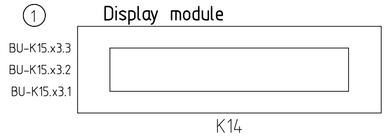

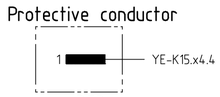

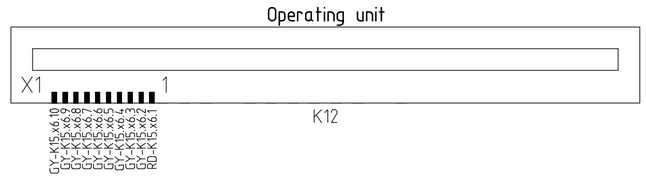

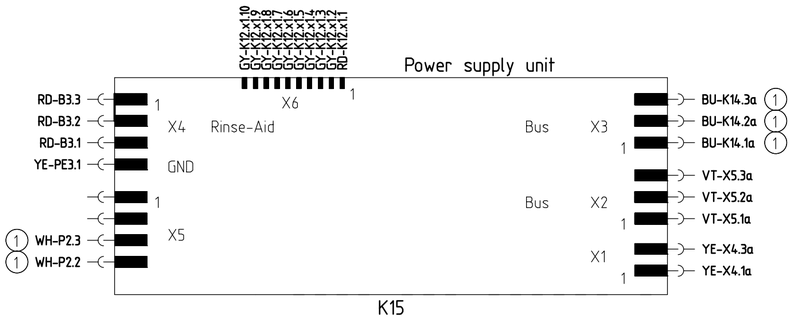

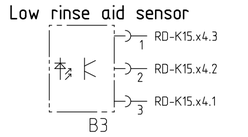

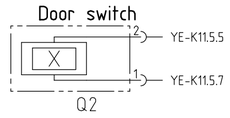

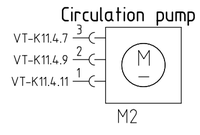

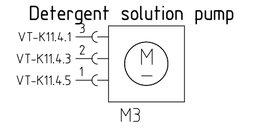

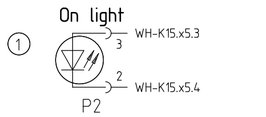

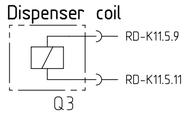

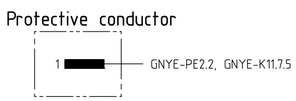

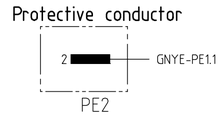

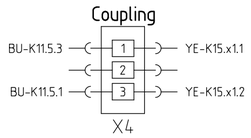

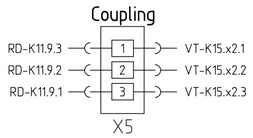

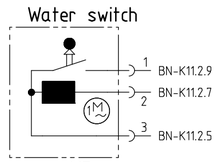

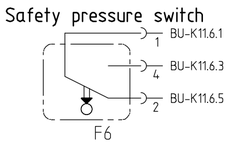

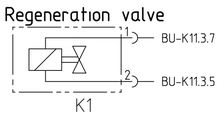

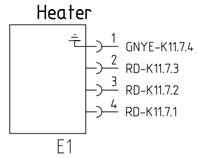

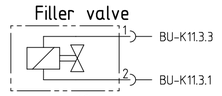

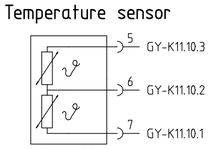

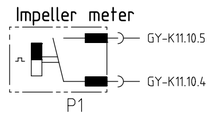

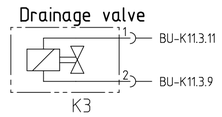

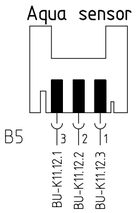

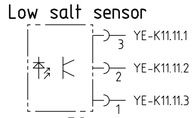

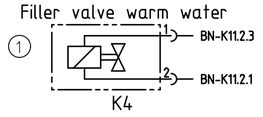

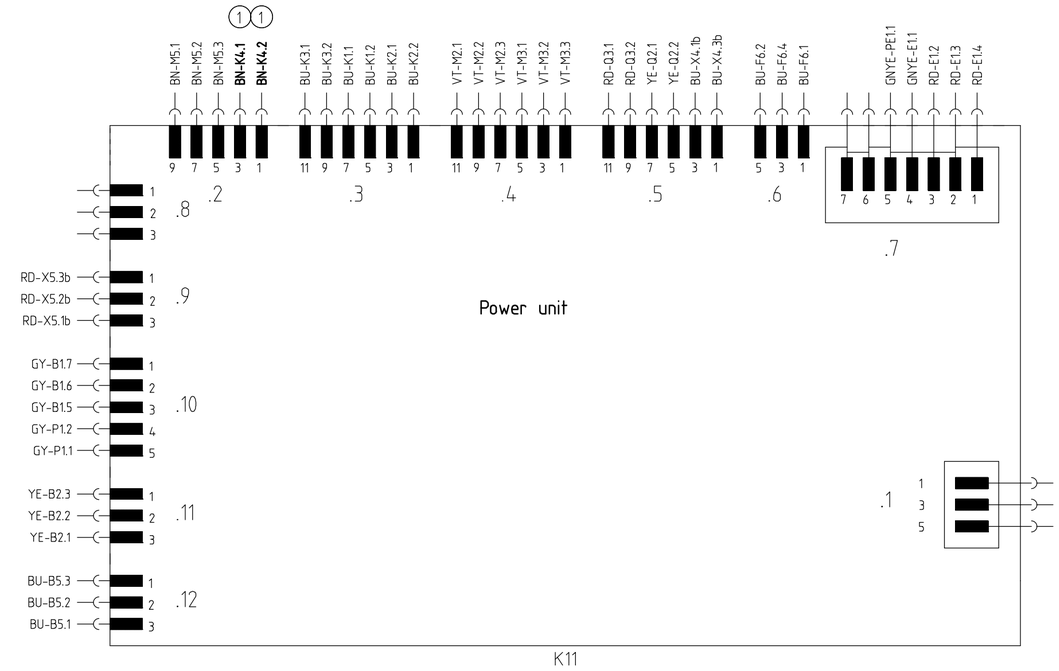

1 Fitted depending on features

Designation	LCS	Document No.	Rev	Sheet-No.
Connection Diagram GV 640A.EU Topklasse	EN	5600 0000142456	C	1 of 1
		Material No. 9000216279		

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Function	Actuation	Display	Remarks

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

Function	Actuation	Display	Remarks

Error class (failure group)		In Customer Service program		At Customer			Appliance behaviour in error case	Results of internal appliance check	Measures
		LED's	Display	LED		Display			
		Act. Clean Sani End							
Door			**E:06**			**E:06**	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.
Heating			**E:07**			**E:07**	Function w/o additional drying-system.	Water in fan housing Heating-circuit Zeolite is intermittent, fan defect, optional electronic defect, wire is intermittent.	Measure Heating-circuit Zeolite (check zeolite-heater resistance, clixon and thermal fuse) Verify components =>only for appliance with additional drying-system
			E:08				Function w/o heating.	Heat pump detects too low water level in sump.	>Corner valve scaled >inlet house kinked >heat exchanger drain valve is leaky >until FD8904: Hydraulic resistance softener to high (e.g. detergent in salt box) >Overturned bowls / pots in appliance?
			E:09			**E:09**		Heating-circuit is intermittent (resistance, wire harness, safety relais pins on power module)	Measure heating resistance, check wires

