

# Electronic Control Specifications

REV.	CHANGE	DATE
00	First Version	11/2009

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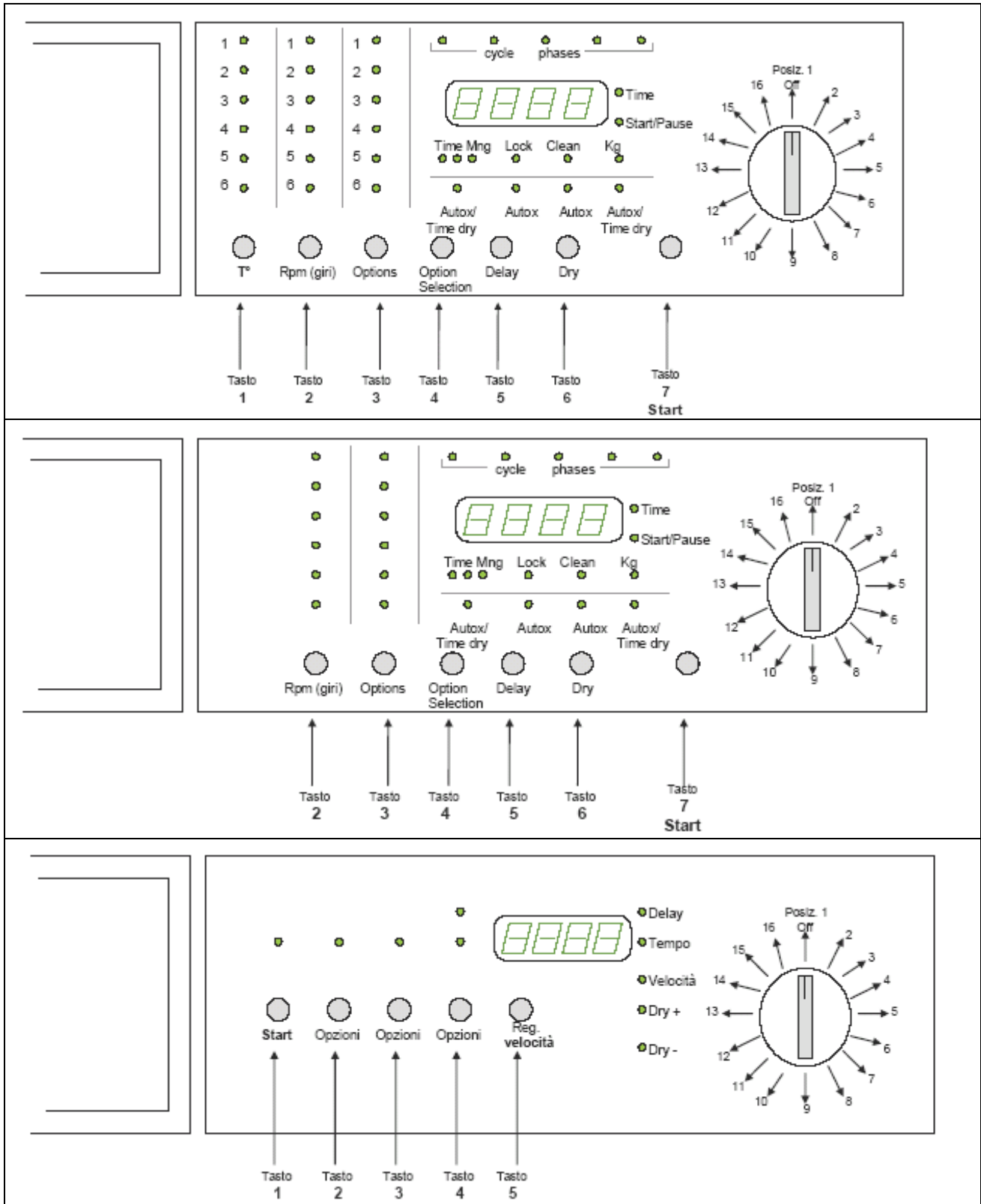
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**1- ERROR CODES**

<b>ALARM</b>	<b>CAUSE</b>	
<b>OPEN</b>	The door has not been closed properly.	
<b>E01</b>	The display shows the intervention of the water leak safety device.	
<b>E02</b>	Overflow protection system intervention (except in a wash programme)	
<b>E04</b>	Water temperature probe short-circuited or cut off.	
<b>E05</b>	When filling with water, if the pressure switch does not register full with 6 minutes, this error is displayed.	
<b>E06</b>	When draining, if the water is not emptied within 12 minutes, this error is displayed.	
<b>E10</b>	Motor overcurrent.	
<b>E11</b>	Motor control triac malfunction (short circuit / cut off)	
<b>E12</b>	Tachometric malfunction signal	
<b>E13</b>	Door lock PTC malfunction. Possible causes: -short circuit heating element -short circuit drying heating element -faulty electronic board	
<b>E14</b>	Air duct outlet NTC in open or short-circuit	
<b>E20</b>	Overtemperature during drying (>105°C)	
<b>E16</b>	Humidity sensor board malfunction / Flat connecting cable fault	
<b>E17</b>	Humidity sensor malfunction	
<b>E25</b>	Air temperature NTC in open or short circuit	- replace the relative NTC's or - replace the circuit board or - check the relative connections.
<b>E26</b>	Condenser NTC in open or short circuit	- replace the relative NTC's or - replace the circuit board or - check the relative connections.

