Error Codes

The following failures will only be indicated, when the relevant component is installed.

F0 or 10 times flashing.
Sensor failure (only when a optical sensor is installed)
Reaction:
The program will finish even if this failure is present. The Failure is indicated **only in** the active test program after 10 – 30 seconds. The active test program will finish as well, even with this failure F0.

If the failure appears in a sensor program, the machine will always choose the highest consumption (best cleaning result). It will not be indicated to the customer.
Symptom:
- Customer claims about permanent too long cycles

Reason:
- The sensor is dirty => clean OWI
- Connection between sensor and control board (CB) interrupted => check the wiring
- Defective electronic of the sensor => change OWI
- Optoelectronic parts in the sensor defect => change OWI

Attention: To calibrate the OWI you HAVE TO run the active test program
The failure code will not be stored.
There are two different OWI´s installed and **not** interchangeable.

F1 or 1 time flashing.
NTC break
Symptom:
- Temperature out of the normal value (-3°C till +85°C)

Reason:
- Temperature inside higher than +85°C => check temp. of the incoming water
- NTC defective resistor, short or open circuit => measure the resistor 50 kΩ normally
- Dishwasher is frozen, less than -3°C => Over night in cold environment?

(If the temperature is less than -3°C, fill the appliance with a cup of warm water to warm it up before you start it.)
Reaction:
- Cycle stops, drain pump drains out, failure indication

F2 or 2 times flashing.
Water Leakage
Symptom:
- Water is in the drip tray

Reason:
- Floater (LS6) switches off the Water Inlet Valve (WV1) and the electronic switches on the Drain Pump Motor until Water Indicator reports that the Sump is empty.
- Leakage on the sump, softener, regeneration dosage, tub

Reaction:
- Cycle stops, drain pump drains out, failure indication

F3 or 3 times flashing.
Heating System Defective
Symptom:
- Poor cleaning results
- Poor drying results

Reason:
- Heats too slowly (less than 1,5 °C in 10 min.)
- Heating (HEW) defective (circuit open or to earth) => measure between the connection ca. 25 Ω of the heater plus to the metal cover (over 500kΩ)
- Relay (RE2) on control board (CB) is defective => check if the output of the CB has ca.230V
- NTC - resistance fluctuation => exchange NTC

Indicated after app. 25 minutes (after 5 min. 1st. check after that 2 additional checks, before the failure will be indicated)

Reaction:
- Cycle stops, drain pump drains out, failure indication

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Error Codes

F4 or 4 times flashing.
Draining Failure

Symptom:
- Drain pump starts and after 4 min. the WI detects sump "not empty"
- Without WI/OWI the electronic detects a deviation of the motor current consumption.

Reason:
- Outlet hose wrong installed => check the hose and lay it correct (Installation guide)
- Outlet hose squeezed / blocked => check the hose and lay it correct (Installation guide)
- Drain pump (DPM) defective => check the solenoid ca. 150Ω
- Siphon closed => clean & unblock the outlet part
- Control board (CB) defective => check the root cause part then exchange CB
- WI defective (doesn't switch) => clean then exchange

Reaction:
- Cycle stops, drain pump drains out, failure indication

F5 or 5 times flashing.
Variable Speed Motor Failure

Reason:
- Connection between Spray pump (Variable Speed Motor) and control board interrupted.
- Frequency converter on Spray pump broken or control board defective.
  => Check the power voltage on the motor. BUS: 5V DC Motor: 230V AC

Reaction:
- Cycle stops, drain pump drains out, failure indication

F5 or 5 times flashing.
SPM Blocked (MPH motor unit)

Failure condition:
- This failure is only indicated during the active test program
- The electronic detects an irregular deviation of the motor current consumption.

Reason:
- Spray Pump blocked => check pump housing
- Short circuit in motor or wiring => check motor values

Reaction:
- After 5 attempts to reactivate the spray pump motor the cycle stops, drain pump drains out, failure indication

F6 or 6 times flashing.
Water Tap Closed

Symptom:
- Water inlet valve (WV1) is switched on but flow meter (FM) sends no pulses (less than 10 imp. in 10 sec.) and the water indicator (WI) is off (empty)

Reason:
- Water tap closed => open tap
- Water inlet hose blocked => unblock sieve / exchange hose
- Water inlet valve (WV1) defective => measure resistor ca. 3,5kΩ
- Flow meter (FM) defective (count wrong) => exchange flow meter in the reg. dosage

Reaction:
- Opening the water tap within the first 30 sec. of the program cycle resets the failure F6. After more than 30 sec. water inlet valve (WV1) will close due to safety reasons.

Error Codes

F7 or 7 times flashing.
Flow Meter Failure
Symptom:

- Water inlet valve (WV1) is switched on and the water indicator (WI) is on (level reached).

Reason:

- Water tap closed during water inlet => open tap
- Water inlet hose blocked => clean sieve
- Water inlet valve (WV1) defective => measure resistor ca. 3,5kΩ
- Flow meter (FM) sends too few/ much pulses (less than 10 imp. in 10 sec.)
  => Flowmeter counts wrong (or the sump is full in less than 30 sec. Causation: Hose felt down and slipped the disc of the valve. The effect is a displacement of the valve tappet)
  => Aquastop defective
- Aquastop defective => exchange hose
- Flow meter (FM) defective => exchange Flowmeter

Reaction:

- Cycle stops, drain pump drains out, failure indication

F8 or 8 times flashing.
Water Level Failure.
Symptom:

- Foam in the tub / soiled sieve

Reason:

- WI / OWI defect? Should switch on after approx. 1lt. => exchange WI / OWI
- Sieve blocked => clean sieve
- Water strongly foams => poured rinse aid foam under 42°C very strong
- e.g. Pot is turned and is filled with water => advice customer
- No stable spray pump (SPM) working => clean dirty spray arm
  => check the impeller of the pump

Failure condition:
Failures will be indicated over the whole program and appear when:

WI (mech.): the WI switches too often, more than 20 times in 2 minutes.

