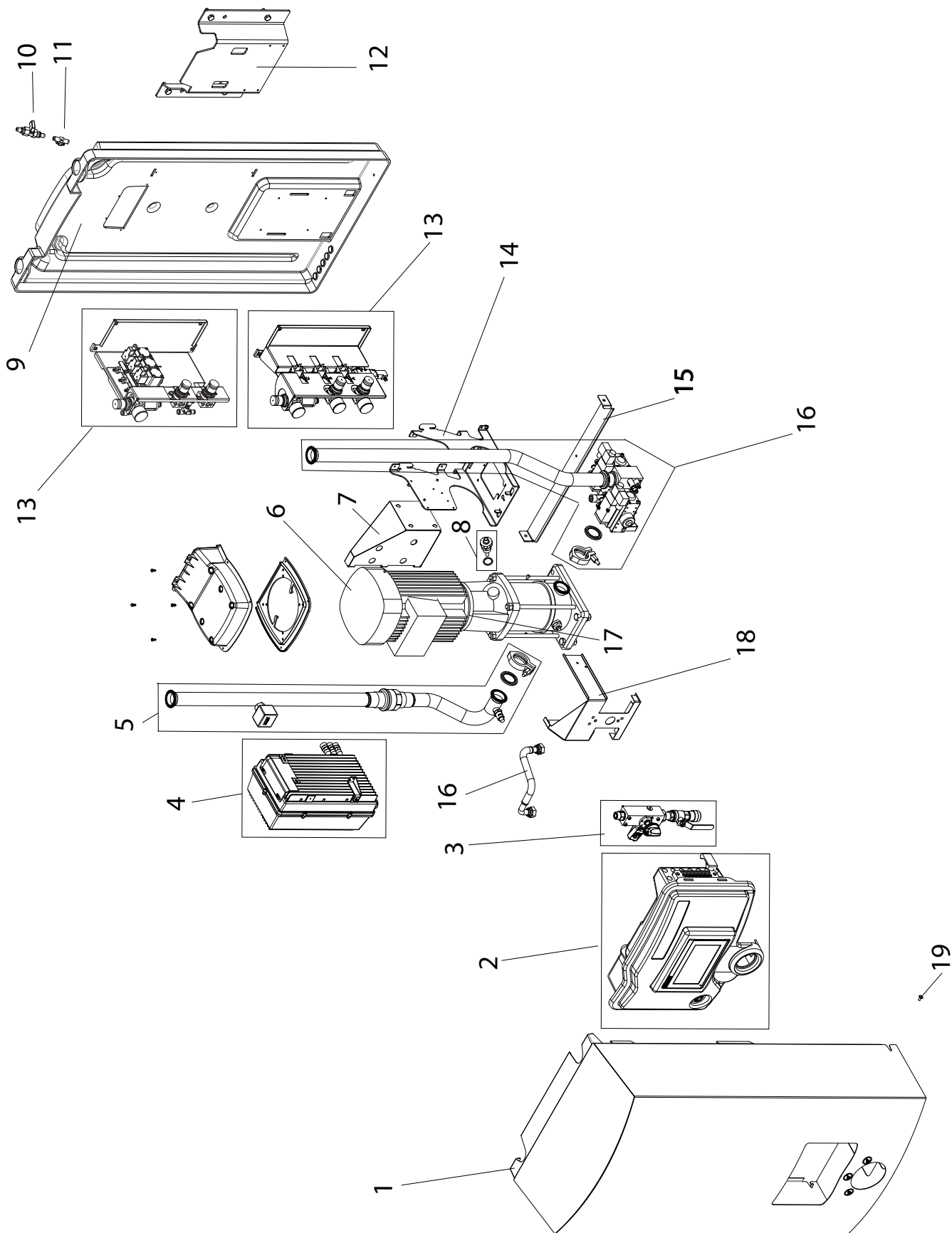


Spare Part List

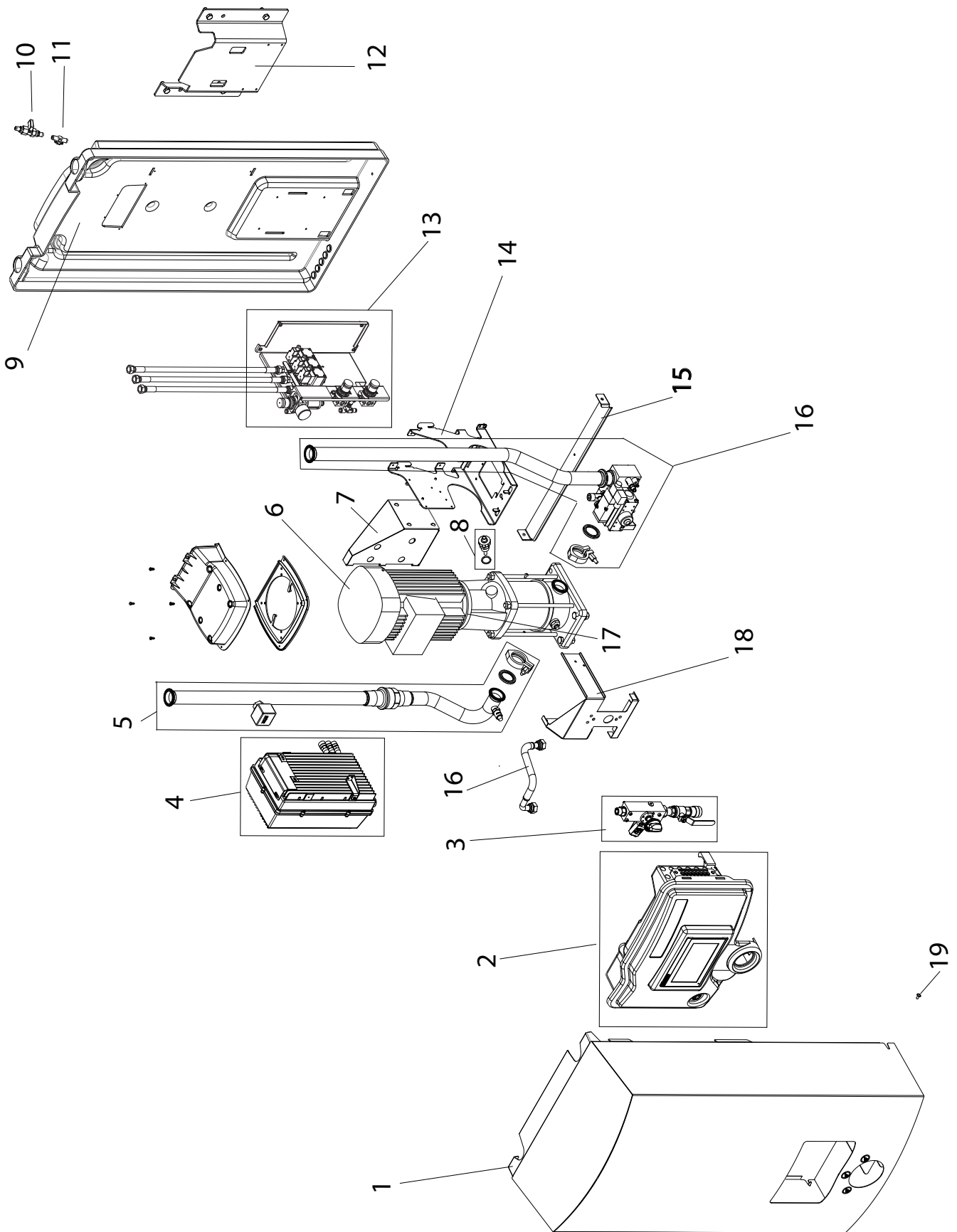
Hybrid Foamatic
 MA2, MA3, MA2C, MA3C, MA2M, MA3M, MA2CM, MA3CM



110004575

Pos./Ref.	Nr. No.	Description Beschreibung Désignation Designación	Hybrid Foamatic MA2	Hybrid Foamatic MA3	Hybrid Foamatic MA2C	Hybrid Foamatic MA3C	Hybrid Foamatic MA2M	Hybrid Foamatic MA3M	Hybrid Foamatic MA2CM	Hybrid Foamatic MA3CM
1	110005300	Cover complete	1	1	1	1	1	1	1	1
2		See page 130-132 drawing 110005233 and 110005256								
3		See page 116 drawing 110004572								
4		See page 128 drawing 110005271								
5		See page 126 drawing 110001888								
6	110004300	Pumpe CRN 5-6 kW	1	1	1	1	1	1	1	1
7	110005088	Hinge bracket Mounting part	1	1	1	1	1	1	1	1
8	110004713	PT1000 Sensor complete	1	1	1	1	1	1	1	1
9	0606745	Back cabinet	1	1	1	1	1	1	1	1
10	110001115	Closing valve complete	1	1	1	1	1	1	1	1
11	0608135	Air non return valve	1	1	1	1	1	1	1	1
12	110001141	Wall bracket complete	1	1	1	1	1	1	1	1
13		See page 134 drawing 110004606 Serial no. →112.01.000423								
13		See page 136 drawing 110008139 Serial no. 112.02.000423 →								
14	110001142	Pump bracket	1	1	1	1	1	1	1	1
15	110003496	Cover bracket	1	1	1	1	1	1	1	1
16		See page 124 drawing 110004572								
17	0634047	Axle sealing	1	1	1	1	1	1	1	1
18	110004949	Block bracket manual block	1	1	1	1	1	1	1	1
19	110003512 (156704)	Screw kit	1	1	1	1	1	1	1	1

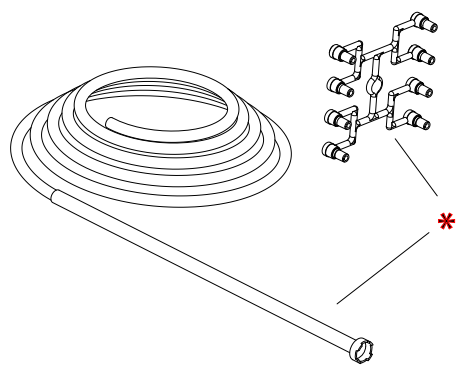
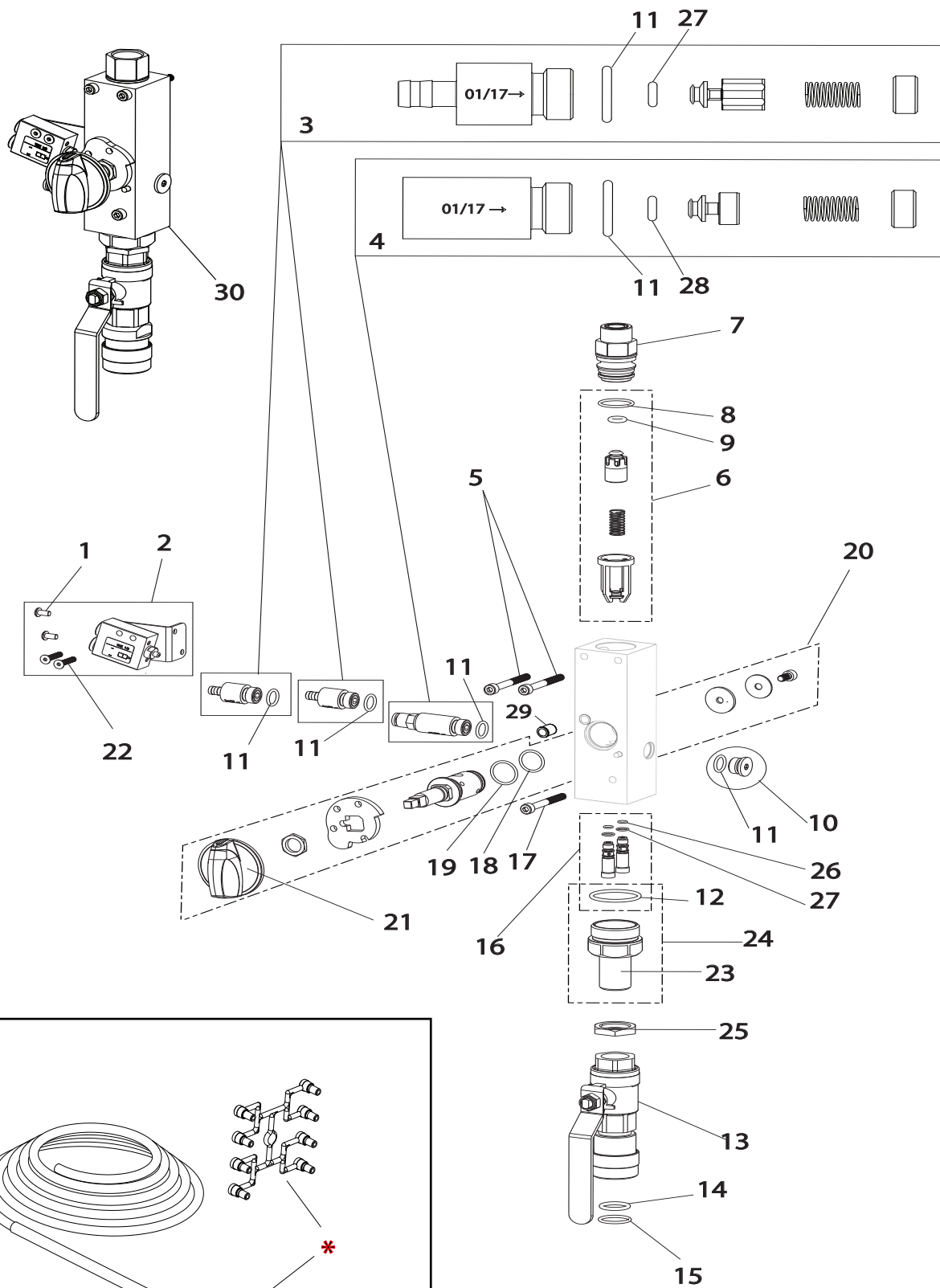
Hybrid Foamatic
MA2PD, MA3PD, MA2CPD, MA3CPD, MA2MPD, MA3MPD, MA2CMPD, MA3CMPD



110008159

Pos./Ref.	Nr. No.	Description Beschreibung Désignation Designación	Hybrid Foamatic MA2PD	Hybrid Foamatic MA3PD	Hybrid Foamatic MA2CPD	Hybrid Foamatic MA3CPD	Hybrid Foamatic MA2MPD	Hybrid Foamatic MA3MPD	Hybrid Foamatic MA2CMPD	Hybrid Foamatic MA3CMPD
1	110005300	Cover complete	1	1	1	1	1	1	1	1
2		See page 130-132 drawing 110005233 and 110005256								
3		See page 116 drawing 110004572								
4		See page 128 drawing 110005271								
5		See page 126 drawing 110001888								
6	110004300	Pumpe CRN 5-6 kW	1	1	1	1	1	1	1	1
7	110005088	Hinge bracket Mounting part	1	1	1	1	1	1	1	1
8	110004713	PT1000 Sensor complete	1	1	1	1	1	1	1	1
9	0606745	Back cabinet	1	1	1	1	1	1	1	1
10	110001115	Closing valve complete	1	1	1	1	1	1	1	1
11	0608135	Air non return valve	1	1	1	1	1	1	1	1
12	110001141	Wall bracket complete	1	1	1	1	1	1	1	1
13		See page 138 drawing 110007902								
14	110001142	Pump bracket	1	1	1	1	1	1	1	1
15	110003496	Cover bracket	1	1	1	1	1	1	1	1
16		See page 124drawing 110004580								
17	0634047	Axle sealing	1	1	1	1	1	1	1	1
18	110004949	Block bracket manual block	1	1	1	1	1	1	1	1
19	110003512 (156704)	Screw kit	1	1	1	1	1	1	1	1

Manuel Block
MA2M, MA3M, MA2CM, MA3CM, MA2MPD, MA3MPD, MA2CMPD, MA3CMPD



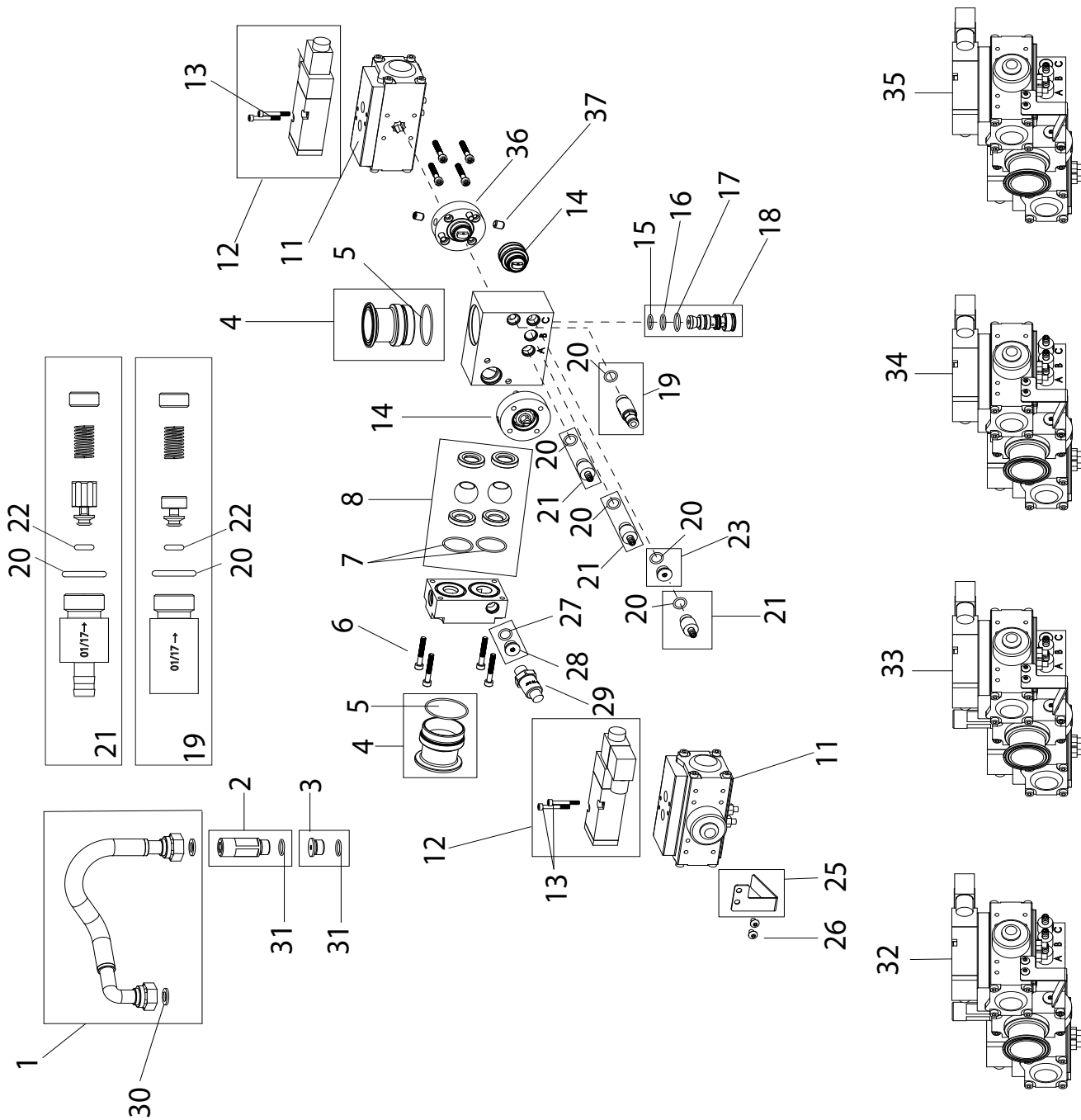
110001405

110004572MA-1

Pos./Ref.	Nr. No.	Description Beschreibung Désignation Designación	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	Hybrid	
			Foamatic MA2	Foamatic MA3	Foamatic MA2C	Foamatic MA3C	Foamatic MA2M	Foamatic MA3M	Foamatic MA2CM	Foamatic MA3CM	Foamatic MA2PD	Foamatic MA3PD	Foamatic MA2CPD	Foamatic MA3CPD	Foamatic MA2MPD	Foamatic MA3MPD	Foamatic MA2CMPD	Foamatic MA3CMPD
1	110003512 (0602021)	Screw kit																
2	110003282	Air regulation valve complete					1	1	1	1					1	1	1	1
3	110001102	Chemical non return valve					2	2	2	2					2	2	2	2
4	110001979	Air non return valve					1	1	1	1					1	1	1	1
5	110003512 (110000526)	Screw kit																
6	110004384	Water non return valve complete					1	1	1	1					1	1	1	1
7	110004246	Fitting					1	1	1	1					1	1	1	1
8	110005355 (0600078)	O-ring kit																
9	110005355 (110002785)	O-ring kit																
10	110002306	Plug					1	1	1	1					1	1	1	1
11	110005355 (110002952)	O-ring kit																
12	110005355 (110000038)	O-ring kit																
13	110003682	Outlet coupling complete					1	1	1	1					1	1	1	1
14	110005355 (641101)	O-ring kit																
15	110005355 (641102)	O-ring kit																
16	110003283	Injector kit					1	1	1	1					1	1	1	1
17	110003512 (110000526)	Screw kit																
18	110005355 (110002508)	O-ring kit																
19	110005355 (350108)	O-ring kit																
20	110003401	Axle for block complete					1	1	1	1					1	1	1	1
21	909100214	Operation button					1	1	1	1					1	1	1	1
22	110003512 (110000525)	Screw kit																
23	110003092	Hexagon nipple					1	1	1	1					1	1	1	1
24	110006214	Hexagon nipple complete																
25	350705	Lock nut					1	1	1	1					1	1	1	1
26	110005355 (110004888)	O-ring kit																
27	110005355 (110004887)	O-ring kit																
28	110003355 (0635021)	O-ring kit																
29	110002392	Flexible pressure piece																
30	110003278	Block complete																
*	110001214 110001197 110001198 110001199 0646105	Chemical hose (blue) Chemical hose (yellow) Chemical hose (red) Chemical hose (green) Chemical limiting nozzle																

