

Description : HVCP Std 55kW
Part no. : 2183637
Drawing no. : 2183823

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Standards/Directives:

EN60 204-1
 EN61000-6-4

The control panel is suitable to be connected to
 TN-S, TN-C, TN-C-S grid

Electrical specifications:

Motor size: 30kW-220/230/240V 50/60Hz
 30-45kW-380/400/440/460V 50/60Hz

Supply Voltage: 3x(220/230/240)VAC PE 50/60Hz
 3x(380/400/440/460)VAC PE 50/60Hz

Short Circuit Current Ratings: 30kA

Frequency: 50/60 Hz

Type: Y/D

H x W x D(mm): 800 x 800 x 300

Control Voltage: 24V AC/ DC

Transformer: 340VA/160VA

Supply To External Equipment: 24V AC 2A, 24V DC 2A

Max installation ambient temperature
 40 °C / 104 °F

Mechanical specifications:

Degree of protection: IP65
 Weight: 54Kg
 Recyclable Materials: 100%

Labels, markings and other possible accessories according to product BOM

Responsible and Warranty:

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Wire specification:**Power cables:**

Insulation Material: PVC or PEX,EPR equivalent

Temperature: 70°C

Approvals: CE

Signal cables:

Material and type: PVC or PEX,EPR equivalent

Temperature: 70°C

Approvals: CE

Cables colour and conductor sectional area:

Protective conductor: Yellow/Green Variable

Power circuits: Black Variable

External control voltage: Orange 0,5mm²24VAC Phase: Red 1,5mm²0VAC Neutral: Red 1,5mm²24VDC Phase (+): Dark blue 0,5mm²0VDC Neutral (-): Dark blue 0,5mm²Analog signal: Purple 0,5mm²

Undefined Signal: --

Labels, markings and other possible accessories according to product BOM

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Wire specification:**Colour code:**

BK:	Black
BN:	Brown
BU:	Blue
GN:	Green
GY:	Grey
RD:	Red
WH:	White
PK:	Pink
PU:	Purple

Cables number grouping

Power Cables	W0 ----->W49
Shielded Power Cables	W50---->W99
Input Signal Cables 0-48V	W101--> W199
Output Signal Cables 0-48V	W200--> W399
Shielded Signal Cables	W500--> W599
Multi I/O Cable	W110

Labels, markings and other possible accessories according to product BOM

Installation of external accessories:

Dimension and types shown are only recommendations. it is the responsibility of the electrician to ensure that local and/or national regulations are met.

Note:

Do not use aluminium cable connect to main switch or contactors. Including motor cables.

Note:

There are limitations of software that determine which ones possible components that can be connected to inputs and outputs. This means that some cabinets do not have all the I/O functionality shown in the electrical diagram.

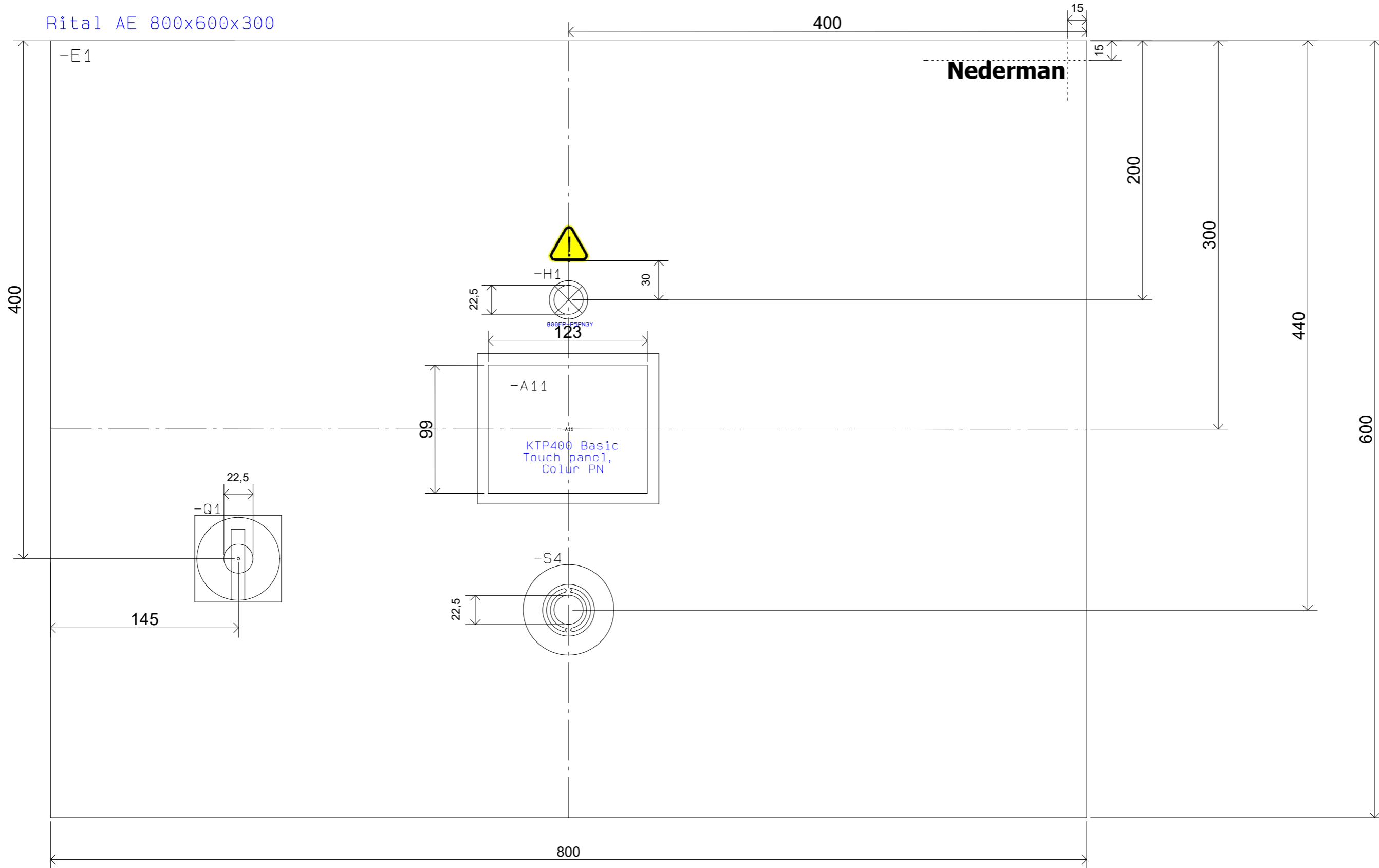
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Rital AE 800x600x300



Components or parts with the text "Marked:" must be marked with specified text. Label, decal or marker cards or equivalent.

