto door opener sense signal indicates that it has left the normal position unintentionally,
- or if the auto door opener times out while opening the door and does not leave the starting position,
- or if the auto door opener reverses direction while opening the door and reach the inside position before expected (door blocked),
- or if the auto door opener times out while retracting.
- Timeouts are defined in MCF
- the warning is not displayed, the cycle continues

**“i90” Code - family : Configuration Problem**

**“i91” – code: checksum MCF**

- No washing program start is possible, can be resolved by turning the appliance off and back on again.
- The display board does not satisfy the identification requests of the main board.

**“i92” – code: checksum CCF**

- The alarm is signalled if the configuration control of the washing cycles provided erroneous results.

**“iB0” Code - family : Sensor Problem**

**“iB0” - code: turbidity sensor**

- The alarm is set if the calibration procedure is not completed after 15 sec.
- The washing program will run as though the dirt value to be considered is high

**“iC0” Code - family : Communication Problem**

**“iC0” – code: user interface communication**

- The error signal is displayed if there is not communication recognize between UI board and main board. The error is displayed only in run time but not saved.

***“iC1” – code: MACS bus communication***

- After three attempts to establish communication, an error is signalled in the hardware control

***“iC2” – Code: ADSI communication***

- The washing programme is suspended but it can be restarted if the alarm conditions no longer apply

***“iC3” – Code: Communication between the power board and the motor control board***

- The alarm is signalled if the communication between the mother board and the motor control board does not start.
- Acoustic signal and visual alarm, depending on the appliance customization; the washing program is restarted automatically if the error conditions no longer apply.

***“iD0” Code - family : Tacho Problem***

***“iD0” – code: no signal***

- The alarm is stored and displayed only in service mode; there is a new control for each new phase.
- If the washing pump is activated but there is no tacho signal for 30 sec then the motor speed is set to full speed and the heating element is not activated.

***“iD1” – code: no signal***

- The alarm is stored and displayed only in service mode.
- If the washing pump is activated but there is no tacho signal for 5 sec then the heating element is temporarily deactivated. If after another 30 sec there is still no signal the appliance displays an error code iD0.

***“iE0” – family: flow controller problem***

***“iE0” – code: flow control position (spray arm level)***

- The alarm is stored and displayed only in service mode; there is a new control for each new phase.
- The alarm is signalled if the desired position of the flow controller is not reached after 120 sec; the heating element is deactivated.
- If the signal from the flow controller does not change after 15 sec, the software suspends the positioning for 2 sec and resumes after another max 120 sec.

***“iF0” Code - family : water level problem***

***“iF0” – Code : overflowing detected***

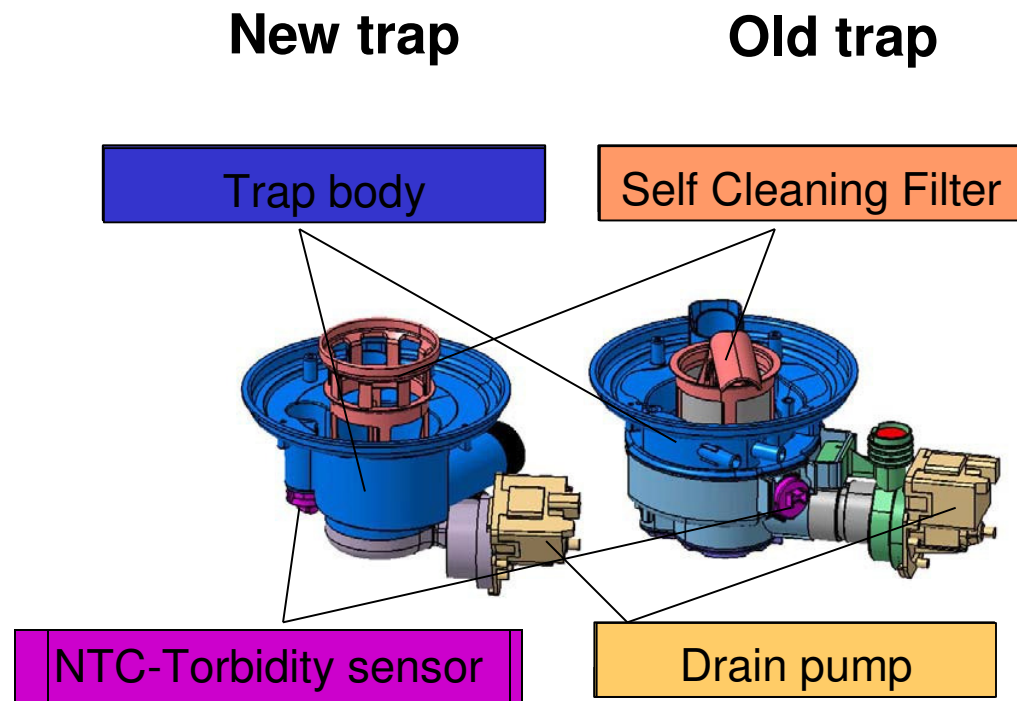
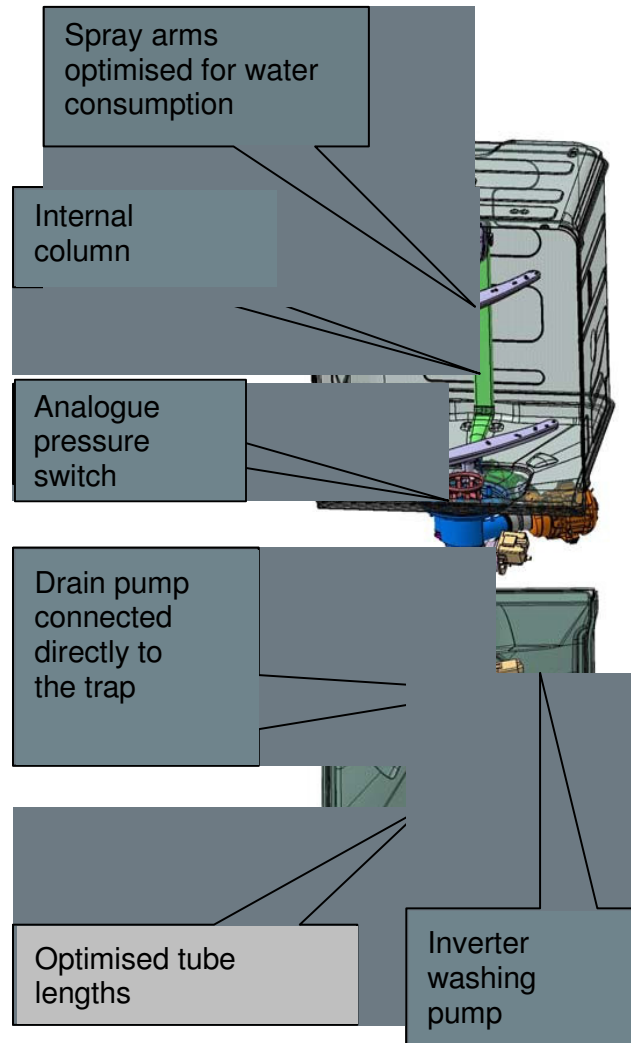
- The alarm is stored and displayed only in service mode; the program continues.
- The error situation is recognized when the total filling times exceed the limits.
- The times are accumulated at each subsequent filling and reset every time the drain is activated.
- If the alarm is detected, the heating element is not activated and the subsequent fillings are ignored.

