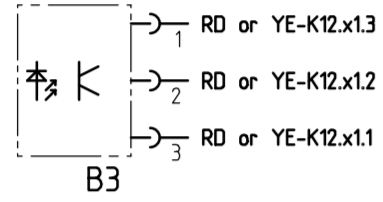
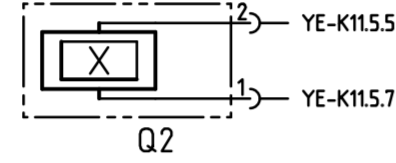


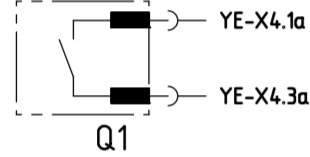
Low rinse aid sensor



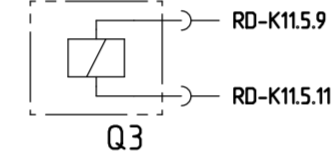
Door switch



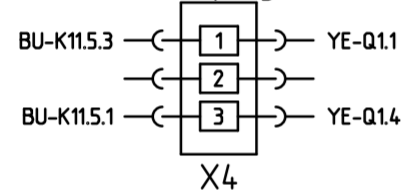
Main switch



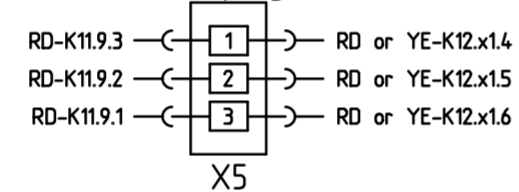
Dispenser coil



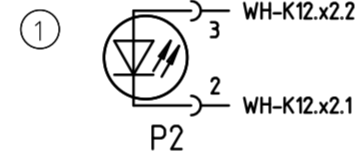
Coupling



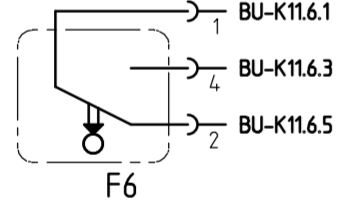
Coupling



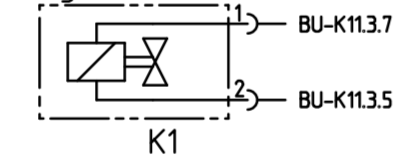
On light



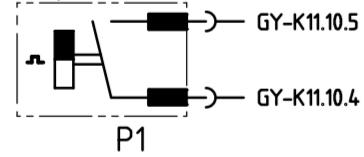
Safety pressure switch



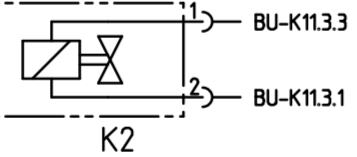
Regeneration valve



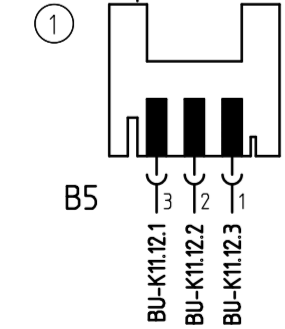
Impeller meter



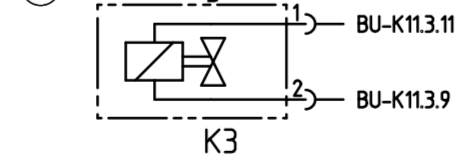
Filler valve