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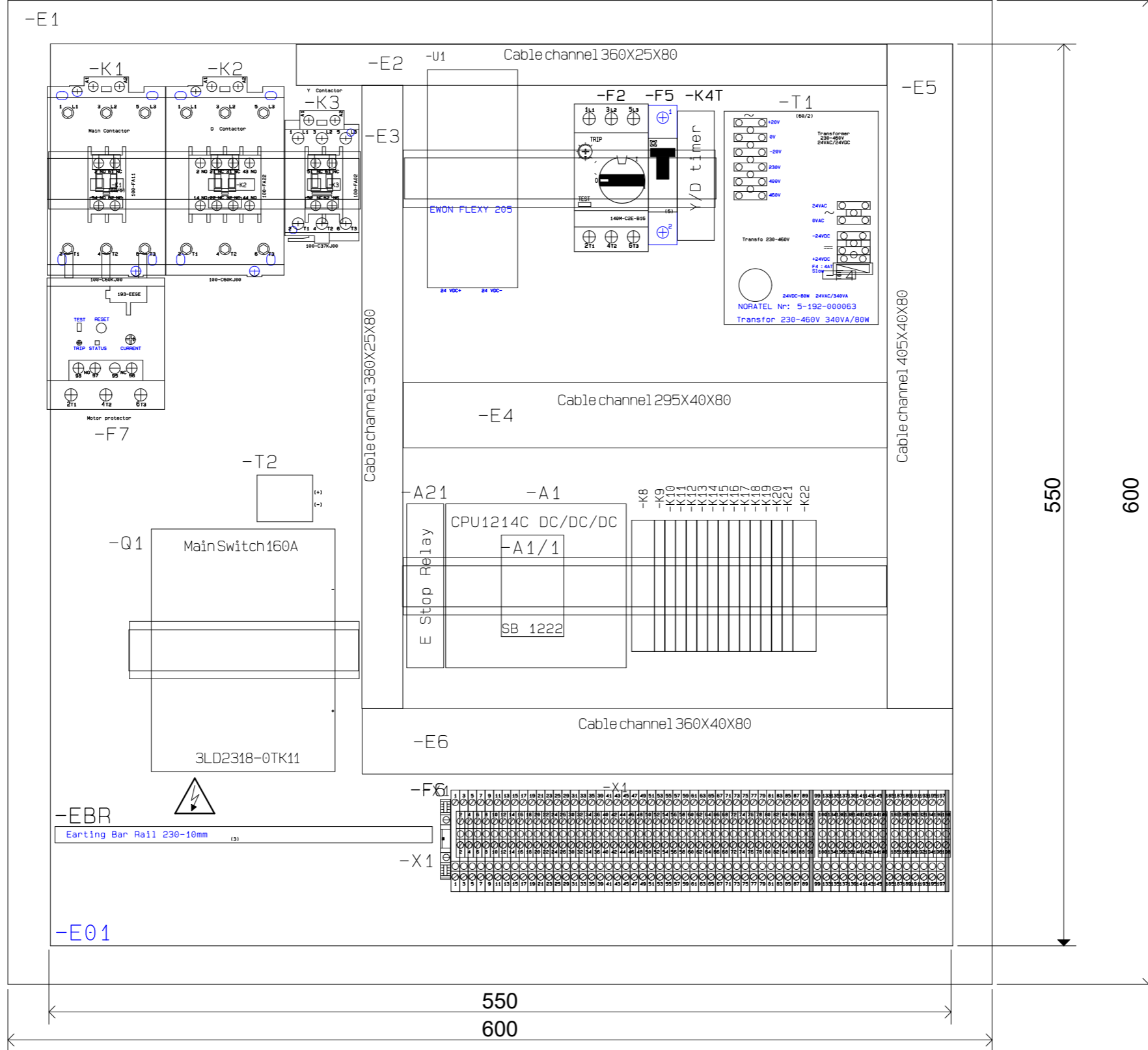
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FRONT
PANEL LAYOUT

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Rital AE 600x600x250



Note: U1 is an optional component. If not fitted, terminations for unused connections fitted instead.

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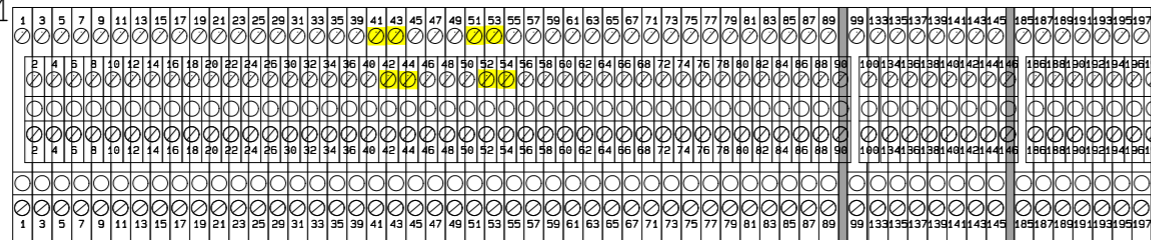