## 2. TEST CYCLE PROCEDURE

### 2.1 Control panel configuration (according to model):



## 2.2. Automatic test cycle

The automatic test cycle allows each component to be checked by means of a predefined sequence of buttons, as described below.

**Note: If the appliance is switched off, the test cycle is cancelled.**

**1-** Setting: Connect the appliance to the water and electricity supplies

Turn the programme knob to position **9**.

Main power supply board off

Door closed

**2-** Keeping button n° 2 pressed, switch on the power to the board (test cycle condition 0)

**3-** After switching on, the operator has **30 seconds** in which to set the test cycle (condition 1) which must be as follows:

button number **3** must be pressed **4 times in sequence**.

At the start of the test cycle, all the leds must light up to indicate that the cycle has been started and that all the indicator lights are working.

**The test cycle must then be confirmed within 20 seconds** by pressing the START button (for appliances with a display, wait until the speed and remaining time appear on the display before pressing the button).

The display shows: **Auto Test**

**4-** Within a few seconds, the appliance will start to fill with water through the prewash valve (\*)

**5-** Press button n° 2 once and the appliance will start to fill through the wash valve (\*)

**5-** Press button n° 2 once and the appliance will start to fill through the wash valve and at the same time through the hot water valve. The appliance will remain in this condition for at least 8 seconds even if the button is pressed to pass to the next fill phase, which is through the wash valve only (\*)

**6-** Press button n° 2 once and the appliance will complete the filling through the wash valve. When the full level is reached, the motor will start to rotate clockwise.

**7-** Press button n° 2 once and the appliance will start to fill through the bleach valve (\*) If the operator does not proceed to the next phase, the bleach valve must close after 90 seconds.

**8-** Press button n° 2 once and the appliance will load the softener (prewash valve and wash valve simultaneously). The motor rotates anticlockwise. If the operator does not proceed to the next phase, the prewash and wash valves must be closed after 90 seconds.

**9-** (On versions with DRYER incorporated) Press button n° 2 once and the appliance will activate the condensation valve. If the operator does not proceed to the next phase, the condensation valve must be closed after 90 seconds.

**10-** Press button n° 2 once and the appliance will start rotating, with an immediate ramp, at 300 rpm for 10 minutes.

After the 10 minute period, the appliance will start to heat up and the motor will rotate at the “D54” rate (15 seconds on, 5 seconds off). To exit the heating phase, place the selector in a different position. If the operator does not proceed to the next phase, the heater element must be switched off once a temperature of 85°C has been reached (or after a maximum of 90 minutes). Before exiting the heating phase, allow the appliance to work for at least 5 rotation cycles in order to be able to check for any leaks.

**11-** Close the water supply tap, disconnect the fill hose and position it, without siphoning and with the tap connector, in the water collection basin of the test station.

**12-** Press button n° 2 once, the appliance opens the water drain valves (emptying residual water into the solenoid valve collector), starts draining and once the pressure switch vacuum set point is reached, starts the test spin: 20 second ramp up to 100 rpm + 10 seconds at 500 rpm + 240 seconds at maximum speed. Press the spin speed button to check the speed reduction. To exit the spin phase, place the relative button in the “no spin” position.

If the appliance is fitted with a humidity sensor, wait 5-6 seconds after the motor stops before starting the dryer tests.

When the test cycle is complete, all the components are switched off and the end of cycle led lights up (basic models) or the word "end" is displayed on higher range models.

Place the programme selector on zero.

Switch off the appliance

### **Appliances with incorporated dryer**

On appliances with incorporated dryer, the test cycle continues with the following tests:

**13-** After switching on, the operator has **30 seconds** in which to set the test cycle (condition 1) which must be as follows: button number 3 must be pressed 4 times in sequence.

At the start of the test cycle, all the leds must light up to confirm that the cycle has been started and that all the indicator lights are working.

The test cycle must then be confirmed within 20 seconds by pressing the START button (for appliances with a display, wait until the speed and remaining time appear on the display before pressing the button).

Dryer version appliances with sensor operate the following sequences:

Motor rotation at 50 rpm for 5 seconds, rotation at 200 rpm for 5 seconds and rotation at 50 rpm for a further 10 seconds, after which, if there are no anomalies on sensor (E16/E17), the appliance continues with the cycle.