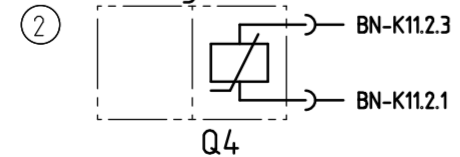
Aqua sensor



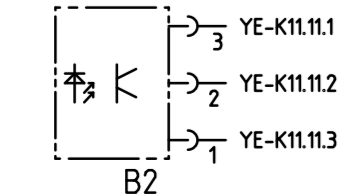
Drainage valve



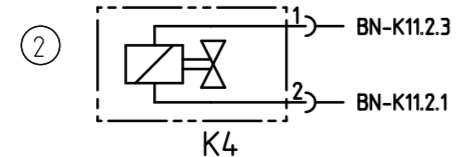
Drainage actuator



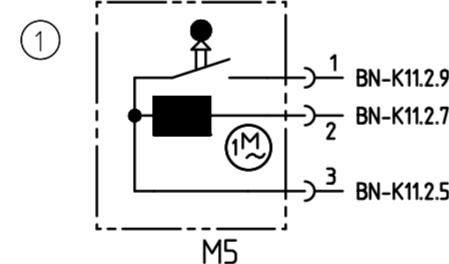
Low salt sensor



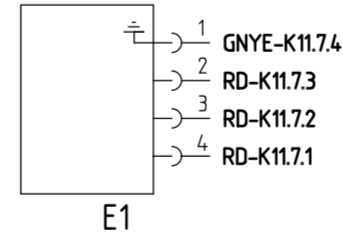
Filler valve warm water



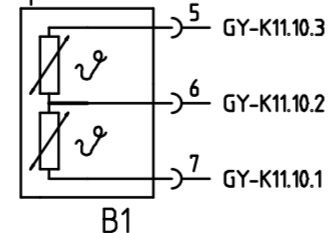
Water switch



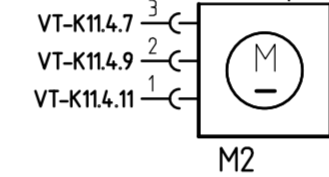
Heater



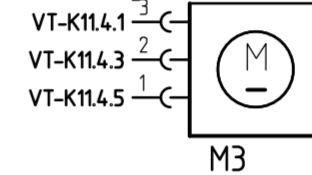
Temperature sensor



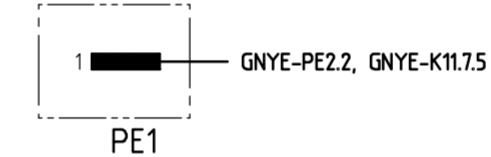
Circulation pump



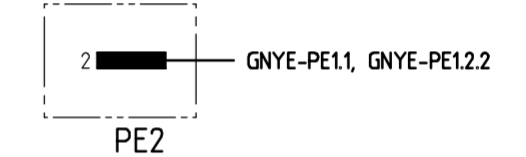
Detergent solution pump



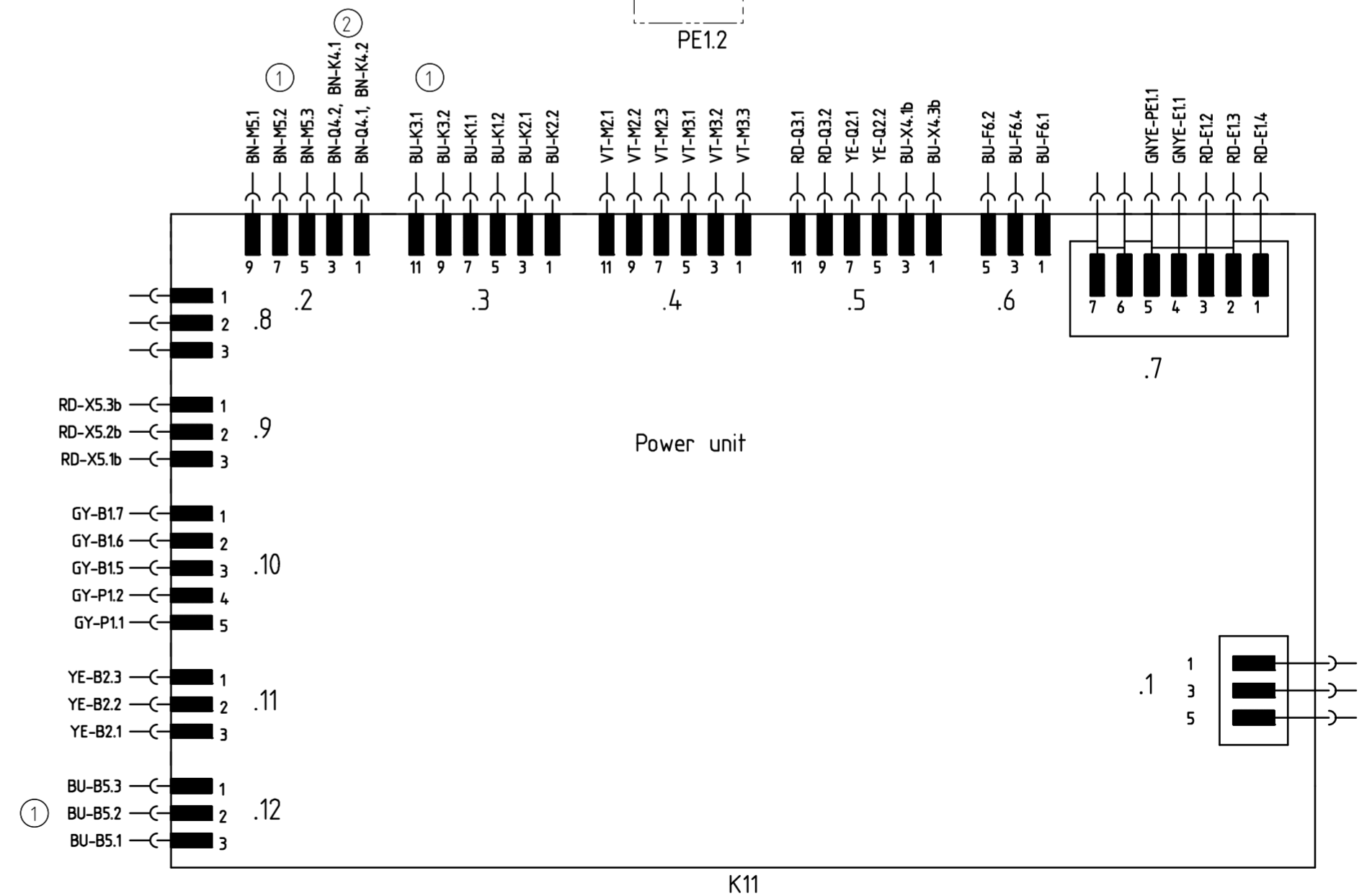
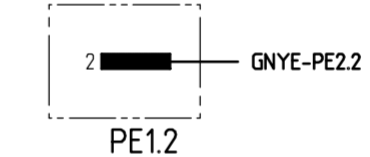
Protective conductor