Hybrid Foamatic Automatic Block
MA2, MA3, MA2C, MA3C, MA2M, MA3M, MA2CM, MA3CM

Serial no. → 112.01.000423

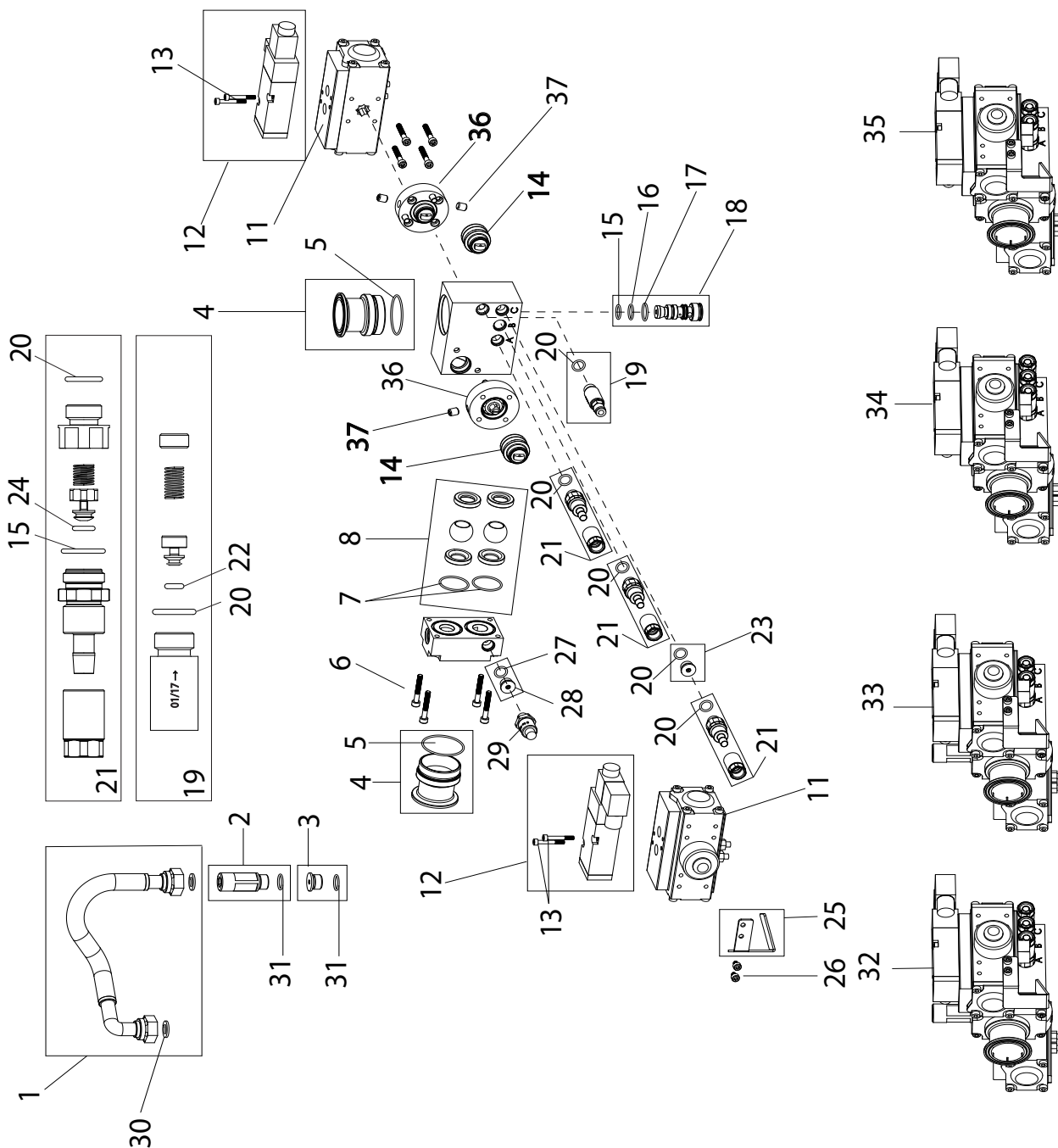


110004572MA-2

Pos./Ref.	Nr. No.	Description Beschreibung Désignation Designación	Hybrid Foamatic MA2	Hybrid Foamatic MA3	Hybrid Foamatic MA2C	Hybrid Foamatic MA3C	Hybrid Foamatic MA2M	Hybrid Foamatic MA3M	Hybrid Foamatic MA2CM	Hybrid Foamatic MA3CM
2	110005274	Fitting					1	1	1	1
3	110005275	Plug	1	1	1	1				
4	110005279	Clamp fitting	2	2	2	2	2	2	2	2
5	110005355 (110004837)	O-ring kit								
6	110003512 (110005104)	Screw kit								
7	110005355 (110004835)	O-ring kit								
8	110005276	Service kit actuator	1	1	1	1	1	1	1	1
11	0605792	Actuator	2	2	2	2	2	2	2	2
12	110004622	Solenoid valve	1	1	1	1	1	1	1	1
13	110003512 (110004573)	Screw kit								
14	110005277	Service kit automatic block	2	2	2	2	2	2	2	2
15	110005355 (110004870)	O-ring kit								
16	110005355 (110004871)	O-ring kit								
17	110005355 (110002955)	O-ring kit								
18	110005362	Injector kit 150								
18	110005278	Injector kit 300	1	1	1	1	1	1	1	1
18	110005363	Injector kit 450								
19	110001979	Air non return valve	1	1	1	1	1	1	1	1
20	110005355 (110002952)	O-ring kit								
21	110001102	Chemical non return valve	2	3	2	3	2	3	2	3
22	110005355 (0635021)	O-ring kit								
23	110002306	Plug	1		1		1		1	
25	110005207	Bracket	1	1	1	1	1	1	1	1
26	110003512 (110003900)	Screw kit								
27	110005355 (110002952)	O-ring kit								
28	110002306	Plug								
29	110000890	Sensor								
30	110005355 (0635042)	O-ring kit					2	2	2	2
31	110005355 (110004140)	O-ring kit								
32	110005227	Block automatic complete						1		1
33	110005226	Block automatic complete					1		1	
34	110005229	Block automatic complete		1		1				
35	110005228	Block automatic complete	1		1					
36	110005351	Fixation for actuator								
37	110003512 (156519)	Pinol screw								

Hybrid Foamatic Automatic Block
 MA2, MA3, MA2C, MA3C, MA2M, MA3M, MA2CM, MA3CM

Serial no. 112.02.000423 →

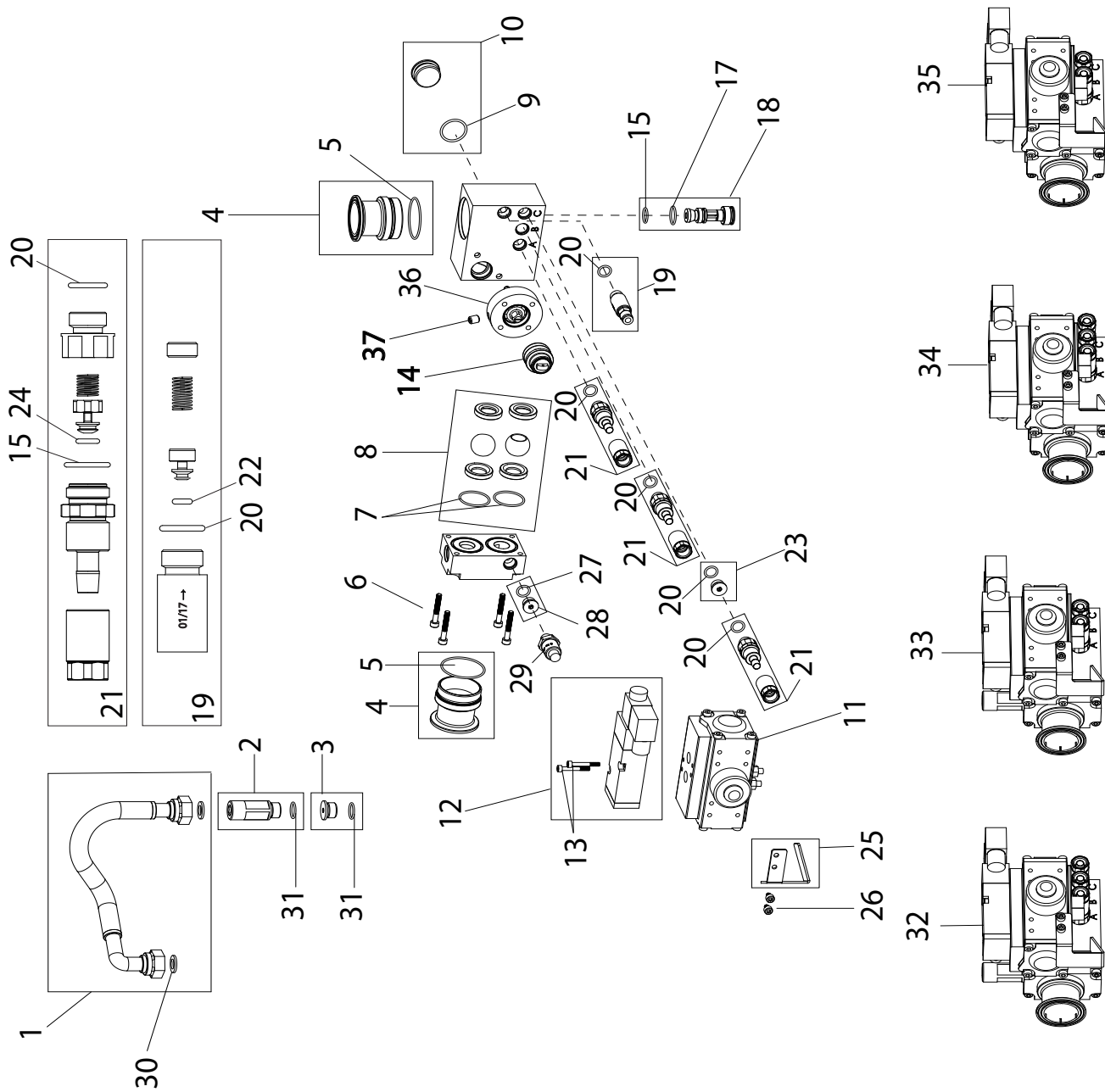


110008013

Pos./Ref.	Nr. No.	Description Beschreibung Désignation Designación	Hybrid Foamatic MA2	Hybrid Foamatic MA3	Hybrid Foamatic MA2C	Hybrid Foamatic MA3C	Hybrid Foamatic MA2M	Hybrid Foamatic MA3M	Hybrid Foamatic MA2CM	Hybrid Foamatic MA3CM
1	110004875	Hose					1	1	1	1
2	110005274	Fitting					1	1	1	1
3	110005275	Plug	1	1	1	1				
4	110005279	Clamp fitting	2	2	2	2	2	2	2	2
5	110005355 (110004837)	O-ring kit								
6	110003512 (110005104)	Screw kit								
7	110005355 (110004835)	O-ring kit								
8	110005276	Service kit actuator	1	1	1	1	1	1	1	1
11	0605792	Actuator	2	2	2	2	2	2	2	2
12	110004622	Solenoid valve	1	1	1	1	1	1	1	1
13	110003512 (110004573)	Screw kit								
14	110005277	Service kit automatic block	2	2	2	2	2	2	2	2
15	110005355 (110004870)	O-ring kit								
16	110005355 (110004871)	O-ring kit								
17	110005355 (110002955)	O-ring kit								
18	110008017	Injector kit 8-15-150								
18	110008018	Injector kit 16-15-300	1	1	1	1	1	1	1	1
18	110008019	Injector kit 24-15-450								
19	110001979	Air non return valve	1	1	1	1	1	1	1	1
20	110005355 (110002952)	O-ring kit								
21	110007961	Chemical non return valve	2	3	2	3	2	3	2	3
22	110005355 (0635021)	O-ring kit								
23	110002306	Plug	1		1		1		1	
24	110005355 (0635025)	O-ring kit								
25	110005207	Bracket	1	1	1	1	1	1	1	1
26	110003512 (110003900)	Screw kit								
27	110005355 (110002952)	O-ring kit								
28	110002306	Plug								
29	110000890	Sensor								
30	110005355 (0635042)	O-ring kit					2	2	2	2
31	110005355 (110004140)	O-ring kit								
32	110008194	Block automatic complete						1		1
33	110008193	Block automatic complete					1		1	
34	110008196	Block automatic complete		1		1				
35	110008195	Block automatic complete	1		1					
36	110005351	Fixation for actuator								
37	110003512 (156519)	Pinol screw								

Hybrid Foamatic Automatic Block

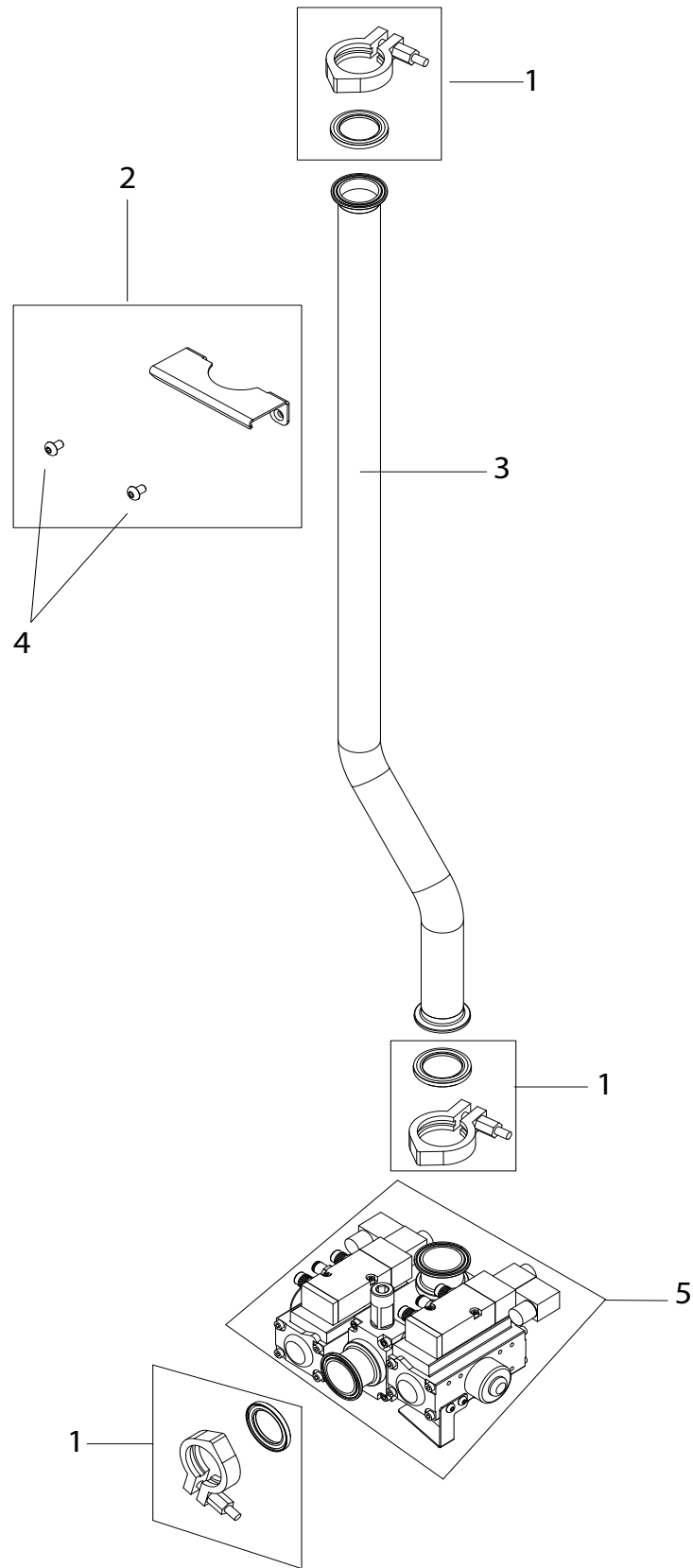
MA2PD, MA3PD, MA2CPD, MA3CPD, MA2MPD, MA3MPD, MA2CMPD, MA3CMPD



110008011

Pos./Ref.	Nr. No.	Description Beschreibung Désignation Designación	Hybrid Foamatic MA2PD	Hybrid Foamatic MA3PD	Hybrid Foamatic MA2CPD	Hybrid Foamatic MA3CPD	Hybrid Foamatic MA2MPD	Hybrid Foamatic MA3MPD	Hybrid Foamatic MA2CMPD	Hybrid Foamatic MA3CMPD
1	110004875	Hose					1	1	1	1
2	110005274	Fitting					1	1	1	1
3	110005275	Plug	1	1	1	1				
4	110005279	Clamp fitting	2	2	2	2	2	2	2	2
5	110005355 (110004837)	O-ring kit								
6	110003512 (110005104)	Screw kit								
7	110005355 (110004835)	O-ring kit								
8	110007960	Service kit actuator PD	1	1	1	1	1	1	1	1
9	110005355 (110004200)	O-ring kit								
10	110007962	Plug	1	1	1	1	1	1	1	1
11	0605792	Actuator	2	2	2	2	2	2	2	2
12	110004622	Solenoid valve	1	1	1	1	1	1	1	1
13	110003512 (110004573)	Screw kit								
14	110005277	Service kit automatic block	2	2	2	2	2	2	2	2
15	110005355 (110004870)	O-ring kit								
16	110005355 (110004871)	O-ring kit								
17	110005355 (110002955)	O-ring kit								
18	110007963	Injector kit PD 9-8-150								
18	110007964	Injector kit PD 18-8-300	1	1	1	1	1	1	1	1
18	110007965	Injector kit PD 21-8-450								
19	110001979	Air non return valve	1	1	1	1	1	1	1	1
20	110005355 (110002952)	O-ring kit								
21	110007961	Chemical non return valve	2	3	2	3	2	3	2	3
22	110005355 (0635021)	O-ring kit								
23	110002306	Plug	1		1		1		1	
24	110005355 (0635025)	O-ring kit								
25	110005207	Bracket	1	1	1	1	1	1	1	1
26	110003512 (110003900)	Screw kit								
27	110005355 (110002952)	O-ring kit								
28	110002306	Plug								
29	110000890	Sensor								
30	110005355 (0635042)	O-ring kit					2	2	2	2
31	110005355 (110004140)	O-ring kit								
32	110007967	Block automatic complete PD						1		1
33	110007966	Block automatic complete PD					1		1	
34	110007969	Block automatic complete PD		1		1				
35	110007968	Block automatic complete PD	1		1					
36	110005351	Fixation for actuator								
37	110003512 (156519)	Pinol screw								

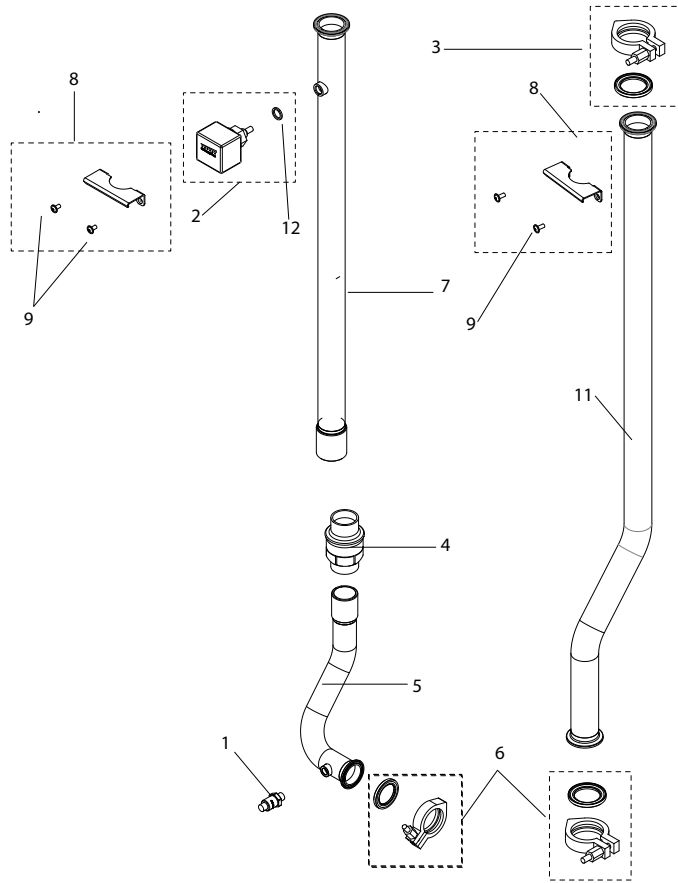
Outlet pipe



110004580

Pos./Ref.	Nr. No.	Description Beschreibung Désignation Designación	Hybrid Foamatic MA2	Hybrid Foamatic MA3	Hybrid Foamatic MA2C	Hybrid Foamatic MA3C	Hybrid Foamatic MA2M	Hybrid Foamatic MA3M	Hybrid Foamatic MA2CM	Hybrid Foamatic MA3CM	Hybrid Foamatic MA2PD	Hybrid Foamatic MA3PD	Hybrid Foamatic MA2CPD	Hybrid Foamatic MA3CPD	Hybrid Foamatic MA2MPD	Hybrid Foamatic MA3MPD	Hybrid Foamatic MA2CMPD	Hybrid Foamatic MA3CMPD	
1	110005273	Clamp kit Foamatic									1	1	1	1	1	1	1	1	1
2	110005280	Bracket									1	1	1	1	1	1	1	1	1
3	110005106	Outlet pipe complete									1	1	1	1	1	1	1	1	1
4	110003512 (110005317)	Screw kit									1	1	1	1	1	1	1	1	1
5		See page 118 drawing 110004572 Serial no. →112.02.000423									1	1	1	1	1	1	1	1	1
5		See page 120 drawing 110008013 Serial no. 112.02.000423→									1	1	1	1	1	1	1	1	1
5		See page 122 drawing 110008011									1	1	1	1	1	1	1	1	1

Inlet pipe



110001888

Pos./Ref.	Nr. No.	Description Beschreibung Désignation Designación	Hybrid Foamatic MA2	Hybrid Foamatic MA3	Hybrid Foamatic MA2C	Hybrid Foamatic MA3C	Hybrid Foamatic MA2M	Hybrid Foamatic MA3M	Hybrid Foamatic MA2CM	Hybrid Foamatic MA3CM
1	110000889	Sensor 1-16 bar	1	1	1	1	1	1	1	1
2	110000973	Flow switch	1	1	1	1	1	1	1	1
3	110005273	Clamp kit Foamatic	1	1	1	1	1	1	1	1
4	630900	Non return valve 1 1/4"1	1	1	1	1	1	1	1	1
5	110004913	Piping support inlet	1	1	1	1	1	1	1	1
6	110005273	Clamp kit Foamatic	1	1	1	1	1	1	1	1
7	110005200	Inlet pipe straight	1	1	1	1	1	1	1	1
8	110005280	Bracket	1	1	1	1	1	1	1	1
9	110003512 (110005317)	Screw kit								

English (EN)

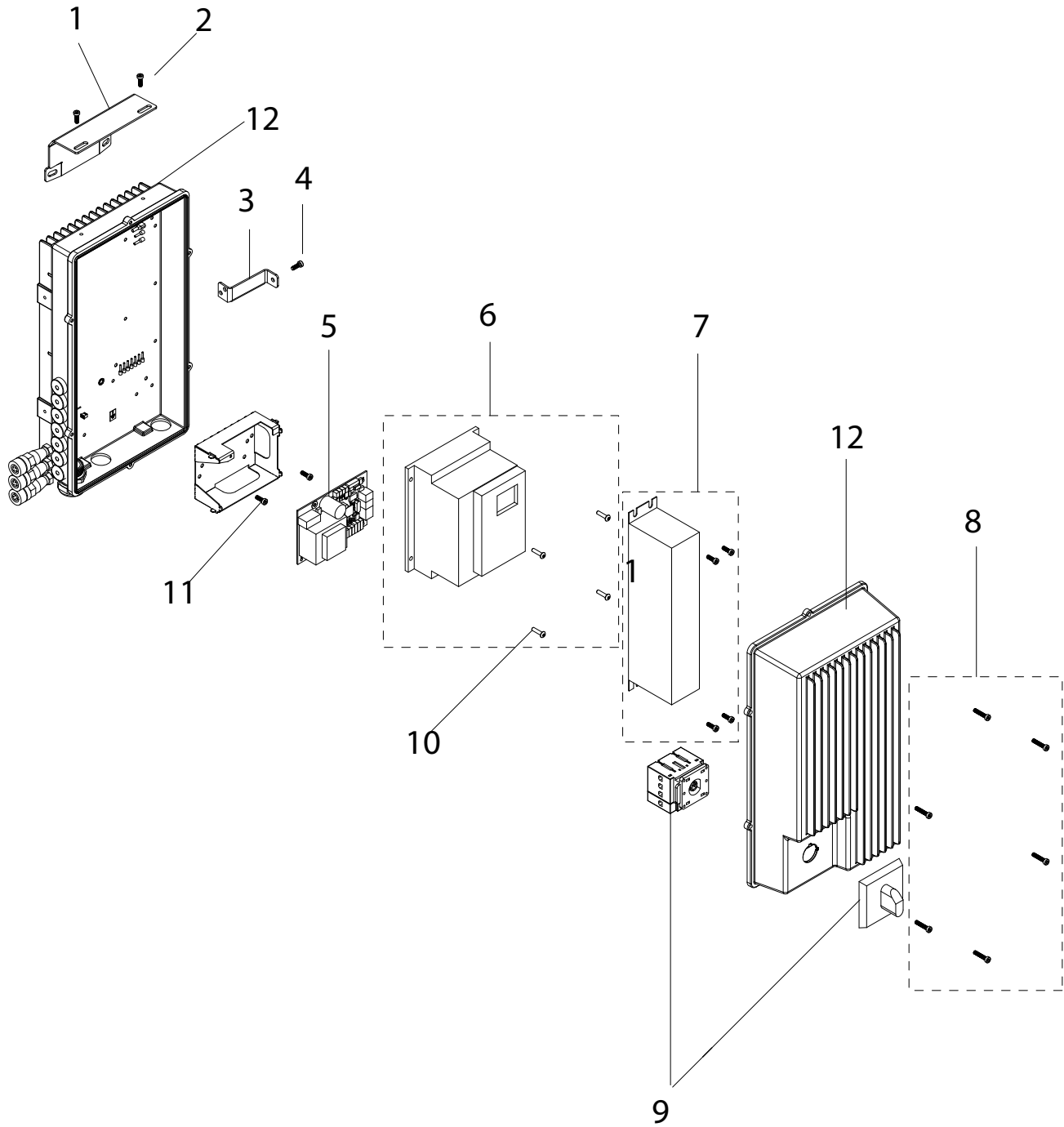
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Français (FR)

