4

SPECTRA S AND X

EN

Troubleshooting

Document Number: TD-104406/0 Order Number: 1H329021/0

Read the safety information chapter before working on the machines.

COFFEE
SYSTEMS

FRANKE

Change log

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Table of contents

I. Explanation of symbols 2

II. For your safety 3

III. Machine error codes 4

IV. Troubleshooting 17

1. Machine restart 17
2. Quick error resolution 17

V. Output ports 18

VI. Input ports 19

Order Number: 1H329021/0

Document Number: TD-104406/0

I. Explanation of symbols

⚠ DANGER — DANGER indicates potentially life-threatening danger or the danger of grave injuries.

⚠ WARNING — WARNING indicates risk of injury.

⚠ CAUTION — CAUTION directs your attention to a danger of minor injuries.

NOTICE — NOTE directs your attention to the risk of damage to machinery.

Tips shortcuts and additional information

Prerequisites for additional steps

Information on materials and tools with information on usage (torque, etc.) as applicable

▸ Action required

Numbering of the steps

II. For your safety

These service instructions have been created exclusively for Franke service technicians and authorized partners. They will enable service technicians to perform their tasks on the coffee machine and its add-on units. These tasks include commissioning, programming, maintenance work, troubleshooting and product settings.

⚠ WARNING

Danger of injury and of damage to the machine

Changes implemented during the course of retrofits or repairs on the machine, if carried out incorrectly, can lead to injuries or machine failure.

- Be sure to read the safety information in the Service folder.
- Programming and settings may only be undertaken by authorized service technicians.
- Modifications and repairs may only be undertaken by authorized service technicians.
- Do not make any modifications to the machine that are not described in the documentation provided by Franke.

Order Number: 1H329021/0
Document Number: TD-104406/0

III. Machine error codes

- If an error occurs when the machine is in operation, error messages are displayed on the display.
- The error code list provides solutions.
- Individual components (heating, brewing unit valves, etc.) can be checked using the respective test menu (input and output ports) *(see p. 18 and p. 19)*.
- As a matter of course, always restart the system first *(see p. 18)*.
- An event message is not displayed, but rather only recorded in the error history.
- The variable indicated in the column Meaning refers to the error history in Service Tool 3.

Unusual errors

Error code	Error text on the display	Meaning	Solution
2	**Door open**	The grounds container door is open. The current product is canceled. The grounds cake counter is reset to zero after 5 s. Variable: 24 V in [0.1 V] increments.	▶ Empty grounds container and close door. The grounds cake counter is reset to zero if the door is open for more than 5 s. ▶ Check the function of the magnetic switch with the help of the test menu, *see Section 6 - Programming, V. Programming, 9. Input ports, 9.18 Grounds container door switch, p. 122.* ▶ Check the coil of the main water valve (Y33) with the help of the test menu, *see Section 6 - Programming, V. Programming, 8. Output ports, 8.13 Y33 main water, p. 104.*
3	**Communication LP**	A connection could not be established with the power PCB within 1.5 s during start-up.	▶ Restart machine. ▶ Disconnect the machine for a minimum of 30 s from the mains. ▶ Check the ribbon cable connection between the power PCB (Connection X24) and the CPU (Connection X2).
6	**Old software SPLP**	The power PCB software is outdated. The required software version is displayed on the display.	▶ Update software (CSS).
7	**Ext. flash SW**	The external memory software is outdated.	▶ Update the software on the external drive (CSS).
8	**Internal CAN**	Internal communication error on the CAN bus. Signal transmission is taking longer than 800 ms (normal transmission time: 20 – 40 ms)	▶ Restart machine. ▶ Check the ribbon cable connection between the power PCB (Connection X24) and the CPU (Connection X2).
9	*No text shown on the display*	Due to an error, the power PCB has been reset. An entry in the error log occurs.	Automatic restart