Protective conductor










Protective conductor






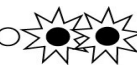







① Fitted depending on features






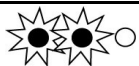
② Q4: only by storage tank, K4: only by 2 aquastop






|                             |     |                         |     |           |
|-----------------------------|-----|-------------------------|-----|-----------|
| Designation                 | LCS | Document No.            | Rev | Sheet-No. |
| Connection Diagram          | EN  | 5600 0000148121         | E   | 1         |
| GV 640A EK und MK-Varianter |     | Material No. 9000250199 |     | of 1      |

| Function                       | Actuation | Display  |             |   |   | Remarks   |   |  |
|--------------------------------|-----------|--|-------------|---|---|---|---|--|
| Error class<br>(failure group) |           | In Customer Service program  |             | At Customer   |   | Appliance behaviour in<br>error case  | Results of internal appliance<br>check  | Measures   |
|                                |           | LED's  | Display     | LED   | Display   |   |   |  |
|                                |           | Act. Clean Sani<br> End  |             |  |  |   |   |  |
|                                |           | ○ ○ ○  | <b>E:00</b> |   |   |   | No error  |  |
| <b>Interface</b>               |           |  |             |  |  | Blinking LED's at end<br>of Flash process<br><br>Stop in current<br>position, no function | Communication issue<br>within electronics   | Power cord of the appliance has<br>to be disconnected (to activate<br>on/off from main switch is not<br>enough!)<br><br>> Verify D-Bus - connectors (3-<br>pole) for electrical connection<br>failure;<br>> Disconnected power cord (plug<br>out and then again plug in);<br>> Repeat flash process;<br>> Change Modul |
| <b>Power module</b>            |           | ○ ○   | <b>E:01</b> |   | <b>E:01</b>   | → End of program  | Pump triggering or pump<br>switching is defect<br><br>Low voltage /<br>Voltage drop | Change power module<br><br>No appliance error!   |
|                                |           |  | <b>E:02</b> |   | <b>E:02</b>   | Running w/o heating   | Working relay of heating<br>is defect   | Change power module  |
|                                |           |  | <b>E:03</b> |   | <b>E:03</b>   | → End of program  | Working relay / safety<br>relay of heating is defect                                |  |
|                                |           |  | <b>E:04</b> |   |   |   | Reserved  |  |
|                                |           |  | <b>E:05</b> |   | <b>E:05</b>   | Water switch is<br>running permanently<br>Cancelation of<br>program (Drain)               | Impulses w/o activation<br><br>Water switch triac defect                            |  |