PANEL LAYOUT

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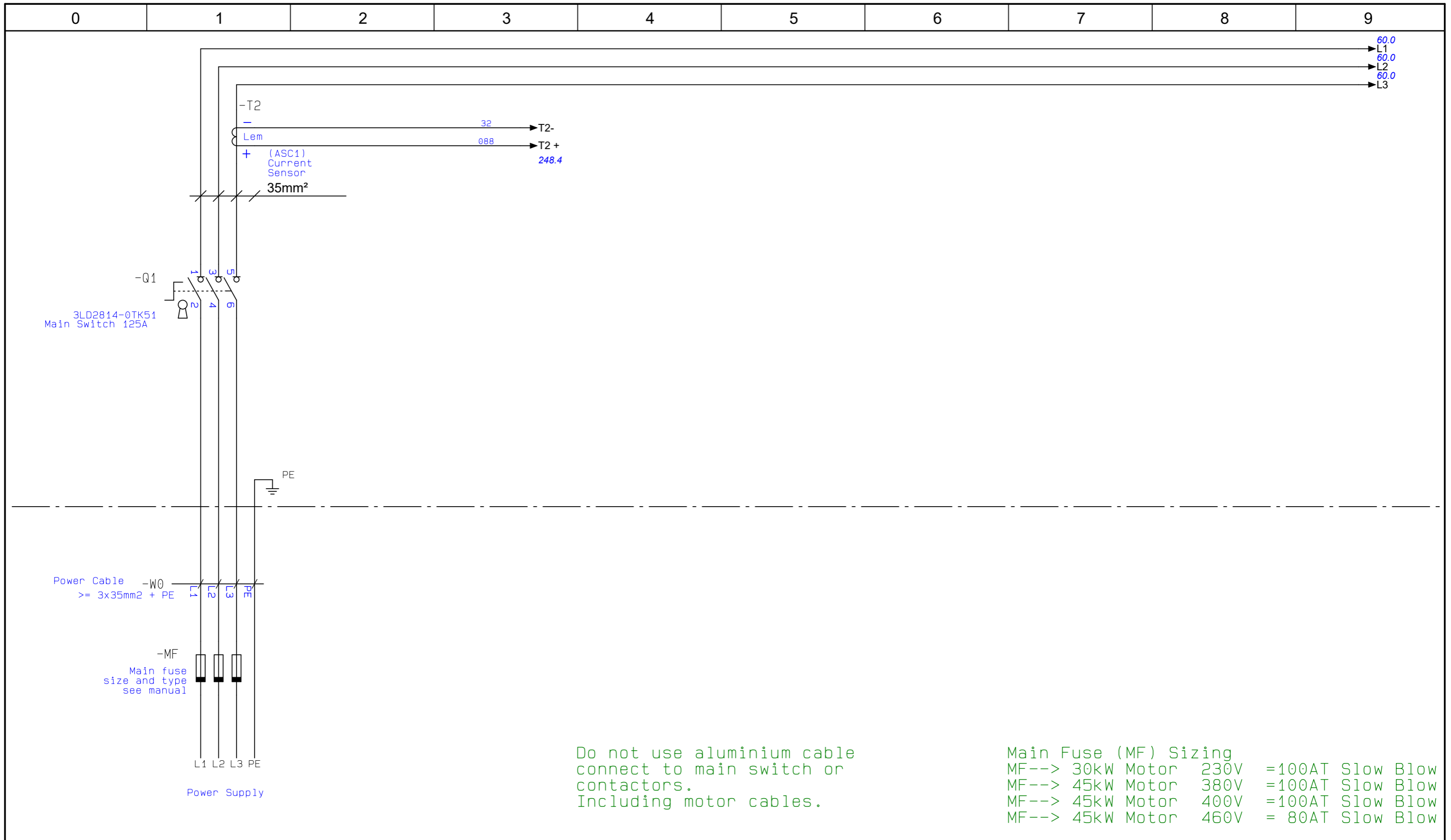


Terminals equipped with diode between levels marked with yellow marker.
Anode on upper level, cathode on lower level.

Terminals with diode:
41-42
43-44
51-52
53-54

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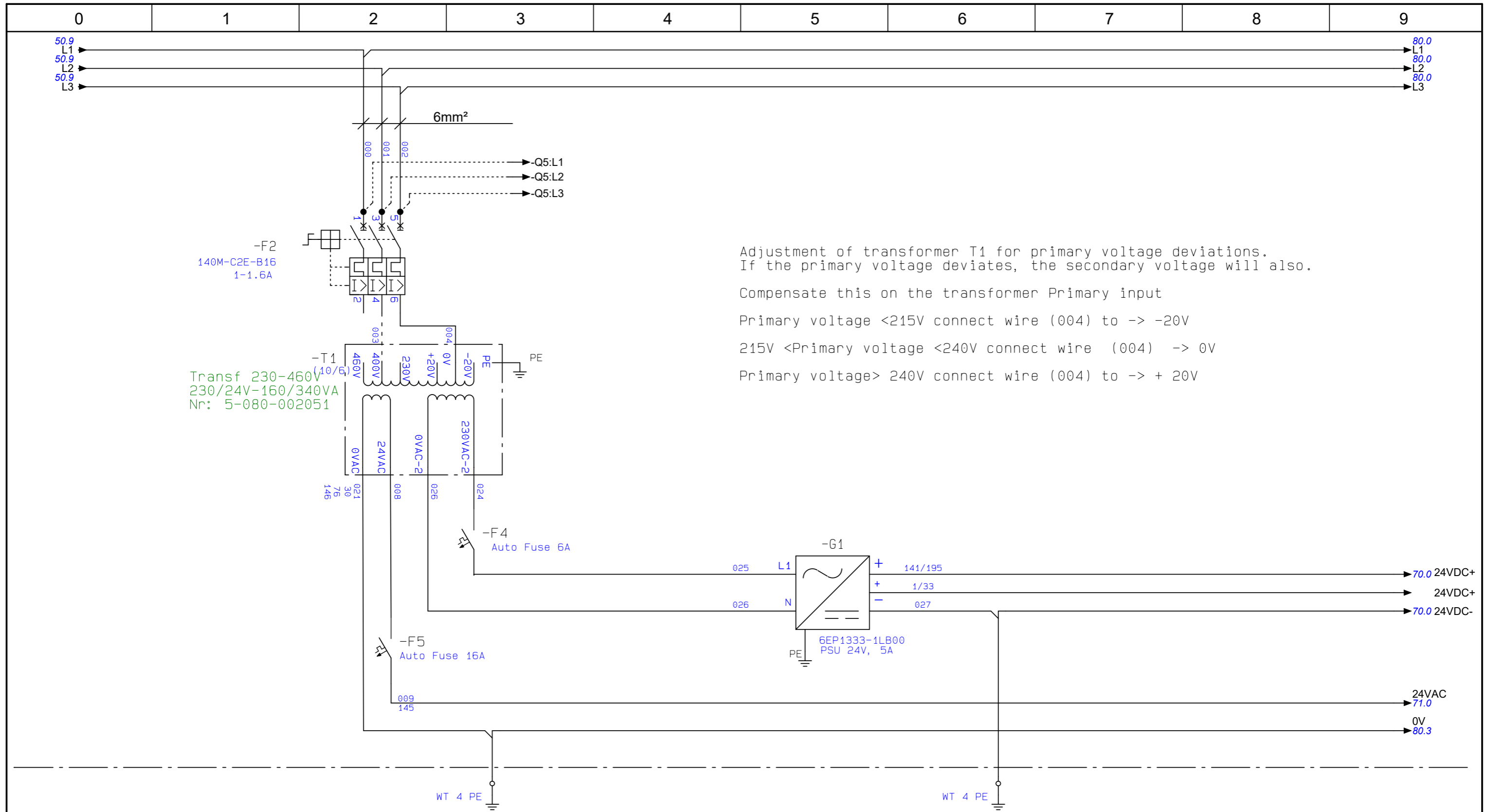
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POWER SUPPLY

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Adjustment of transformer T1 for primary voltage deviations.
 If the primary voltage deviates, the secondary voltage will also.