***“iF1” – code: high water level***

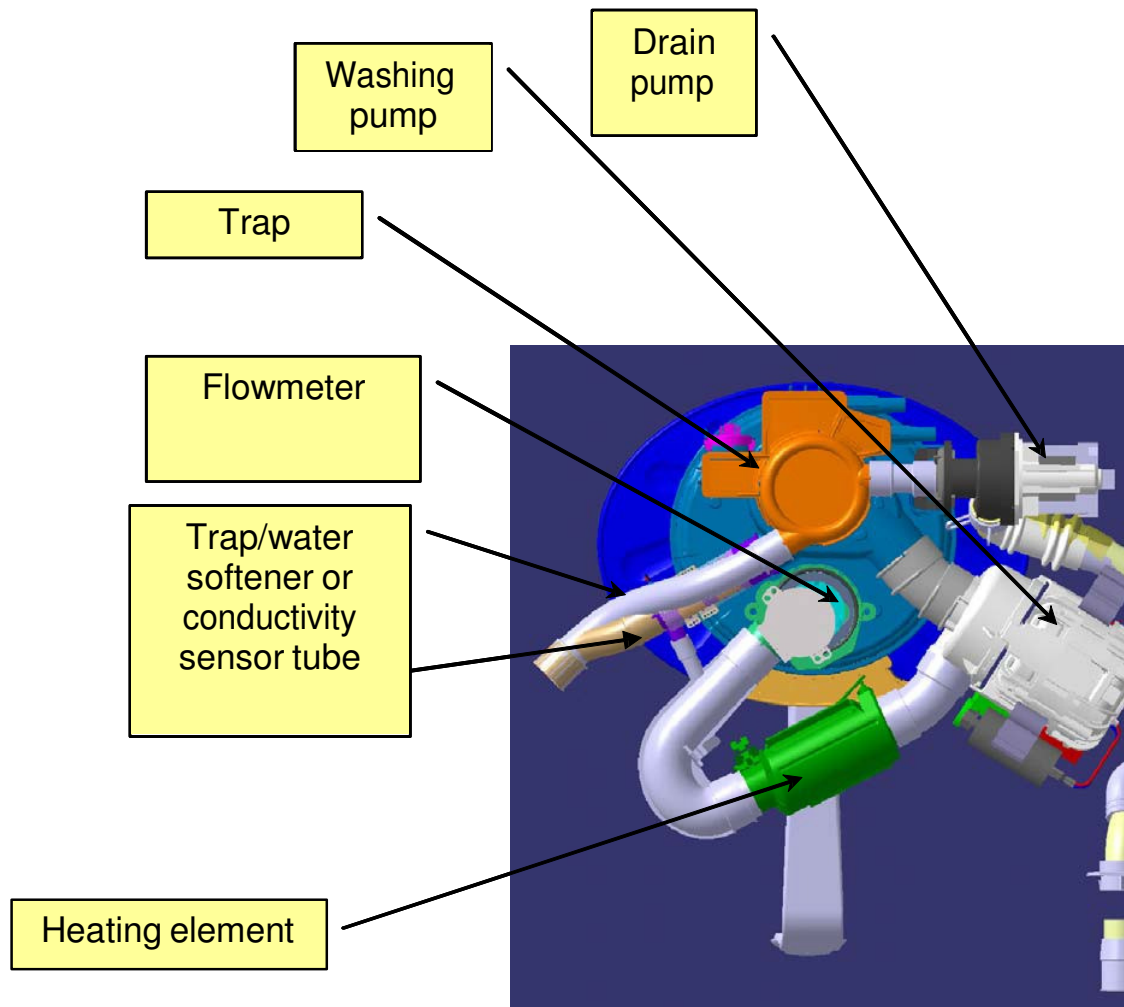
- The alarm is stored and displayed only in service mode.
- The alarm condition is recognized if the safety water level is exceeded for more than 4 sec.
- A drain phase is activated until the water level drops below the safety level.
- The washing program continues only if this condition is achieved

## 10 Technical details

### 10.1 New hydraulic circuit



# Detail of heart between 60cm, 45cm & BIG



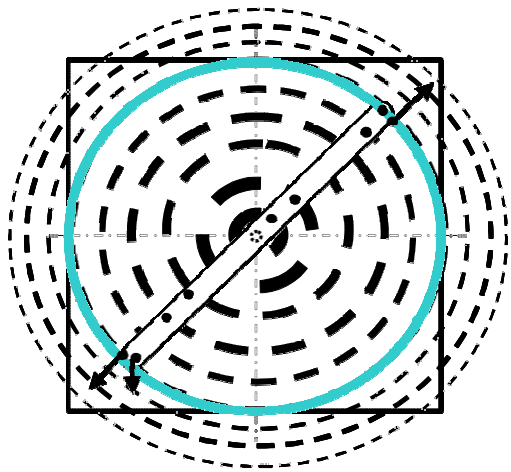
## 10.2 New components



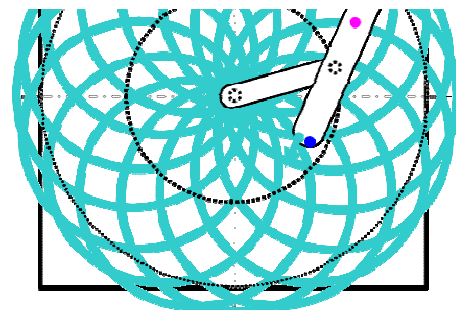
- The hydraulic components were mainly designed to reduce the volume of water contained
- Spray arms and filters were designed differently depending on the Brand
- Flow meter to manage the washing action of the spray arms