| Function                       |  | Actuation  |             | Display   |   | Remarks                              |  |  |   |
|--------------------------------|--|--|-------------|---|---|--------------------------------------|--|--|---|
| Error class<br>(failure group) |  | In Customer Service program  |             | At Customer   |   | Appliance behaviour in<br>error case | Results of internal appliance<br>check   | Measures   |   |
|                                |  | LED's  | Display     | LED   | Display   |                                      |  |  |   |
|                                |  | Act. Clean Sani<br> End  |             |  |  |                                      |  |  |   |
| <b>Door</b>                    |  |   | <b>E:06</b> |   |   | <b>E:06</b>                          | Stop in current position, no function  | Hall-sensor defect, wire disconnected or power module defect     | Power module is functional ok, if plug is disconnected and Hall-sensor is feed with supply voltage. Otherwise change Hall-sensor. |
| <b>Heating</b>                 |  |   | <b>E:07</b> |   |   | <b>E:07</b>                          | Function w/o additional drying-system.   | Water in fan housing<br>Heating-circuit Zeolite is intermittent, | Measure Heating-circuit Zeolite (check zeolite-heater resistance, clixon and thermal fuse)  |
|                                |  |  |             |   |   |                                      |  | fan defect, optional electronic defect, wire is intermittent.    | Verify components<br><br>=>only for appliance with additional drying-system   |
|                                |  |  |             |   |   |                                      | <b>E:08</b>  |  |   |
|                                |  |  | <b>E:09</b> |   |   | <b>E:09</b>                          | Heating-circuit is intermittent (resistance, wire harness, safety relais pins on power module) | Measure heating resistance, check wires                          |   |

| Function                       |  | Actuation  |         | Display   |   | Remarks                              |   |   |
|--------------------------------|--|--|---------|---|---|--------------------------------------|---|---|
| Error class<br>(failure group) |  | In Customer Service program  |         | At Customer   |   | Appliance behaviour in<br>error case | Results of internal appliance<br>check  | Measures  |
|                                |  | LED's  | Display | LED   | Display   |                                      |   |   |
|                                |  | Act. Clean Sani<br> End  |         |  |  |                                      |   |   |
|                                |  |  |         |   |   | Function w/o<br>heating.             | Thermal output to less,<br>deposits on heating<br>element.                            | Check water hardness; if<br>necessary decalcify and clean.<br>On repeat change heat pump. |
|                                |  |  |         |   |   |                                      | NTC-failure<br>Failure in wire to NTC's   | Measure NTC's,<br>check wires.  |
|                                |  |  |         |   |   |                                      | Reserved  |   |
|                                |  |  |         |   |   |                                      | Water temperature too<br>high (> 75°C)  | Safety measure - no failure!<br>Check water inlet temperature .                           |
| Filling                        |  |   |         |   |   |                                      | Flow sensor detects no<br>impulses, even though<br>circulation pump detects<br>water. | Check wires, check flow sensor<br>(Reed-switch)   |
|                                |  |  |         |   |   |                                      | Safety switch base<br>carrier active. Appliance<br>can't be turned off.               | Look / Search for cause of water<br>in base carrier                                       |
|                                |  |  |         |   |   |                                      | Water inlet (impulses<br>from flow sensor) w/o<br>activation of filling valve.        | Check filling valve.<br>Check triggering of filling valve.                                |
|                                |  |  |         |   |   |                                      | Water inlet amount<br>according flow sensor too<br>high                               | Check flow control in filling valve   |
|                                |  |  |         |   |   |                                      | Waiting for water inlet.<br>Program abort with<br>draining                            | Check water inlet   |

| Function                       |  | Actuation  |         | Display   |   | Remarks                              |  |  |   |
|--------------------------------|--|--|---------|---|---|--------------------------------------|--|--|---|
| Error class<br>(failure group) |  | In Customer Service program  |         | At Customer   |   | Appliance behaviour in<br>error case | Results of internal appliance<br>check                   | Measures   |   |
|                                |  | LED's  | Display | LED   | Display   |                                      |  |  |   |
|                                |  | Act. Clean Sani<br> End  |         |  |  |                                      |  |  |   |
| Circulation pump               |  |   | E:19    |   |   |                                      | Reserved   |  |   |
|                                |  |  |         | E:20  |   | E:20                                 | → End of program   | Wrong resistance value<br>of circulation pump    | Check wires,<br>measure coil.   |
|                                |  |  |         | E:21  |   | E:21                                 | → End of program   | Circulation pump blocked                         | Check for foreign objects, if<br>necessary renew  |
| Drainpump                      |  |   | E:22    |   |   |                                      | Reserved   |  |   |
|                                |  |  | E:23    |   | E:23  | → End of program                     | Wrong resistance value<br>of drain pump                  | Check wires,<br>measure coil                     |   |
|                                |  |  | E:24    |   | ●   | E:24                                 | → End of program   | Draining not possible.<br>Pump cover missing?    | Clean filters.<br>Check water draining (hose<br>kinked / blocked, pressure head,<br>pump cover).<br>Install pump cover. |
|                                |  |  |         |   |   |                                      |  | Circulation pump stiff?                          | Exchange circulation pump.  |
|                                |  |  |         |   |   |                                      |  | Check valve leaky                                | Inspect check valve   |
|                                |  | E:25   |         | ●   | E:25  | → End of program                     | Drain pump blocked;<br>possibly pump cover is<br>missing | Check for foreign objects.<br>Install pump cover |   |