Compensate this on the transformer Primary input

Primary voltage <215V connect wire (004) to -> -20V
 215V <Primary voltage <240V connect wire (004) -> 0V
 Primary voltage > 240V connect wire (004) to -> + 20V

-F2
 140M-C2E-B16
 1-1.6A

-T1
 Transf 230-460V
 230/24V-160/340VA
 Nr: 5-080-002051

-G1
 6EP1333-1LB00
 PSU 24V, 5A

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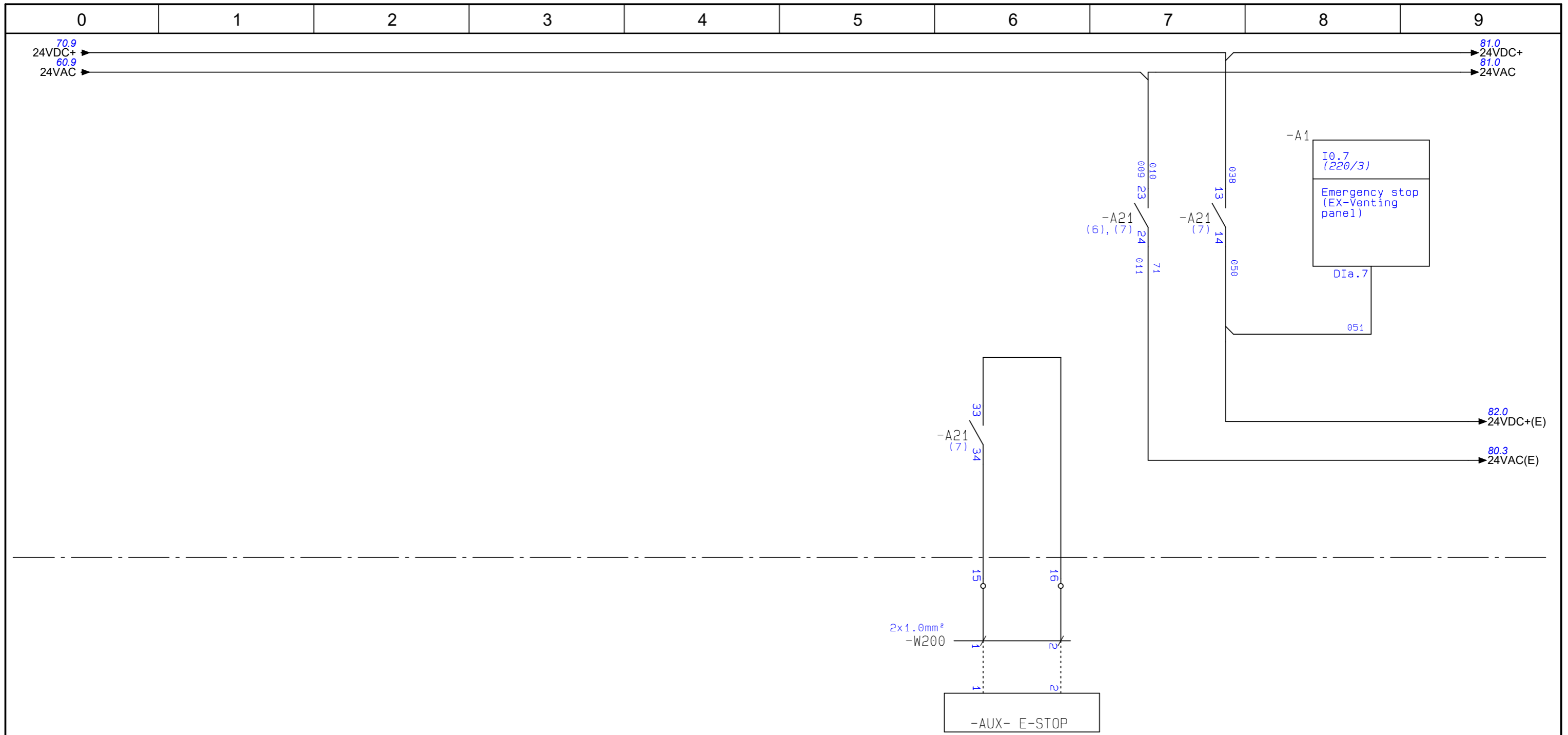
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CONTROL VOLTAGE

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E-Stop signal to external control panel