Español (ES)

Italiano (IT)

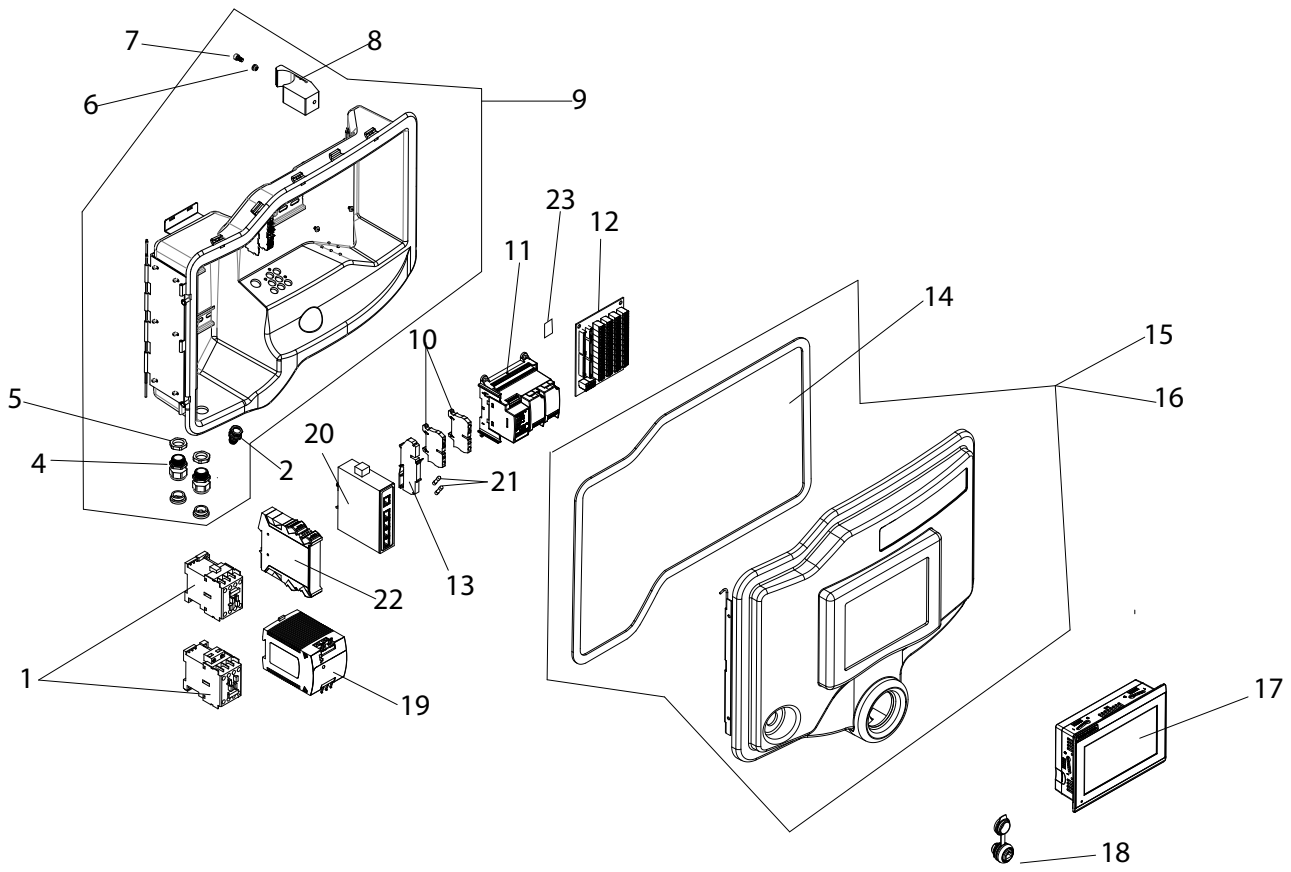
El box



110005271

Pos./Ref.	Nr. No.	Description Beschreibung Désignation Designación	Hybrid Foamatic MA2	Hybrid Foamatic MA3	Hybrid Foamatic MA2C	Hybrid Foamatic MA3C	Hybrid Foamatic MA2M	Hybrid Foamatic MA3M	Hybrid Foamatic MA2CM	Hybrid Foamatic MA3CM
1	110005005	Top bracket	1	1	1	1	1	1	1	1
2	110003512 (110001369)	Screw kit	1	1	1	1	1	1	1	1
3	110001340	Bottom bracket	1	1	1	1	1	1	1	1
4	110003512 (156208)	Screw kit								
5	110001124	Controller board incl. cable	1	1	1	1	1	1	1	1
6	110001136	Frequency converter incl. cable	1	1	1	1	1	1	1	1
7	0631057	EMC Filter 4/5.5 kW								
8	110003512	Screw kit								
9	110001881	Main switch	1	1	1	1	1	1	1	1
10	110003512 (110004617)	Screw kit								
11	110003512 (0602104)	Screw kit								
12	110005012	EI-box	1	1	1	1	1	1	1	1

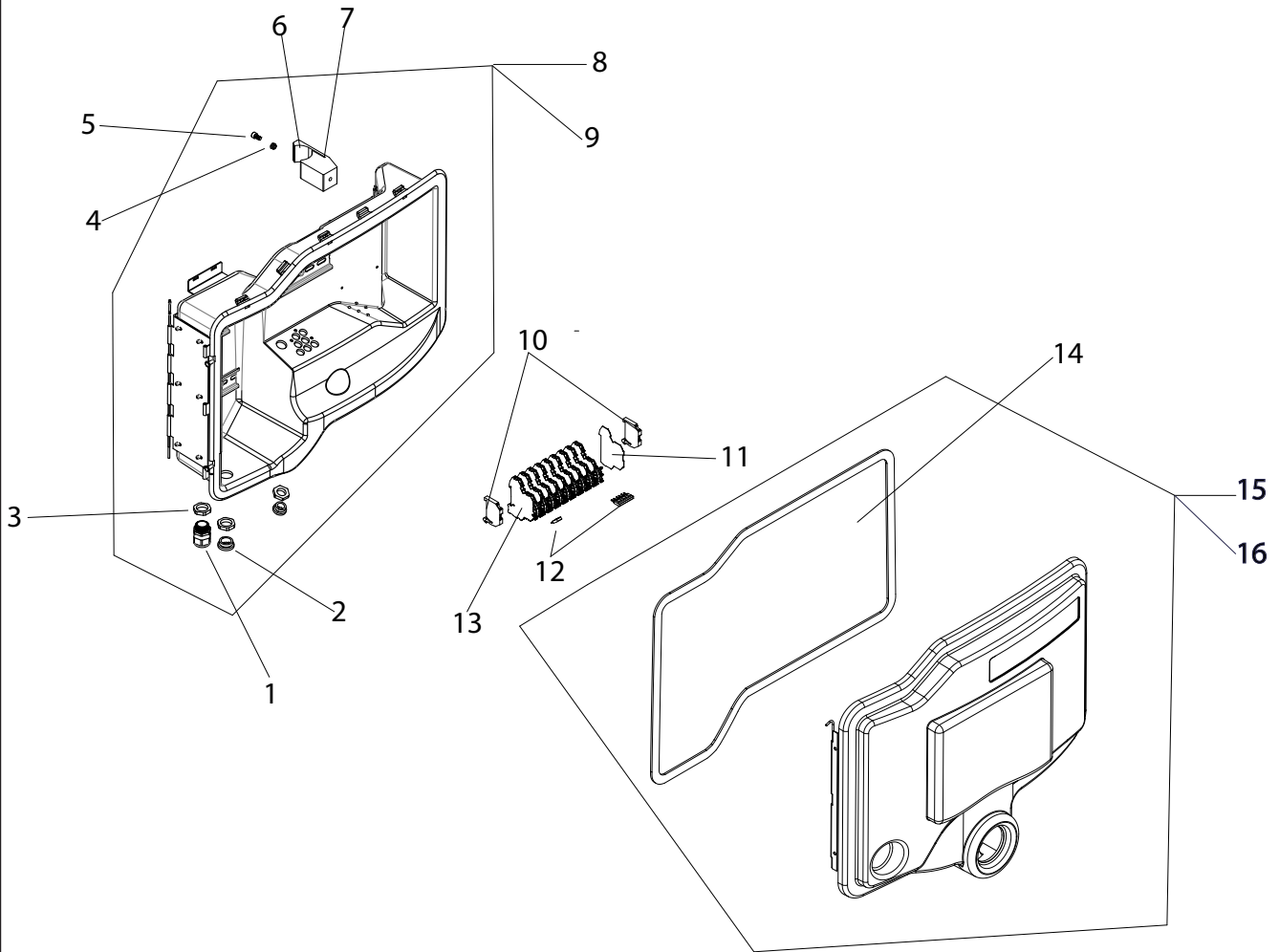
Controller MA2C, MA3C, MA2CM, MA3CM, MA2CPD, MA3CPD, MA2CMPD, MA3CMPD



110005233

Pos./Ref.	Nr. No.	Description Beschreibung Désignation Designación	Hybrid Foamatic MA2	Hybrid Foamatic MA3	Hybrid Foamatic MA2C	Hybrid Foamatic MA3C	Hybrid Foamatic MA2M	Hybrid Foamatic MA3M	Hybrid Foamatic MA2CM	Hybrid Foamatic MA3CM	Hybrid Foamatic MA2PD	Hybrid Foamatic MA3PD	Hybrid Foamatic MA2CPD	Hybrid Foamatic MA3CPD	Hybrid Foamatic MA2MPD	Hybrid Foamatic MA3MPD	Hybrid Foamatic MA2CMPD	Hybrid Foamatic MA3CMPD	
1	110004642	Contacteur			2	2			2	2			2	2			2	2	
2	110004220	MI2 plug			1	1			1	1			1	1			1	1	
4	0631091	Strain relief			2	2			2	2			2	2			2	2	
5	0631092	Counter nut			2	2			2	2			2	2			2	2	
6	110003512 (156310)	Nut																	
7	110003512 (11000526)	Screw																	
8	110005291	Piping lock			1	1			1	1			1	1			1	1	
9	110005297	Controller back complete Serial no. →112.01.000423			1	1			1	1			1	1			1	1	
9	110007970	Controller back complete Serial no. 112.02.000423→			1	1			1	1			1	1			1	1	
10	150640	Screw terminals			2	2			2	2			2	2			2	2	
11	110006096	PLC			1	1			1	1			1	1			1	1	
12	110004920	Controller board			1	1			1	1			1	1			1	1	
13	110004649	Terminal block			1	1			1	1			1	1			1	1	
14	110004925	Sealing			1	1			1	1			1	1			1	1	
15	110005293	Controller front							1	1							1	1	
16	110005295	Controller front			1	1							1	1					
17	110006099	Display			1	1			1	1			1	1			1	1	
18	110004444	Ethernet plug			1	1			1	1			1	1			1	1	
19	110004641	Power supply			1	1			1	1			1	1			1	1	
20	110005513	Switch			1	1			1	1			1	1			1	1	
21	110003167	Fuses			2	2			2	2			2	2			2	2	
22	110004644	Safety relay			1	1			1	1			2	2			2	2	
23	110005443	SD Micro card MA2C / MA2CM SD card containing software			1				1										
23	110005444	SD Micro card MA3C / MA3CM SD card containing software				1				1									
23	110007819	SD Micro card MA2CPD / MA2CMPD SD card containing software											1					1	
23	110007820	SD Micro card MA3CPD / MA3CMPD SD card containing software												1					1

Screw Terminal

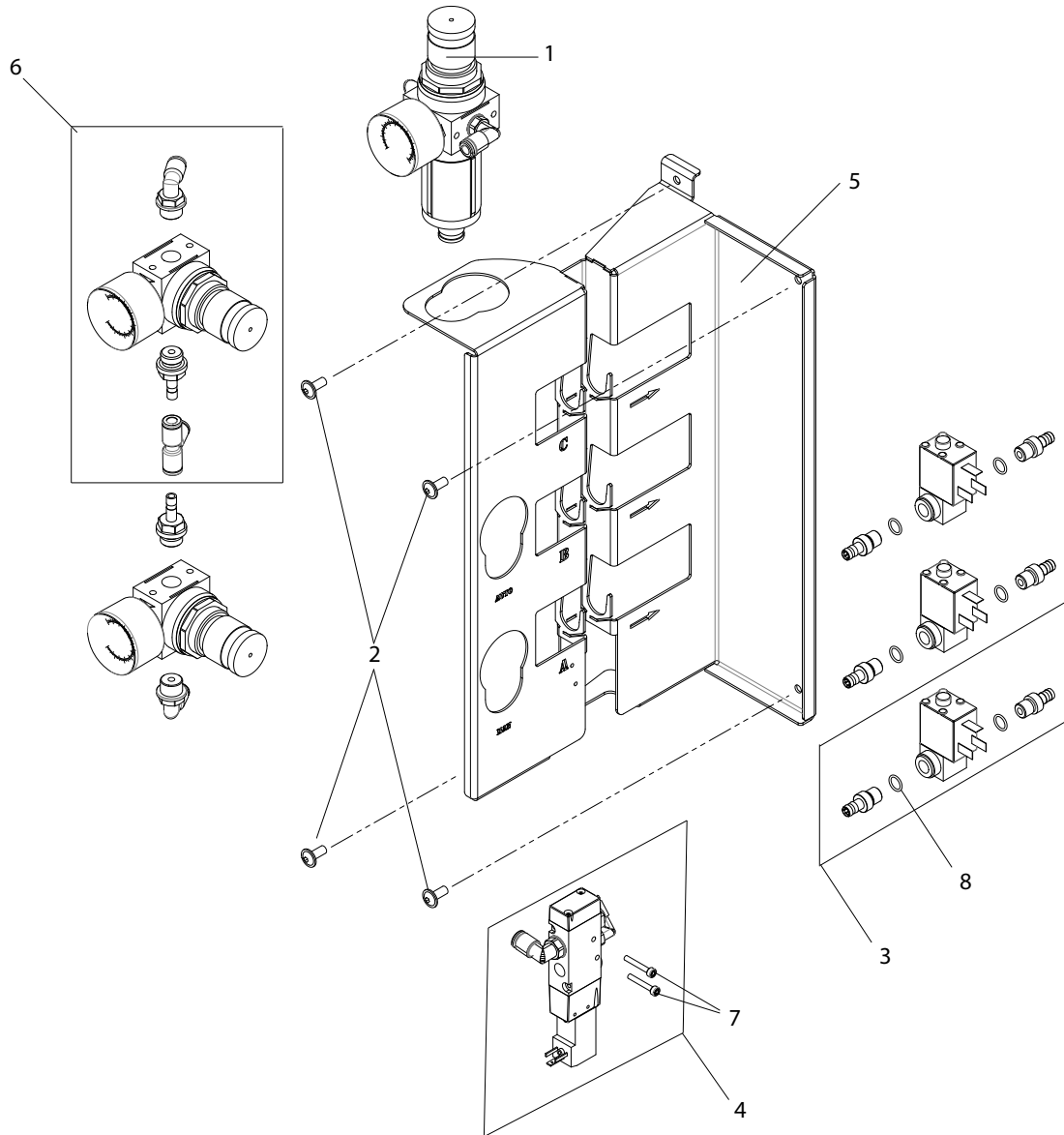


110005256

Pos./Ref.	Nr. No.	Description Beschreibung Désignation Designación	Hybrid Foamatic MA2	Hybrid Foamatic MA3	Hybrid Foamatic MA2C	Hybrid Foamatic MA3C	Hybrid Foamatic MA2M	Hybrid Foamatic MA3M	Hybrid Foamatic MA2CM	Hybrid Foamatic MA3CM	Hybrid Foamatic MA2PD	Hybrid Foamatic MA3PD	Hybrid Foamatic MA2CPD	Hybrid Foamatic MA3CPD	Hybrid Foamatic MA2MPD	Hybrid Foamatic MA3MPD	Hybrid Foamatic MA2CMPD	Hybrid Foamatic MA3CMPD	
1	110004220	Plug	1	1			1	1			1	1			1	1			
2	0601477	Plug	2	2			2	2			2	2			2	2			
3	0631092	Counter nut	2	2			2	2			2	2			2	2			
4	110003512 (156310)	Nut																	
5	110003512 (110000526)	Screw																	
6	110005292	Piping lock																	
7	110005291	Piping lock	1	1			1	1			1	1			1	1			
8	110005224	Controller back complete Serial no. →112.01.000XXX	1	1			1	1			1	1			1	1			
9	110007972	Controller back complete Serial no. 112.02.000XXX→	1	1			1	1			1	1			1	1			
10	152200	End stop	2	2			2	2			2	2			2	2			
11	319918	End plate	1	1			1	1			1	1			1	1			
12	0631034	Center lug	1	1			1	1			1	1			1	1			
13	319917	Double clamps	9	9			9	9			9	9			9	9			
14	110004925	Sealing	1	1			1	1			1	1			1	1			
15	110005294	Controller front					1	1							1	1			
16	110005296	Controller front	1	1							1	1							

Chemical valve bracket
MA2, MA3, MA2C, MA3C, MA2M, MA3M, MA2CM, MA3CM

Serial no. → 112.01.000XXX

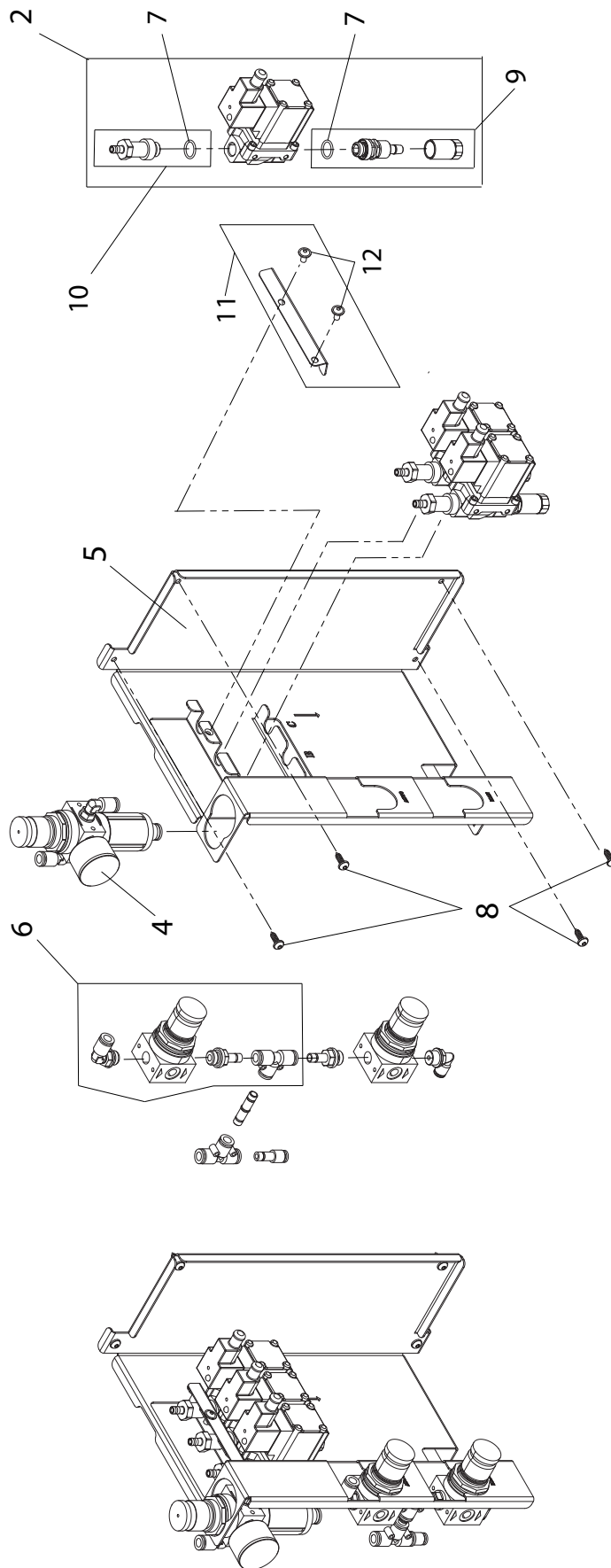


110004606

Pos./Ref. Nr. No.	Description Beschreibung Désignation Designación	Hybrid Foamatic MA2	Hybrid Foamatic MA3	Hybrid Foamatic MA2C	Hybrid Foamatic MA3C	Hybrid Foamatic MA2M	Hybrid Foamatic MA3M	Hybrid Foamatic MA2CM	Hybrid Foamatic MA3CM
1	110005282	Filter regulator complete	1	1	1	1	1	1	1
2	110003512 (110000847)	Screw kit							
3	110005281	Solenoid valve Bürkert complete	2	3	2	3	2	3	2
4	110002787	Solenoid valve 5/2" complete	1	1	1	1	1	1	1
5	110004297	Chemical valve bracket MA	1	1	1	1	1	1	1
6	110005396	Reduction valve with manometer	1	2	1	2	1	2	1
7	110003512 (110002749)	Screw kit							
8	110005355 (0635031)	O-ring kit							

Chemical valve bracket
MA2, MA3, MA2C, MA3C, MA2M, MA3M, MA2CM, MA3CM

Serial no. 112.02.000XXX →



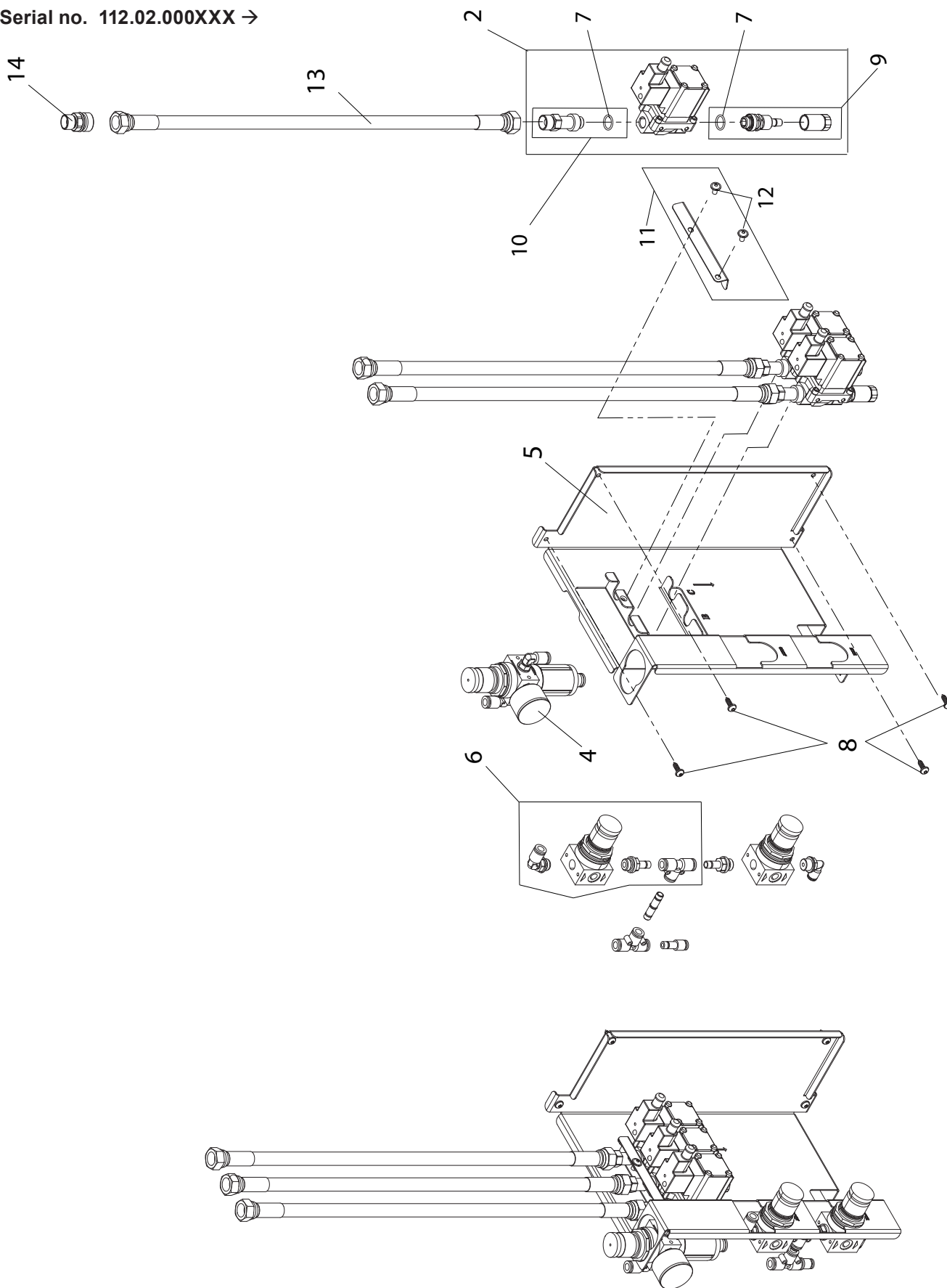
110008139

Pos./Ref. Nr. No.	Description Beschreibung Désignation Designación	Hybrid Foamatic MA2	Hybrid Foamatic MA3	Hybrid Foamatic MA2C	Hybrid Foamatic MA3C	Hybrid Foamatic MA2M	Hybrid Foamatic MA3M	Hybrid Foamatic MA2CM	Hybrid Foamatic MA3CM	
2	110007984	Solenoid valve SMC complete	2	3	2	3	2	3	2	3
4	110005282	Filter regulator complete	1	1	1	1	1	1	1	1
5	110006556	Chemical valve bracket MA	1	1	1	1	1	1	1	1
6	110005396	Reduction valve with manometer	1	2	1	2	1	2	1	2
7	110005355 (110004870)	O-ring kit								
8	110003512 (11000847)	Screw kit								
9	110007978	Hose connector kit	2	3	2	3	2	3	2	3
10	110008146	Hose connection complete	2	3	2	3	2	3	2	3
11	110008080	Bracket for solenoid valve complete	1	1	1	1	1	1	1	1
12	110003512 (11000847)	Screw kit								