| Function                       | Actuation | Display  |             |   |   | Remarks                                 |   |   |
|--------------------------------|-----------|--|-------------|---|---|---|---|---|
| Error class<br>(failure group) |           | In Customer Service program  |             | At Customer   |   | Appliance behaviour in<br>error case    | Results of internal appliance<br>check                          | Measures  |
|                                |           | LED's  | Display     | LED   | Display   |   |   |   |
|                                |           | Act. Clean Sani<br> End  |             |  |  |   |   |   |
| <b>Waterswitch</b>             |           |   | <b>E:26</b> |   |   | Permanent activation<br>of water switch | Impulses from water<br>switch are missing<br>despite triggering | Check wires.<br>Measure supply voltage on<br>motor. Check switch of water<br>switch       |
|                                |           |  | <b>E:27</b> |   |   |   |   |   |
| <b>Aquasensor</b>              |           |  | <b>E:28</b> |   |   | Function w/o<br>aquasensor              | Calibration of aquasensor<br>not successful                     | Check wires.<br>Dirt on aquasensor. Is appliance<br>serially equipped with<br>aquasensor? |
| <b>General</b>                 |           |  | <b>E:29</b> |   |   |   | Reserved  |   |
|                                |           |  | <b>E:30</b> |   |   | Normal function                         | Overvoltage   | Not customer service relevant   |
|                                |           |  | <b>E:31</b> |   |   |   | Measured value<br>circulation pump                              | Not customer service relevant   |
|                                |           |  | <b>E:32</b> |   |   |   | Measured value<br>drain pump                                    | Not customer service relevant   |

| Function | Display         |                 | Remark         |          |       |                 |
|----------|-----------------|-----------------|----------------|----------|-------|-----------------|
|          | Software (old)* | Software (new)* | Can be skipped | Time (s) | Value | Check / Measure |

\*depend of the software version is it possible to have different programsteps

### 1.1 Customer Service Program

|  |  |  |    |                |       |   |  |
|--|--|--|----|----------------|-------|---|--|
| <b>Preparation</b>                           |  |  |    |                |       | Remove approx. 0.5 l water from salt dispenser    | Regeneration valve must be checked for leaks at appropriate customer specifications (see also steps with display 10 + S:32 or S:11 + S:33) |
| <b>CoilCheck</b>                             | S:00   | S:00   | No | approx. 20     |       |   | Check the drain pump. Activate the drain pump and place the water switch in the top basket position.                                       |
| <b>Check flow sensor and flow controller</b> | S:01 – S:03<br>(Step S:04 to S:06 are displayed only if error E 18 occurs) | S:01 – S:03<br>(Step S:04 to S:06 are displayed only if error E 18 occurs) | No | approx. 10-100 |       |   | Add 50 ml (filling valve, drainage pump and circulation pump are activated in succession).   |
| <b>Pause</b>                                 | S:07<br>(Step is not displayed)  | S:07<br>(Step is not displayed)  | No | 10             |       |   |  |
| <b>Fill + pump</b>                           | S:08 – S:10  | S:08 – S:09  | No | approx. 100    |       |   | Residual quantity in the pump sump is pumped off.  |
| <b>Pause</b>                                 | S:11   | S:10   | No | 10             |       | Visual inspection: water level in salt dispenser. | No change to water level ==> Regeneration valve leakproof.   |
| <b>Fill</b>                                  | S:12   | S:11   | No | approx. 40     | 1,5 l | Check waterinlet amount                           | Inside of 40sec the capacity must be obtain. All the water is conveyed to the pump sump.   |
| <b>Pause</b>                                 | S:13   | S:12   | No | 10             |       | Visual inspection: water level in appliance.      | Water level on upper edge of fine mesh filter (= 1.5 l in pump sump).  |
| <b>Fill</b>                                  | S:14 – S:15  | S:13 – S:14  | No | approx. 60     | 2,5 l |   | Total: 4 l in appliance  |