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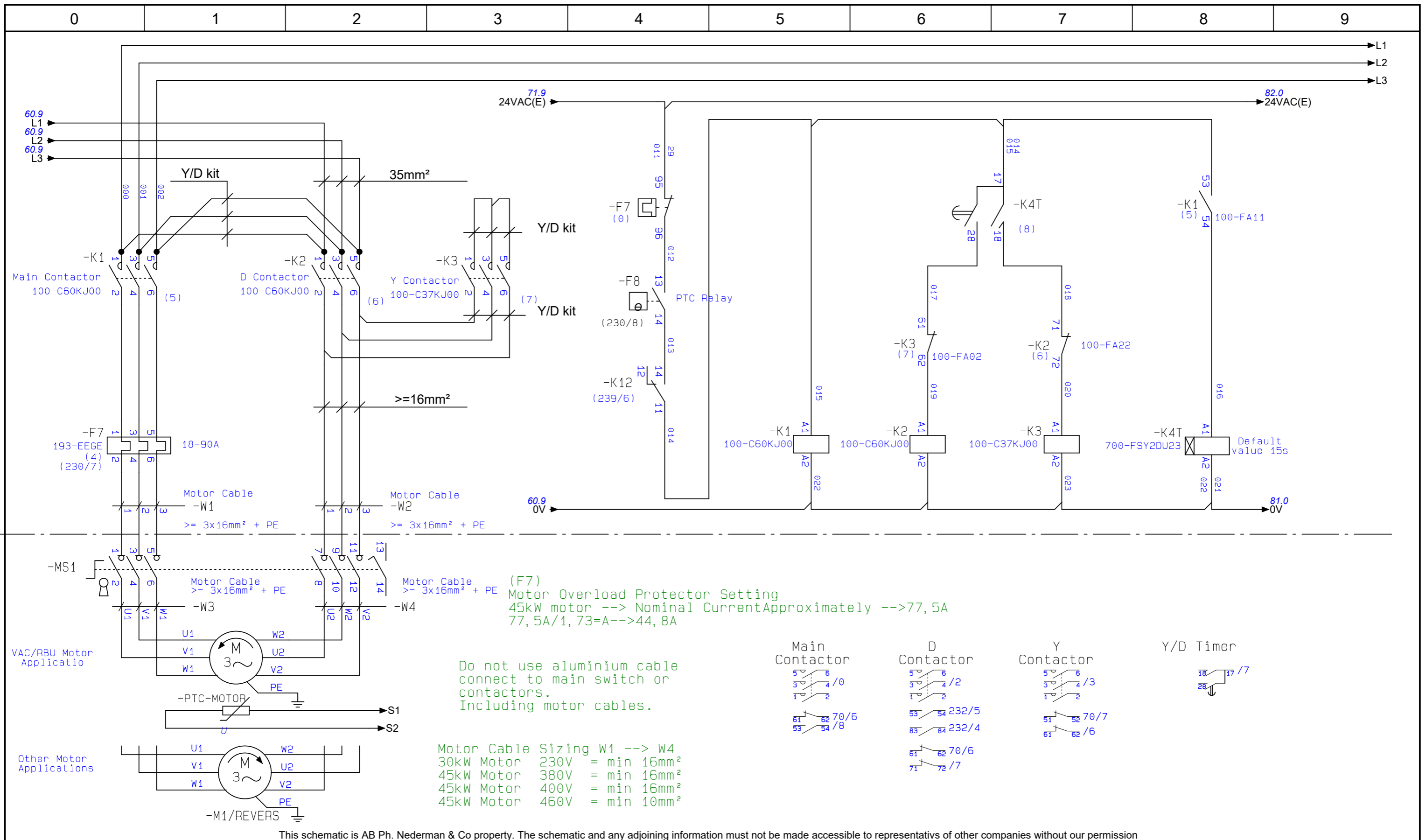
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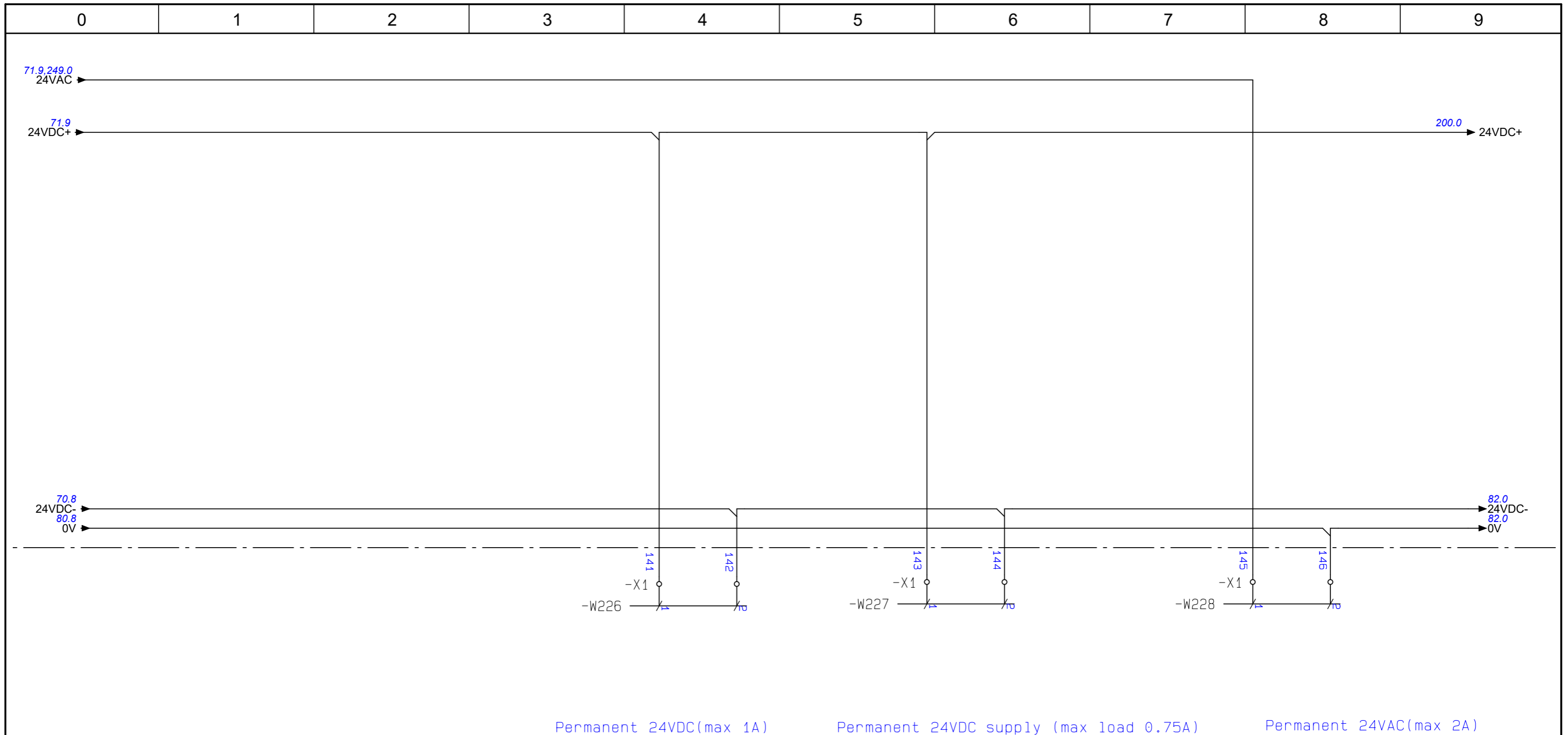