Chemical valve bracket

MA2PD, MA3PD, MA2CPD, MA3CPD, MA2MPD, MA3MPD, MA2CMPD, MA3CMPD

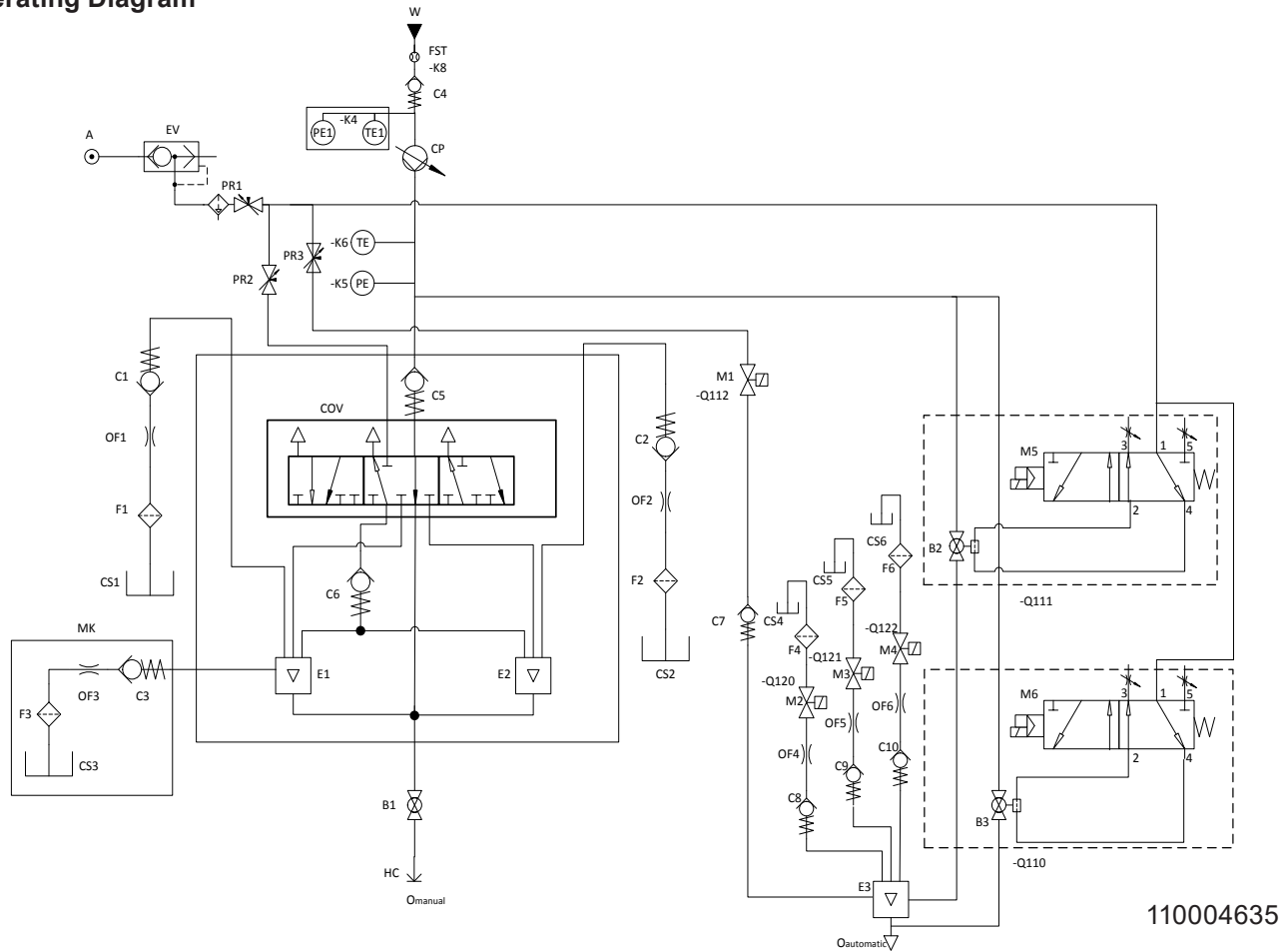
Serial no. 112.02.000XXX →



110007902

Pos./Ref.	Nr. No.	Description Beschreibung Désignation Designación	Hybrid Foamatic MA2CPD	Hybrid Foamatic MA3CPD	Hybrid Foamatic MA2CPD	Hybrid Foamatic MA3CPD	Hybrid Foamatic MA2MPD	Hybrid Foamatic MA3MPD	Hybrid Foamatic MA2CMPD	Hybrid Foamatic MA3CMPD
1	110007784	Hose Connection	2	3	2	3	2	3	2	3
2	110007984	Solenoid valve SMC complete	2	3	2	3	2	3	2	3
3	110007961	Chemical non return valve complete	2	3	2	3	2	3	2	3
4	110005282	Filter regulator complete	1	1	1	1	1	1	1	1
5	110006556	Chemical valve bracket MA	1	1	1	1	1	1	1	1
6	110005396	Reduction valve with manometer	1	2	1	2	1	2	1	2
7	110005355 (110004870)	O-ring kit								
8	110003512 (11000847)	Screw kit								
9	110007978	Hose connector kit	2	3	2	3	2	3	2	3
10	110007979	Hose connection complete PD	2	3	2	3	2	3	2	3
11	110008080	Bracket for solenoid valve complete	1	1	1	1	1	1	1	1
12	110003512 (11000847)	Screw kit								
13	110007861	PD Hose	2	3	2	3	2	3	2	3
14	110007831	Fitting for PD Hose	2	3	2	3	2	3	2	3

Operating Diagram



	English	Deutsch	Français	Español
A	Air supply	Lufteingang	Alimentation air	Suministro de aire
B	Ball valve	Kugelventil	Clapet à bille	Válvula esférica
C	Check valve	Rückschlagventil	Soupape de non retour	Válvula de retención
COV	Change over valve	Umschaltventil	Robinet coupleur	Válvula de conmutación
CP	Centrifugal pump	Kreiselpumpe	Pompe Centrifuge	Bomba centrífuga
CS	Chemical supply	Chemische Versorgung	Fourniture de produits chimiques	Toma de suministro de productos químicos
E	Ejector	Ejektor	Ejecteur	Eyector
EV	Exhaust valve	Auslassventil	la soupape d'échappement	válvula de escape
F	Filter	Filter	Filtre	Filtro
FST	Flow sensor and -trigger	Durchflusssensor und auslöser	Capteur de débit et de déclenchement	Sensor de caudal y de activación
HC	Hose coupling	Schlangenverbindung	Connexion flexible	Conexión de tubo flexible
K	Component reference	Komponentenreferenz	Référence composant	Referencia del componente
M	Magnetic valve	Magnetventil	Vanne magnétique	Válvula magnética
MK	Mix kit (Optional)	Misch-Kit (Optional)	Kit de mélange (Optionnel)	Kit de mezcla (Opcional)
O	Outlet	Ausgang	Sortie	Salida
OF	Orifice	Blende	Orifice	Orificio
PE	Pressure sensor	Drucksensor	Capteur de pression	Sensor de presión
PR	Pressure regulator	Druckregler	Régulateur de pression	Régulador de presión
TE	Temperature sensor	Temperatursensor	Capteur de température	Sensor de temperatura

Nilfisk FOOD

Nilfisk Food

Blytaekkervej 2
DK- 9000 Aalborg
Tlf. +45 7218 2000

Project : Hybrid Foamatic MRKII MA

Item No. : 110009261

Rated Voltage : 400V

Rated frequency : 50Hz

Full-load current : 11,6A

Max single load : 11,6A

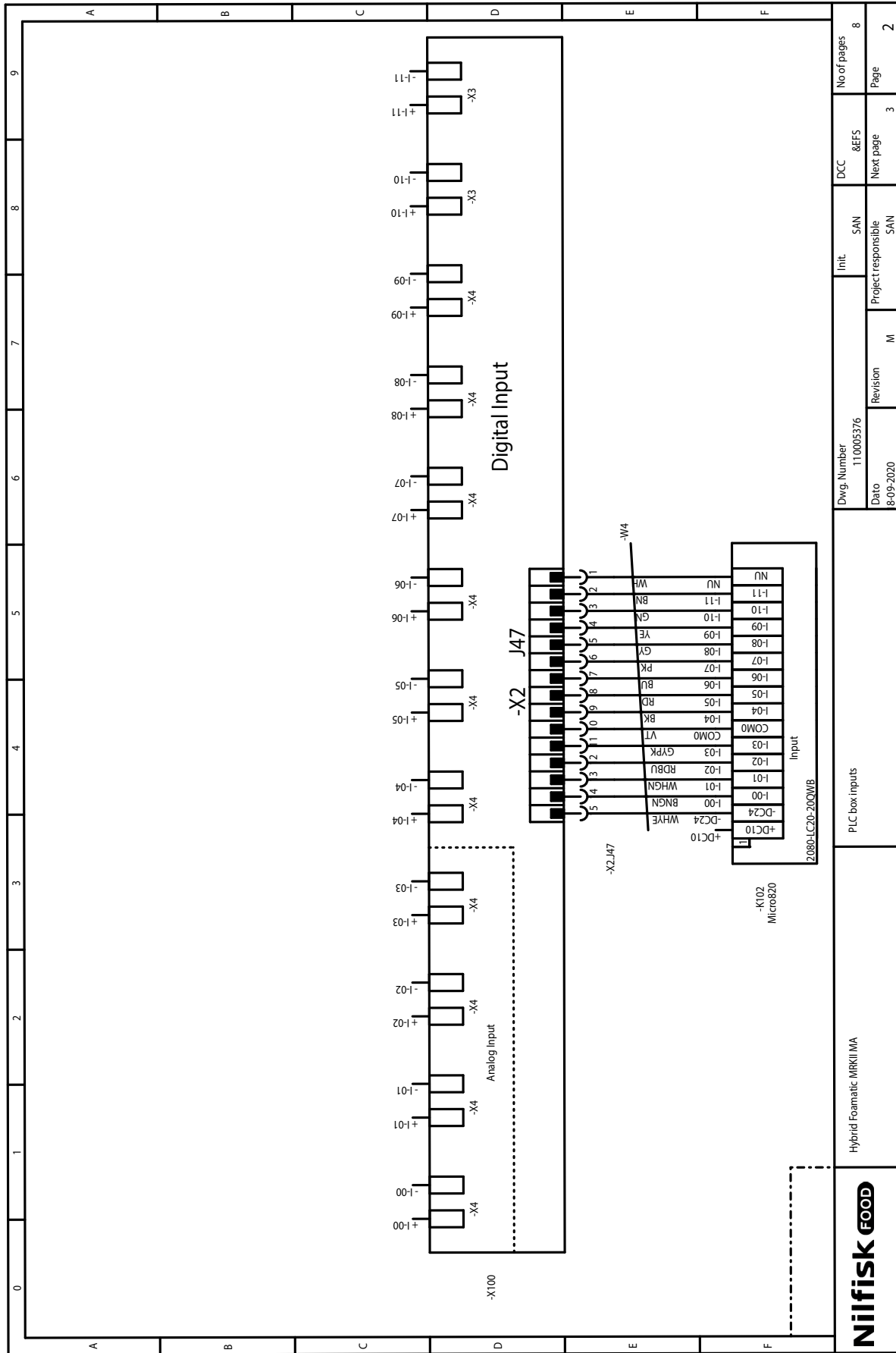
Rated short time
withstand current, I_{cw} : 6kA

Max fuse : 16A

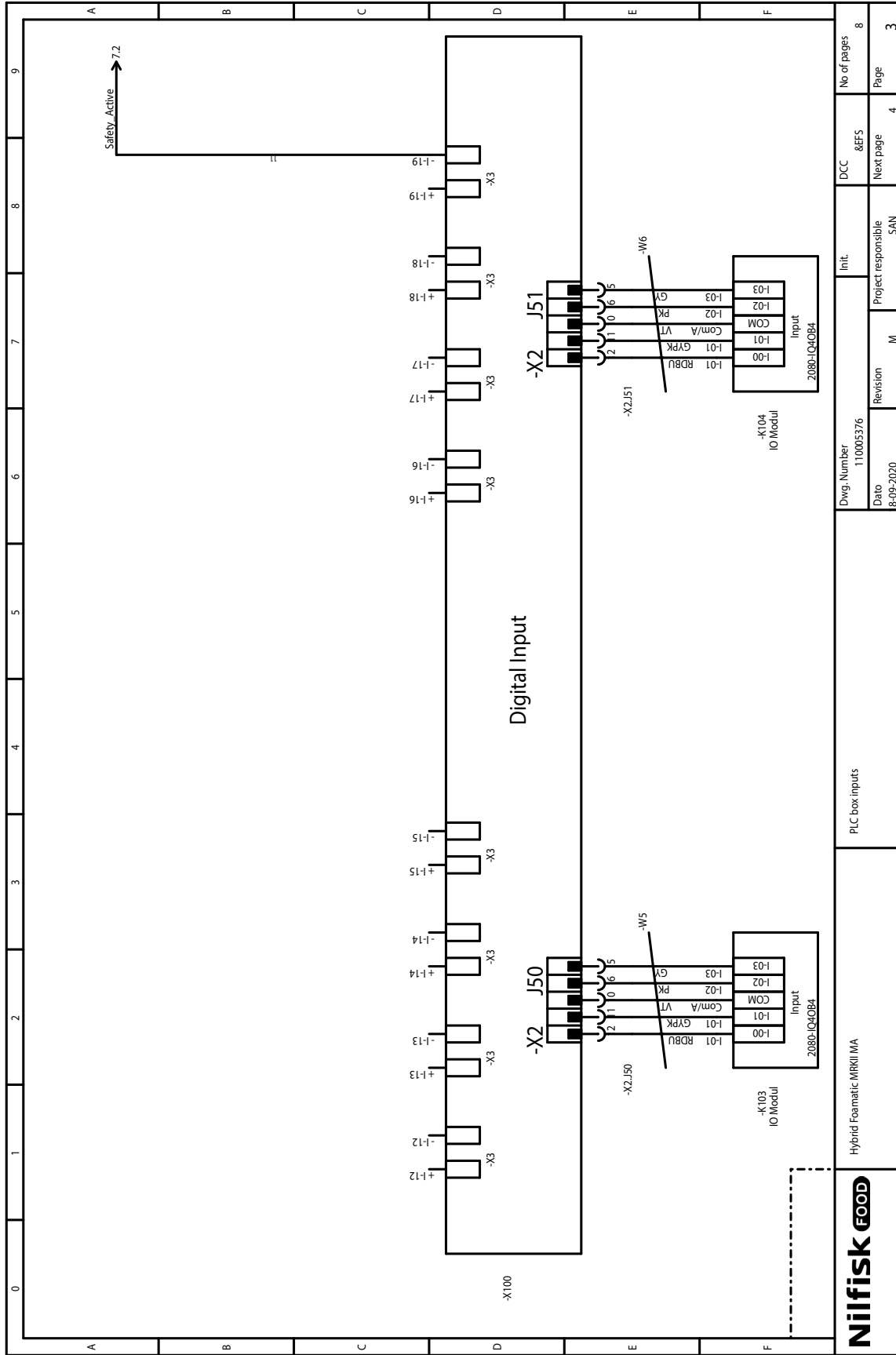
Document revision : M

Project Responsible : SAN

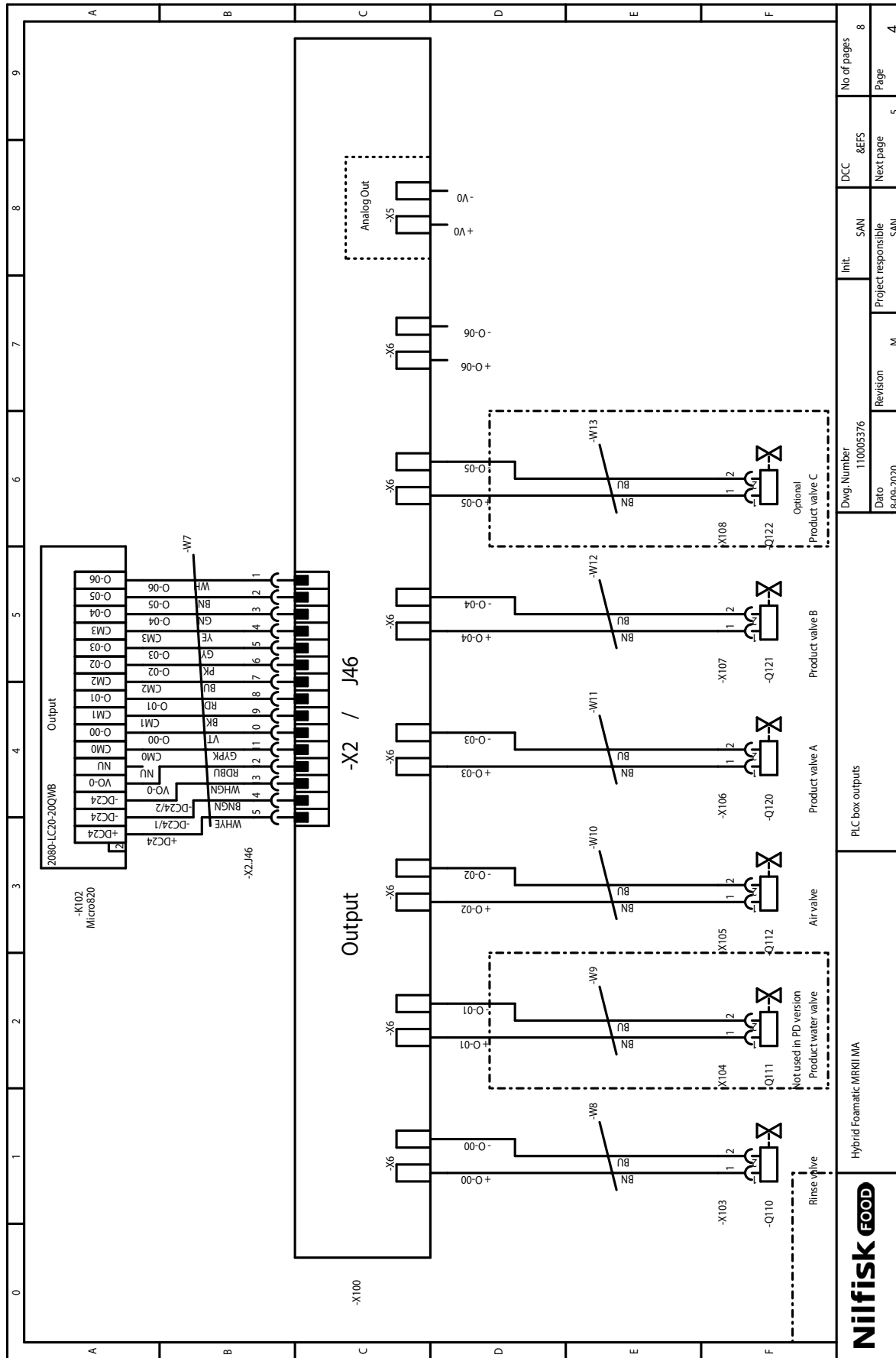
EI Diagram/Sensor Diagram



EI Diagram/Sensor Diagram

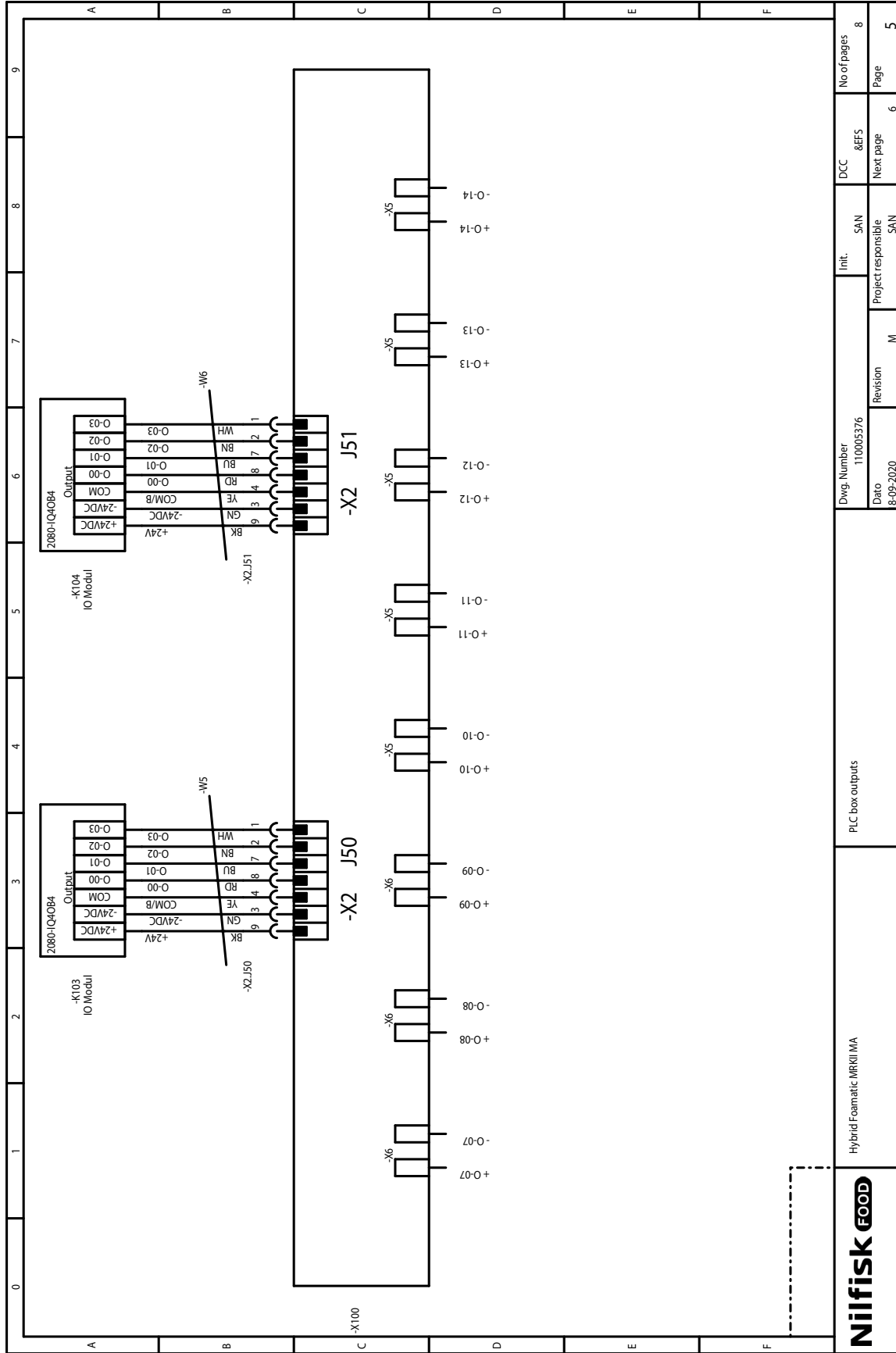


EI Diagram/Sensor Diagram



Niifisk FOOD		Hybrid Foamatic MRKII MA		PLC box outputs		Dwg. Number 110005376		Init. SAN		DCC		No. of pages 8	
						Date 8-09-2020		Revision M		Next page		Page 4	
						Project responsible SAN				Next page		Page 5	