**Traditional spray arm**



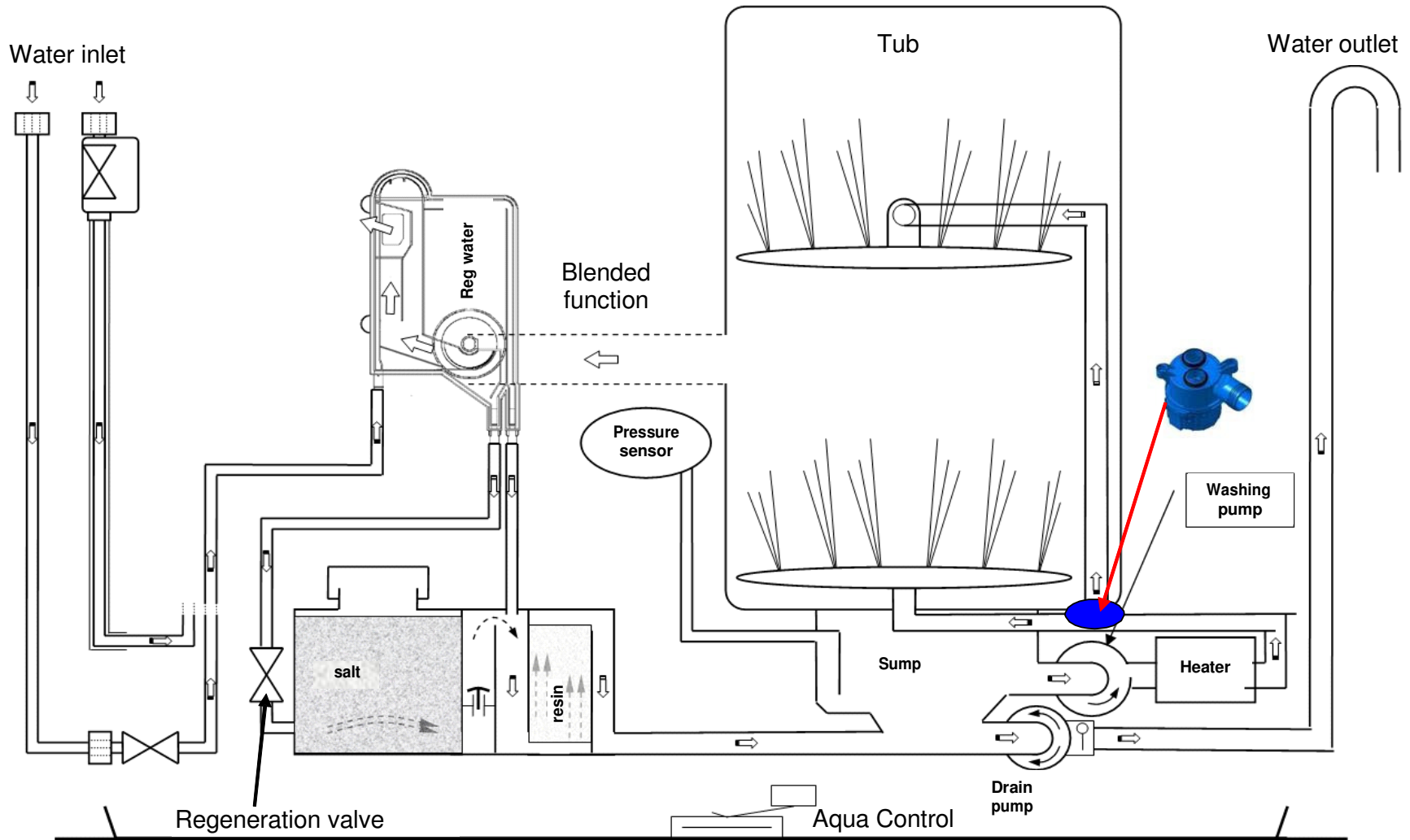
**Satellite Spray Arm**



Better cover in washing  
results in a higher cleaning  
index

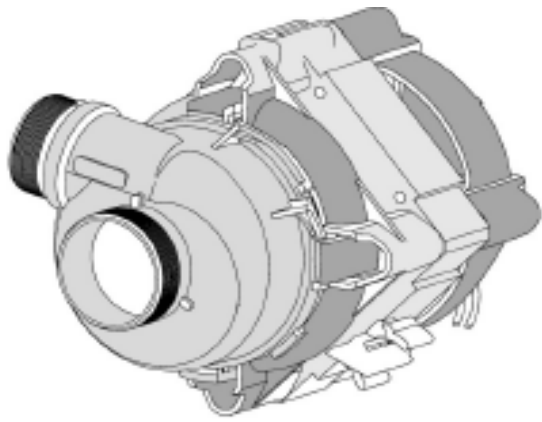


### 10.3 Water circuit

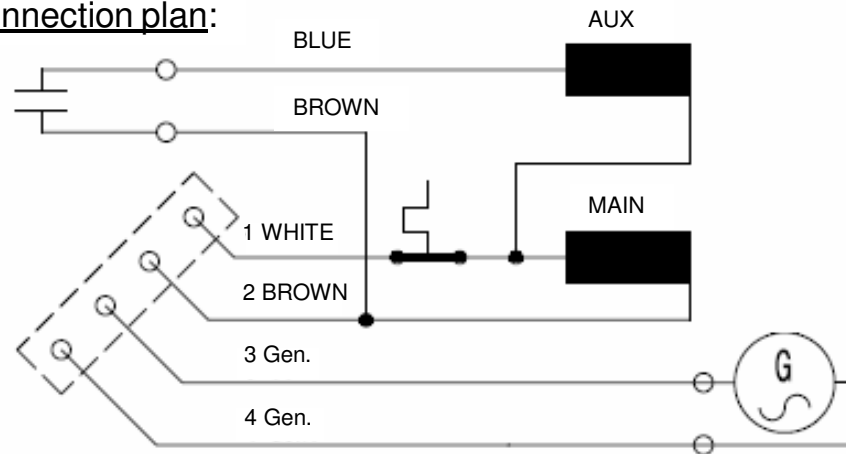




#### 10.4 Single-phase asynchronous washing pump



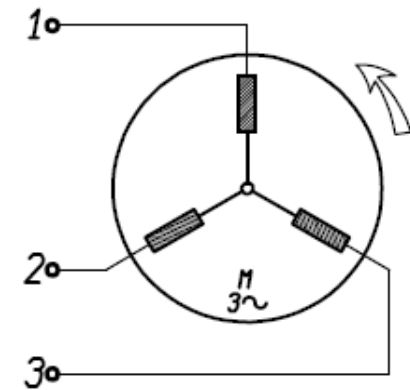
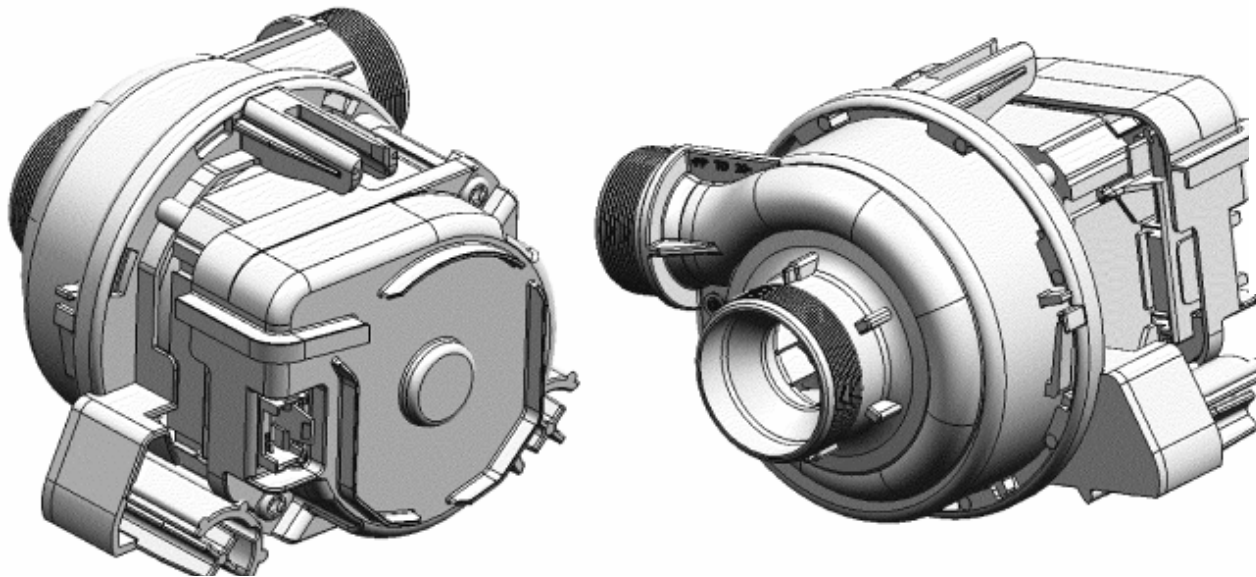
Connection plan:



- Driven by a single-phase induction motor and auxiliary coil (condenser 3  $\mu\text{F}$ ) with an absorbed power of 90 W
- In models with tachometric function, the speed may vary from 1600 to 2800 rpm for pulse washing (control on phase)
- Main coil resistance: 95 ohms
- Auxiliary coil resistance: 130 ohms
- Tachometric resistance: 220 ohms

## 10.5 Three-phase washing pump - inverter motor

### Three-phase asynchronous motor (Inverter motor):

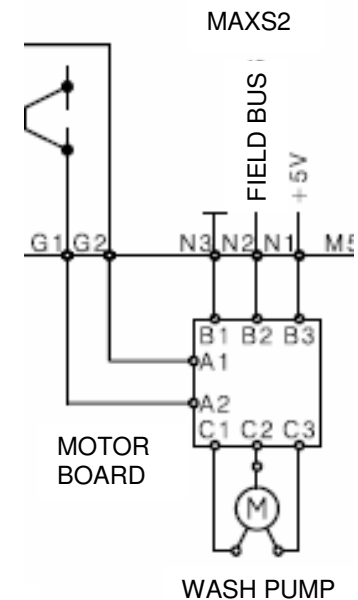


The motor must be powered by a specific electronic board, which also guarantees the thermal cut-out of the actual motor.

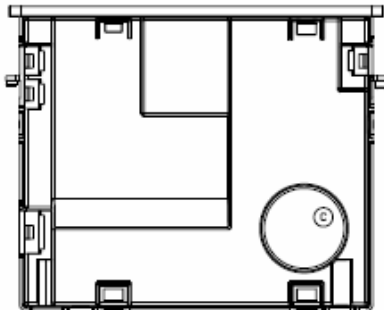
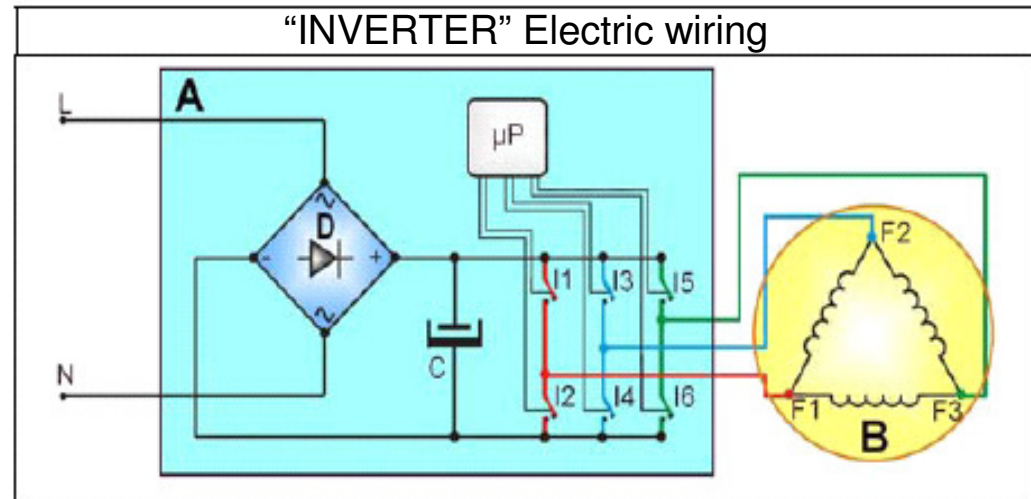
Electrical details:

230/240 V 50/60 Hz Class F

Resistance: 1-2: 56 ohms/2-3: 56 ohms/3-1: 56 ohms

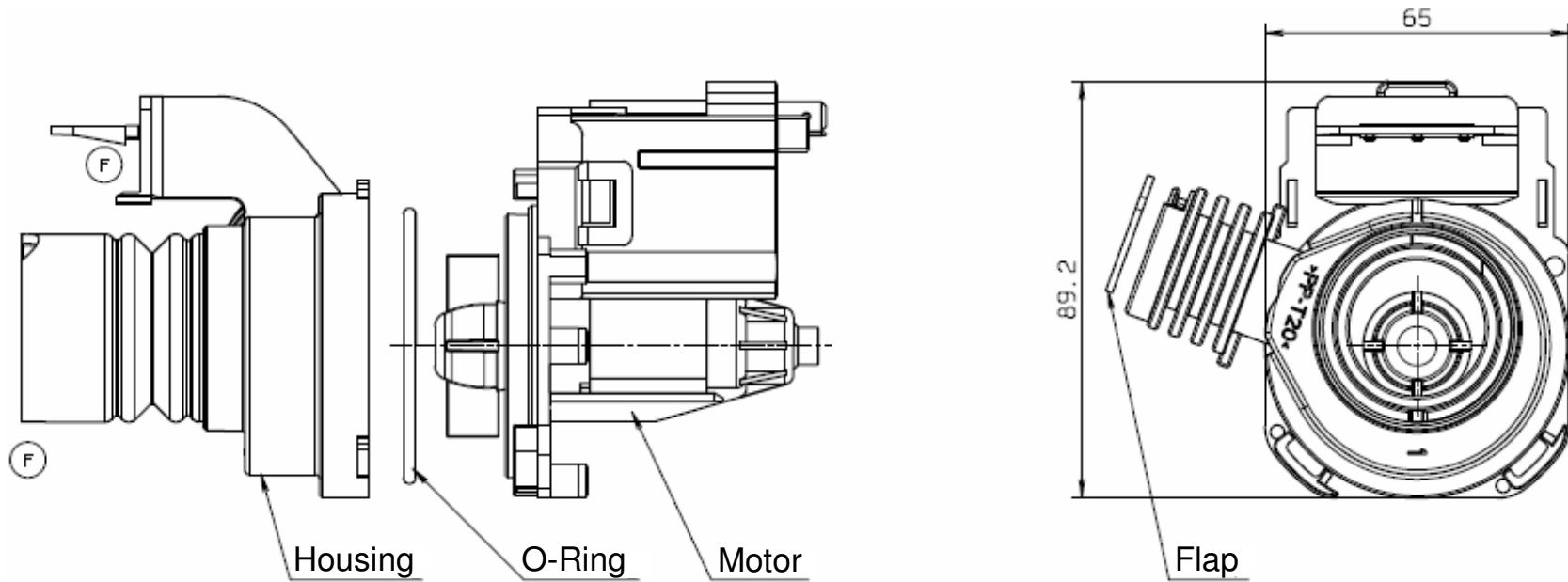


- L = Phase
- N = Neutral
- A = Inverter board
- B = Motor
- C = Condenser
- D = Diodes
- I1-6 = Switches
- F1-3 = Motor connectors
- μP = Microprocessor



A specific electronic board (A) converts the single-phase domestic power into three-phase power. The characteristics of the three-phase power may be changed to manage the motor power and its speed respectively. Single-phase power (applied to connectors L-N) is modified by a diode (D) to generate approx. **325 V** at the ends of condenser C. The combined opening and closing of switch I1-I6 (managed by the microprocessor) determines the voltage and frequency of the power applied to the motor.

## 10.6 Drain pump



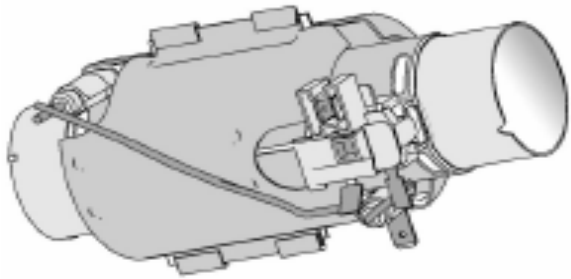
Driven by a synchronous motor:

Voltage 230 V 50 Hz

Power: 30 W -7 resistance approx. 225 ohms

Max. flow rate: 15 litres/min

## 10.7 Heating element



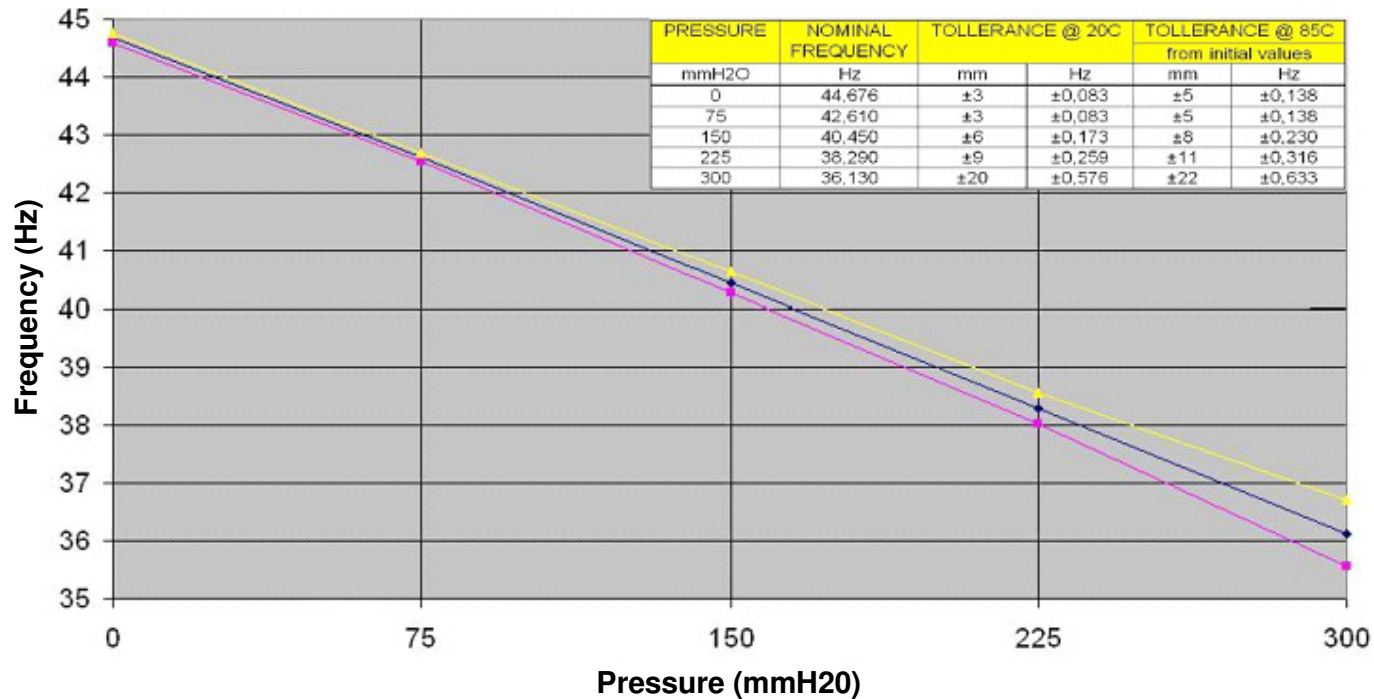
Absorbed power:	2100 W
Cold resistance:	25 $\Omega$
Safety thermostat:	98 °C $\pm$ 5 °C
Safety thermostat:	206 °C



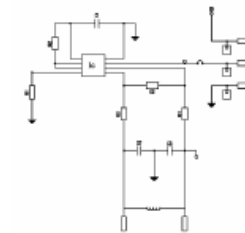
The heating element, housed in a tube, is used to heat the water.  
The heating element is not activated during the drying phase.  
Connected to the washing pump delivery and to the conduit or the flowmeter which directs the water to the top spray arm.  
Standard version version for all the appliances in the range.

## 10.8 Analogue pressure switch

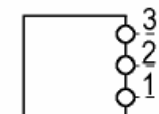
Here are the main characteristics of the pressure switch:  
 frequency output (0-5 V signal),  
 range: 0-300 mm of water,  
 connection: 3way RAST 2.5 mm,  
 frequency and characteristics of tolerances:



Electronic pressure switch



Electric symbol



## 10.9 Flowmeter



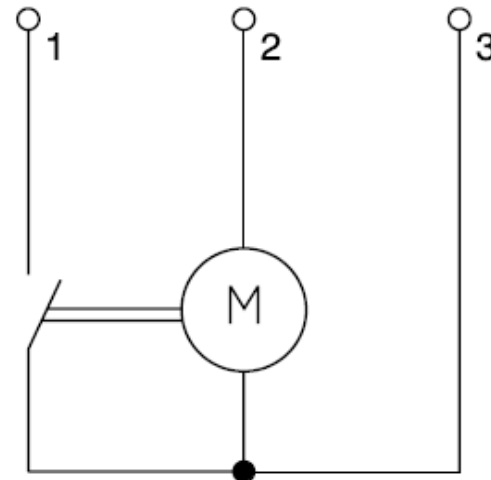
The flowmeter controls the flow of water towards the two dishwasher spray arms.