EMERGENCY STOP
CIRCUIT

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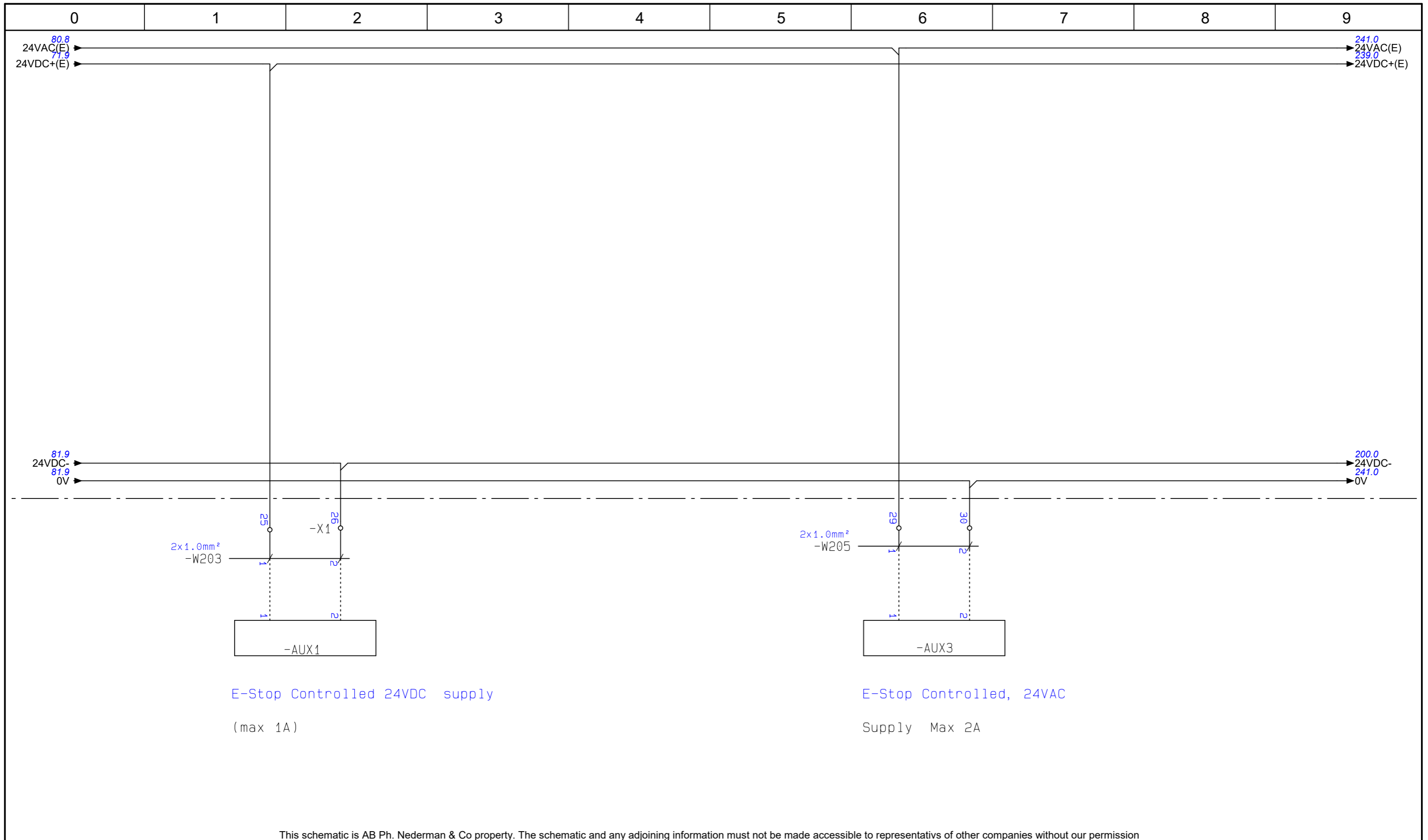
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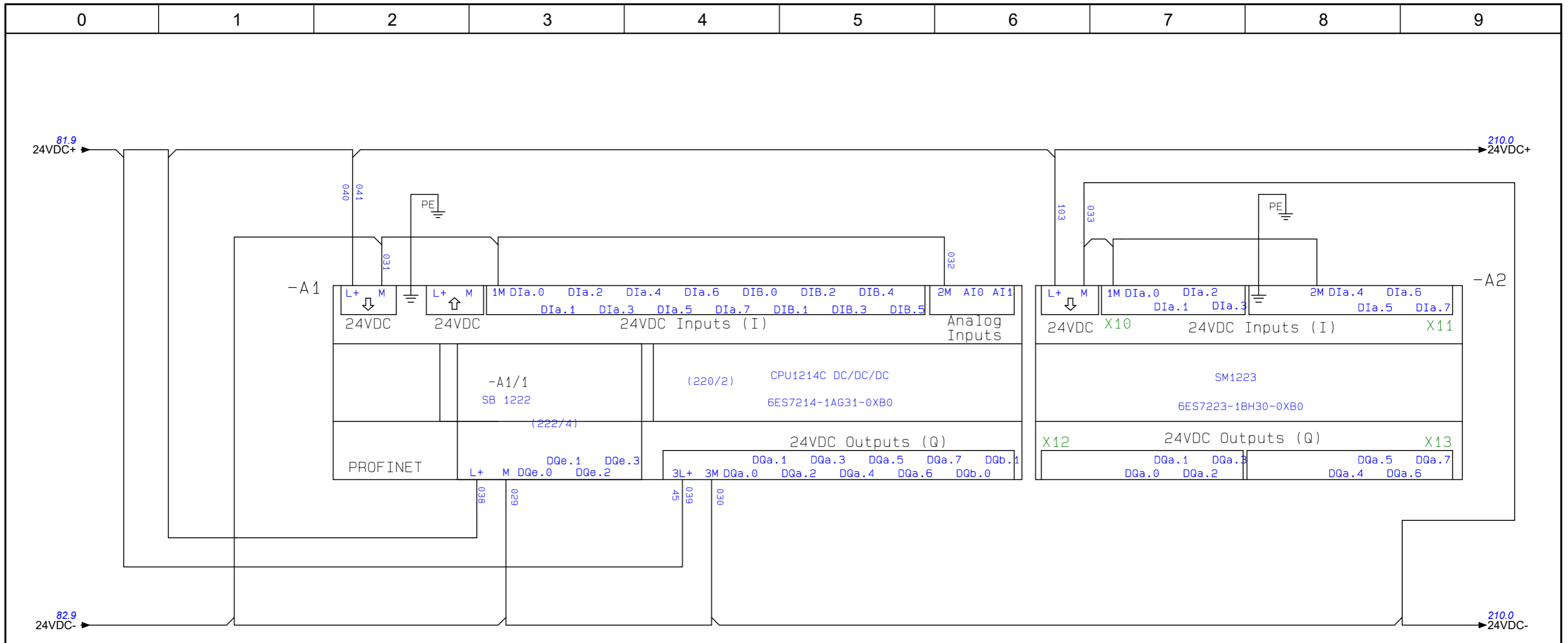
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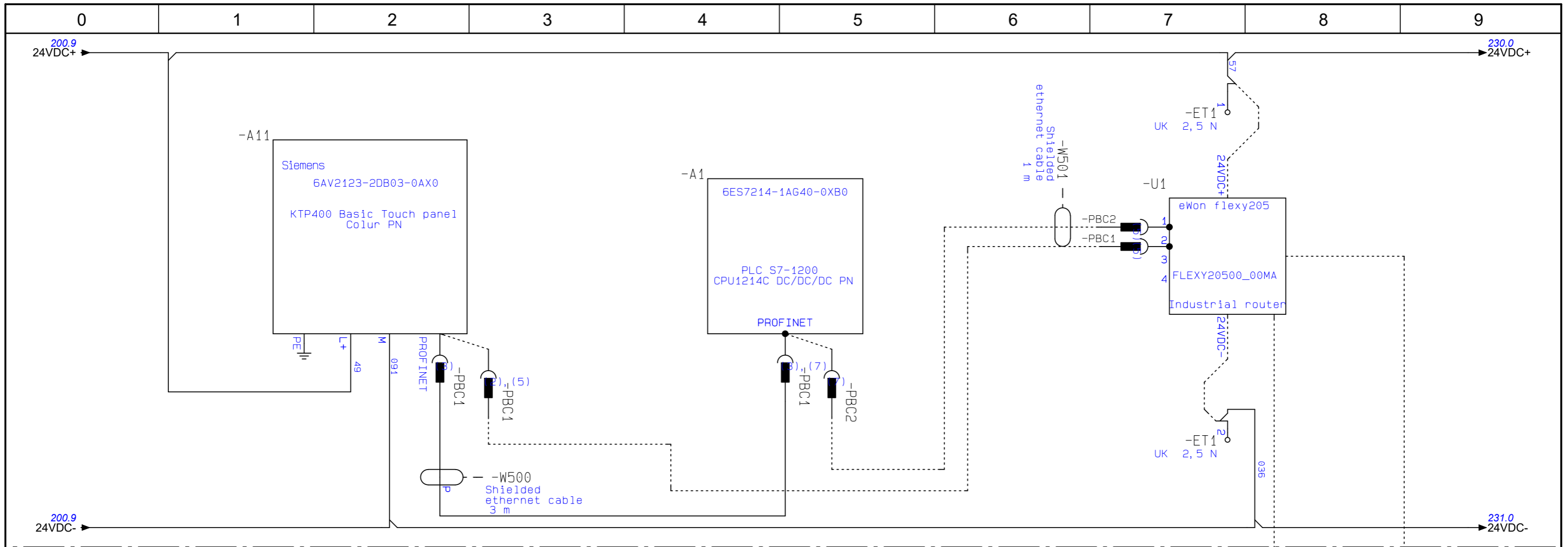
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When U1 not installed:
PBC1 between A1 and A11 (3 m)