Function	Actuation	Display	Remarks

Error class (failure group)		In Customer Service program		At Customer			Appliance behaviour in error case	Results of internal appliance check	Measures
		LED's	Display	LED		Display			
		Act. Clean Sani End		✳					
			E:10				Function w/o heating.	Thermal output to less, deposits on heating element.	Check water hardness; if necessary decalcify and clean. On repeat change heat pump.
			E:11			**E:11**		NTC-failure Failure in wire to NTC's	Measure NTC's, check wires.
			E:12					Reserved	
			E:13					Water temperature too high (> 75°C)	Safety measure - no failure! Check water inlet temperature .
Filling		✳ ○ ○	**E:14**		●	**E:14**	Program abort with draining	Flow sensor detects no impulses, even though circulation pump detects water.	Check wires, check flow sensor (Reed-switch)
			E:15		✳	**E:15**	Program abort with interval pumping	Safety switch base carrier active. Appliance can't be turned off.	Look / Search for cause of water in base carrier
			E:16			**E:16**		Water inlet (impulses from flow sensor) w/o activation of filling valve.	Check filling valve. Check triggering of filling valve.
			E:17			**E:17**	Program abort with draining	Water inlet amount according flow sensor too high	Check flow control in filling valve
			E:18		●		Waiting for water inlet. Program abort with draining	Water inlet amount according flow sensor too low or no water intake.	Check water inlet

Function	Actuation	Display	Remarks

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

Function	Actuation	Display	Remarks

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

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

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

1.1 Customer Service Program

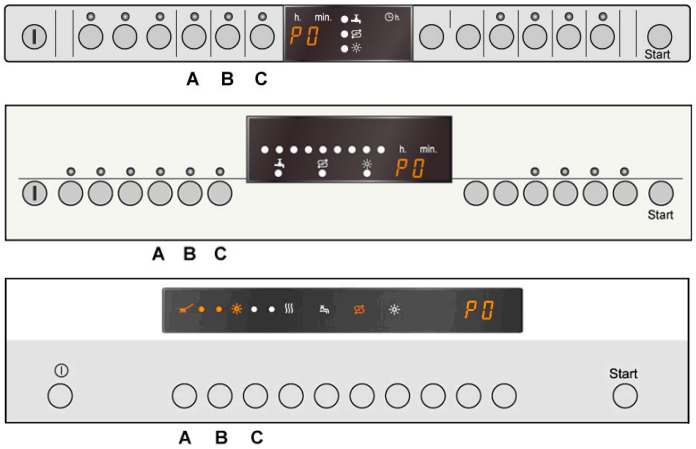
Preparation						Remove approx. 0.5 l water from salt dispenser.	Regeneration valve must be checked for leaks at appropriate customer specifications (see also steps with display S:11 + S:33 or S:12 + S:34)
CoilCheck	S:00	S:00	No	approx. 20			Check the drain pump. Activate the drain pump and place the water switch in the top basket position.
Check flow sensor and flow controller	S:01 – S:03 (Step S:04 to S:06 are displayed only if error E 18 occurs)	S:01–S:03 (Step S:04 to S:07 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).
Pause	S:07 (Step is not displayed)	S:08 (Step is not displayed)	No	10			
Fill + pump	S:08 – S:10	S:09 – S:11	No	approx. 100			Heat exchanger is overfilled, residual quantity in the pump sump is pumped off ==> heat exchanger full (contains 3.1 l water).
Pause	S:11	S:12	No	10		Visual inspection: water level in salt dispenser.	No change to water level ==> Regeneration valve leakproof.
Fill	S:12	S:13	No	approx. 40	1,5 l	Check waterinlet amount	All the water is conveyed to the pump sump via the heat exchanger.

Function	Display		Remark				
	Software (old)*	Software (new)*	Can be skipped	Time (s)	Value	Check / Measure	Remark
Pause	S:13	S:14	No	10		Visual inspection: water level in appliance.	Water level on upper edge of fine mesh filter (= 1.5 l in pump sump).
Fill	S:14 – S:15	S:15 – S:16	No	approx. 60	2,5 l		Total: 4 l in appliance
Circulate	S:16	S:17	No	15			Circulation pump must not “snorkel”.
Dispense (detergent)	S:17	S:18	No	10			
Circulate + heat + calibrate AquaSensor	S:18 – S:19	S:19 – S:20	No	110			
Circulate + heat	S:20	S:21	Yes		40 °C		Increase of temperature during heating +2.5 °C/min
Pause	S:21	S:22	No	5			
Circulate + dispense (rinse aid)	S:22 – S:24	S:23 – S:25	No	60			Number of impulses = set value of dispensed rinse aid
Circulate + heat + change position of water switch	S:25 – S:26	S:26 – S:27	Yes	approx. 480	65 °C		Increase of temperature during heating +2.5 °C/min. Change every 30 s roof shower head, top basket, bottom basket.
Pump off	S:27	S:28	No	45			Tightness test of outlet valve Water-level at heat exchanger is not supposed to falling off
Drain heat exchanger	S:28	S:29	No	60			Check outlet valve
Pause	S:29	S:30	No	10		Visual inspection: water level in appliance.	Water level must be over handle of coarse filter
Pump off + drain heat exchanger + fill + regenerate	S:30 – S:32	S:31 – S:33	No	approx. 20			Drain the complete appliance