Boiler heating errors

Error code	Error text on the display	Meaning	Solution
14	**Temperature sensor**	The temperature sensor of boiler 2 (X15) has a short circuit. Spectra S: Hot water/steam boiler Spectra X: Coffee boiler	▶ Check the connection cable and connection plug. ▶ Check the temperature sensor and replace it, if necessary. ▶ Restart machine.
15	**Temperature sensor**	The temperature sensor of boiler 2 (X15) has a short circuit. Spectra S: Hot water/steam boiler Spectra X: Coffee boiler	▶ Check the connection cable and connection plug. ▶ Check the temperature sensor and replace it, if necessary. ▶ Restart machine.
16	**Temp. difference**	The temperature in boiler 2 is below the minimum value of 2 °C within a heating duration of 60°s. Spectra S: Hot water/steam boiler Spectra X: Coffee boiler Variable: Temperature in °C (actual value when the error occurred)	▶ Check the bimetallic thermal switch (Klixon) and replace it, if necessary. ▶ Check the electrical circuit. ▶ Check the temperature sensor and replace it, if necessary. ▶ Check the heater. ▶ Check the connections. ▶ Restart machine.
17	**Over temperature**	Boiler 2 temperature is greater than 150 °C or 25 °C above the target value indicated in the Install menu, *see Section 6 - Programming, V. Programming, 1. Machine, 1.7 Temperatures, p. 34*. Spectra S: Hot water/steam boiler Spectra X: Coffee boiler	▶ Check the temperature sensor and replace it, if necessary. ▶ Check the heater and replace it, if necessary. ▶ Check the connections. ▶ Restart machine. ▶ Check the Power PCB
18	**Temperature sensor**	The temperature sensor of boiler 1 (X16) has a short circuit. Spectra S: Coffee boiler Spectra X: Hot water boiler	▶ Check the bimetallic thermal switch (Klixon). ▶ Check the temperature sensor and replace it, if necessary. ▶ Check the connections. ▶ Restart machine.
19	**Temperature sensor**	The temperature sensor of boiler 1 (X16) is missing or has been interrupted. Spectra S: Coffee boiler Spectra X: Hot water boiler	▶ Check the temperature sensor and replace it, if necessary. ▶ Check the connection cable and connection plug. ▶ Restart machine.
20	**Temp. difference**	The temperature in boiler 1 is below the minimum value of 2 °C within a heating duration of 60°s. Spectra S: Coffee boiler Spectra X: Hot water boiler	▶ Check the bimetallic thermal switch (Klixon) and replace it, if necessary. ▶ Check the electrical circuit. ▶ Check the temperature sensor and replace it, if necessary. ▶ Check the heater and replace it, if necessary. ▶ Check the connections. ▶ Restart machine.

Order Number: 1H329021/0
Document Number: TD-104406/0

Error code	Error text on the display	Meaning	Solution
21	**Over temperature**	Boiler 1 temperature is greater than 150 °C or 25 °C above the target value indicated in the Install menu, *see Section 6 - Programming, V. Programming, 1. Machine, 1.7 Temperatures, p. 34*. Spectra S: Coffee boiler Spectra X: Optional hot water boiler	▶ Check the temperature sensor and replace it, if necessary. ▶ Check the Power PCB and replace it, if necessary. ▶ Check the heater and replace it, if necessary. ▶ Check the connections. ▶ Restart machine.
22	**Heater timeout**	Lower heater (H2) on boiler 2 has been switched on without interruption for too long. Spectra S: Hot water/steam heater; Timeout 12 min. Spectra X: Coffee heating; Timeout 10 min.	▶ Check the bimetallic thermal switch (Klixon). ▶ Check the power connection. ▶ Check the electrical circuit. ▶ Check the temperature sensor. ▶ Check the heater and replace it, if necessary. ▶ Restart machine.
23	**Heater timeout**	Upper heater on boiler 2 (H3) has been switched on without interruption for too long. Spectra S: Hot water/steam heater; Timeout 12 min. Spectra X: Coffee heating; Timeout 10 min.	▶ Check the bimetallic thermal switch (Klixon). ▶ Check the power connection. ▶ Check the electrical circuit. ▶ Check the temperature sensor. ▶ Check the heater and replace it, if necessary. ▶ Restart machine.
24	**Heater timeout**	Heater (H1) on boiler 1 has been switched on without interruption for too long. Spectra S: Coffee heating; Timeout 10 min. Spectra X: Hot water heating: Timeout 12 min.	▶ Check the bimetallic thermal switch (Klixon). ▶ Check the power connection. ▶ Check the electrical circuit. ▶ Check the temperature sensor. ▶ Check the heater and replace it, if necessary. ▶ Restart machine.
25	**Temperature sensor**	The temperature sensor for Autosteam (X1) has a short circuit. The current product is canceled.	▶ Check the temperature sensor and replace it, if necessary. ▶ Check the connections. ▶ Restart machine. ▶ Reselect the product.
26	**Temperature sensor**	The connection to the temperature sensor for Autosteam (X1) has been interrupted. The current product is canceled.	▶ Check the temperature sensor and replace it, if necessary. ▶ Check the connections. ▶ Restart machine. ▶ Reselect the product.
27	**Temperature sensor**	Spectra X: The temperature sensor for the storage container (X34.3 and X34.15) has a short circuit.	▶ Check the temperature sensor and replace it, if necessary. ▶ Restart machine.
28	**Temperature sensor**	Spectra X: The connection to the temperature sensor for the storage container (X34.3 and X34.15) has been interrupted.	▶ Check the temperature sensor and replace it, if necessary. ▶ Restart machine.