When U1 installed:
PBC1 between A11 and U1 (3 m)
PBC2 between A1 and U1 (1 m)

Note: When installing router,
disconnect wires from terminals
ET1 and ET2 and connect to router.
Remove ET1 and ET2.

Antenna mounted externally

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HMI PANEL

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CPU1214C DC/DC/DC		(200/4), (7)
I0.0 (230/2)	Pilot Signal (PS)	DIa.0
I0.1 (230/5)	Compressed air switch (CAS)	DIa.1
I0.2 (230/7)	Thermal switches (TS)	DIa.2
I0.3 (230/8)	Motor protector +(PTC (EX))	DIa.3
I0.4 (231/1)	Level indicator on dust bin (BLI)	DIa.4
I0.5	Main filter DPS Configurable (DFC-OBM alarm (when no replica))	DIB.5
I0.6 (231/9)	Remote St.By/Off/OTTr	DIa.6
I0.7 (71/8)	Emergency stop (EX-Venting panel)	DIa.7
I1.0 (232/2)	Maintenance switch	DIb.0
I1.1 (232/6)	Closing function in D-mode	DIb.1
I1.2 (232/8)	Level Indicator (LI) (Emptying on demand) Configurable	DIb.2
I1.3 (233/0)	Control filter DPS 1 Configurable	DIb.3
I1.4 (233/6)	Manual emptying TVFD/AEB (NS)	DIb.4
I1.5 (233/8)	Fire Alarm	DIb.5
6ES7214-1AG40-0XB0		

-A1

CPU1214C DC/DC/DC		(2), (221/3)
Q0.0 (238/3)	NoAlarm (Reset Safety circ.)	DQa.0
Q0.1 (238/5)	Alarm message lamp lamp in front panel	DQa.1
Q0.2 (238/8)	Warning DPS BLI and LI (relay is energized at warnig active)	DQa.2
Q0.3 (239/2)	Filter Cleaning Valve V1 dust collector Configurable FlexF 13/18 v1 (replica)	DQa.3
Q0.4 (239/4)	Filter Cleaning Valve V2 dust collector Configurable FlexF 13/18 v1 (replica)	DQa.4
Q0.5 (239/6)	Run(Start motor)	DQa.5
Q0.6 (239/8)	Solenoid V10 in vacuum unit (Start up valve / Idling (RBU))	DQa.6
Q0.7 (240/3)	Upper solenoid V11 TVFD 1 Configurable	DQa.7
Q1.0 (240/5)	Lower solenoid V12 TVFD 1 Emptying AEB; Configurable	DQb.0
Q1.1 (240/8)	On/standby lamp (external)	DQb.1
6ES7214-1AG40-0XB0		

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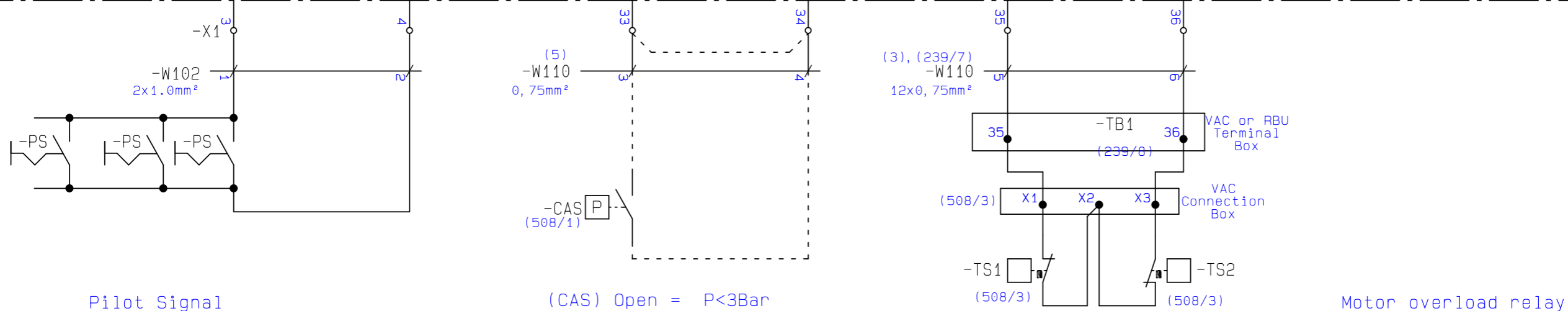
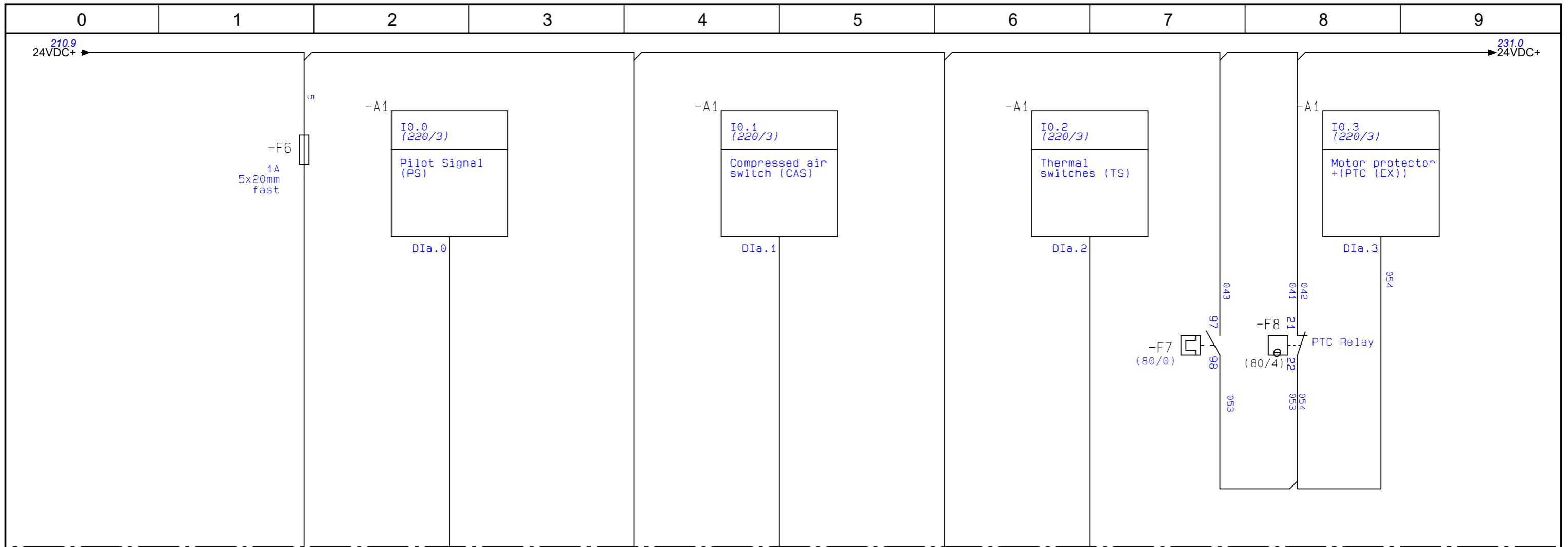
CPU1214C DC/DC/DC		(220/7), (248/3)
AI0 (248/3)	(ASC) Current Sensor	AI0
AI1 (248/6)	Vacuum Sensor input dP FlexFilter 13/18	AI1
6ES7214-1A631-0XB0		