El Diagram/Sensor Diagram



Nifisk FOOD

Hybrid Foamatic MRKII MA

PLC box outputs

Dwg. Number
110005376

Date
8-09-2020

Revision
M

Init.
SAN

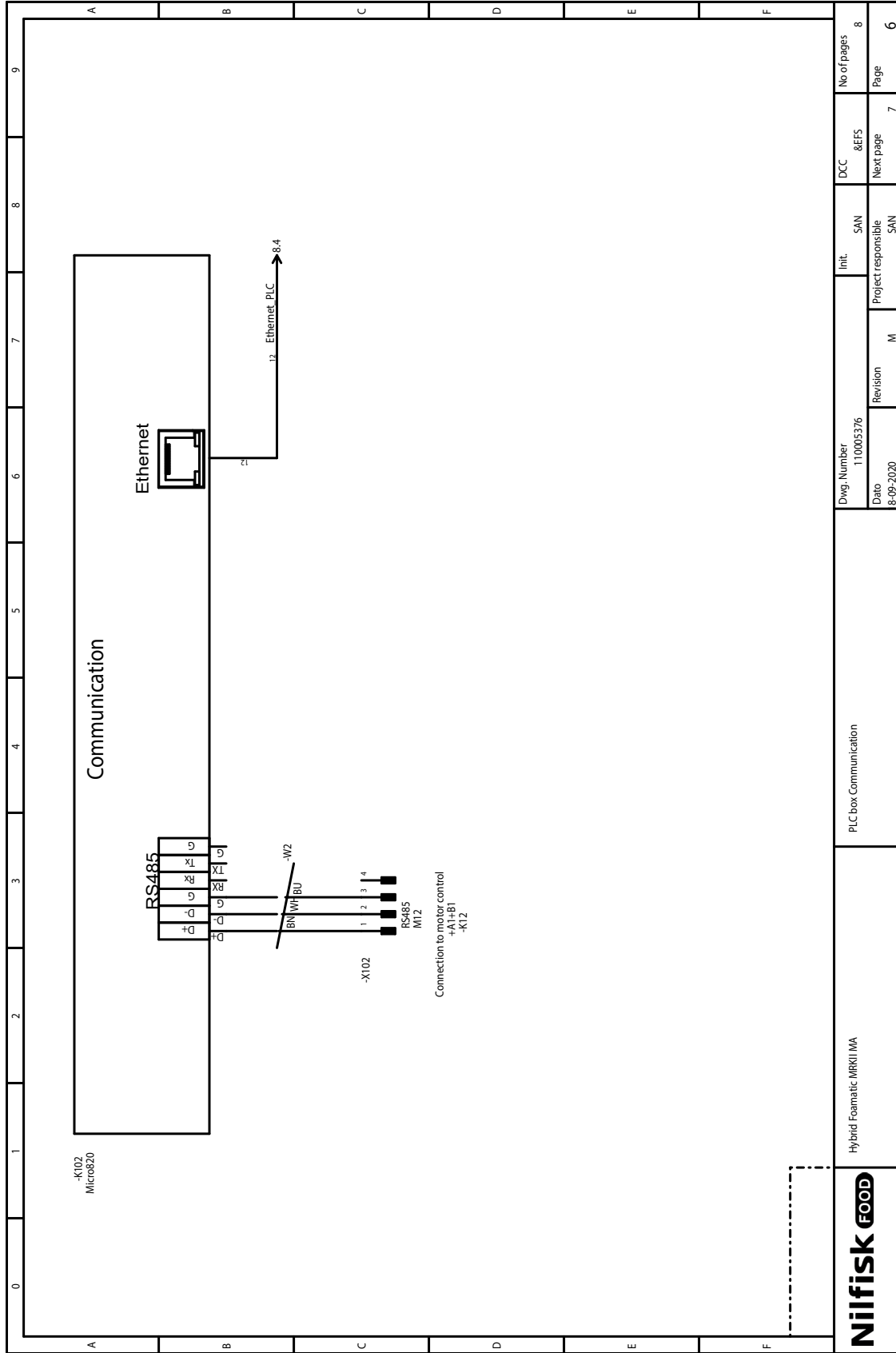
Project responsible
SAN

DCC &EFS
Next page
6

No of pages
8

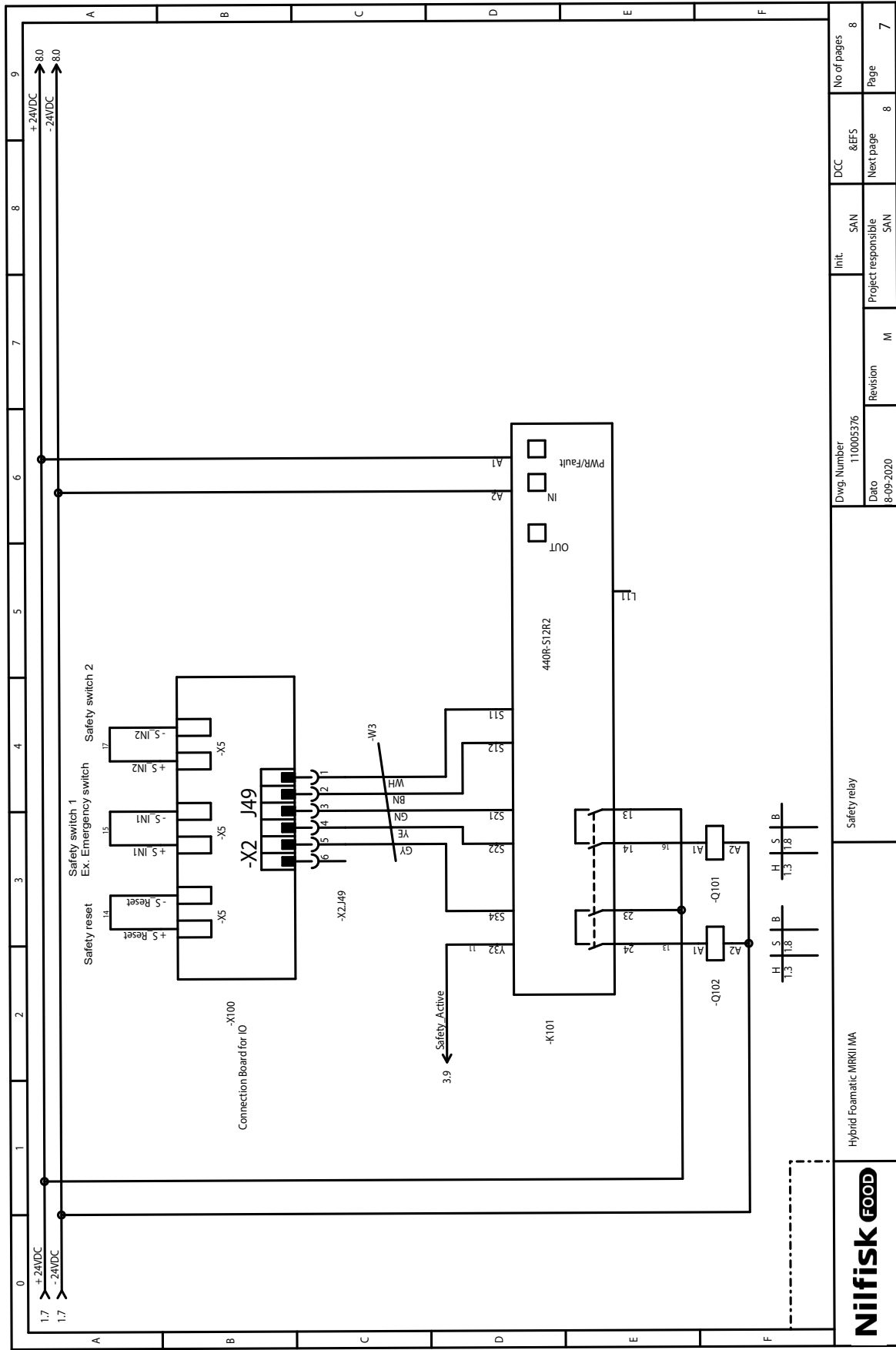
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EI Diagram/Sensor Diagram



Nilfisk FOOD		Hybrid Foamatec MPRK11MA		PLC box Communication		Dwg. Number 110005376		Init. SAN		DCC &EFS		No of pages 8	
						Date 8-09-2020		Project responsible M		Next page SAN		Page 7	
												6	

EI Diagram/Sensor Diagram

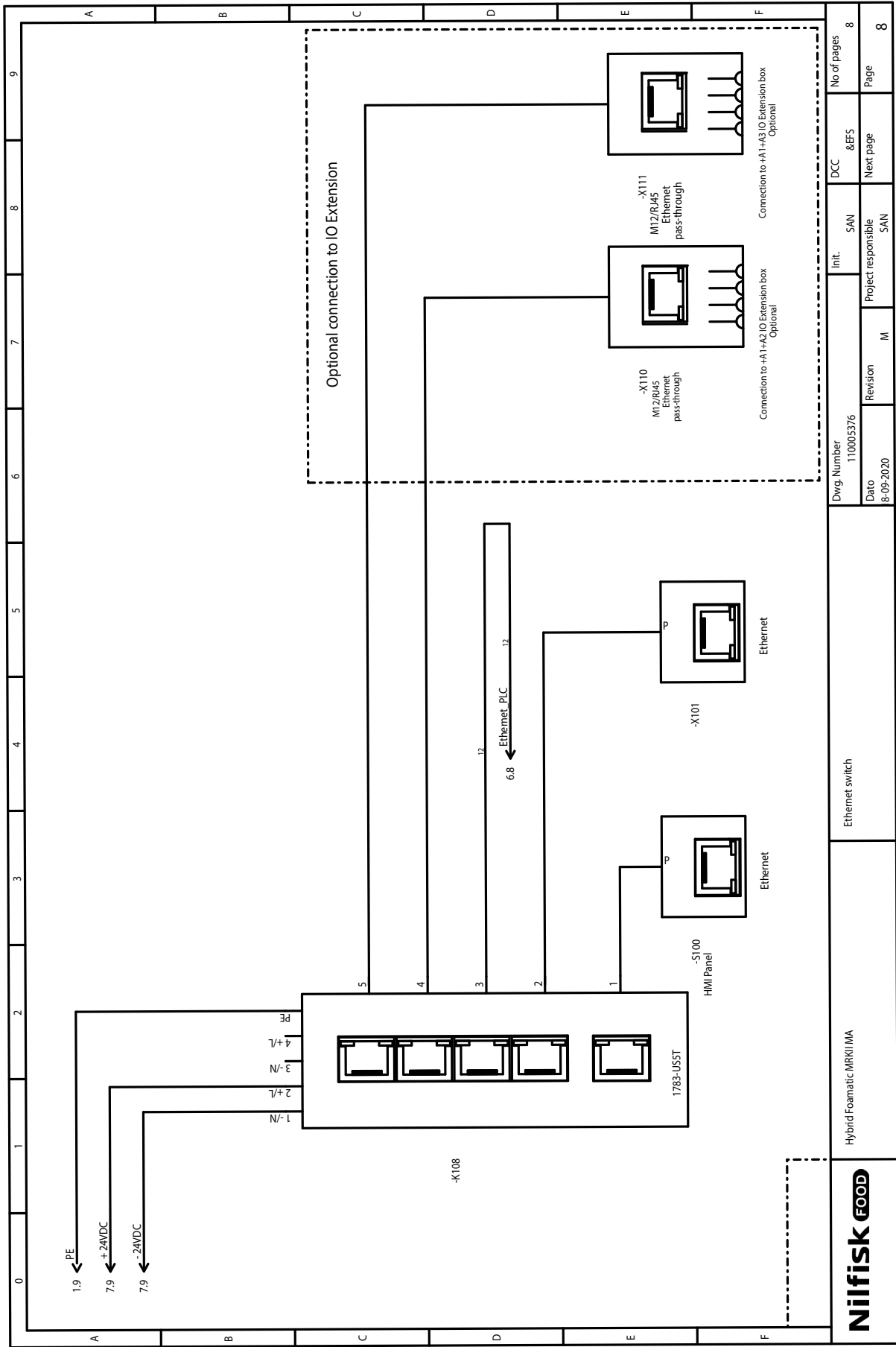


Hybrid Foamatec MRKII MA

Safety relay

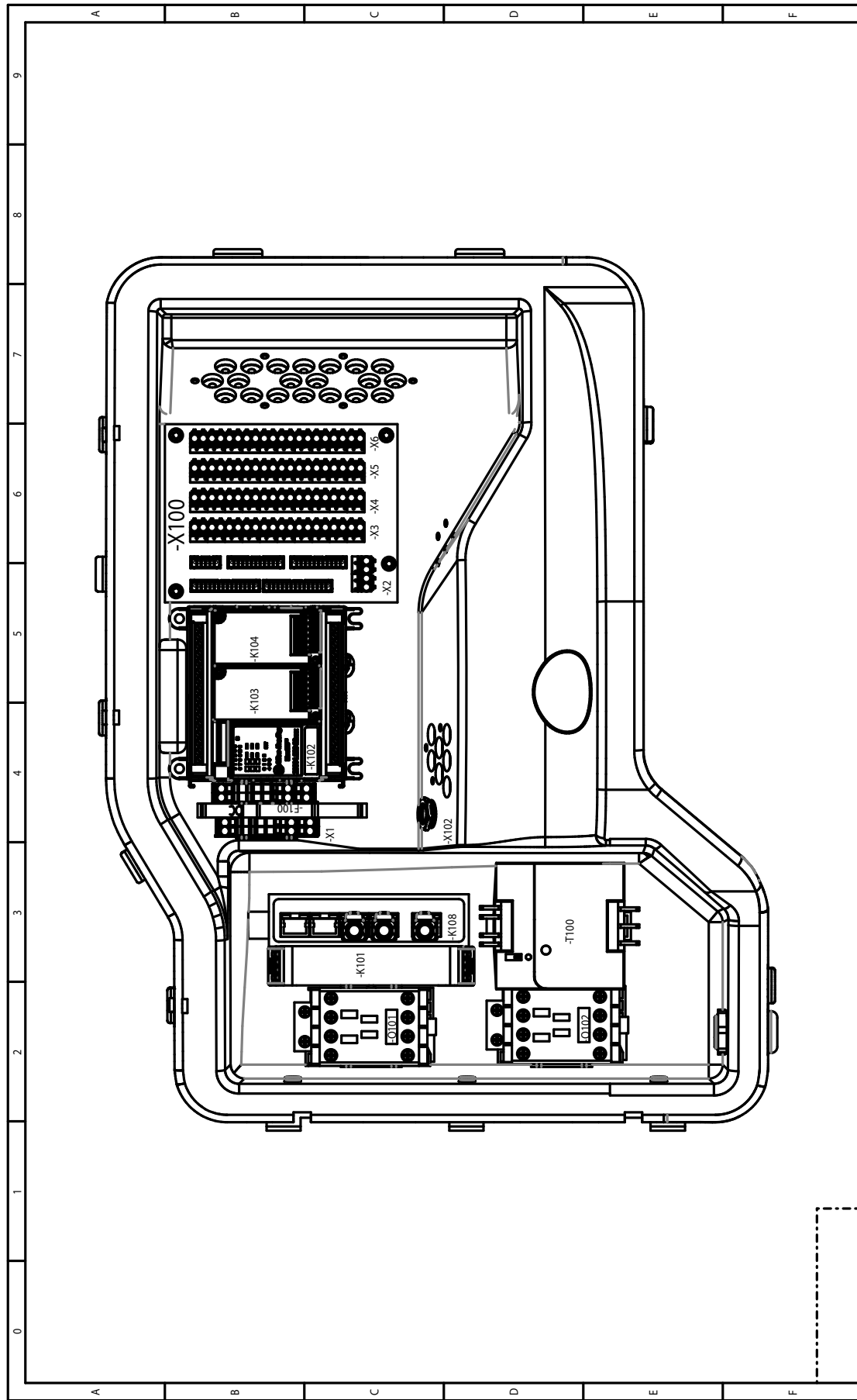
Dwg. Number	110005376	Init.	SAN	DCC	&EFS	No of pages	8
Dato	8-09-2020	Revision	M	Project responsible	SAN	Next page	8
						Page	7

EI Diagram/Sensor Diagram



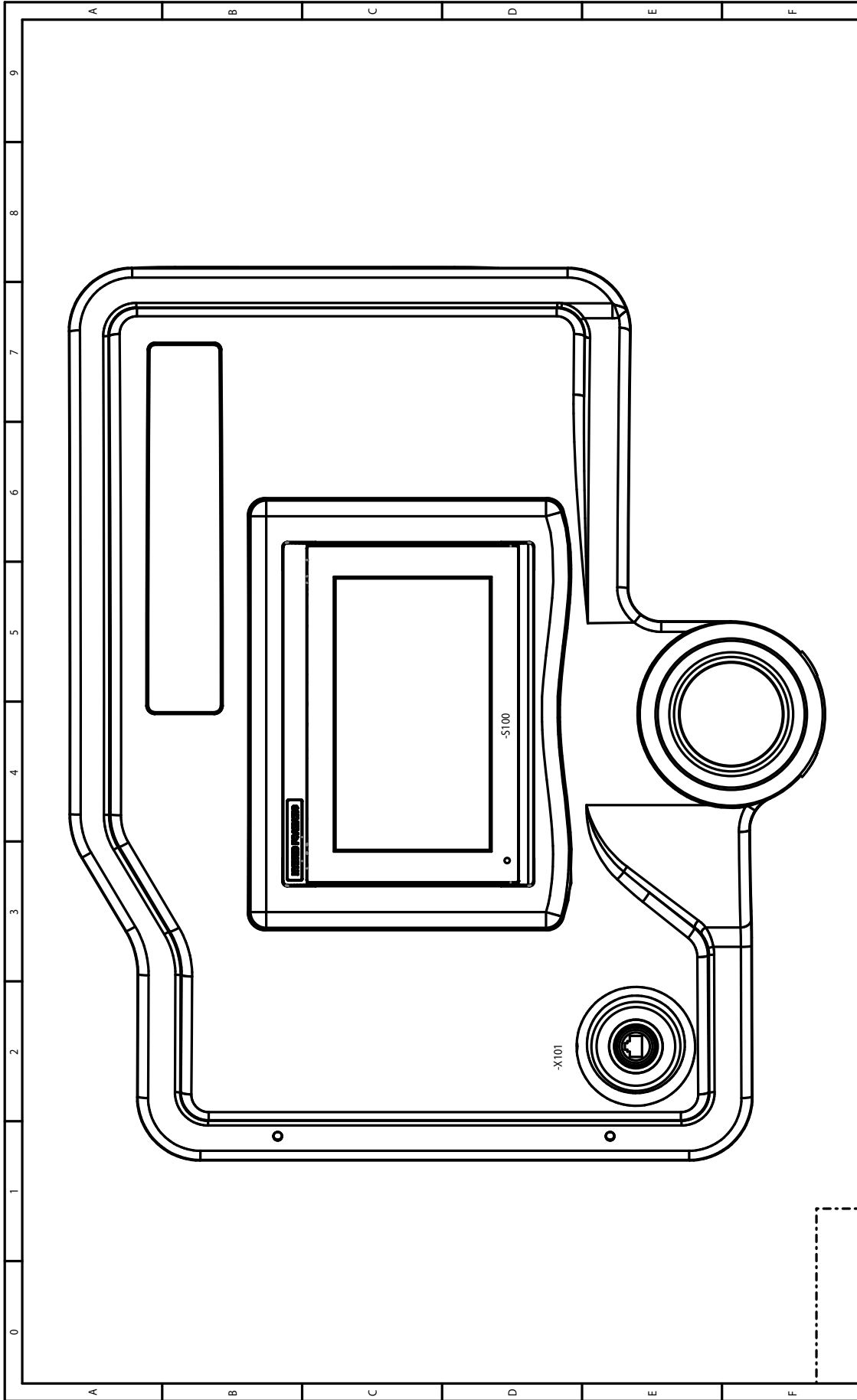
		Hybrid Foomatic MRKII MA		Ethernet switch		Dwg. Number 110003376		Init. SAN		DCC &EFS		No of pages 8	
						Date 8-09-2020		Revision M		Project responsible SAN		Next page 8	

El Diagram/Sensor Diagram



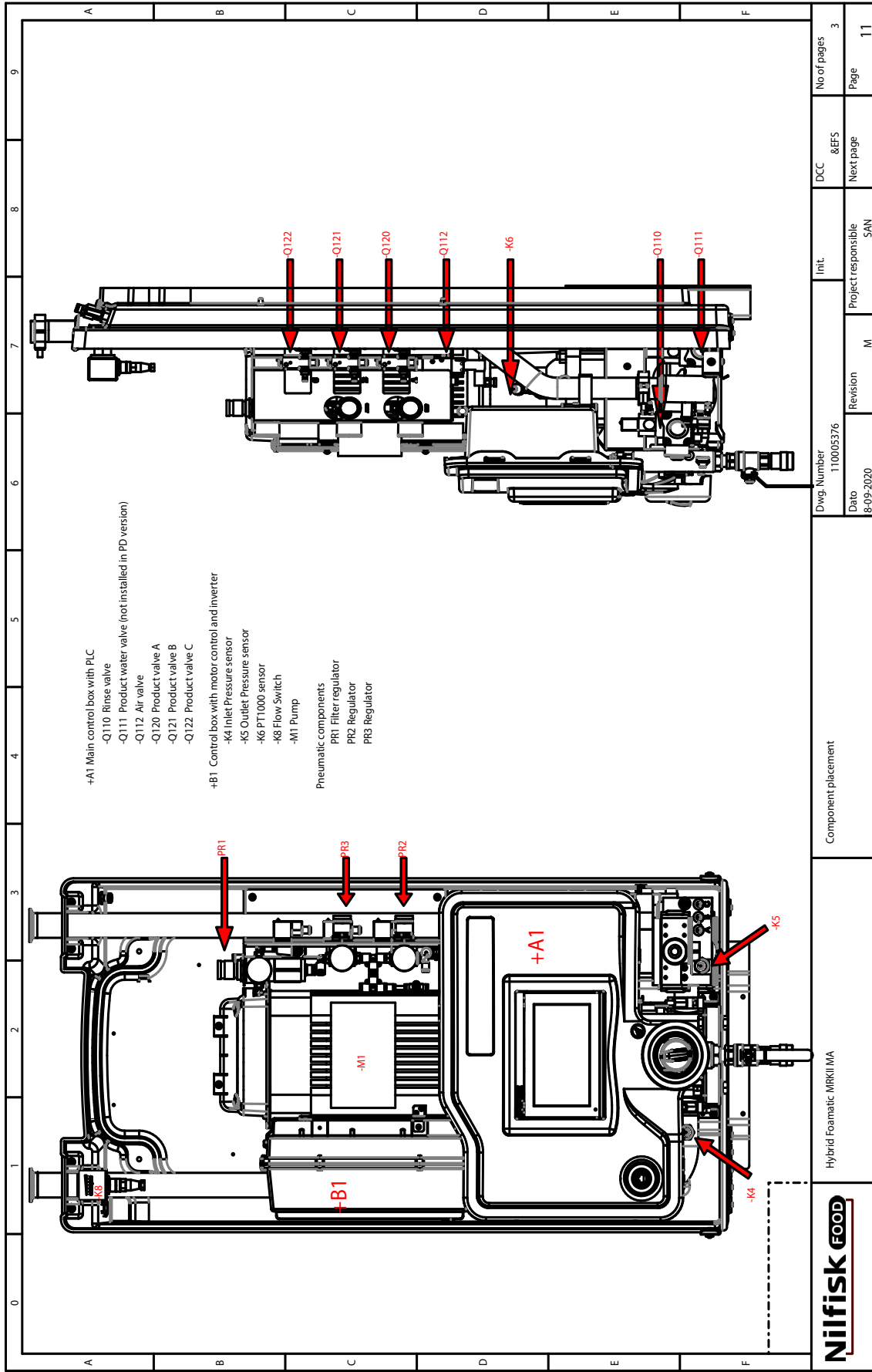
Niifisk FOOD	Hybrid Foamatic MRP/II MA	Component placement		Dwg. Number 110005376	Init.	DCC	No of pages
				Date 8-09-2020	Revision M	Project responsible SAN	&EFS
						Next page	Page
						10	9