The flowmeter is designed to split the flow of water towards the bottom spray arm, towards the top one or towards both spray arms.

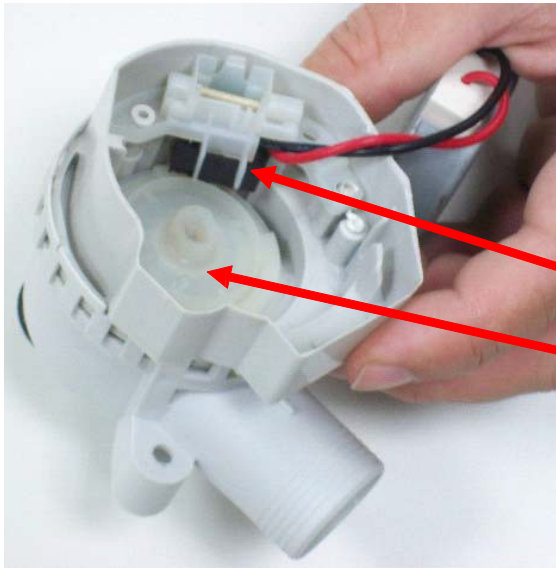
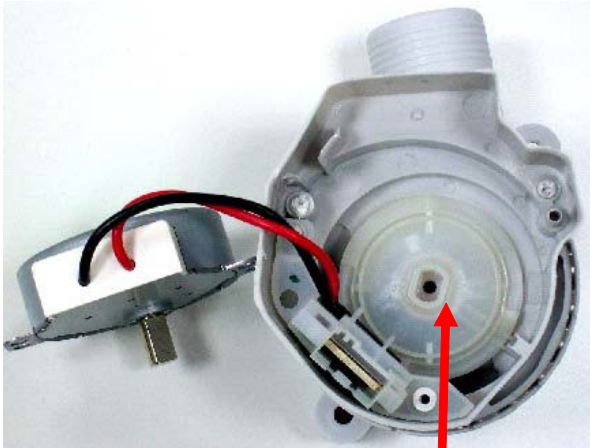


Micro-switch

Synchronous motor  
230 V AC, 50/60 Hz  
2.5/3 rpm  
Anti-clockwise rotation





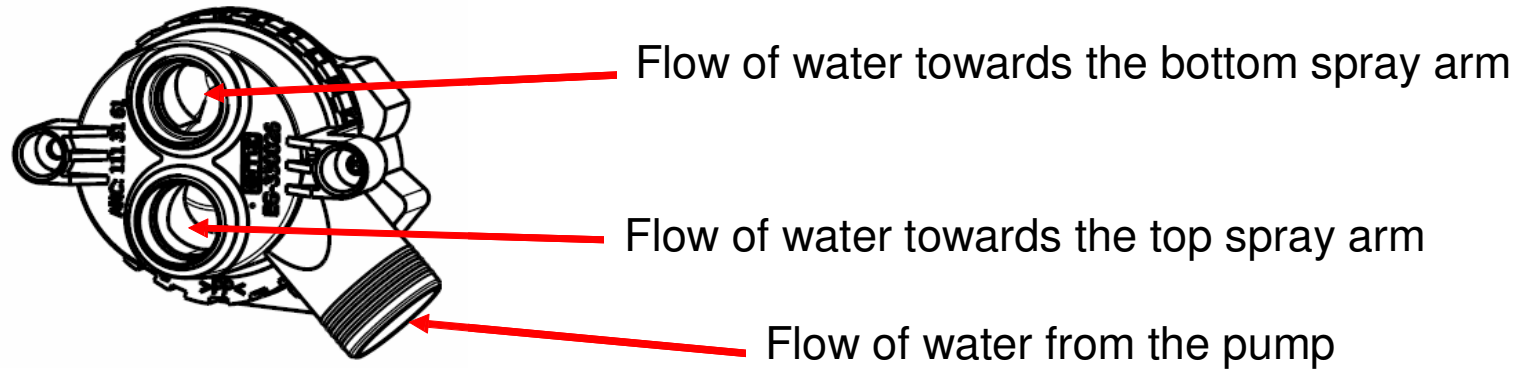


Separator with three holes to define different water flows

Micro-switch

The cam activates the micro-switch





ANC	111 31 61-00
SBP no.	111 31 87 - 00
T1 on	1.00 sec. +/- 0.35 (only upper)
T1 off	6.50 sec. +/- 0.35 <b>Contact open</b>
T2 on	5.50 sec. +/- 0.35 (only lower)
T2 off	3.00 sec. +/- 0.35 <b>Contact open</b>
T3 on	3.00 sec. +/- 0.35 (upper and lower)
T3 off	5.00 sec. +/- 0.35 <b>Contact open</b>
Water leakage at 0.3 Bar	1.2 litre/min. (only upper)
Water leakage at 0.3 Bar	2.0 litre/min. (only lower)
Rated voltage	220/240 VAC - 50 Hz
Connection	RAST2.5 housing, suitable for RAST2.5 connector R2.5/2-3cdef
Current at switch	0.5 ... 1 mA
Contract resistance	< 1 KOhm (measure with 3 V/10 mA)

## 10.10 Detergent dispenser

### Caution:

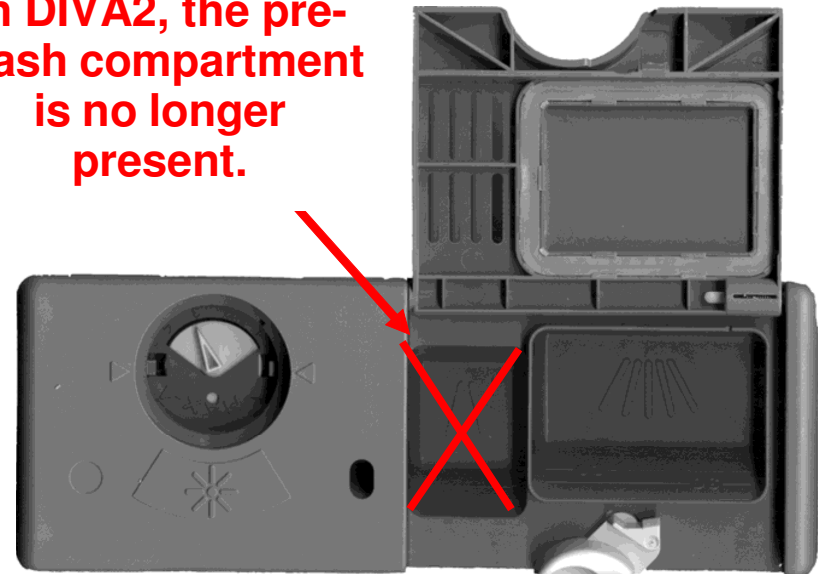
If the dishwasher is turned off after the detergent dispenser was opened, the latter needs to be closed manually.

This should also be done in service mode.

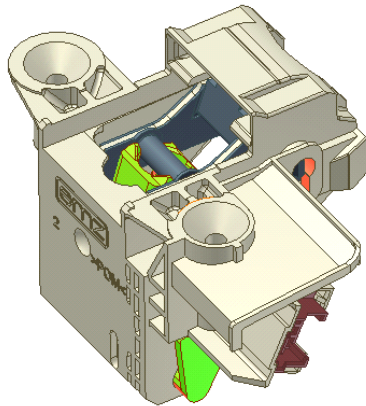
Otherwise the sequence will be modified.

The dispenser can only be closed when the dispenser coil has cooled.

In DIVA2, the pre-wash compartment is no longer present.