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Customer Service Program

Document-No.: **56000000162697**ASP EN

Material-No.: 9000.347.372

Revision D

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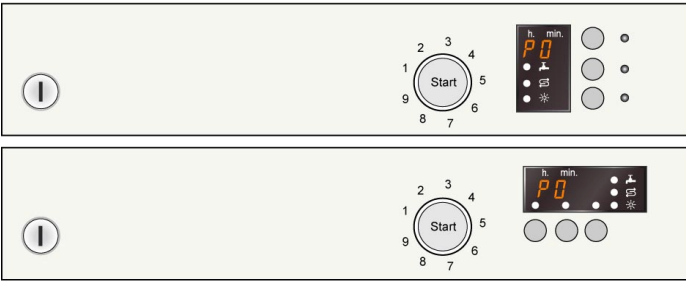

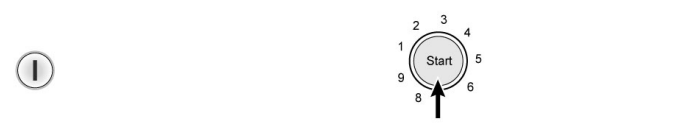



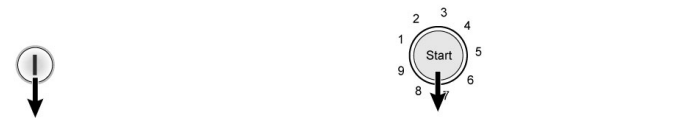
| Function  | Display         |                 | Remark         |             |       |   |  |
|---|-----------------|-----------------|----------------|-------------|-------|---|--|
|   | Software (old)* | Software (new)* | Can be skipped | Time (s)    | Value | Check / Measure                                   | Remark   |
| <b>Circulate</b>  | S:16            | S:15            | No             | 15          |       |   | Circulation pump must not "snorkel".   |
| <b>Dispense (detergent)</b>                               | S:17            | S:16            | No             | 10          |       |   |  |
| <b>Circulate + heat + calibrate AquaSensor</b>            | S:18 – S:19     | S:17 – S:18     | No             | 110         |       |   |  |
| <b>Circulate + heat</b>                                   | S:20            | S:19            | Yes            |             | 40 °C |   | Increase of temperature during heating +2.5 °C/min   |
| <b>Pause</b>  | S:21            | S:20            | No             | 5           |       |   |  |
| <b>Circulate + dispense (rinse aid)</b>                   | S:22 – S:24     | S:21 – S:23     | No             | 60          |       |   | Number of impulses = set value of dispensed rinse aid.   |
| <b>Circulate + heat + change position of water switch</b> | S:25 – S:26     | S:24 – S:25     | Ja             | approx. 480 | 65 °C |   | Increase of temperature during heating +2.5 °C/min. Change every 30 s roof shower head, top basket, bottom basket. |
| <b>Pump off</b>   | S:27            | S:26            | No             | 45          |       |   |  |
| <b>Pause</b>  | S:28 – S:29     | S:27 – S:28     | Yes            | 70          |       |   |  |
| <b>Pump off + fill + regenerate</b>                       | S:30 – S:32     | S:29 – S:31     | No             | approx. 20  |       |   | Drain the complete appliance   |
| <b>Pause</b>  | S: 33           | S:32            | No             | 10          |       | Visual inspection: water level in salt dispenser. | Water level in salt dispenser must be increased by several cm.   |
| <b>Pump + fill</b>  | S:34 – S:35     | S:33 – S:34     | No             | approx. 100 | 4 l   |   | Rinse the brine solution out of the pump sump  |
| <b>Pump</b>   | S:36            | S:35            | No             | 30          |       |   | Drain the complete appliance   |

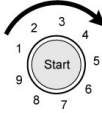
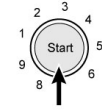
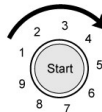



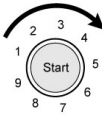

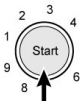

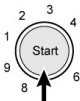






| Function   | Display  |  | Remark         |                   |       |                        |   |
|--|--|--|----------------|-------------------|-------|------------------------|---|
|  | Software (old)*  | Software (new)*  | Can be skipped | Time (s)          | Value | Check / Measure        | Remark  |
| <b>Check whether appliance was drained (activates circulation pump and drain pump)</b> | S:37 – S:38<br>(Step S:39 to S:40 are displayed only if error E 24 occurs) | S:36 – S:37<br>(Step S:38 to S:39 are displayed only if error E 24 occurs) | No             | approx.<br>10-120 |       |                        | Self-check whether appliance was drained.   |
| <b>End of test programme</b>   | "0" on display or "End LED" is lit   |  |                |                   |       | Switch off main switch | Test has ended. When the appliance is next switched on, the normal rinse programme is displayed |
|  |  |  |                |                   |       |                        |   |