Error code	Error text on the display	Meaning	Solution
29	Over temperature	Spectra X: Storage container temperature is 20 °C above the target value indicated in the Install menu, *see Section 6 - Programming, V. Programming, 1. Machine, 1.9 Temperature store, p. 36*.	▶ Check the temperature sensor and replace it, if necessary. ▶ Check the heater. ▶ Check the connections. ▶ Restart machine.
30	Coffee post-heating	The heater for boiler 1 (H1) has not reached the target value within the prescribed time. Spectra S: Coffee heating; Timeout 6 min.	▶ Please wait. The error will be canceled once the target temperature is reached.
30	HW/S post-heating	The heater for boiler 1 (H1) has not reached the target value within the prescribed time. Spectra X: Hot water heating: Timeout 3 min.	▶ Please wait. The error will be canceled once the target temperature is reached.
31	HW/S post-heating	The heater for boiler 2 (H2/H3) has not reached the target value within the prescribed time. Spectra S: Hot water/steam heater; Timeout 3 min.	▶ Please wait. The error will be canceled once the target temperature is reached.
31	Coffee post-heating	The heater for boiler 2 (H2/H3) has not reached the target value within the prescribed time. Spectra X: Coffee heating. Timeout 6 min.	▶ Please wait. The error will be canceled once the target temperature is reached.

Boiler supply errors

Error code	Error text on the display	Meaning	Solution
36	Add coffee	Boiler 1 could not be filled in the prescribed time of 4 min. Heater and pump will be switched off.	▶ Restart machine. ▶ Check pump pressure, *see Section 2 - Commissioning, VI. Commissioning, p. 22*. ▶ Check Boiler 1 (coffee) pressure-relief valve for seal (water flow in drip tray). ▶ Check water supply (seal and supply).
37	Fill HW/S boiler	Boiler 2 could not be filled in the prescribed time of 4 minutes (first-time filling). Heater and pump will be switched off. Spectra S: Hot water/steam	▶ Restart machine. ▶ Check Boiler 2 (hot water/steam) pressure-relief valve for seal (water flow in drip tray). ▶ Check the level sensor (connection/lime deposits), *see Section 6 - Programming, V. Programming, 9. Input ports, 9.2 B2 NTC Boiler 2, p. 117*. ▶ Check water supply (seal and supply).
38	Fill HW/S boiler	Boiler 2 could not be refilled in the prescribed time of 3 min. Heater and pump will be switched off. Spectra S: Hot water/steam	▶ Restart machine. ▶ Check Boiler 2 (hot water/steam) pressure-relief valve for seal (water flow in drip tray). ▶ Check the level sensor (connection/lime deposits), *see Section 6 - Programming, V. Programming, 9. Input ports, 9.2 B2 NTC Boiler 2, p. 117*. ▶ Check water supply (seal and supply).

Order Number: 1H329021/0
Document Number: TD-104406/0

Brewing unit errors

Error code	Error text on the display	Meaning	Solution
40	**Motor timeout**	Minimum feedback (10 increments within 3 s) from increment transmitter in the brewing unit motor was not achieved two times in a row. The position of the brewing unit is not defined.	▶ Restart machine. ▶ Check the position switch of the brewing unit (increment transmitter) and replace it, if necessary. ▶ Check the motor. ▶ Clean the brewing unit with a brush.
41	**Motor timeout**	The number of increments registered while the brewing chamber was moving upward from the return position (increment 110) to the grind position (increment 730) is too small. Minimum value: 550 increments within 3 s This error is returned only after the second occurrence during the same movement.	▶ Restart machine. ▶ Check the position switch of the brewing unit (increment transmitter) and replace it, if necessary. ▶ Check the motor. ▶ Check the mechanical function of the brewing unit. ▶ Check the brewing unit with the help of the test menu, *see Section 6 - Programming, V. Programming, 8. Output ports, 8.25 Brewing unit, p. 109*.
42	**Motor timeout**	The number of increments registered while the brewing chamber was moving upward from the grind position (increment 730) to the brew position (minimum increment 1240) is too small. Minimum value: 440 increments within 7 s This error is returned only after the second occurrence during the same movement.	▶ Restart machine. ▶ Check the position switch of the brewing unit (increment transmitter) and replace it, if necessary. ▶ Check the motor. ▶ Check the mechanical function of the brewing unit. ▶ Check the brewing unit with the help of the test menu, *see Section 6 - Programming, V. Programming, 8. Output ports, 8.25 Brewing unit, p. 109*.
43	**Motor timeout**	The number of increments registered while the brewing chamber was moving upward from the manual insertion position (increment 610) to the brew position (minimum increment 1240) is too small. Minimum value: 550 increments within 8 s This error is returned only after the second occurrence during the same movement.	▶ Restart machine. ▶ Check the position switch of the brewing unit (increment transmitter) and replace it, if necessary. ▶ Check the motor. ▶ Check the mechanical function of the brewing unit. ▶ Check the brewing unit with the help of the test menu, *see Section 6 - Programming, V. Programming, 8. Output ports, 8.25 Brewing unit, p. 109*.
44	**Motor timeout**	The number of increments registered while the brewing chamber was moving upward from the brew position to the eject position (increment 110) is too small. Minimum value: 900 increments within 10 s This error is returned only after the second occurrence during the same movement. Variable: Increment value of the brewing unit when the error occurred	▶ Restart machine. ▶ Check the position switch of the brewing unit (increment transmitter) and replace it, if necessary. ▶ Check the motor. ▶ Check the mechanical function of the brewing unit. ▶ Check the brewing unit with the help of the test menu, *see Section 6 - Programming, V. Programming, 8. Output ports, 8.25 Brewing unit, p. 109*.