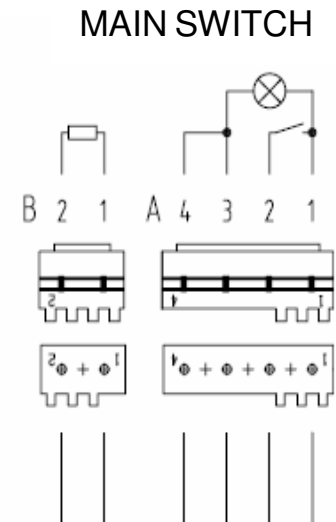
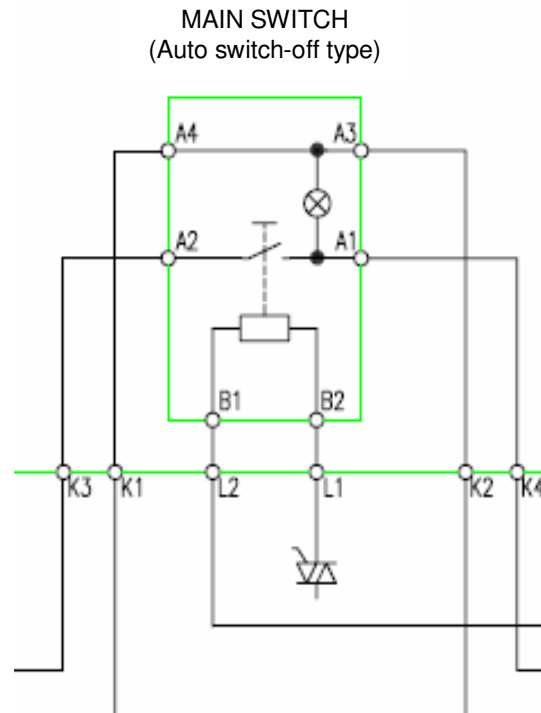
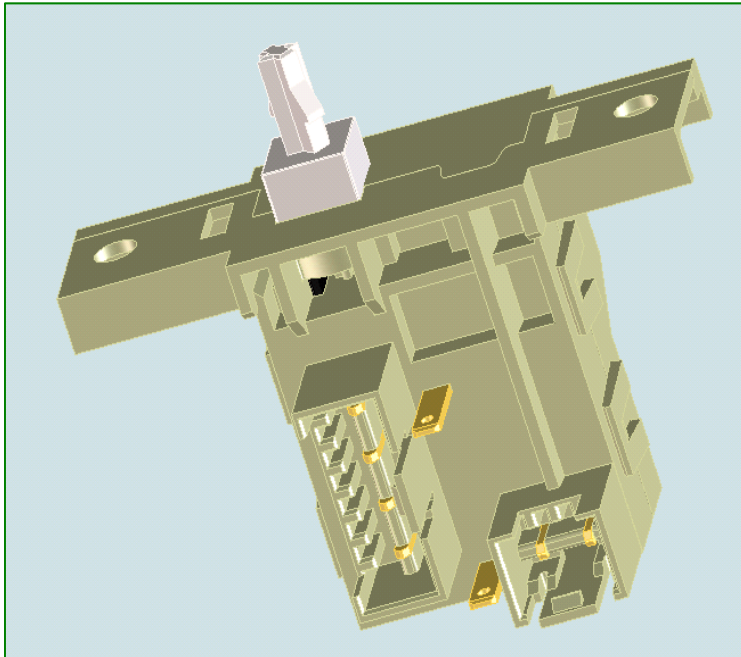


## 10.11 Traditional door



The door lock is guaranteed by a mechanical latch. The system is also connected to the main electronic board by a micro-switch at **12 V**, which detects the status of the door. This means that the micro-switch does not disconnect the appliance from the mains voltage when the door is open.

## 10.12 ON/OFF Switch



### Objectives:

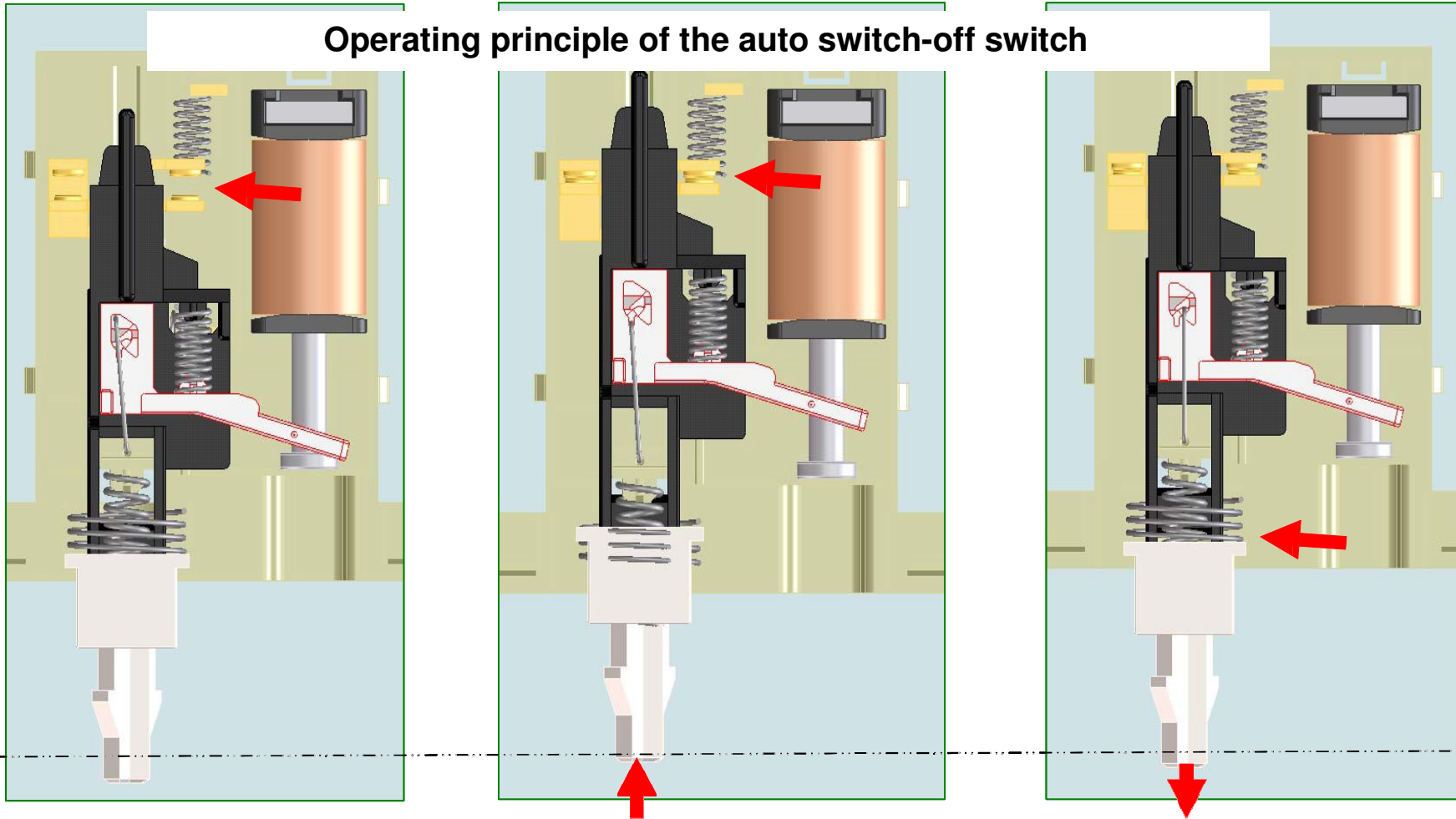
- remove all electricity consumption at the end of each cycle
- cost benefits for use of a standard switch
- possible use in all Diva2 electronic platforms in FS/BI/FI structures