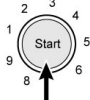

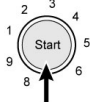

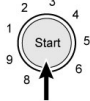

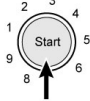

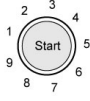
## 1.2 Reset program

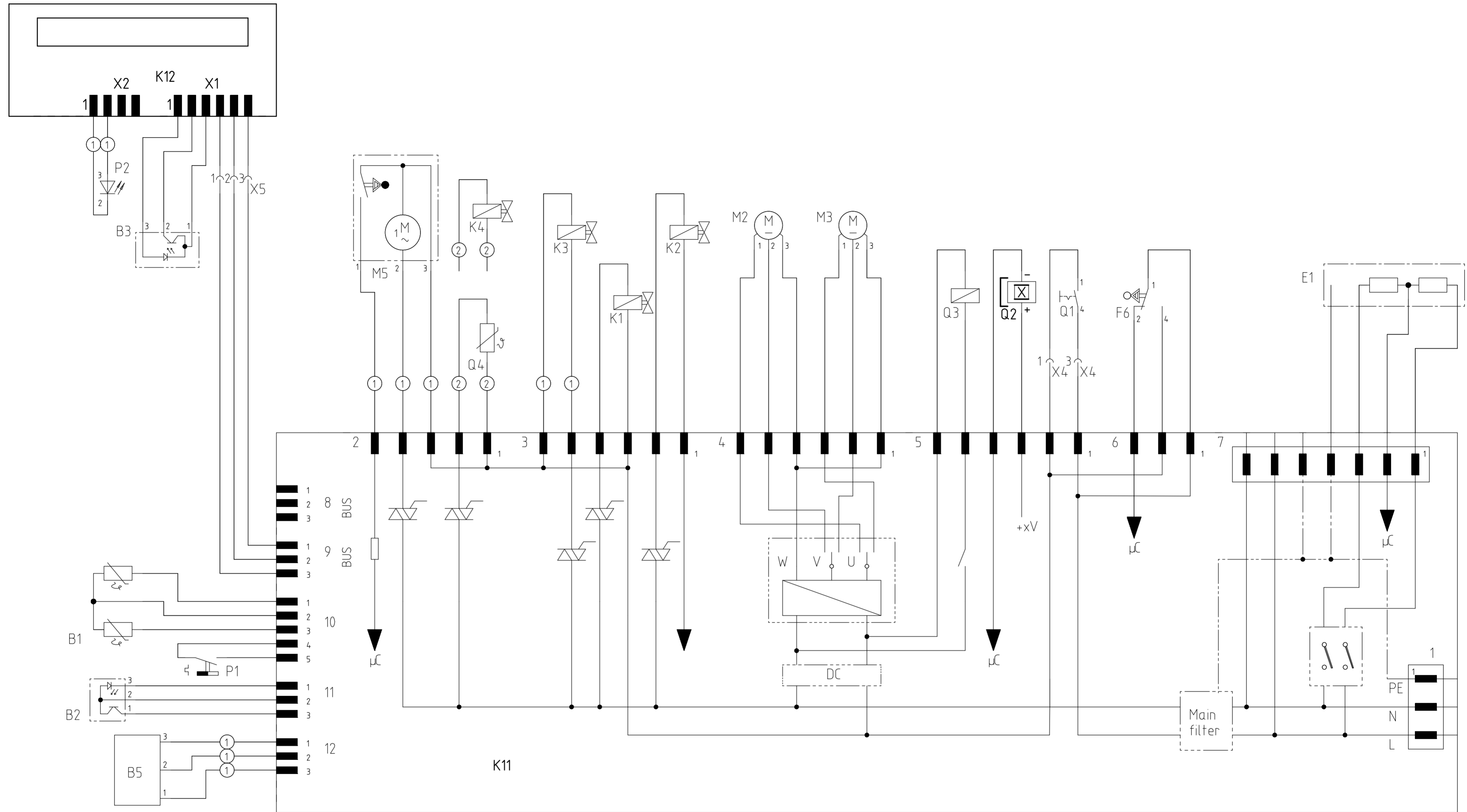
|              |  |  |  |  |  |               |  |
|--------------|--|--|--|--|--|---------------|--|
| <b>Reset</b> |  |  |  |  |  | Perform reset | Is possible at any time by pressing the button "Start" for longer than 3 seconds |
|              |  |  |  |  |  |               |  |