Error code	Error text on the display	Meaning	Solution
45	**Increment transmitter**	More than one negative increment was registered. The brewing chamber is moving in the wrong direction.	▶ Restart machine. ▶ Check the wiring of the increment transmitter. ▶ Check the increment transmitter and replace it, if necessary. ▶ Check the motor. ▶ Check the mechanical function of the brewing unit. ▶ Check with the help of the test menu, *see Section 6 - Programming, V. Programming, 8. Output ports, 8.25 Brewing unit, p. 109*.
46	**Motor timeout**	Event message: A motor timeout occurred during cleaning Entry in error history.	▶ Restart machine. ▶ Repeat cleaning cycle.
47	**BU light barrier**	The brewing unit light barrier cannot be determined during recalibration. The error is displayed and entered in the error history only if it occurs 20 times within a week.	▶ Clean and check the light barrier and replace it, if necessary. ▶ Check the wiring of the light barrier. The error will be canceled once the brewing unit light barrier is recognized again.
48	*No text shown on the display*	Brewing unit calibration after mechanical strike (electricity) when light barrier is recognized when at the same time an increment position above the valid range is transmitted (max. valid incremental value: 500) This error does not trigger a block. Entry in error history	Increment automatically corrected to 100 ▶ Clean the brewing unit with a brush. ▶ Check the brewing unit motor cable routing. (Supply lines must be twisted and laid separately from incremental signal cables.)
49	*No text shown on the display*	An increment value of 10 was achieved during the brewing unit recalibration. This error does not trigger a block. Entry in error history.	Increment automatically corrected to 100. ▶ Clean the brewing unit with a brush. ▶ Check the brewing unit motor cable routing. (Supply lines must be twisted and laid separately from incremental signal cables.) ▶ If the error occurs repeatedly, check the motor drive shaft and replace the motor, if necessary.

Chip card errors

Error code	Error text on the display	Meaning	Solution
50	**Checking card**	The card chip type is not recognized.	▶ Use the following chips: I2C or SLE4428/SLE5528.
51	**Checking card**	Wrong card type, not supported by the machine.	▶ Use an Install Card, Boot Card, Adjust Card or Adjust plus Card.
52	**Checking card**	The card cannot be read. It either contains incorrect data or is defective. This error may also occur if the card is inserted incorrectly into the reader.	▶ Check whether the card is inserted the right way around. ▶ Replace the card.

Order Number: 1H329021/0
Document Number: TD-104406/0

Error code	Error text on the display	Meaning	Solution
53	**Checking card**	The card cannot be read. It either contains incorrect data or is defective. This error may also occur if the card is inserted incorrectly into the reader.	▶ Check whether the card is inserted the right way around. ▶ Replace the card.
54	**Reading card**	An incorrect Adjust Card has been inserted. The machine or product data on the card do not correspond to the data of the coffee machine.	▶ Use the correct Adjust Card. ▶ Erase the Adjust Card. ▶ Create a new Adjust Card.
55	**Checking card**	The card chip type cannot be read.	▶ Replace the card.
56	**Checking card**	The manufacturer code (RID Code) on the card is incorrect.	▶ Create a new chip card or use the correct chip card.
57	**Checking card**	The card has an incorrect application code (RIX Code.	▶ Create a new chip card or use the correct chip card.
58	**Writing card**	Card ID reading error. An error occurred in the writing and reading check following the write procedure.	▶ Insert the card again. ▶ Clean the contacts on the chip. ▶ Clean the contacts on the card reader. ▶ Replace the card. ▶ Replace the card reader.
59	**Writing card**	Error when writing to the card.	▶ Repeat the write procedure. ▶ Replace the card. ▶ Replace the card reader.
60	**Writing card**	The chip card has become unusable because the operator tried eight times to write the wrong write-protection code to the card.	▶ Replace the card.
61	**Writing card**	Error when writing to the card.	▶ Repeat the write procedure. ▶ Replace the card. ▶ Replace the card reader.