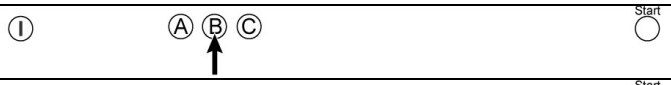
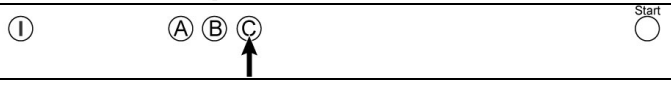
Function	Display		Remark				
	Software (old)*	Software (new)*	Can be skipped	Time (s)	Value	Check / Measure	Remark
Pause	S:33	S:34	No	10		Visual inspection: water level in salt dispenser.	Water level in salt dispenser must be increased by several cm.
Pump off + drain heat exchanger + fill	S:34 – S:35	S:35 – S:36	No	approx. 100	4 l		Rinse the brine solution out of the heat exchanger and pump sump.
Pump off + drain (heat exchanger)	S:36	S:37	No	30			Drain the complete appliance
Check whether appliance was drained (activates circulation pump and drain pump)	S:37 – S:38 (Step S:39 to S:40 are displayed only if error E 24 occurs)	S:38–S:39 (Step S:40 to S:41 are displayed only if error E 24 occurs)	No	approx. 10–120			Self-check whether appliance was drained.
End of test programme	"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