El Diagram/Sensor Diagram



	Hybrid Foamatec MKII IMA	Component placement	Dwg. Number 11005376	Init.	DCC &EFS	No of pages 3
			Date 8-09-2020	Revision M	Project responsible SAN	Next page 11
						Page 10

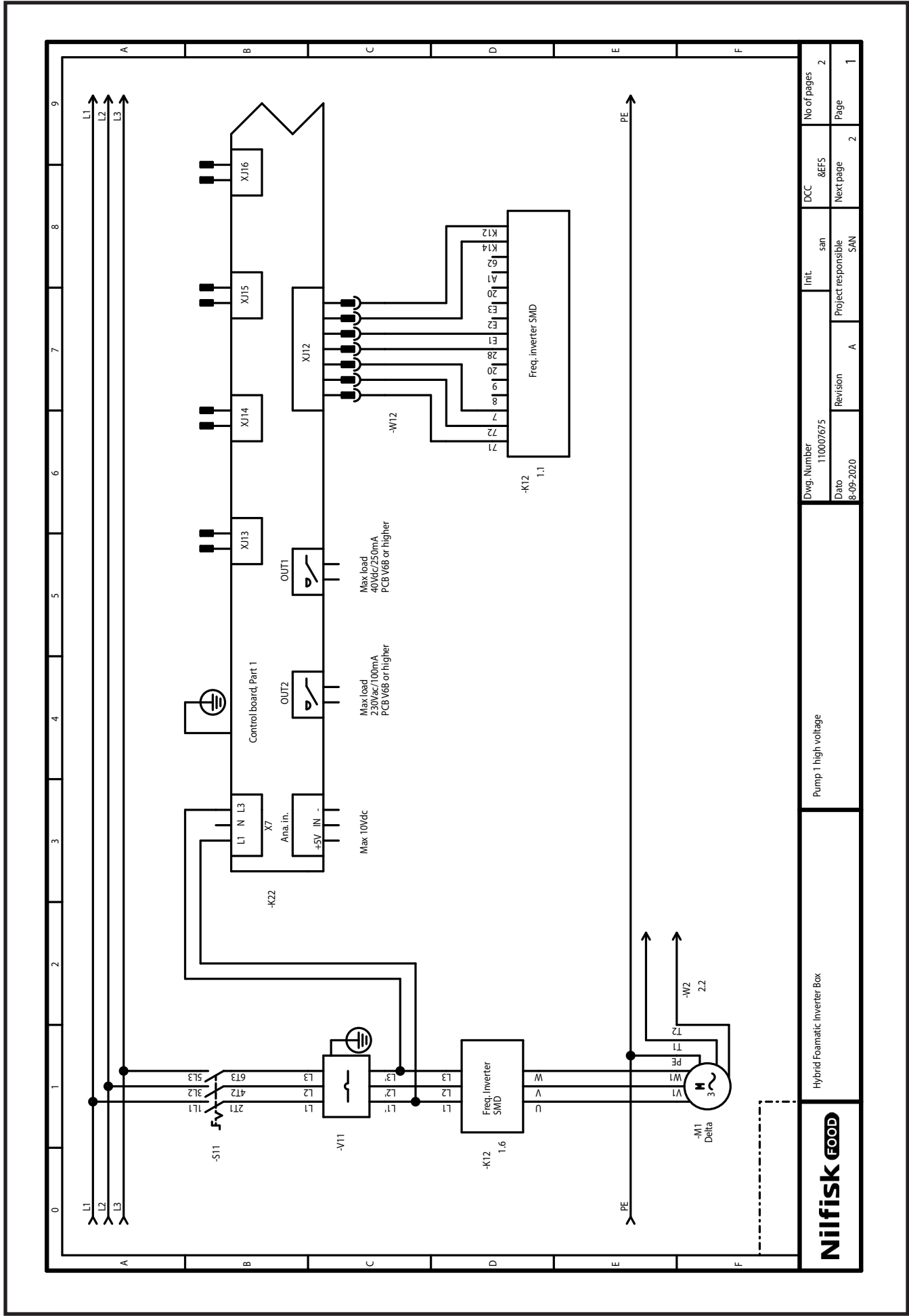
EI Diagram/Sensor Diagram

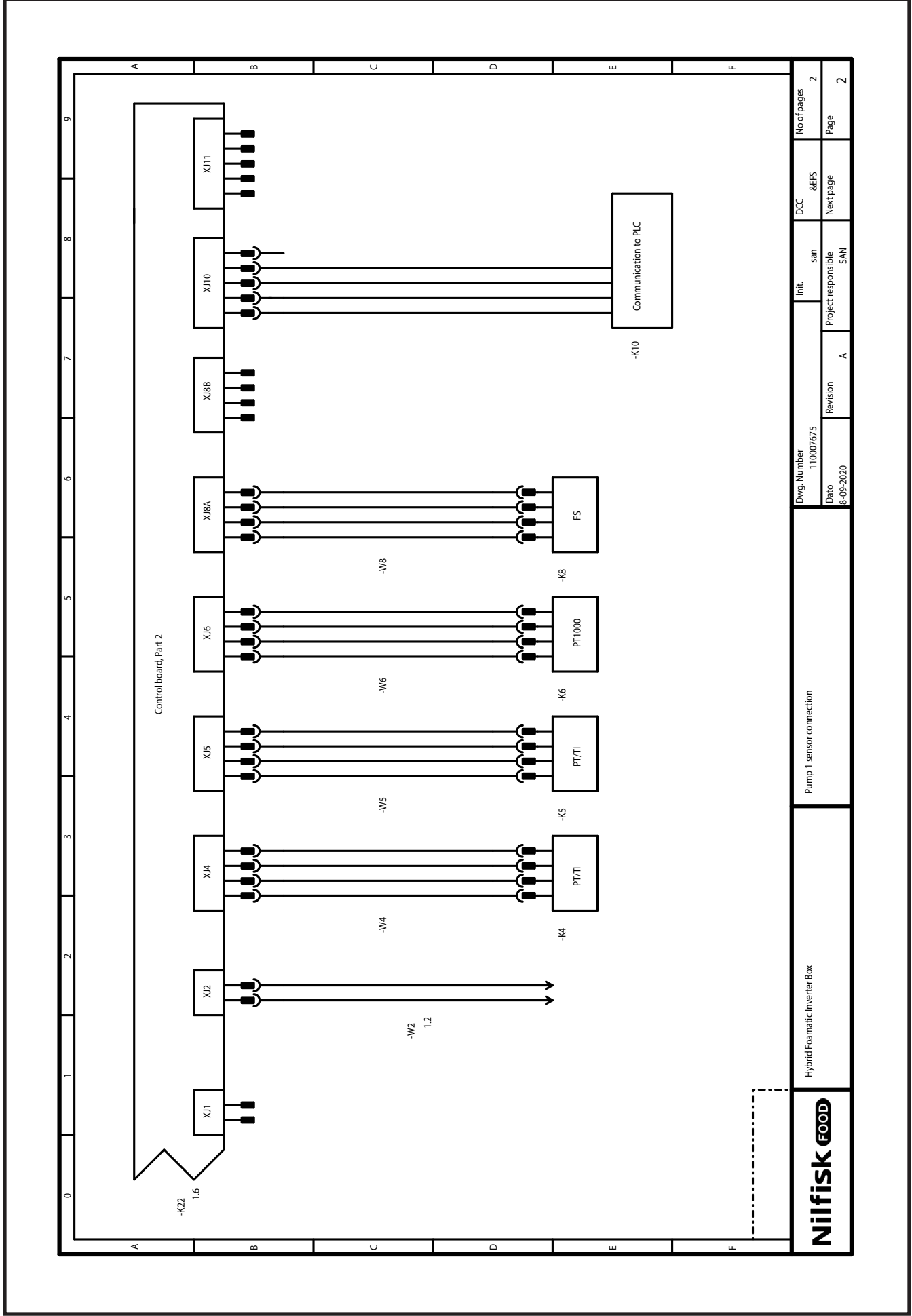


Hybrid Foamatic MKII MA

Component placement

Dwg. Number	110005376	Init.		DCC		No of pages	3
Date	8-09-2020	Revision	M	&EFS	Next page	Page	11
		Project responsible	SAN				





Nilfisk FOOD	HybridFoamatic Inverter Box	Pump 1 sensor connection		Dwg. Number 110007675	Init. san	DCC &EFS	No of pages 2
				Date 8-09-2020	Project responsible SAN	Next page A	Page 2

UK

Hybrid Foamatic Terminal Box

Terminal description

Rinse Valve (Q110)

Terminals 5.A and 5.B are used for opening for Rinse water. This is water going through the block but not through the injector inside the block. Opening this valve is done by applying 24Vdc to terminal 5.A and 0V to terminal 5.B

Product Water Valve (Q111)

Terminals 6.A and 6.B are opening for the valve in the block leading water through the injector to the outlet pipe. Opening the valve is done by applying 24Vdc to terminal 6.A and 0V to terminal 6.B

Air Valve (Q112)

Terminals 7.A and 7.B are opening for compressed air to the block. This is done for instance to make foam or empty off the pipes. Activating this valve is done by applying 24Vdc to terminal 7A and 0V to terminal 7B

Product valve A,B,C (Q120, Q121, Q122)

Terminals 8,9,10 A and B are opening for products to flow to the injector. Activating these valves are done by applying 24Vdc to the A terminal and 0V to the B terminal. Be very careful not to open more than one product valve at a time, unless it is approved by the chemical supplier. Product C is an option and only functional in a 3 product machine.

Error

This signals is a relay signal indicating if an error is active at the pump. If an error is active terminal 1.A and 1.B will be short circuited otherwise the will be disconnected. This function is only used in Hybrid Foamatic MA

Speed Control/enable motor

Terminals 2.A and 2.B are used for controlling the pressure of the pump, with a signal of 0-10Vdc. 0V being pump stopped and 10Vdc is equal to 15bar. Signal to control the pressure must be applied for the motor to run. In 3.A and 3.B a jumper is mounted. This terminal can be used as release signal for the pump. This is done by removing the jumper and replacing it with a relay signal which must be on to for releasing the pump and off for preventing the pump for running.

Reset

Terminal 4.A and 4.B are used for resetting any errors detected. Reset will happen by making a short circuit between 4.A and 4.B for a short period of time, after this release the short circuit again.

Description of internal valves in Hybrid Foamatic SA/MA

Description of sequence for wash steps

Rinsing		
Sequence	Activity/function	Time/valve no. to activate
1	Activate area valve*	
2	Activate rinse valve (Q110)	
3	Step time – rinsing	XX sec.
4	Deactivate rinse valve (Q110)	
5	Action pause (closing of valve)	3 sec.
6	Deactivate area valve	
7	Action pause (close of vave)	3 sec.
Foaming		
Sequence	Activity/function	Time/valve no. to activate
1	Activate area valve*	
2	Activate product water valve	(Q111)
3	Activate chemical product valve**	(Q120/Q121/Q122)
4	Action pause (opening of valve)	3 sec.
5	Activate air valve	(Q112)
6	Step time – foaming	XX sex.
7	Deactivate air valve	(Q112)
8	Deactivate chemical product valve**	(Q120/Q121/Q122)
9	Deactivate product water valve	(Q111)
10	Action pause (closing of valve)	3 sec.
11	Deactivate area valve	
12	Action pause (closing of valve)	3 sec.
Sanitize		
Sequence	Activity/function	Time/valve no. to activate
1	Activate area valve*	
2	Activate product water valve	(Q111)
3	Activate chemical product valve**	(Q120/Q121/Q122)
4	Step time – sanitizing	XX sec.
5	Deactivate chemical product valve**	(Q120/Q121/Q122)
6	Deactivate product water valve	(Q111)
7	Action pause (closing of valve)	3 sec.
8	Deactivate area valve	
9	Action pause (closing of valve)	3 sec.
Pause		
Sequence	Activity/function	Time/valve no. to activate
1	Step time – pause	XX sec.
Injector pulse flush function		
Sequence	Activity/function	Time/valve no. to activate
1	Activate area valve*	
2	Activate product water valve	(Q111)
3	Action pause (opening of valve)	10 sec.
4	Deactivate product water valve	(Q111)
5	Action pause (closing of valve)	5 sec.
6	Activate product water valve	(Q111)
7	Action pause (opening of valve)	5 sec.
8	Deactivate product water valve	(Q111)
9	Action pause (closing of valve)	5 sec.
10	Activate product water valve	(Q111)
11	Action pause (opening of valve)	5 sec.
12	Deactivate product water valve	(Q111)
13	Action pause (closing of valve)	5 sec.
14	Activate product water valve	(Q111)
15	Action pause (opening of valve)	5 sec.
16	Deactivate product water valve	(Q111)

17	Action pause (closing of valve)	5 sec.
18	Activate product water valve	(Q111)
19	Action pause (opening of valve)	5 sec.
20	Deactivate product water valve	(Q111)
21	Action pause (closing of valve)	5 sec.
22	Deactivate area valve*	

Fill pipe**Sequence**

	Activity/function	Time/valve no. to activate
1	Activate product water valve	(Q111)
2	Action pause (opening of valve)	5 sec.
3	Activate area valve*	
4	Step time – filling pipe	XX sec.
5	Deactivate product water valve	(Q111)
6	Action pause (closing of valve)	3 sec.
7	Deactivate area valve*	
8	Action pause (closing of valve)	3 sec.

Empty pipe**Sequence**

	Activity/function	Time/valve no. to activate
1	Activate area valve*	
2	Activate air valve	(Q112)
3	Step time – emptying pipe	XX sec.
4	Deactivate air valve	(Q112)
5	Action pause (closing of valve)	5 sec.
6	Deactivate area valve*	
7	Action pause (closing of valve)	3 sec.

* Customer has to decide which area valve

** **WARNING!** Be sure not to open two chemical product valves at the same time!

DE Klemmen - Beschreibung

Spülventil (Q110)

Klemme 5.A und 5.B für Öffnung des Spülventils verwenden. Das Ventil dadurch öffnen, dass Sie 24Vdc an Klemme 5.A und 0V an Klemme 5.B anschließen.

Chemie Wasserventil (Q111)

Terminal 6.A und 6.B für Öffnung des Ventils im Block verwenden. Dadurch, wird Wasser via den Injektor an dem Ablaufrohr geleitet. Das Ventil dadurch öffnen, dass Sie 24Vdc an Terminal 6.A und 0V an Terminal 6.B verbinden.

Luftventil (Q112)

Terminal 7.A und 7.B für Öffnung der Druckluft für den Block verwenden. Dies z.B. um Schaum zu bilden oder die Rohre zu leeren. Das Ventil dadurch aktivieren, dass Sie 24Vdc an Terminal 7A und 0V an Terminal 7B verbinden.

Chemie Produktventil A, B (Q120, Q121)

Terminal 8 und 9-A und B für Öffnung der Produkte für den Injektor verwenden. Das Ventil dadurch aktivieren, dass Sie 24Vdc an Terminal A und 0V an Terminal B verbinden. VORSICHT! Nur ein Produktventil zur Zeit öffnen, außer wenn etwas andere vom Chemielieferanten genehmigt worden ist.

Fehler

Dieses Signal ist ein Relais-Signal, das einen aktive Pumpenfehler anzeigt. Bei einem aktiven Fehler werden Terminal 1.A und 1.B verbunden, sonst werden die Terminale ausschalten.

Speed Control/Motor aktivieren

Terminal 2.A und 2.B werden für Kontrolle des Pumpendrucks benutzt mit einem Signal von 0-10Vdc. 0V = Pumpe schaltet ab und 10Vdc = ist gleich 15bar. Signal für Kontrolle des Drucks anmachen um den Motor zu aktivieren.

In 3.A und 3.B ist eine Verbindung montiert. Der Terminal ist als Freigebungssignal für die Pumpe benutzbar. Dies dadurch machen, dass Sie die Verbindung entfernen und Sie mit einem Relais-Signal ersetzen. Das Relais-Signal in EIN Position um die Pumpe zu freigeben und AUF Position um die Pumpe abzuschalten.

Reset

Terminal 4.A und 4.B werden für Reset von Fehler benutzt. Reset passiert dadurch, dass Sie kurz eine Verbindung der 4.A und 4.B machen.

Beschreibung der internen Ventile in Hybrid Foamatic SA/MA

Beschreibung der Reihenfolge für Waschschrötte

Spülen

Sequenz	Aktivität/Funktion	Zeit/Ventilnummer zu aktivieren
1	Aktivieren Zoneventil*	
2	Aktivieren Spülventil	(Q110)
3	Zeit für Waschschrötte – Spülen	XX sec.
4	Deaktivieren Spülventil	(Q110)
5	Aktionspause (Ventil schliessen)	3 Sekunden
6	Deaktivieren Zoneventil	
7	Aktionspause (Ventil schliessen)	3 Sekunden

Schäumen

Sequenz	Aktivität/Funktion	Zeit/Ventilnummer zu aktivieren
1	Aktivieren Zoneventil*	
2	Aktivieren Chemie Wasserventil	(Q111)
3	Aktivieren Chemie Produktventil**	(Q120/Q121/Q122)
4	Aktionspause (Ventil öffnen)	3 Sekunden
5	Aktivieren Luftventil	(Q112)
6	Zeit für Waschschrötte – Schäumen	XX Sekunden
7	Deaktivieren Luftventil	(Q112)
8	Deaktivieren Chemie Produktventil	(Q120/Q121/Q122)
9	Deaktivieren Chemie Wasserventil	(Q111)
10	Aktionspause (Ventil schliessen)	3 Sekunden
11	Deaktivieren Zoneventil	
12	Aktionspause (Ventil schliessen)	3 Sekunden

Sprühdesinfektion

Sequenz	Aktivität/Funktion	Zeit/Ventilnummer zu aktivieren
1	Aktivieren Zoneventil*	
2	Aktivieren Chemie Wasserventil	(Q111)
3	Aktivieren Chemie Produktventil**	(Q120/Q121/Q122)
4	Zeit für Waschschrötte - Sprühdesinfektion	XX Sekunden
5	Deaktivieren Chemie Produktventil	(Q120/Q121/Q122)
6	Deaktivieren Chemie Wasserventil	(Q111)
7	Aktionspause (Ventil schliessen)	3 Sekunden
8	Deaktivieren Zoneventil	
9	Aktionspause (Ventil schliessen)	3 Sekunden

Pause

Sequenz	Aktivität/Funktion	Zeit/Ventilnummer zu aktivieren
1	Zeit für Waschschrötte - Pause	XX Sekunden

Injector pulse flush function

Sequenz	Aktivität/Funktion	Zeit/Ventilnummer zu aktivieren
1	Aktivieren Zoneventil*	
2	Aktivieren Chemie Wasserventil	(Q111)
3	Aktionspause (Ventil öffnen)	10 Sekunden
4	Deaktivieren Chemie Wasserventil	(Q111)
5	Aktionspause (Ventil schliessen)	5 Sekunden
6	Aktivieren Chemie Wasserventil	(Q111)
7	Aktionspause (Ventil öffnen)	5 Sekunden
8	Deaktivieren Chemie Wasserventil	(Q111)
9	Aktionspause (Ventil schliessen)	5 Sekunden
10	Aktivieren Chemie Wasserventil	(Q111)
11	Aktionspause (Ventil öffnen)	5 Sekunden
12	Deaktivieren Chemie Wasserventil	(Q111)
13	Aktionspause (Ventil schliessen)	5 Sekunden
14	Aktivieren Chemie Wasserventil	(Q111)
15	Aktionspause (Ventil öffnen)	5 Sekunden
16	Deaktivieren Chemie Wasserventil	(Q111)
17	Aktionspause (Ventil schliessen)	5 Sekunden
18	Aktivieren Chemie Wasserventil	(Q111)

19	Aktionspause (Ventil öffnen)	5 Sekunden
20	Deaktivieren Chemie Wasserventil (Q111)	
21	Aktionspause (Ventil schliessen)	5 Sekunden
22	Deaktivieren Zoneventil*	

Rohr füllen

Sequenz	Aktivität/Funktion	Zeit/Ventilnummer zu aktivieren
1	Aktivieren Chemie Wasserventil (Q111)	
2	Aktionspause (Ventil öffnen)	5 Sekunden
3	Aktivieren Zoneventil*	
4	Zeit für Waschschrift – Rohr füllen	XX Sekunden
5	Deaktivieren Chemie Wasserventil (Q111)	
6	Aktionspause (Ventil schliessen)	3 Sekunden
7	Deaktivieren Zoneventil*	
8	Aktionspause (Ventil schliessen)	3 Sekunden

Rohr leer blasen

Sequenz	Aktivität/Funktion	Zeit/Ventilnummer zu aktivieren
1	Aktivieren Zoneventil*	
2	Aktivieren Luftventil (Q112)	
3	Zeit für Waschschrift – Rohr leer blasen	XX Sekunden
4	Deaktivieren Luftventil (Q112)	
5	Aktionspause (Ventil schliessen)	5 Sekunden
6	Deaktivieren Zoneventil*	
7	Aktionspause (Ventil schliessen)	3 Sekunden

* Der Kunde muss das Zoneventil wählen.

** **WARNUNG!** Achten Sie darauf nicht zwei Chemie Produktventile (Q120/Q121) gleichzeitig zu öffnen!!

FR**Description du terminal****Vanne de rinçage (Q110)**

Les terminaux 5.A et 5.B sont utilisés pour ouvrir l'eau de rinçage. C'est de l'eau qui passe par le bloc mais pas par l'injecteur à l'intérieur du bloc. L'ouverture de cette vanne est faite en appliquant du 24Vdc au terminal 5.A et du 0V au terminal 5.B

Vanne d'eau produit (Q111)

Les terminaux 6.A et 6.B s'ouvrent pour la vanne dans le bloc entraînant l'eau par l'injecteur dans le tuyau de sortie. L'ouverture de la vanne est faite en appliquant du 24Vdc au terminal 6.A et du 0V au terminal 6.B

Vanne d'air (Q112)

Les terminaux 7.A et 7.B s'ouvrent pour l'air comprimé vers le bloc. Cela est fait par exemple pour créer de la mousse ou vider les tuyaux. L'ouverture de cette vanne se fait en appliquant du 24Vdc au terminal 7.A et du 0V au terminal 7.B

Vanne produit A,B,C (Q120, Q121, Q122)

Les terminaux 8,9,10.A et B s'ouvrent pour le flux des produits vers l'injecteur. L'activation de ces vannes est faite en appliquant du 24Vdc au terminal A et du 0V au terminal B. Faites très attention de ne pas ouvrir plus d'une vanne produit à la fois, à moins que ce ne soit autorisé par le fournisseur de produits chimiques. Le produit C est une option et ne fonctionne que dans une machine à 3 produits.

Erreur

Ce signal est un signal de relais indiquant si une erreur est active à la pompe. Si une erreur est active, le terminal 1.A et 1.B déclencheront un court circuit, autrement ils seront déconnectés. Cette fonction est uniquement utilisée dans l'appareil Hybrid Foamatic MA

Contrôle de vitesse/Activer le moteur/Activer le moteur pour un nettoyage manuel

Les terminaux 2.A et 2.B sont utilisés pour contrôler la pression de la pompe avec un signal de 0-10Vdc. 0V étant l'arrêt de la pompe et 10Vdc est égal à 15bar. Le signal pour contrôler la pression doit être appliqué pour que le moteur fonctionne.