Process errors

Error code	Error text on the display	Meaning	Solution
70	*No text shown on the display*	No 100 ml could be dosed through the brewing valve and the bypass valve within 25 s during initialization. Initialization has been canceled.	▶ Restart machine. ▶ Check whether the water supply is guaranteed. ▶ Check for leaks on the water circuits.
71	*No text shown on the display*	During initialization, the steam boiler level could not be achieved within 25 s. The boiler continues filling. This event message is very likely to appear each time an empty boiler is initially filled. Error code 37 will appear after 4 minutes.	▶ Wait at least 4 minutes. ▶ Check the sensor and replace it, if necessary. ▶ Check whether the water supply is guaranteed. ▶ Check for leaks on the water circuits.
72	*No text shown on the display*	During initialization, an error occurred when the brewing unit was being recalibrated. The error **Motor timeout** appears.	▶ Restart machine. ▶ Check the position switch (increment transmitter) and replace it, if necessary. ▶ Check the motor. ▶ Clean the brewing unit with a brush.

Error code	Error text on the display	Meaning	Solution
90	Maint. required	Maintenance is due.	▶ Perform maintenance according to maintenance plan (see *Section 3 - Maintenance*). ▶ Once maintenance has been completed, reset the counter. *See Section 6 - Programming, V. Programming, 6. Clearing counters, 6.12 Maintenance, p. 94.*
91	Lime deposits	A mean value of more than 554 has been measured during the measurement of the A/D water hardness of the steam boiler level sensor. The threat of lime deposits exists on the sensor or the boiler, respectively. (This error message is not yet active.)	▶ Clean level sensor and replace it, if necessary. ▶ Check water hardness and adjust water filter settings if necessary.
99	Water filter	The water filter is used up and must be replaced.	▶ Replace the water filter. ▶ Reset the counter. *See Section 6 - Programming, V. Programming, 6. Clearing counters, 6.3 Filter water quantity, p. 91.*
100	Grounds cont full	The programmed number of grounds cakes has been reached. Coffee products are blocked.	▶ Remove, empty and clean and replace the grounds container. The grounds container door must be open for at least 5 s, even on machines with grounds ejection.
101	Empty grounds cont	The grounds container is nearly full. Another 10 coffee cycles are possible.	▶ Remove, empty and clean and replace the grounds container. The grounds container door must be open for at least 5 s.
110	Flowmeter error	Water flow is disrupted. The flowmeter receives too few or no impulses (fewer than three impulses in 1.2 s). The error is cleared as soon as flowmeter impulses are detected again. Variable: Number of flowmeter pulses that were still recognized up to the error detection	▶ Check water intake. Open the water spigot, if necessary. ▶ Check the water circuits and clean or replace them, if necessary. ▶ Check product settings (grind coarseness too fine?). ▶ Check the flowmeter and clean or replace it, if necessary.
111	Flowmeter error	Only with Spectra X with turbine output	
112	Clean agitator	Water flow of the powder system is disrupted. The product is canceled in order to prevent a clogging of the mixing chamber.	▶ Check powder system water circuit. ▶ Clean the coffee machine. The front door must be open for at least 20 s in order to clear the error.
114	Flowmeter error	Water flow is disrupted. The flowmeter for hot water receives too few or no impulses (fewer than three impulses in 1.2 s). Spectra X: Boiler 1 Variable: Number of flowmeter pulses that were still recognized up to the error detection	▶ Select another product. ▶ Check water intake. Open the water spigot, if necessary. ▶ Check the hot water circuit and clean or replace clogged parts, if necessary. ▶ Check the flowmeter and clean or replace it, if necessary.
119	Powder container, center	Powder container center is empty. In the double powder dosing unit, the right chamber is empty.	▶ Fill with powder suitable for automatic coffee makers.