OFF

MAX TRAVEL

ON

Operating principle of the auto switch-off switch

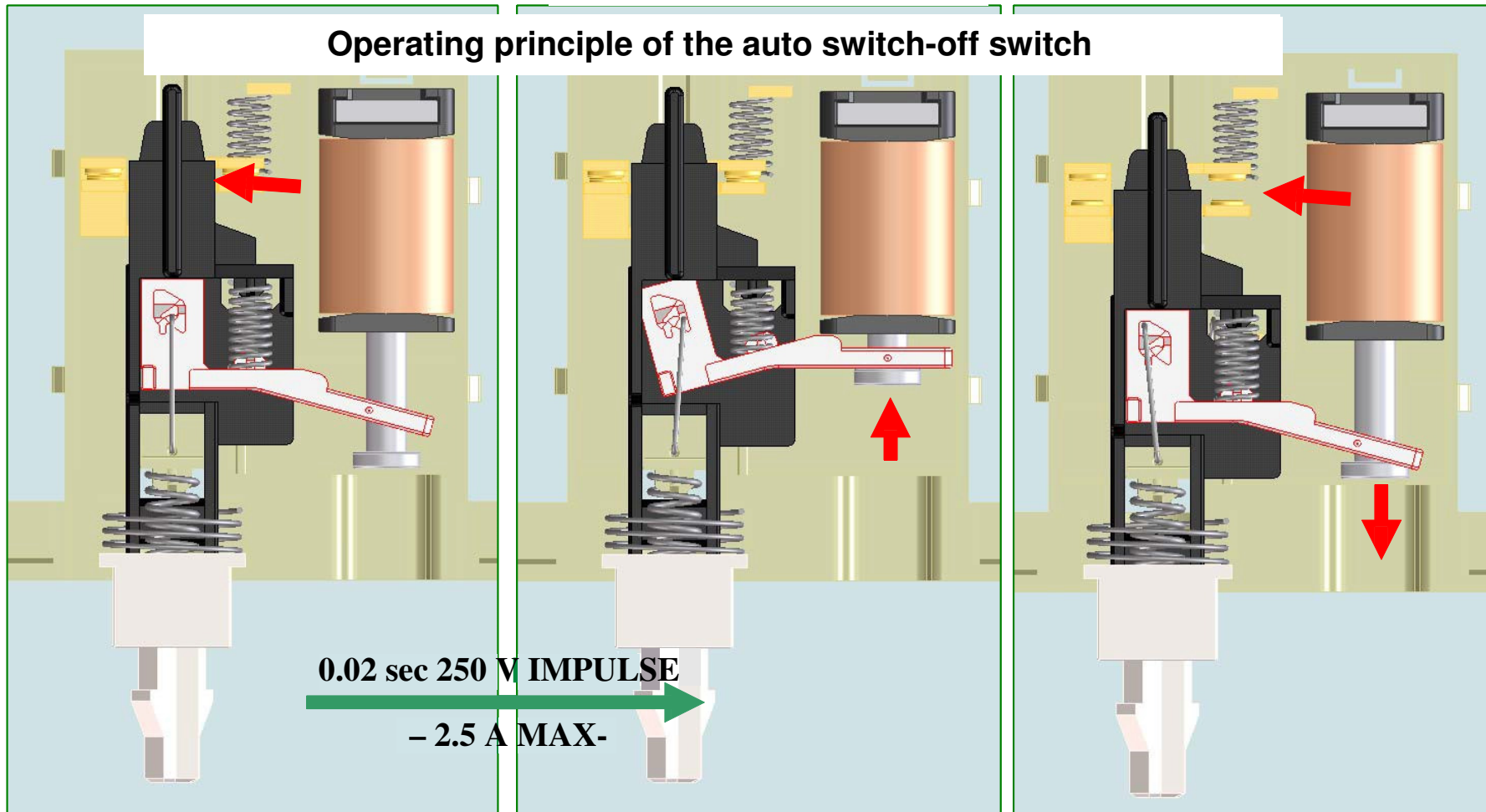


**ON**

**UNLOCKING**

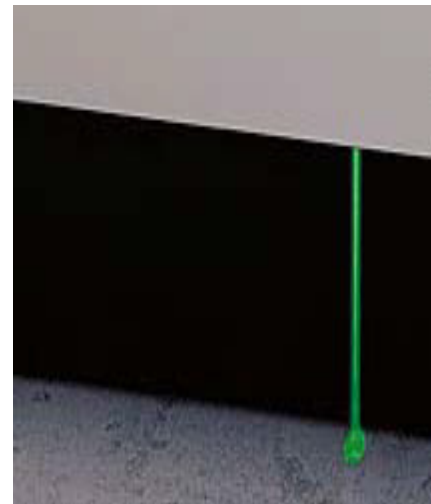
**OFF**

**Operating principle of the auto switch-off switch**



### 10.13 Beam-on-Floor

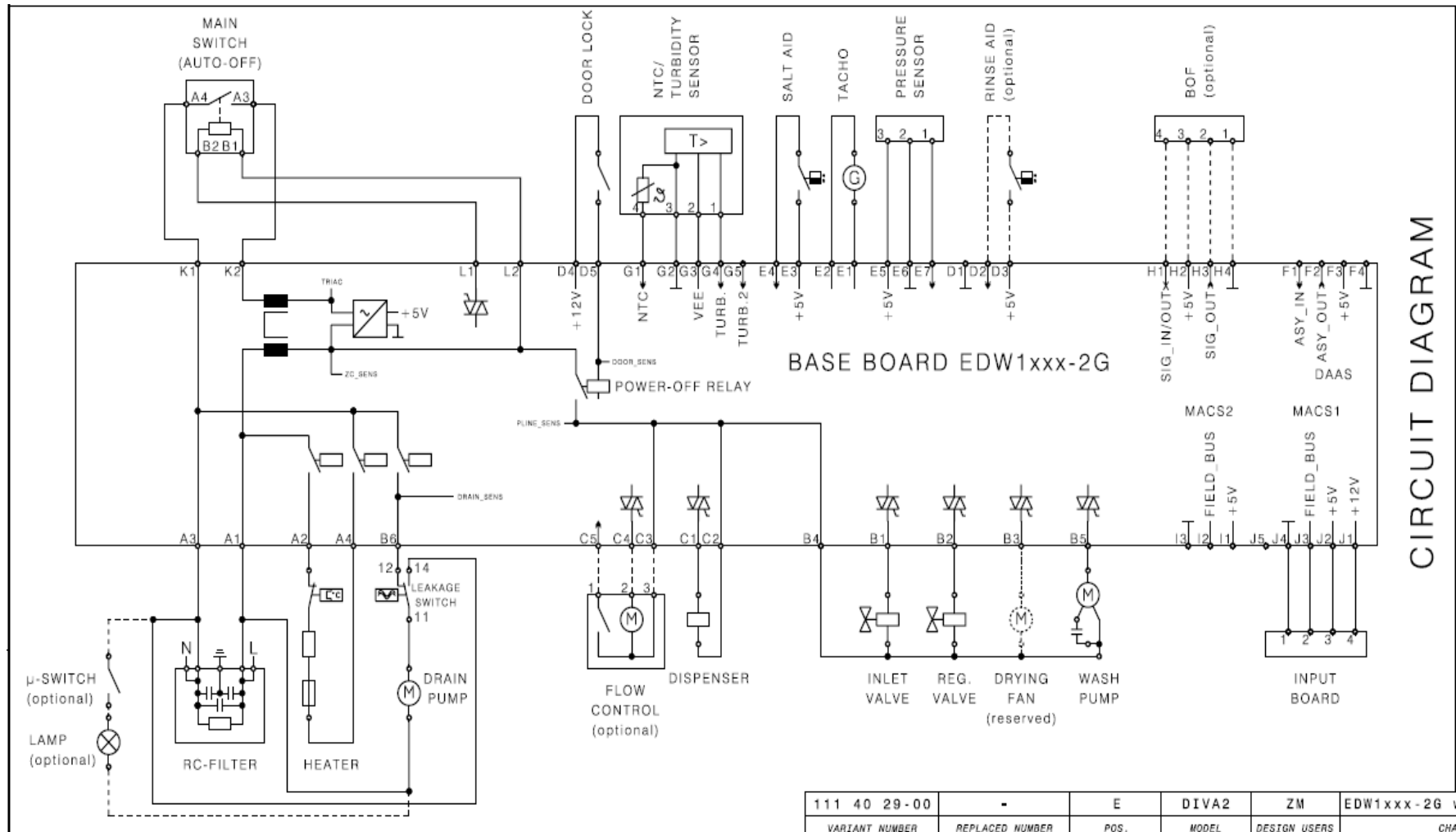
Beam on Floor (DIVA2): envisaged in two colours and with 3-digit display