OWI: The permanent OWI-Signal is missing, after the second measuring for 5 sec. If after the 2nd measuring the OWI-Signal is not present, then it shows the Failure F8.

VWI: The Spray Pump Motor measures permanently the water level. When the water level decrease the motor current will diminish and the control board indicates the failure F8.

Reaction:

- Cycle stops, drain pump drains out, failure indication

F9 or 9 times flashing.
Continuous Water Inlet
Symptom:

- Water inlet valve (WV1) is switched off, water indicator (WI) on, flow meter (FM) sends impulses (more than 10 imp. in 10 sec.)

Reason:

- Water inlet valve (WV1) mechanically not closed => measure resistor ca. 3,5kΩ
- Triac (CB) permanently switched on. (short circuit) => check solenoid resistance of valve then exchange CB

Reaction:

- Cycle stops , failure indication, drain pump drain out until sump is empty.
  When the level of 1,5 lt. is reached, the drain pump runs again.

Error Codes

FA or 11 times flashing.
OWI (Optical Water Indicator) – Failure

Symptom:

- After the flow meter counts 3,4 lt. on permanent washing system or 2,5 lt. on alternating washing system the control board expects a signal from the OWI. The machine try to clean the lens by: Water inlet off for 30 Sec and SPM on for 30 Sec. If the OWI doesn't send the signal "Water in sump" after two checks, the appliance goes into failure mode FA.

Failure condition:

- The Control Board receives no signal

Reason:

- The sensor is dirty (90%) => Lens of the OWI shall be cleaned
- Connection between sensor and control board (CB) interrupted => check the wiring
- Defective electronic of the sensor => change OWI
- Optoelectronic parts in the sensor defect => change OWI

Attention: To calibrate the OWI you HAVE TO run the active test program
The failure code will not be stored.
There are two different OWI´s installed and **not backwards** interchangeable.

Reaction:

- Cycle stops, drain pump drains out, failure indication

FA or 11 times flashing.
WI Failure

Failure condition:

- If the electronic signal of the Flow meter has been received for the 3.4 lt. of water on permanent washing system and the WI signal "Water in the sump" is missing, then the failure occurs.
- The WI needs a level of 1,5 lt. water to react.

Reason:

- Micro switch of the WI defective => measure the switch with an multimeter
- Weak contact => check contact, then exchange WI
- Wiring defective/ interrupted => check wiring and repair it

Reaction:

- Cycle stops, drain pump drains out, failure indication

FB or 12 times flashing.
MDV (Motor Diverter Valve) – Failure

Failure condition:

- The MDV has an inbuilt micro switch. The switch informs the CB about the position of the valve. If after 120 sec. the CB doesn't detect an impulse from MDV, the failure FB will be indicated.

Check:

- Do the upper and lower spray arms alternating in approx. 30-40 sec.?
  If only one turns, then there is a failure. => Check further:
- Is the diverter disc in the sump blocked? Yes. => Unblock it.
- Does 230V come from the control board (ZW,DVH) to the MDV? No.
  => Exchange control board. How to check:
  Start test program and wait until back rinse is over. After the start of the regular water-inlet there have to be 230V within 30 sec. for approx. 20 sec. at the MDV.
- Is the signal cable between the MDV and control board (SAB,DVL) carrying 5V?
- Is the solenoid of the MDV or cable to the MDV interrupted? (ZW,DVH) resistance of the MDV should be approx. 6,5 KW

Reaction: Cycle stops, drain pump drains out, failure indication

Error Codes

FC or 13 times flashing.
ASA (Automatic Salt Adaptation)/ Water hardness sensor Failure
(only indicated in the active test program)

Failure condition:
- Electronic on the water softener detects high electrical resistance in the resin.
- The CB detect a fault in the softener.

Reason:
- Cables on the sensors of the water softener interrupted or weak contact. => correct it
- Cables from the control board (ASA) to the electronic at the water softener interrupted or weak contact. => check and correct wiring
- Electronic of water softener defective. => exchange Softener

Reaction:
- Cycle stops, drain pump drains out, failure indication

FD or 14 times flashing.
Failure on the big green LCD display

Failure condition:
- This failure will be indicated when the wiring between LCD display and control board is faulty

FE or 15 times flashing.
EEPROM Failure

Failure condition:
- After the start of the test program the EEPROM is immediately checked for errors and an error is displayed if any are found.

Reason:
- The control board software has an error. => Reprogram the control board, when ineffective exchange the CB

Reaction:
- Cycle stops, drain pump drains out, failure indication

FF or 16 times flashing.
VWI Failure (Motor characteristic Water Indication) MPH motor unit

Failure condition:
- The failure occurs during permanent motor measurement, when the wiring is interrupted.

Reason:
- Motor defective => check and exchange motor of MPH unit
- Weak contacts => check with multimeter and correct it
- Wiring interrupted => check with multimeter and correct it

Reaction:
- Cycle stops, drain pump drains out, failure indication

No F Codes but can be defective

Appliance jumps to end of program	MPH motor blocked. Start the test program to get the conformation with F5.

Ventilator Fan	ca. 140 Ω
Regeneration Valve	ca. 3,2 kΩ
Dispenser Unit Valve	ca. 1,3 k Ω
Capacitor of the SPM	ca. 2-6 µF
Resistor of the mech. Water Hardness Setting	ca. 2-24 k Ω