Order Number: 1H329021/0
Document Number: TD-104406/0

Error code	Error text on the display	Meaning	Solution
120	No ground coffee	The brewing chamber was able to be closed up to increment 1540 and is therefore recognized as being empty (only if monitoring is programmed. See *Section 6 - Programming, V. Programming, 2. Products, 2.13 Grind quantity/powder, Monitoring, p. 64*.) Variable: Increment value of the brewing unit when the error occurred	▶ Check the coffee powder chute and clean with a brush. ▶ Check the light barrier of the coffee bean monitor. ▶ Add ground coffee and/or coffee beans. ▶ Restart product preparation.
121	Fill left container	Left container is empty.	▶ Fill beans or powder, respectively, into the left container.
122	Fill center container	Center container is empty.	▶ Fill beans or powder, respectively, into the center container.
123	Fill right container	Right container is empty.	▶ Fill beans or powder, respectively, into the right container.
124	Cover open	The cover of the ground coffee container is open (applies only to Spectra X with powder dosing unit). No coffee powder dosing is carried out or an ongoing coffee powder dosing is canceled.	▶ Close the cover of the ground coffee container. ▶ Check whether there is ground coffee between the ground coffee container and the ground coffee storage container; this causes the two containers to be pushed away and the cover monitoring is inhibited. ▶ Check solenoid switch. ▶ Restart product preparation.
125	Powder lid open	The powder lid for manually filling with powder or cleaning tablets is open Variable: 24 V in [0.1 V] increments.	▶ Close powder lid (the brewing unit is recalibrated afterwards).
126	Brewing chamb open	The brewing chamber was opened during a brewing process up to increment 1245. The brewing process is canceled. Variable: Increment value of the brewing unit when the error occurred.	▶ Prepare a new drink (the brewing unit will be recalibrated). ▶ If this occurs more than once, check the values, *see Section 6 - Programming, V. Programming, 8. Output ports, 8.25 Brewing unit, p. 109*.
127	Brewing chamb open	The brewing chamber could not be closed (increment 1255 was not reached). Variable: Increment value of the brewing unit when the error occurred	▶ Prepare a new drink (the brewing unit will be recalibrated). ▶ Check grind quantity, *see Section 6 - Programming, V. Programming, 2. Products, 2.13 Grind quantity/powder p. 64*. ▶ Check grinder calibration, *see Section 6 - Programming, V. Programming, 10. Calibration, p. 126 ff*.
130	Add cold milk	**Foam Master:** Milk must be refilled, the ongoing product is interrupted. In accounting mode, an interrupted, previously paid product can be dispensed one more time at no charge. **CF, CF2:** The max. time for the milk empty message in Tank 1 has been reached. All milk products are immediately blocked. Variable: 24 V in [0.1 V] increments.	▶ Add milk. Foam Master: If the error message appears despite a full tank, then the following checks are necessary: ▶ Check milk suction hose. ▶ Check the milk foam portion (max. 70%) of all products that contain cold milk foam.

Error code	Error text on the display	Meaning	Solution
131	**Milk empty**	**CF, CF2** only: The milk is practically used up. Variable: 24 V in [0.1 V] increments.	▶ Add milk.
132	**Add cold milk cont 2**	The milk is used up. All milk products are immediately blocked. Variable: 24 V in [0.1 V] increments.	▶ Add milk.
133	**Milk container 2 empty**	The milk is practically used up. This error only occurs with milk systems with a milk sensor and two milk pumps. Variable: 24 V in [0.1 V] increments.	▶ Add milk
135	*No text shown on the display*	The milk temperature with a Foam Master exceeds 8 °C. This error occurs only with conductive monitoring and is entered into the error history a maximum of one time per hour. Variable: Milk temperature in °C	
140	**Calibrate store**	The storage container with the Spectra X is not calibrated (no gauge process carried out).	▶ Calibrate the flowmeter and afterwards the storage container, *see Section 6 - Programming, V. Programming, 10. Calibration, 10.1 left (L), p. 126*.
141	**Frequency store**	The level monitor of the Spectra X storage container measures frequencies lower than 100 kHz. The sensor is missing or it is not connected or it measures incorrectly.	▶ Check the sensor and replace it, if necessary.
160	**Battery low**	The voltage of the battery of the CPU PCB is less than 2.5 V or not present. Caution: All data is lost if the power supply is interrupted while the battery is dead.	1. Back up the data ▶ With Service Tool 3, *see Section 2 - Commissioning, VII. Saving settings, 3. Saving settings with Service Tool, p.32*. ▶ With Adjust Card, *see Section 6 - Programming, VII. Programming , 11. Data backup, p. 161.* 2. Switch off the machine. 3. Replace the battery (type CR2032, 3 V). 4. Switch on the machine. 5. Loading backed up data, *see Section 6 - Programming, V. Programming, 11. Data backup, p. 161*.
170	**Check water tank**	The fresh water tank is empty or the wastewater tank is full.	▶ Fill fresh water tank. ▶ Empty wastewater tank. ▶ Press the CLEAN button. The error message is cleared ▶ If necessary, check position of the sensors. ▶ Check wiring. ▶ Check the sensors and replace them, if necessary.