Dans 3.A et 3.B, un cavalier est monté. Ce terminal peut être utilisé comme signal de déclenchement pour la pompe. Cela est fait en retirant le cavalier et en le remplaçant par un signal relais qui doit être activé pour le déclenchement de la pompe et désactivé pour éviter que la pompe ne fonctionne.

Réinitialisation

Les terminaux 4.A et 4.B sont utilisés pour réinitialiser les erreurs détectées. La réinitialisation aura lieu en créant un court circuit entre 4.A et 4.B pendant un bref moment, ensuite libérez le court-circuit.

Description des vannes internes dans l'Hybrid Foamatic SA / MA

Description des séquences pour les étapes de lavage

Rinçage		
Séquence	Activité/fonction	Nombre de vannes à activer
1	Activer vanne de zone*	
2	Activer vanne de rinçage	(Q110)
3	Durée d'étape - Rinçage	XX sec.
4	Désactiver vanne de rinçage	(Q110)
5	Mise en pause de l'action (fermeture de vanne)	3 sec.
6	Désactiver vanne de zone	
7	Mise en pause de l'action (fermeture de vanne)	3 sec.
Moussage		
Séquence	Activité/fonction	
1	Activer vanne de zone*	
2	Activer la vanne d'eau produit	(Q111)
3	Activer la vanne de produits chimiques**	(Q120/Q121/Q122)
4	Mise en pause de l'action	
(Ouverture de la valve)3 sec.		
5	Activer vanne d'air	(Q112)
6	Durée d'étape - Moussage	XX sec.
7	Désactiver vanne d'air	(Q112)
8	Désactiver la vanne de produits chimiques**	(Q120/Q121/Q122)
9	Désactiver la vanne d'eau produit	(Q111)
10	Mise en pause de l'action (fermeture de vanne)	3 sec.
11	Désactiver vanne de zone	
12	Mise en pause de l'action (fermeture de vanne)	3 sec.
Désinfectant		
Séquence	Activité/fonction	
1	Activer vanne de zone*	
2	Activer la vanne d'eau produit	(Q111)
3	Activer la vanne de produits chimiques**	(Q120/Q121/Q122)
4	Durée d'étape - Désinfectant	XX sec.
5	Désactiver la vanne de produits chimiques**	(Q120/Q121/Q122)
6	Désactiver la vanne d'eau produit	(Q111)
7	Mise en pause de l'action (fermeture de vanne)	3 sec.
8	Désactiver vanne de zone	
9	Mise en pause de l'action (fermeture de vanne)	3 sec.
Mise en pause		
Séquence	Activité/fonction	
1	Durée d'étape - Mise en pause	XX sec.
Fonction de rinçage à pulsion de l'injecteur		
Séquence	Activité/fonction	
1	Activer vanne de zone*	
2	Activer la vanne d'eau produit	(Q111)
3	Mise en pause de l'action (Ouverture de la valve)	10 sec.
4	Désactiver la vanne d'eau produit	(Q111)
5	Mise en pause de l'action (Fermeture de la valve)	5 sec.
6	Activer la vanne d'eau produit	(Q111)
7	Mise en pause de l'action (Ouverture de la valve)	5 sec.
8	Désactiver la vanne d'eau produit	(Q111)
9	Mise en pause de l'action (Fermeture de la valve)	5 sec.
10	Activer la vanne d'eau produit	(Q111)
11	Mise en pause de l'action(Ouverture de la valve)	5 sec.

12	Désactiver la vanne d'eau produit	(Q111)
13	Mise en pause de l'action (Fermeture de la valve)	5 sec.
14	Activer la vanne d'eau produit	(Q111)
15	Mise en pause de l'action (fermeture de vanne)	5 sec.
16	Désactiver la vanne d'eau produit	(Q111)
17	Mise en pause de l'action (Fermeture de la valve)	5 sec.
18	Activer la vanne d'eau produit	(Q111)
19	Mise en pause de l'action (Ouverture de la valve)	5 sec.
20	Désactiver la vanne d'eau produit	(Q111)
21	Mise en pause de l'action (Fermeture de la valve)	5 sec.
22	Désactiver vanne de zone*	

Tuyau de remplissage

Séquence	Activité/fonction	
1	Activer la vanne d'eau produit	(Q111)
2	Mise en pause de l'action (fermeture de vanne)	5 sec.
3	Activer vanne de zone*	
4	Durée d'étape - tuyau de remplissage	XX sec.
5	Désactiver la vanne d'eau produit	(Q111)
6	Mise en pause de l'action (fermeture de vanne)	3 sec.
7	Désactiver vanne de zone*	
8	Mise en pause de l'action (fermeture de vanne)	3 sec.

Tuyau de vidange

Séquence	Activité/fonction	
1	Activer vanne de zone*	
2	Activer vanne d'air	(Q112)
3	Durée d'étape - tuyau de vidange	XX sec.
4	Désactiver vanne d'air	(Q112)
5	Mise en pause de l'action (fermeture de vanne)	5 sec.
6	Désactiver vanne de zone*	
7	Mise en pause de l'action (fermeture de vanne)	3 sec.

* Le client doit décider quelle vanne de zone

** ATTENTION ! Assurez-vous d'ouvrir deux vannes de produits chimiques en même temps !

ES**Descripción del terminal****Válvula de enjuague (Q110)**

Los terminales 5.A y 5.B se utilizan para dar paso al agua de enjuague. Se trata del agua que atraviesa el bloque, pero no el inyector que se encuentra dentro del bloque. La apertura de esta válvula se realiza aplicando 24 VDC al terminal 5.A y 0V al terminal 5.B

Válvula de agua del producto (Q111)

Los terminales 6.A y 6.B se abren para que la válvula del bloque deje pasar el agua a través del inyector hasta la tubería de salida. La apertura de esta válvula se realiza aplicando 24 VDC al terminal 6.A y 0V al terminal 6.B

Válvula de aire (Q112)

Los terminales 7.A y 7.B se utilizan para dar paso al aire comprimido hasta el bloque. Esto se hace, por ejemplo, para hacer espuma o vaciar las tuberías. La activación de esta válvula se realiza aplicando 24 VDC al terminal 7.A y 0V al terminal 7.B

Válvula de producto A, B, C (Q120, Q121, Q122)

Los terminales 8,9,10.A y B se utilizan para dar paso al flujo de productos hasta el inyector. La activación de estas válvulas se realiza aplicando 24 VDC al terminal A y 0V al terminal B. Tenga mucho cuidado de no abrir más de una válvula de producto a la vez, a menos que el proveedor de productos químicos lo apruebe. El producto C es opcional y solo puede utilizarse en una máquina de 3 productos.

Error

Esta es una señal de relé que indica si hay un error activo en la bomba. Si se produce un error, se cortocircuitarán los terminales 1.A y 1.B. De lo contrario, se desconectarán. Esta función solo se utiliza en el Hybrid Foamatic MA

Control de velocidad/Habilitar motor/Habilitar motor para limpieza manual

Los terminales 2.A y 2.B se utilizan para controlar la presión de la bomba, con una señal de 0-10 VDC. 0V corresponde a la bomba detenida, y 10VDC corresponde a 15bar. Para que el motor funcione debe aplicarse la señal para controlar la presión.

En 3.A y 3.B existe un puente. Este terminal se puede utilizar como señal de activación de la bomba. Esto se hace retirando el puente y reemplazándolo por una señal de relé, que se debe encender para activar la bomba, y apagar para evitar que la bomba funcione.

Reiniciar

Los terminales 4.A y 4.B se utilizan para reiniciar cualquier error detectado. El reinicio se llevará a cabo cortocircuitando 4.A y 4.B durante un corto período de tiempo, para después interrumpir nuevamente el cortocircuito.

Descripción de válvulas internas en Hybrid Foamatic SA/MA

Descripción de la secuencia de pasos de lavado

Enjuague

Secuencia	Actividad/función	Duración/nº válvula a activar
1	Activar la válvula de área*	
2	Activar la válvula de enjuague	(Q110)
3	Paso intervalo de tiempo - enjuague	XX seg.
4	Desactivar la válvula de enjuague	(Q110)
5	Pausa de actividad (cierre de válvula)	3 seg.
6	Desactivar la válvula de área*	
7	Pausa de actividad (cierre de válvula)	3 seg.

Espumado

Secuencia	Actividad/función	Duración/nº válvula a activar
1	Activar la válvula de área*	
2	Activar la válvula de agua del producto	(Q111)
3	Activar la válvula del producto químico**	(Q120/Q121/Q122)
4	Pausa de actividad (apertura de la válvula)	3 seg.
5	Activar la válvula de aire	(Q112)
6	Paso intervalo de tiempo - espumado	XX seg.
7	Desactivar la válvula de aire	(Q112)
8	Desactivar la válvula del producto químico**	(Q120/Q121/Q122)
9	Desactivar la válvula de agua del producto	(Q111)
10	Pausa de actividad (cierre de válvula)	3 seg.
11	Desactivar la válvula de área*	
12	Pausa de actividad (cierre de válvula)	3 seg.

Desinfección

Secuencia	Actividad/función	Duración/nº válvula a activar
1	Activar la válvula de área*	
2	Activar la válvula de agua del producto	(Q111)
3	Activar la válvula del producto químico**	(Q120/Q121/Q122)
4	Paso intervalo de tiempo - desinfección	XX seg.
5	Desactivar la válvula del producto químico**	(Q120/Q121/Q122)
6	Desactivar la válvula de agua del producto	(Q111)
7	Pausa de actividad (cierre de válvula)	3 seg.
8	Desactivar la válvula de área*	
9	Pausa de actividad (cierre de válvula)	3 seg.

Pausa

Secuencia	Actividad/función	Duración/nº válvula a activar
1	Paso intervalo de tiempo - pausa	XX seg.

Función de lavado de inyectores mediante barrido

Secuencia	Actividad/función	Duración/nº válvula a activar
1	Activar la válvula de área*	
2	Activar la válvula de agua del producto	(Q111)
3	Pausa de actividad (apertura de la válvula)	10 seg.
4	Desactivar la válvula de agua del producto	(Q111)
5	Pausa de actividad (cierre de válvula)	5 seg.
6	Activar la válvula de agua del producto	(Q111)
7	Pausa de actividad (apertura de la válvula)	5 seg.
8	Desactivar la válvula de agua del producto	(Q111)
9	Pausa de actividad (cierre de válvula)	5 seg.
10	Activar la válvula de agua del producto	(Q111)
11	Pausa de actividad (apertura de la válvula)	5 seg.
12	Desactivar la válvula de agua del producto	(Q111)
13	Pausa de actividad (cierre de válvula)	5 seg.

14	Activar la válvula de agua del producto	(Q111)
15	Pausa de actividad (cierre de válvula)	5 seg.
16	Desactivar la válvula de agua del producto	(Q111)
17	Pausa de actividad(cierre de válvula)	5 seg.
18	Activar la válvula de agua del producto	(Q111)
19	Pausa de actividad (apertura de la válvula)	5 seg.
20	Desactivar la válvula de agua del producto	(Q111)
21	Pausa de actividad (cierre de válvula)	5 seg.
22	Desactivar la válvula de área*	

Llenado de tubería

Secuencia	Actividad/función	
1	Activar la válvula de agua del producto	(Q111)
2	Pausa de actividad (cierre de válvula)	5 seg.
3	Activar la válvula de área*	
4	Paso intervalo de tiempo - llenado de tubería	XX seg.
5	Desactivar la válvula de agua del producto	(Q111)
6	Pausa de actividad (cierre de válvula)	3 seg.
7	Desactivar la válvula de área*	
8	Pausa de actividad (cierre de válvula)	3 seg.

Vaciado de tubería

Secuencia	Actividad/función	
1	Activar la válvula de área*	
2	Activar la válvula de aire	(Q112)
3	Paso intervalo de tiempo - vaciado de tubería	XX seg.
4	Desactivar la válvula de aire	(Q112)
5	Pausa de actividad (cierre de válvula)	5 seg.
6	Desactivar la válvula de área*	
7	Pausa de actividad (cierre de válvula)	3 seg.

* El cliente tiene que decidir qué válvula de área

** ¡ATENCIÓN! ¡Asegúrese de no abrir dos válvulas de productos químicos al mismo tiempo!

IT

Descrizione del terminale

Valvola di risciacquo (Q110)

I terminali 5.A e 5.B sono utilizzati per l'apertura dell'acqua di risciacquo. Quest'acqua scorre attraverso il blocco ma non attraverso l'iniettore all'interno del blocco. L'apertura di questa valvola viene effettuata applicando 24Vdc al terminale 5.A e 0V al terminale 5.B

Valvola dell'acqua del prodotto (Q111)

I terminali 6.A e 6.B aprono la valvola nel blocco che conduce l'acqua attraverso l'iniettore al tubo di uscita. L'apertura di questa valvola viene effettuata applicando 24Vdc al terminale 6.A e 0V al terminale 6.B

Valvola dell'aria (Q112)

I terminali 7.A e 7.B aprono l'aria compressa verso il blocco. Questa operazione viene effettuata ad esempio per produrre la schiuma o svuotare i tubi. L'attivazione di questa valvola viene effettuata applicando 24Vdc al terminale 7.A e 0V al terminale 7.B

Valvola del prodotto A,B,C (Q120, Q121, Q122)

I terminali 8,9,10.A e B aprono il flusso dei prodotti verso l'iniettore. L'attivazione di queste valvole viene effettuata applicando 24Vdc al terminale A e 0V al terminale B. Prestare molta attenzione a non aprire più di una valvola del prodotto alla volta, tranne qualora approvato dal fornitore della sostanza chimica. Il prodotto C è un'opzione e funziona esclusivamente in una macchina per 3 prodotti

Errore

Questo segnale è un segnale a relè che indica se è attivo un errore per la pompa. Se è attivo un errore i terminali 1.A e 1.B saranno cortocircuitati altrimenti saranno scollegati. Questa funzione è utilizzata solo in Hybrid Foamatic MA

Controllo velocità/Azionamento motore/Azionamento motore per pulizia manuale

I terminali 2.A e 2.B sono utilizzati per il controllo della pressione della pompa, con un segnale di 0-10Vdc. 0V è l'arresto della pompa e 10Vdc equivale a 15bar. Per far funzionare il motore deve essere applicato il segnale per il controllo della pressione.

Nei terminali 3.A e 3.B è montato un ponticello. Questo terminale può essere utilizzato come segnale di rilascio per la pompa. Questa operazione viene eseguita rimuovendo il ponticello e sostituendolo con un segnale a relè che deve essere acceso per azionare la pompa e spento per impedire il funzionamento della pompa.

Ripristino

I terminali 4.A e 4.B sono utilizzati per ripristinare gli eventuali errori rilevati. Il ripristino avverrà effettuando un cortocircuito tra 4.A e 4.B per un breve periodo di tempo, dopo questa operazione rilasciare nuovamente il cortocircuito.

Descrizione delle valvole interne in Hybrid Foamatic SA/MA

Descrizione della sequenza delle fasi di lavaggio

Risciacquo

Sequenza	Attività/funzione	Tempo/n. valvola da attivare
1	Attivare valvola di zona*	
2	Attivare valvola di risciacquo (Q110)	
3	Tempo della fase – risciacquo	XX sec.
4	Disattivare valvola di risciacquo (Q110)	
5	Pausa dell'azione (chiusura della valvola)	3 sec.
6	Disattivare valvola di zona	
7	Pausa dell'azione (chiusura della valvola)	3 sec.

Produzione di schiuma

Sequenza	Attività/funzione	
1	Attivare valvola di zona*	
2	Attivare valvola dell'acqua del prodotto	(Q111)
3	Attivare valvola della sostanza chimica**	(Q120/Q121/Q122)
4	Pausa dell'azione (apertura della valvola)	3 sec.
5	Attivare valvola dell'aria	(Q112)
6	Tempo della fase – produzione di schiuma	XX sec.
7	Disattivare valvola dell'aria	(Q112)
8	Disattivare valvola della sostanza chimica**	(Q120/Q121/Q122)
9	Disattivare valvola dell'acqua del prodotto	(Q111)
10	Pausa dell'azione (chiusura della valvola)	3 sec.
11	Disattivare valvola di zona	
12	Pausa dell'azione (chiusura della valvola)	3 sec.

Igienizzazione

Sequenza	Attività/funzione	
1	Attivare valvola di zona*	
2	Attivare valvola dell'acqua del prodotto	(Q111)
3	Attivare valvola della sostanza chimica**	(Q120/Q121/Q122)
4	Tempo della fase – igienizzazione	XX sec.
5	Disattivare valvola della sostanza chimica**	(Q120/Q121/Q122)
6	Disattivare valvola dell'acqua del prodotto	(Q111)
7	Pausa dell'azione (chiusura della valvola)	3 sec.
8	Disattivare valvola di zona	
9	Pausa dell'azione (chiusura della valvola)	3 sec.

Pausa

Sequenza	Attività/funzione	
1	Tempo della fase – pausa	XX sec.

Funzione flush impulso dell'iniettore

Sequenza	Attività/funzione	
1	Attivare valvola di zona*	
2	Attivare valvola dell'acqua del prodotto	(Q111)
3	Pausa dell'azione (apertura della valvola)	10 sec.
4	Disattivare valvola dell'acqua del prodotto	(Q111)
5	Pausa dell'azione (chiusura della valvola)	5 sec.
6	Attivare valvola dell'acqua del prodotto	(Q111)
7	Pausa dell'azione (apertura della valvola)	5 sec.
8	Disattivare valvola dell'acqua del prodotto	(Q111)
9	Pausa dell'azione (chiusura della valvola)	5 sec.
10	Attivare valvola dell'acqua del prodotto	(Q111)
11	Pausa dell'azione (apertura della valvola)	5 sec.
12	Disattivare valvola dell'acqua del prodotto	(Q111)
13	Pausa dell'azione (chiusura della valvola)	5 sec.

14	Attivare valvola dell'acqua del prodotto	(Q111)
15	Pausa dell'azione (apertura della valvola)	5 sec.
16	Disattivare valvola dell'acqua del prodotto	(Q111)
17	Pausa dell'azione(chiusura della valvola)	5 sec.
18	Attivare valvola dell'acqua del prodotto	(Q111)
19	Pausa dell'azione (apertura della valvola)	5 sec.
20	Disattivare valvola dell'acqua del prodotto	(Q111)
21	Pausa dell'azione (chiusura della valvola)	5 sec.
22	Disattivare valvola di zona*	

Tubo di riempimento

Sequenza	Attività/funzione	
1	Attivare valvola dell'acqua del prodotto	(Q111)
2	Pausa dell'azione (apertura della valvola)	5 sec.
3	Attivare valvola di zona*	
4	Tempo della fase – tubo di riempimento	XX sec.
5	Disattivare valvola dell'acqua del prodotto	(Q111)
6	Pausa dell'azione (chiusura della valvola)	3 sec.
7	Disattivare valvola di zona*	
8	Pausa dell'azione (chiusura della valvola)	3 sec.

Tubo di svuotamento

Sequenza	Attività/funzione	
1	Attivare valvola di zona*	
2	Attivare valvola dell'aria	(Q112)
3	Tempo della fase – tubo di svuotamento	XX sec.
4	Disattivare valvola dell'aria	(Q112)
5	Pausa dell'azione (chiusura della valvola)	5 sec.
6	Disattivare valvola di zona*	
7	Pausa dell'azione (chiusura della valvola)	3 sec.

* Il cliente deve decidere quale valvola di zona

** **AVVERTIMENTO!** Assicurarsi di non aprire due valvole della sostanza chimica allo stesso tempo!

Nilfisk FOOD

Nilfisk Food

Blytaekervej 2
DK-9000 Aalborg
Tlf. +45 7218 2000

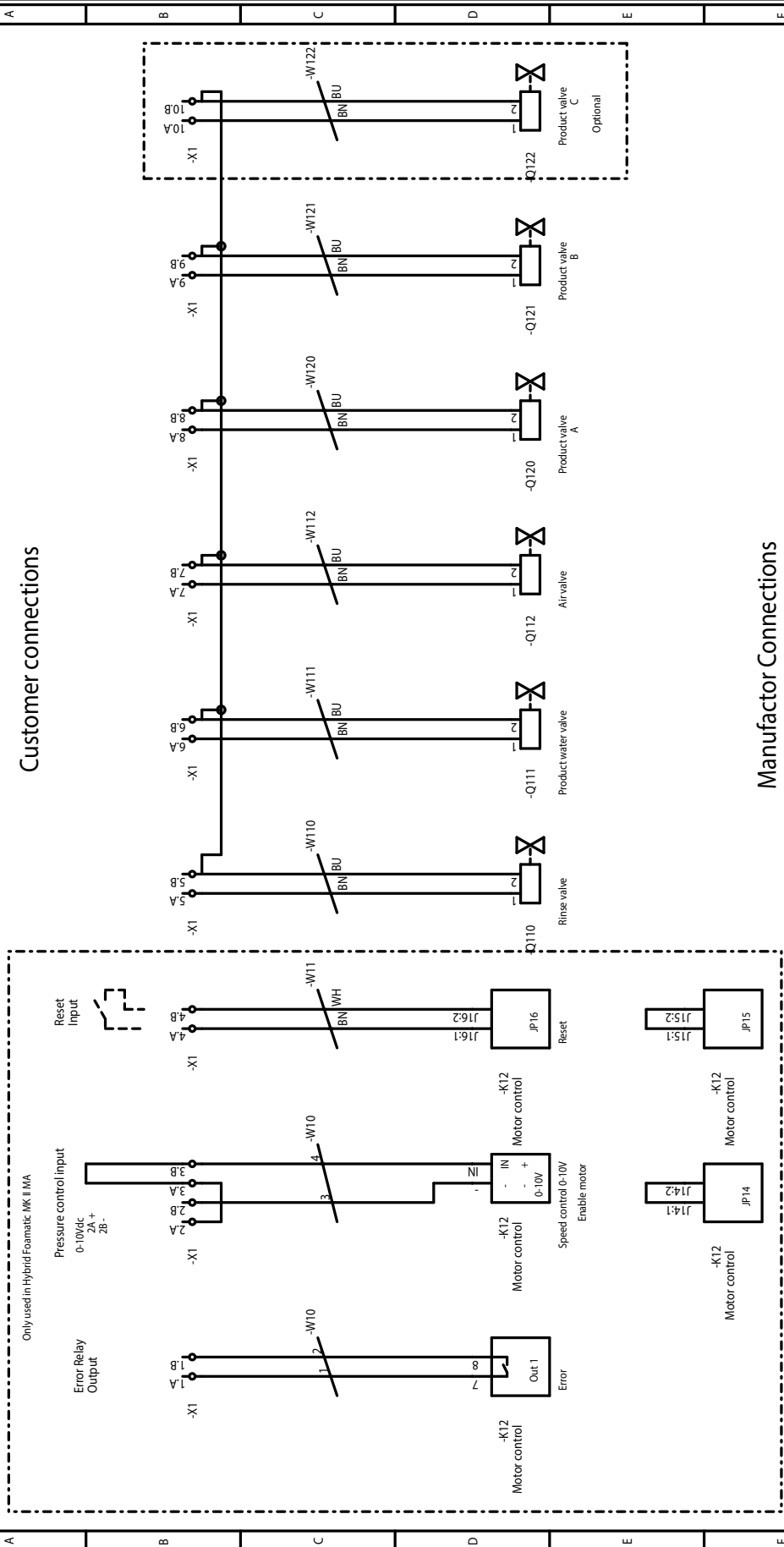
Project : Main Terminal box
Item No. : 110 005 249

Rated Voltage	: 24V DC
Rated frequency	: -
Full-load current	: 4A
Max single load	: 4A
Rated short time withstand current, I _{cw}	: 6kA
Max fuse	: 16A
Document Revision	: K