| Function   | Actuation  | Display | Remark   |
|--|--|---------|--|
| <b>Operating diagram</b>   |    |         | <p>Button name</p> <p>Panels are by way of example, different designs are possible</p> |
| <b>Reset *</b><br>* Before selecting the special programmes, perform a reset |    |         | Appliance is switched on   |
|  |    | 0:01    | Press "Start" button for 3 seconds   |
| <b>Select special programmes</b>   |    |         | Switch off the appliance   |
|  |   |         | Press and hold down the Start button   |
|  |  |         | Press the main switch  |
|  |  | P0      | Release buttons when P0 is displayed   |

| Function                         | Actuation  | Display                                      | Remark   |
|----------------------------------|--|--|--|
| <b>Select special programmes</b> |  | P0...P7                                      | Turn selector switch clockwise until required programme is selected  |
|                                  |  | P0<br>P1<br>P2<br>P3<br>P4<br>P5<br>P6<br>P7 | Error memory<br>Customer service test programme<br>Not relevant to customer service<br>Not relevant to customer service<br>Not relevant to customer service<br>Not relevant to customer service<br>Not relevant to customer service<br>Demonstration programme |
| <b>Read out error memory</b>     |  | P0   | Activate: Press "Start" button   |
|                                  |  | C:00...C:07<br><br>E:00...E:32               | Turn selector switch clockwise by one position at a time, storage space number is displayed for approx. 1 s<br><br>Contents of the storage space (error code) is then displayed  |

| Function  | Actuation  | Display     | Remark   |
|---|--|-------------|--|
| Customer service test programme                   |     | P1          | Turn selector switch clockwise until P1 is selected  |
|   |     | S:00...S:xy | Activate: Press "Start" button   |
| Skip test step                                    |     | S:00...S:xy | Press "Start" button<br>Not all test steps can be skipped<br>(see customer service test programme) |
| Special programme stopped<br>In error memory (P0) |     |             | Switch off main switch   |
| In the customer service test programme (P1)       |     | 0:01        | Press "Start" button for 3 seconds (Reset)   |
|   |   |             | Switch off main switch   |

| Function                       | Actuation  | Display | Remark   |
|--------------------------------|--|---------|--|
| Select demonstration programme |   | P7      | Door closed<br>Turn selector switch clockwise until P7 is selected       |
|                                |   | 1:23    | Activate: Press "Start" button   |
| End demonstration programme    |   | 0:01    | Press "Start" for 3 seconds until 0:01 is displayed, then release button |
|                                |   | 0:01    | Press "Start" button again for 3 seconds                                 |
|                                |   |         | Switch off main switch   |



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53

| REF | Components                   | Path        | REF | Components        | Path |
|-----|------------------------------|-------------|-----|-------------------|------|
| B1  | Temperature sensor NTC       | 5           | P1  | Impeller meter    | 6-8  |
| B2  | Low salt sensor optical      | 4           | P2  | On light          | 3    |
| B3  | Low rinse aid sensor optical | 5-6         | Q1  | Main switch       | 38   |
| B5  | Aqua sensor 1                | 6           | Q2  | Door switch       | 36   |
| E1  | Heater                       | 47,48,50,51 | Q3  | Dispenser coil    | 34   |
| F6  | Safety pressure switch       | 40-41       | Q4  | Drainage actuator | 17   |
| K1  | Regeneration valve           | 22          |     |                   |      |
| K2  | Filler valve                 | 24          |     |                   |      |
| K3  | Drainage valve               | 20          |     |                   |      |
| K4  | Filler valve warm water      | 17          |     |                   |      |
| K11 | Power unit                   | 9-51        |     |                   |      |
| K12 | Operating unit T             | 3-8         |     |                   |      |
| M2  | Circulation pump BLDC        | 26-27       |     |                   |      |
| M3  | Detergent solution pump BLDC | 29-30       |     |                   |      |
| M5  | Water switch                 | 12-15       |     |                   |      |

- ① Fitted depending on features
- ② Q4: only by storage tank, K4: only by second aquastop

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