Order Number: 1H329021/0
Document Number: TD-104406/0

Error code	Error text on the display	Meaning	Solution
200	Communication CS	The connected accounting device (slave) did not answer within 0.2 s to a query from the coffee machine (master). Possibly a cable connection is broken or the accounting device is not switched on.	▶ Restart machine. ▶ Check the cable connections. ▶ Switch the devices on.
201	Communication CS	Data timeout. No data was sent for 5 s after the query. Possibly a cable connection is broken.	▶ Restart machine. ▶ Check the cable connections. ▶ Switch the devices on.
202	Communication CS	The checksum of a data packet is faulty.	▶ Restart machine. ▶ Check the cable connections. ▶ Switch the devices on.
203	Communication CS	The accounting device has sent 5 error messages (NAK).	▶ Restart machine. ▶ Check the cable connections. ▶ Switch the devices on.
210	Accounting CAN	The accounting device has sent no status reports within 16 s. Error is cleared automatically as soon as a status is reported.	▶ Restart machine. ▶ Press the CLEAN button (the CAN bus is re-initialized). ▶ Check the accounting device and restart the system.
211	Accounting CAN	A communication error has occurred at the accounting device (interface).	▶ Check connections of and supply to the accounting communication. ▶ Check the accounting device and restart the system.
221	Communication FS	Timeout CAN bus. The Flavour Station did not respond within 10 s.	▪ Check the connection cable. ▪ Test the connection to the other node ID, *see Section 6 - Programming, V. Programming, 8. Output ports, 8.30 CAN bus, p. 112*.
222	Communication FM	Timeout CAN bus. The milk controller did not respond within 10 s.	▶ Check the connection cable. ▶ Test the connection to the other node ID, *see Section 6 - Programming, V. Programming, 8. Output ports, 8.30 CAN bus, p. 112*.
223	Communication FM	10 s CAN bus timeout during a cleaning. The milk controller did not respond within 10 s. The milk cleaning is canceled and the machine switches to energy saver mode.	▶ Check the connection cable. ▶ Test the connection to the other node ID, *see Section 6 - Programming, V. Programming, 8. Output ports, 8.30 CAN bus, p. 112*.
240	Display error	The display RAM is no longer present. It is possible that the display controller has crashed (is monitored every 10 s). This error can only be read from the error history because it is only marginally possible to show the error on the display.	▶ Restart machine. ▶ Replace display if error occurs repeatedly.

Error code	Error text on the display	Meaning	Solution
245	*No text shown on the display*	**Event message:** The coffee machine has been switched on. **Causes of the event:** 0 = On/Off button 1 = power failure 2 = timer 4 = Service Tool 3	
246	*No text shown on the display*	**Event message:** Coffee machine has been switched off. **Causes of the event:** 0 = On/Off button 2 = timer 4 = Service Tool 3	
249	*No text shown on the display*	**Event message:** Coffee machine has been connected to the power supply.	
250	*No text shown on the display*	**Event message:** Cleaning has been started.	
251	*No text shown on the display*	**Event message:** Cleaning has been ended. **Variable:** For machines with Foam Master, the water temperature is entered that was measured when the rinse water was filled.	▶ Finish cleaning correctly.
252	*No text shown on the display*	**Event message:** Cleaning has been canceled. Entry in the error history	▶ Restart the cleaning process.
253	*No text shown on the display*	**Event message:** Cleaning has been canceled. A too-low frequency change was measured within 30 s during the filling of the storage container of the Spectra X; the storage container was not filled correctly. In addition, the level in the container was less than 1.8 liters. **Variable:** Frequency of the level sensor in kHz when the error occurred	▶ Restart the cleaning process.
254	*No text shown on the display*	**Event message:** **Spectra without powder:** Cleaning has been canceled. The grounds door was open for less than 5 s during the cleaning. **Spectra S with powder:** Cleaning has been canceled. The grounds door was open for less than 20 s during the cleaning. The entry in the error history is made independent of the software version.	▶ Restart cleaning.
255	*No text shown on the display*	**Event message:** The cleaning was canceled because the grounds door was not opened within 20 s during the cleaning after being prompted to do so.	▶ Restart cleaning.
256	*No text shown on the display*	**Event message:** Cleaning was canceled manually using a key combination.	▶ Restart cleaning.