Project Responsible : SAN

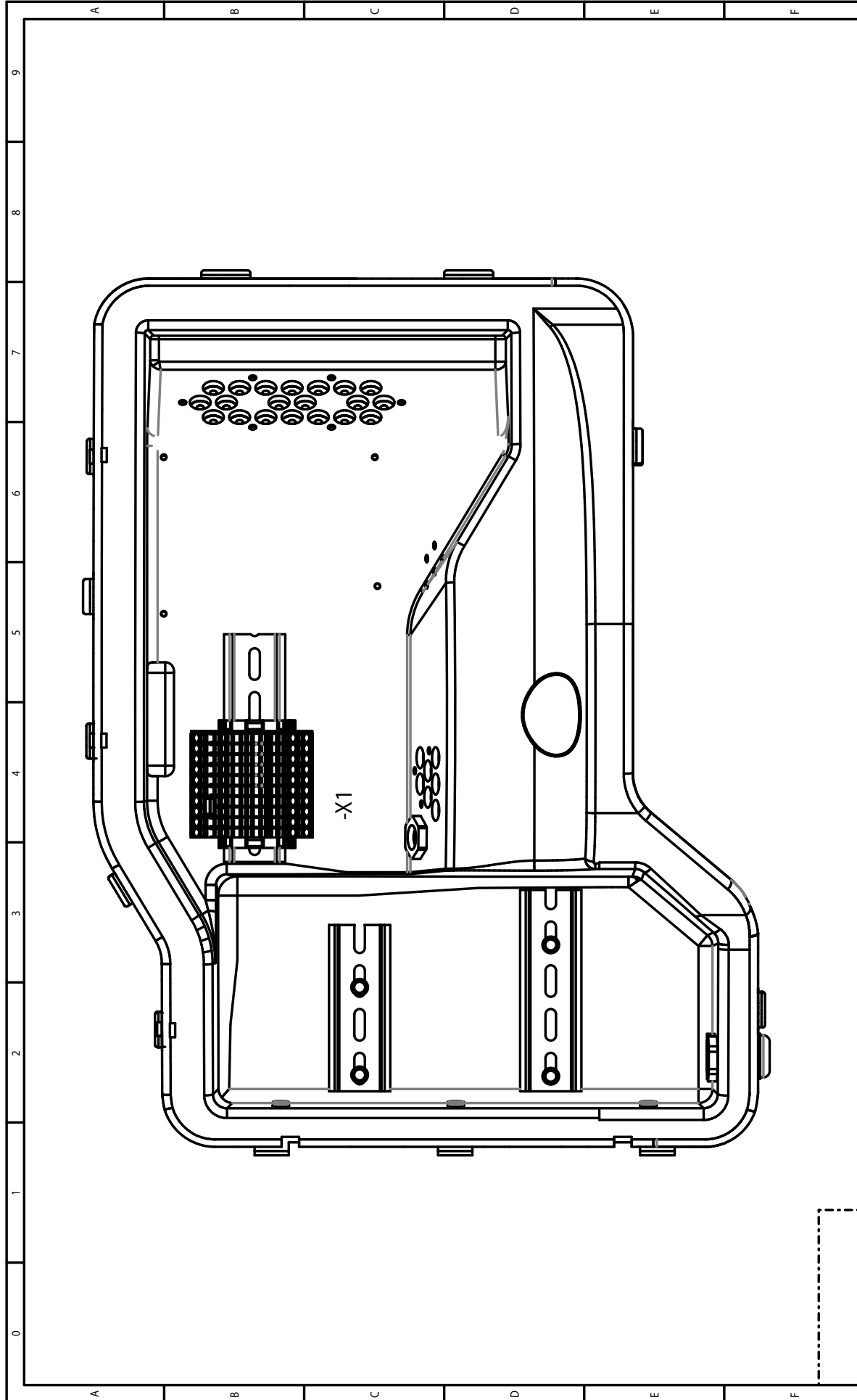
Control voltage 24V DC

Customer connections



Manufacturer Connections

NILFISK FOOD		Main Terminal box Hybrid Foamatic MKII Without Control		Terminals		Dwg. Number 110005249		DCC		No of pages 1	
						Date 06-12-2018		Init.		Page 1	
						Revision K		Project responsible SAN		Next page	



Main Terminal box
Hybrid Foamic MKII Without Control

Component placement

Dwg. Number
110005249

Dato
6-09-2018

Revision
K

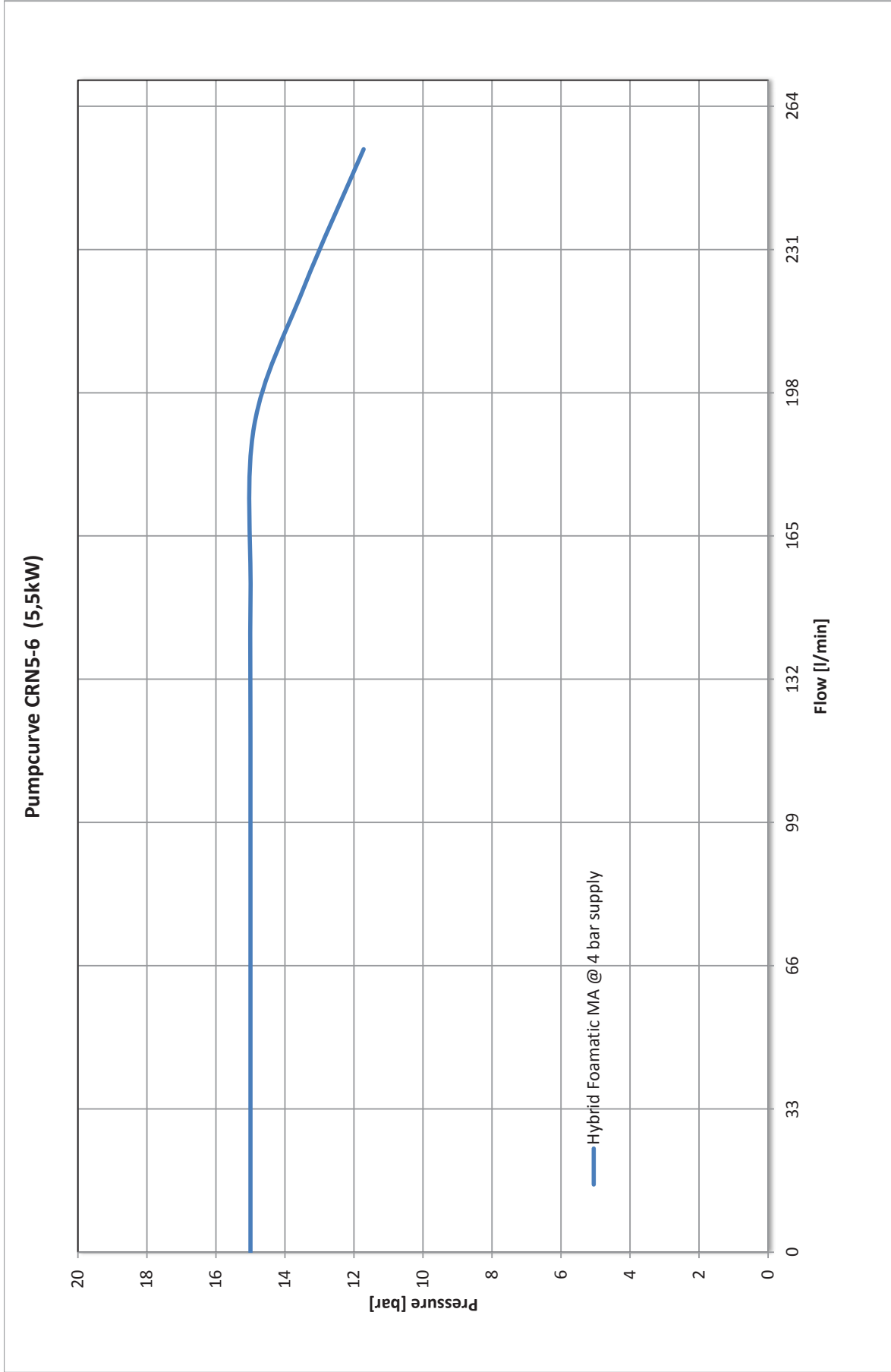
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Project responsible
SAN

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Next page

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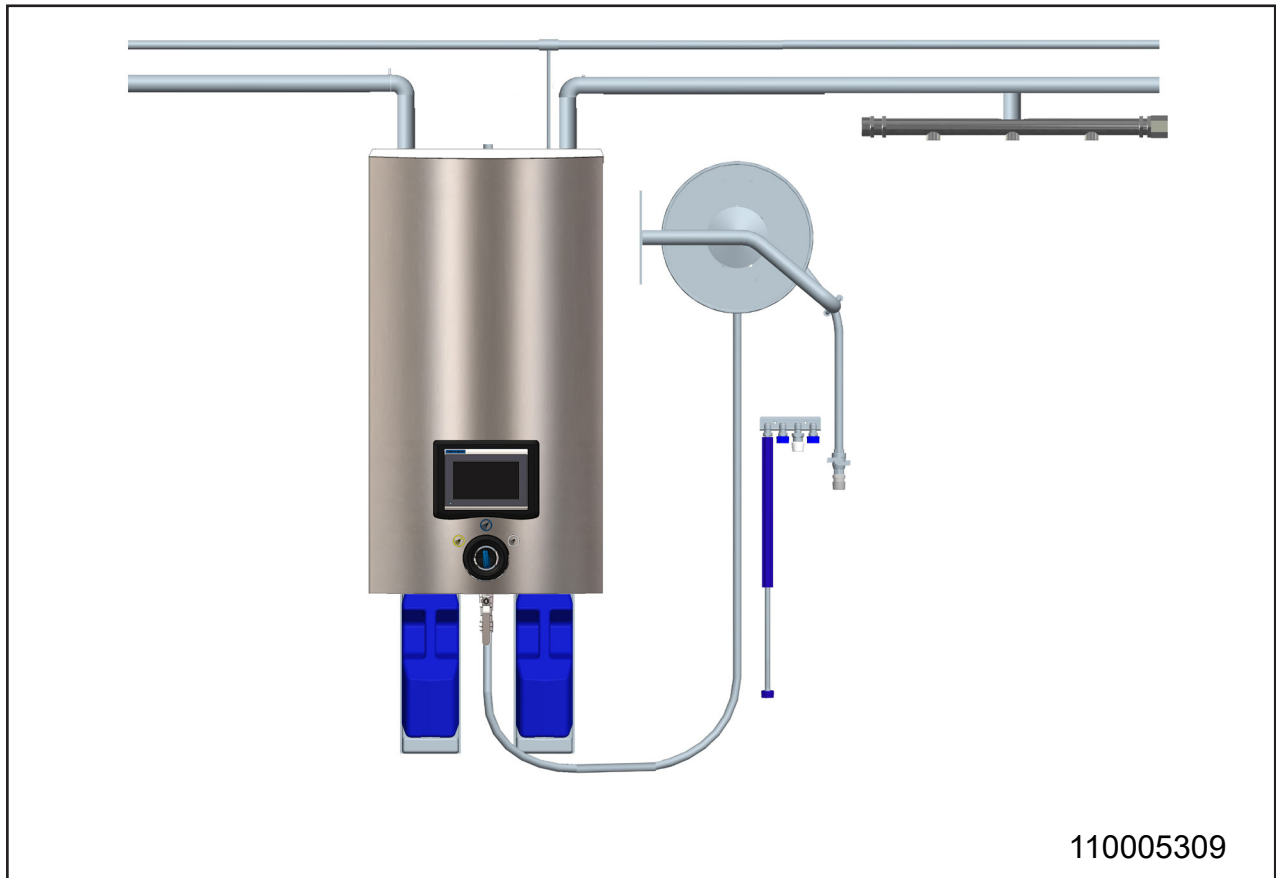
1
2

Pump curve

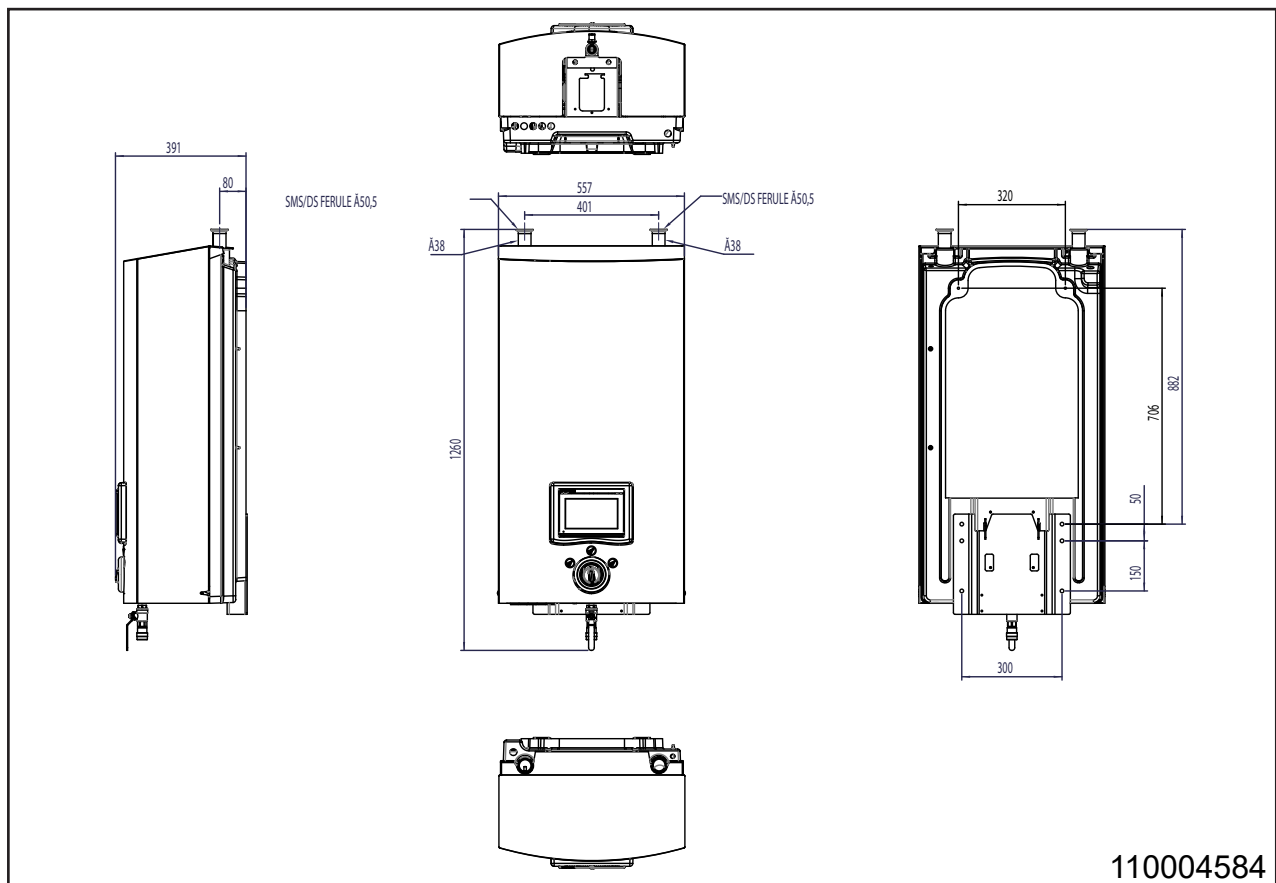


11003038

Installation Diagram

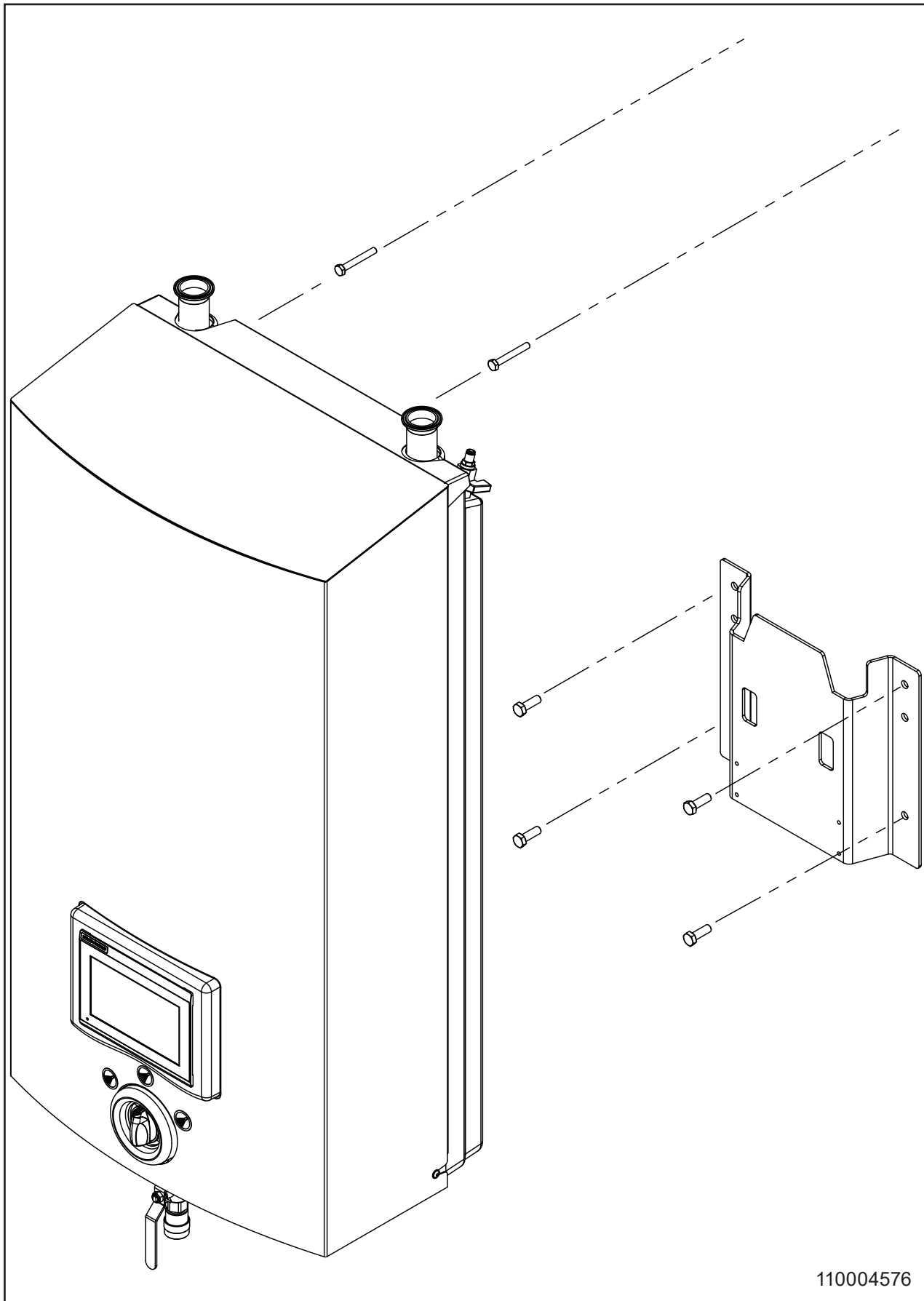


110005309



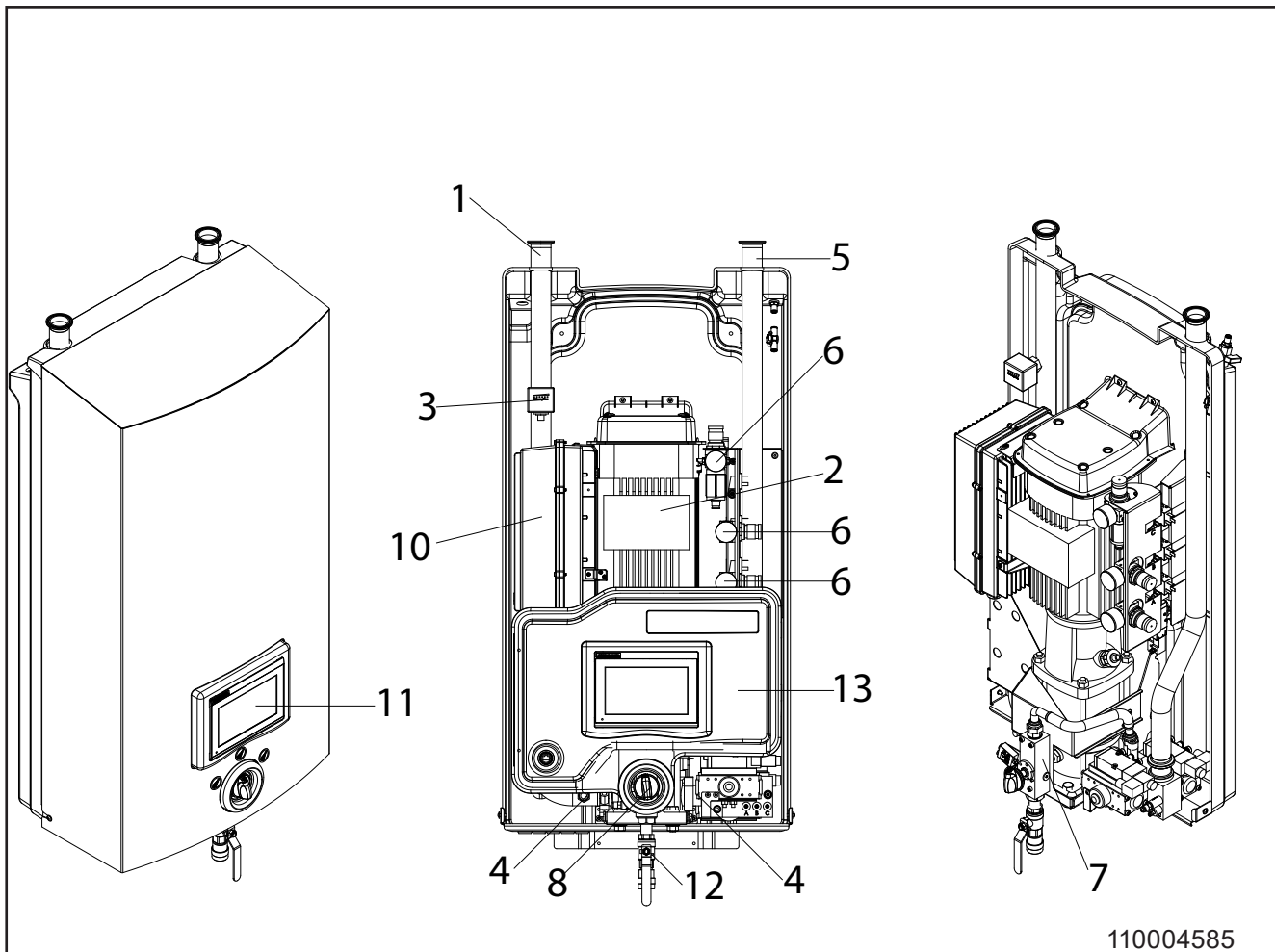
110004584

Mounting



Layout Hybrid Foamatic MA

Layout Hybrid Foamatic



110004585

	English	German	French	Spanish	Italian
1	Water inlet	Wassereinlauf	Entrée d'eau	Entrada de agua	Ingresso dell'acqua
2	Pump	Pumpe	Pompe	Bomba	Pompa
3	Flow switch	Durchflussschalter	Interrupteur de débit	Interruptor de caudal	Interruttore flussometrico
4	Pressure sensor	Drucksensor	Capteur de pression	Sensor de presión	Sensore di pressione
5	Water Outlet pipe	Wasser Auslaufrohr	Conduit sortie	Tubería de salida	Tubo di uscita dell'acqua
6	Air regulator with manometer	Luftregler mit Manometer	Régulateur d'air avec manomètre	Regulador de aire con manómetro	Regolatore dell'aria con manometro
7	Multi block	Multi Block	Multi Block	Multibloque	Multi blocco
8	Operation button	Bedientaste	Bouton de commande	Botón de funcionamiento	Pulsante di funzionamento
9	Compressor	Kompressor	Compresseur?	Compresor	Compressore
10	Controller	Regler	Contrôleur	Controlador	Centralina
11	Display	Display	Affichage	Visor	Display
12	Ball valve with quick coupling	Kugelventil mit Schnellkupplung	Robinet à boisseau sphérique avec raccord rapide	Válvula de bola con acoplamiento rápido	Valvola a sfera con attacco rapido
13	Automatic Controller	Automatikregler	Contrôleur automatique	Controlador automático	Dispositivo automatico di controllo