**14-** Press button n° 2 once to start the fan.

**15-** Press button n° 2 once to start the dryer heater element together with the fan.

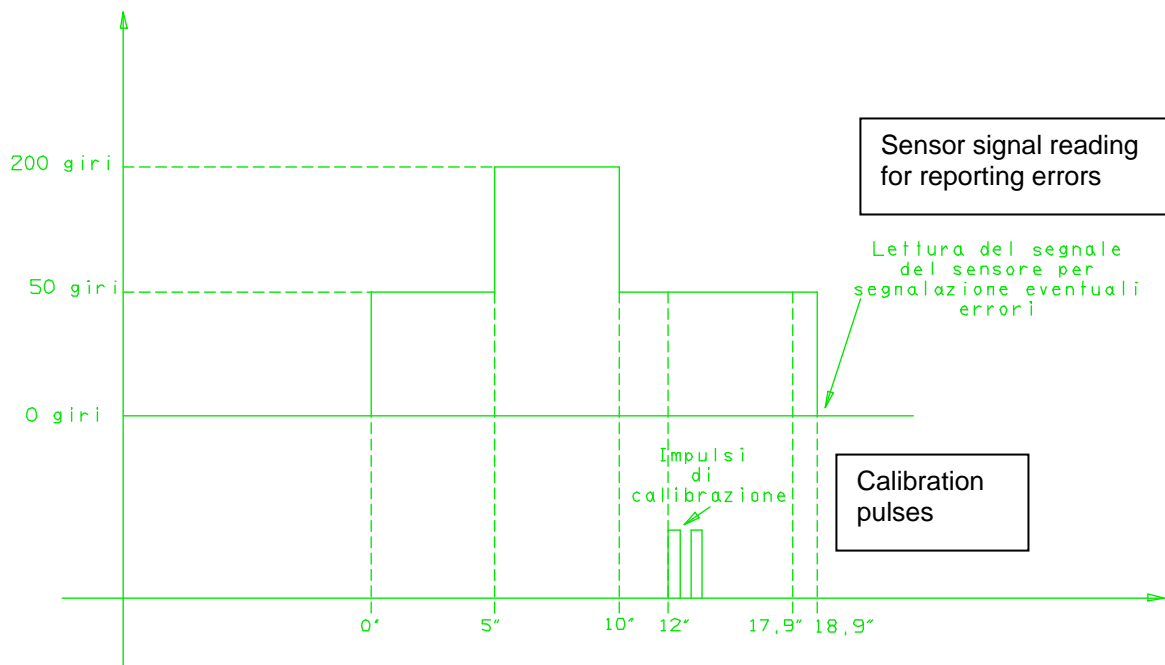
**16-** Press button n° 2 to terminate the cycle.

### Appliances with Acquastop

For appliances equipped with a drain pump, during test 9) activate the pump for a few seconds to check its operation.

**N.B. The appliance will reset if the start button is kept pressed for 5 seconds**

(\*) If the pressure switch set point is reached during these phases, the appliance will pass directly to phase 7.



### 2.3. Manual test cycle

**Note: The manual test cycle is used for appliances produced as from 16/09/2009.**

The manual test cycle allows each component to be checked according to the position of the programme selector, as described below.

**Note: If the appliance is switched off, the test cycle is cancelled.**

**1- Setting:** Connect the appliance to the water and electricity supplies  
 Turn the programme knob to position **8**.  
 Main power supply board off  
 Door closed

**2-Keeping** button n° 2 pressed, switch on the power to the board (test cycle condition 0)

**3- After** switching on, the operator has **30 seconds** in which to set the test cycle (condition 1) which must be as follows:

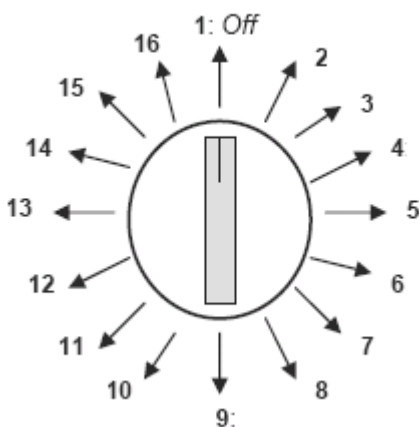
button number must be pressed **4 times in sequence**.

At the start of the test cycle, all the leds must light up to confirm that the cycle has been started and that all the indicator lights are working.

**The test cycle must then be confirmed within 20 seconds** by pressing the START button (for appliances with a display, wait until the speed and remaining time appear on the display before pressing the button).

The display shows: **Manu Test**.

**4-** It is now possible to activate and deactivate each individual component by rotating the programme knob to the positions indicated below:



- 1- off position
- 2- start-up button led flashing, no information on the display
- 3- start-up button led flashing, no information on the display
- 4- drain pump, rinse phase led, pressure switch
- 5- water heater, wash phase led, water temperature
- 6- condenser valve, drying phase led, pressure switch status
- 7- prewash and main wash valves, rinse phase led, pressure switch status
- 8- main wash valve, wash phase led, pressure switch status
- 9- prewash valve, prewash phase led, pressure switch status
- 10- buzzer, 2 second sequence for each sound
- 11- analogue pressure sensor value (where present)
- 12- error list, 2 second sequence for each error type
- 13- motor fan and dryer heater element, drying phase led, air temperature
- 14- motor rotation left – 54 rpm, wash phase led, rpm value
- 15- motor rotation right – 54 rpm, wash phase led, rpm value
- 16- spin, increase to max rpm, spin phase led, rpm value