Document Number: TD-104406/0 Order Number: 1H329021/0

Error code	Error text on the display	Meaning	Solution
257	*No text shown on the display*	Event message: During the Spectra X cleaning cycle, the brewing chamber must be moved upwards for better ventilation. This will not result in a cancellation of cleaning.	
260	*No text shown on the display*	Event message: The grounds door has been closed.	
261	*No text shown on the display*	Event message: The cleaning of the Flavour Station has been started.	
262	*No text shown on the display*	Event message: The cleaning of the Flavour Station has been ended.	
263	*No text shown on the display*	Event message: The cleaning of the Flavour Station has been canceled because the grounds door was opened on the coffee machine.	
264	*No text shown on the display*	Event message: The cleaning of the Flavour Station has been canceled because the CAN communication was interrupted.	
265	*No text shown on the display*	Event message: The cleaning of the Flavour Station has been canceled because the coffee machine was switched off.	
266	*No text shown on the display*	Event message: The container cover on the Spectra X has been closed.	
270	*No text shown on the display*	Event message: Water conductance A/D steam boiler. The measurement is always taken at the end of the milk cleaning cycle. Spectra S only (HW/S boiler). Variable: averaged A/D value of the HW/S boiler level sensor at the end of the cleaning cycle.	
280	*No text shown on the display*	Event message: The DC voltage exceeds 31 V. Variable: DC voltage ¨[0.1 V]	
281	*No text shown on the display*	Event message: DC voltage has dropped below 31 V after it was previously higher than 31 V. Variable: DC voltage ¨[0.1 V]	
290	*No text shown on the display*	Event message: FM boot values corrected	

IV. Troubleshooting

1. Machine restart

- As a matter of course, always restart the system first.
- Among other things, a restart resets the CPU and the power PCB.

01

- Switch off the machine.
- Disconnect the machine from power for at least 30 seconds.

The condensers will discharge.

- Switch on the machine.

2. Quick error resolution

- The protocols or acknowledgment of many errors can be resolved by briefly pressing the button.
- For instance, the CAN bus or the display can be completely rebuilt in this way.

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- Very briefly (approx. 100 milliseconds) press the CLEAN button.

The error will be resolved and the display may rebuild.

Order Number: 1H329021/0
Document Number: TD-104406/0

V. Output ports

OK? The machine must be heated up so that the tests can be carried out in an optimum manner.

- The **Output ports** menu item is used for testing whether a signal is coming from the desired component and for checking the functionality of a component.
- Following testing via the **output ports**, the components should if necessary also be tested via the **input ports** to ensure an accurate diagnosis.
- Only one output port can be activated at a time.

⚠ WARNING

Danger of scalding or injury from working on a machine

- Strict observation of the directions contained in the instructions is imperative.
- Pay attention and work carefully.
- Work as rapidly as possible.

NOTICE

Damage caused by continuous operation of individual components

The **Output ports** function activates individual components for function verification. Excessively long test operation can destroy the components.

- Activate the components only for a maximum of 2 to 3 s for the function test.
- Switch off the components immediately after the test.

NOTICE

Damage from overheating the boiler

The **Output ports** function activates the boiler for function verification. NTC temperature sensor monitoring is not active during this process. Operating too long in test mode can ruin the boiler, particularly if it is empty.

- Activate the components only for a maximum of 2 – 3 s for the function test.
- Switch off the components immediately after the test.

For instructions on using **Output ports**, *see Section 6 - Programming, V. Programming, 8. Output ports, p. 98 ff.*

If test is unsuccessful:

- Check the electrical connections to the component (*see Section 8 - Electrical diagrams*).
- Repeat the test.
- Check the component and replace it, if necessary.

VI. Input ports

OK? The machine must be heated up so that the tests can be carried out in an optimum manner.

- The **Input ports** menu item is used to test whether a signal is being received by the desired component. The functionality can thus be checked indirectly. The status of the respective input port is displayed.
- Only one input port can be activated at a time.

⚠ WARNING

Danger of scalding or injury from working on a machine

- Strict observation of the directions contained in the instructions is imperative.
- Pay attention and work carefully.
- Work as rapidly as possible.

NOTICE

Damage caused by continuous operation of individual components

The **Output ports** function activates individual components for function verification. Excessively long test operation can destroy the components.

- Activate the components only for a maximum of 2 to 3 s for the function test.
- Switch off the components immediately after the test.

For instructions on **Input ports**, see *Section 6 - Programming, V. Programming, 9. Input ports, p. 116 ff.*

If test is unsuccessful:

- Check the electrical connections to the component (*see Section 8 - Electrical diagrams*).
- Repeat the test.
- Check the component and replace it, if necessary.

Order Number: 1H329021/0
Document Number: TD-104406/0