Red: cycle in progress  
Green: cycle ended

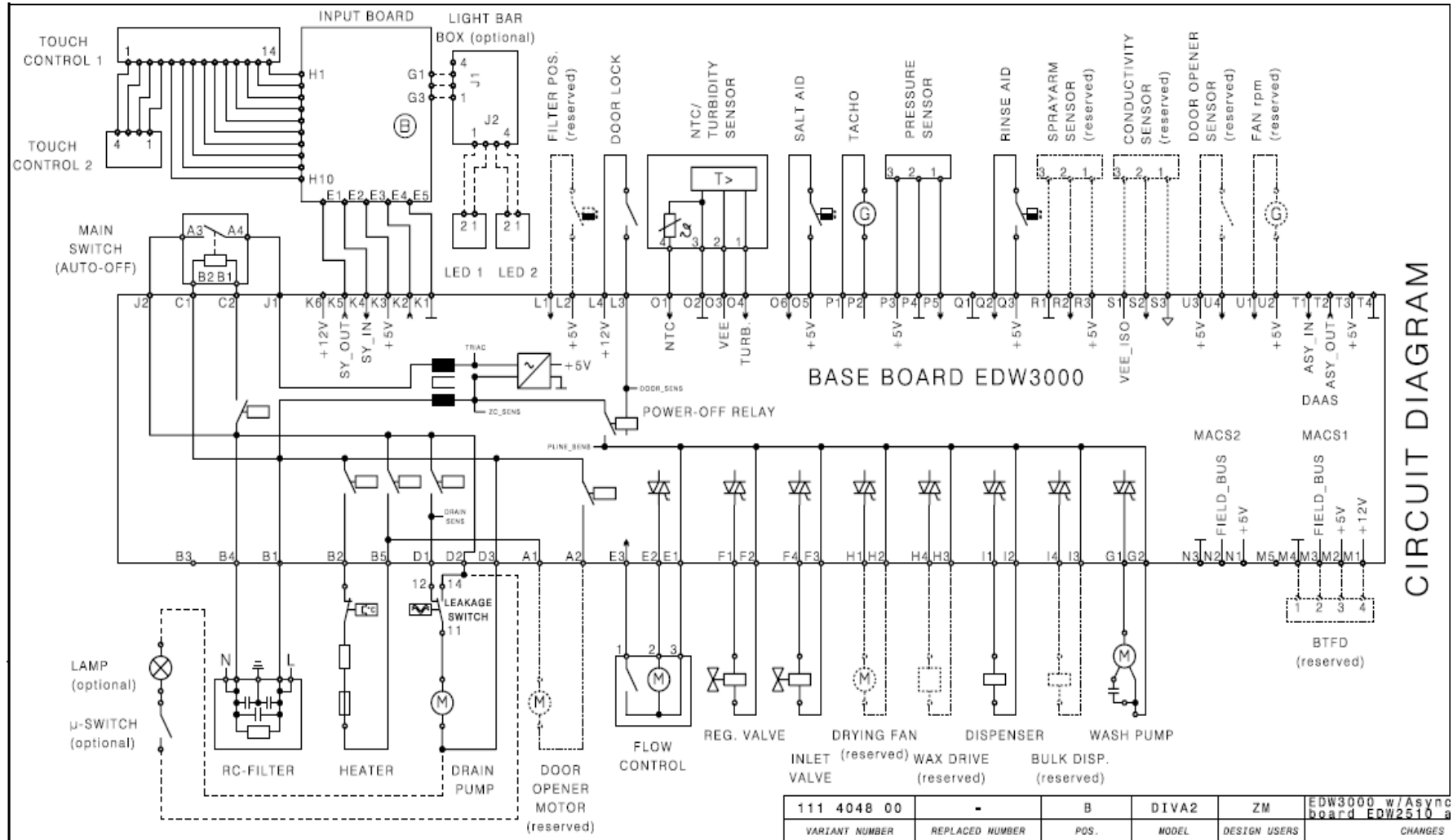
The three digits indicate the time left until the end of the cycle in progress; the colour projected can be changed according to the type of floor.

### 10.14 EDW1xxx-2G operating diagram

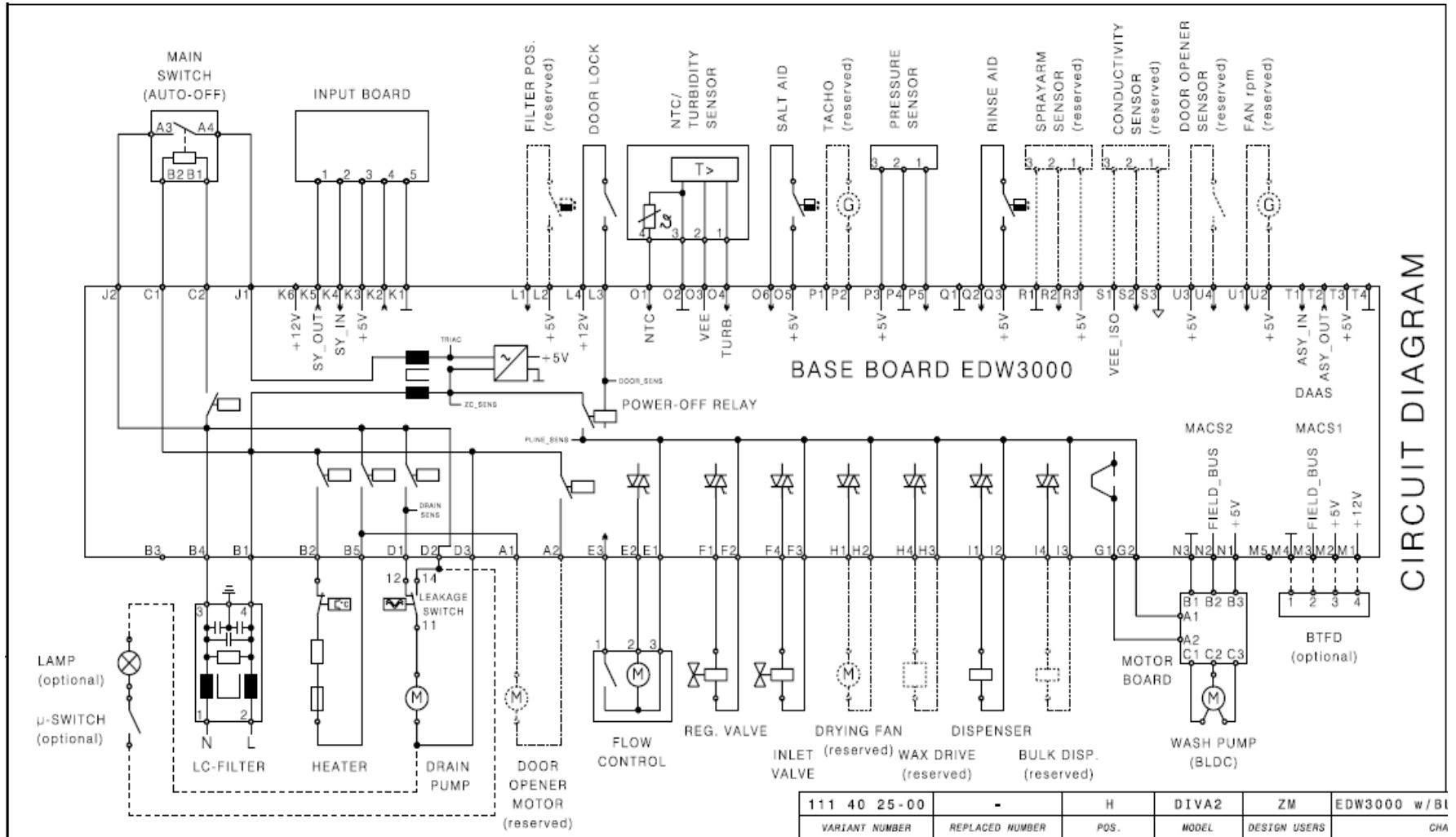




### 10.15 EDW3000 operating diagram (single-phase motor)



10.16 EDW3000 operating diagram (three-phase Inverter motor)



### 10.17 Components check for AC motor

PARTS	LEAD CONNECTIONS		CORRECT VALUE	REMARKS
POWER CABLE	A1	L	0 Ω	
	A3	N	0 Ω	
ON/OFF SWITCH	K1	K2	0 Ω	
AUTO OFF COMMAND	L1	L2	250 VOLT	Activation
			130 Ω ± 8 %	DH off
Heating ELEMENT + Safety THERMOSTAT	A2	A4	25 Ω ± 8 %	Serial connection 1900 W
DOOR SWITCH	D4	D5	0 Ω	Door closed
DISPENSER	C1	C2	3900 Ω ± 8 %	
RINSE AID SENSOR	D2	D3	0 Ω	Without Rinse Aid
			INFINITE	With Rinse Aid
SALT SENSOR	E4	E3	0 Ω	Without Salt
			INFINITE	With Salt
TEMPERATURE SENSOR	G2	G1	4850 Ω ± 5 %	25 °C
			1205 Ω ± 5 %	60 °C
TACHO SENSOR	E1	E2	220 Ω ± 8 %	The motor has stopped
REGENERATING solenoid valve	B4	B2	3800 Ω ± 8 %	
FILL solenoid valve	B4	B1	4200 Ω ± 8 %	Solenoid valve in fill tube
			3500 Ω ± 8 %	Solenoid valve in base
WASHING MOTOR	B4	B5	100 Ω ± 8 %	AC Motor
DRAIN MOTOR + Anti-flooding	B6	A1	230 Ω ± 8 %	Serial connection
FLOW CONTROL	C3	C4	10400 Ω ± 8 %	Motor
	C3	C5	0/INFINITE	Micro-switch