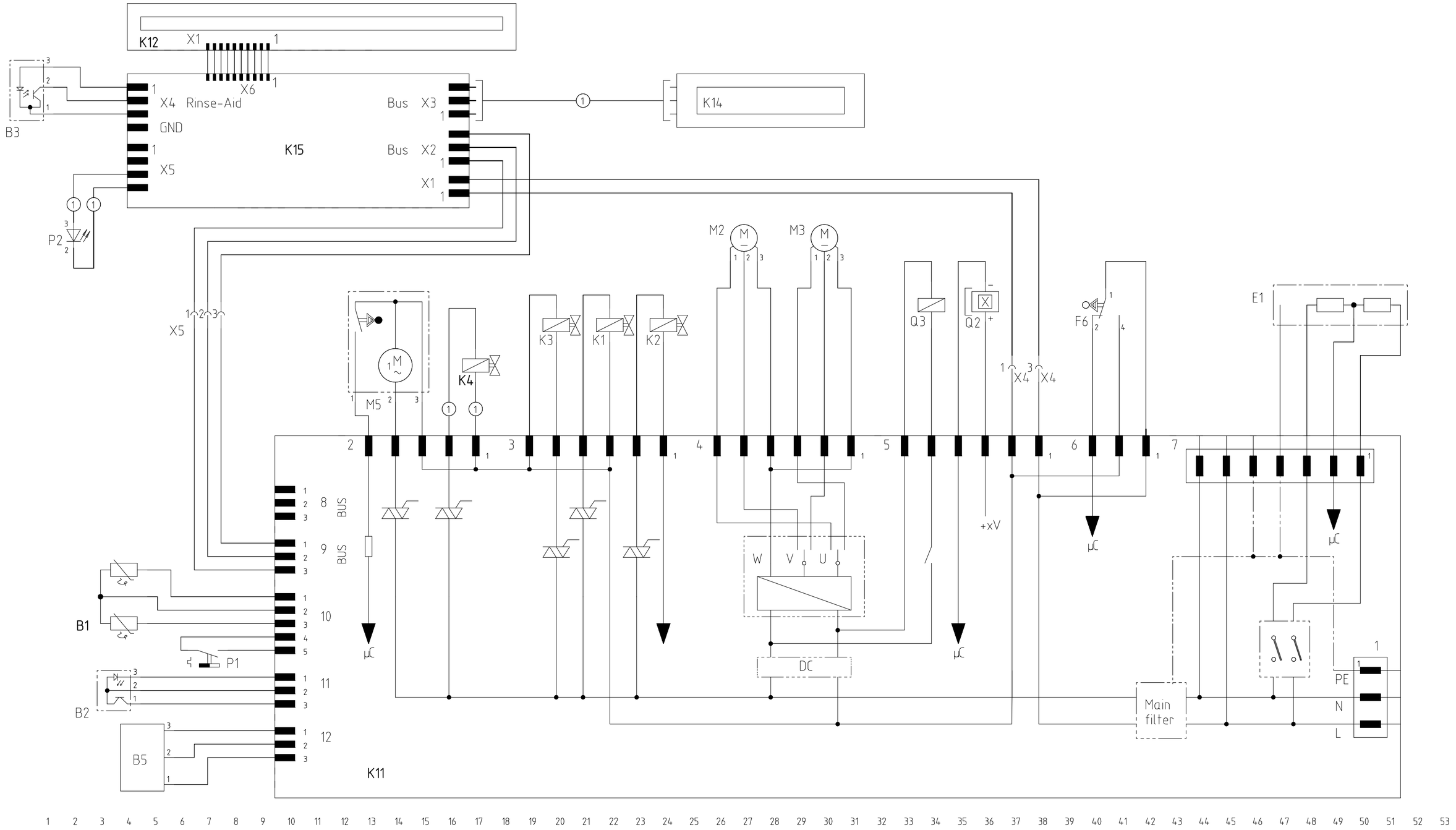
1.2 Reset program

Reset						Perform reset	Is possible at any time by pressing the button "Start" for longer than 3 seconds

Function	Actuation	Display	Remark
Operating diagram			Button name Panels are by way of example, different designs are possible
Reset * * Before selecting the special programmes, perform a reset			Appliance is switched on
		0:01	Press “Start” button for 3 seconds
Select special programmes			Switch off the appliance
			Press and hold down buttons “B” + “C”
			Press the main switch
		P0	Release buttons when P0 is displayed

Function	Actuation	Display	Remark
Select special Selection		P0…P7	Press button “B” until required programme is selected
		P0 P1 P2 P3 P4 P5 P6 P7	Error memory Customer service test programme Not relevant to customer service Not relevant to customer service Not relevant to customer service Not relevant to customer service Not relevant to customer service Demonstration programme
Read out fault memory		P0	Activate: Press button “C”
		C:00…C:07 E:00…E:32	Storage space number: Hold down button “C” Storage space contents (fault code): Release button “C”
Customer service test programme		P1	Press button “B” until P1 is displayed
		S:00...S:xy	Activate: Press button “C”
Skip test step		S:00...S:xy	Press button “B” Not all test steps can be skipped (see customer service test programme)

Function	Actuation	Display	Remark
End special programmes In the 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
Select demonstration programme		P7	Press button “B” until P7 is displayed
		1:23	Activate: Press button “C”
	Door		If operation from front: Open and close door again If operation from above: Close and open door and close again
End demonstration programme	Door		Only if operation from above: When programme is running, open door
		0:01	Press “Start” button for 3 seconds (Reset)
			Hold down buttons “B” + “C”
			Switch off main switch



REF	Components	Path
B1	Temperature sensor NTC	5
B2	Low salt sensor optical	4
B3	Low rinse aid sensor optical	1
B5	Aqua sensor 1	6
E1	Heater	47,48,50,51
F6	Safety pressure switch	40-41
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	7-9
K14	Display module	24-31
K15	Power supply unitPiezopart	4-17
M2	Circulation pump BLDC	26-27

REF	Components	Path
M3	Detergent solution pump BLDC	29-30
M5	Water switch	12-15
P1	Impeller meter	6-8
P2	On light	2
Q2	Door switch	36
Q3	Dispenser coil	34

① Fitted depending on features

Designation	LCS	Document No.	Rev	Sheet-No.
Circuit Diagram GV 640A.EU Topklasse	EN	5600 0000142463 Material No. 9000216278	C	1 of 1

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