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SB 1222	(200/3)
4.00 (241/2)	Config output K19 ASC move/Flush 1 DQe.0
4.01 (241/4)	Config output K20 ASC open/Flush 2 DQe.1
4.02 (241/6)	LCC start DQe.2
4.03 (241/9)	MUX AI0 Current AI1 Pressure DQe.3
6ES7222-1BD30-0XB0	

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All connected in parallel
Maximum length Signal Cable
Unshielded =300m
Shielded =500m

Compressed air switch (CAS)
Open = P<3Bar

Thermal Switch on VAC Bearing = Resettable
Thermal Fuse =Max 140C on RBU:pump outlet Not Resettable

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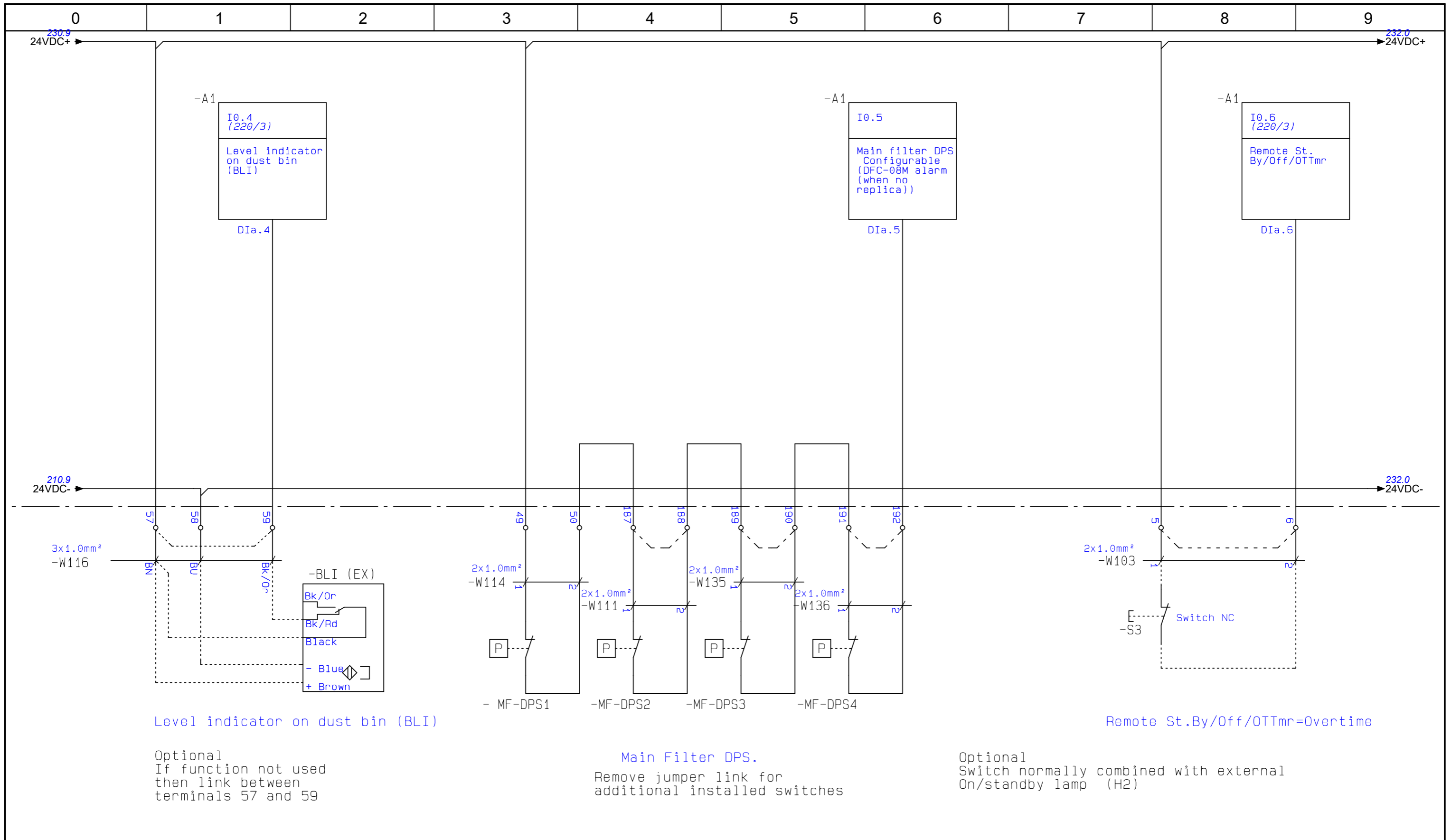
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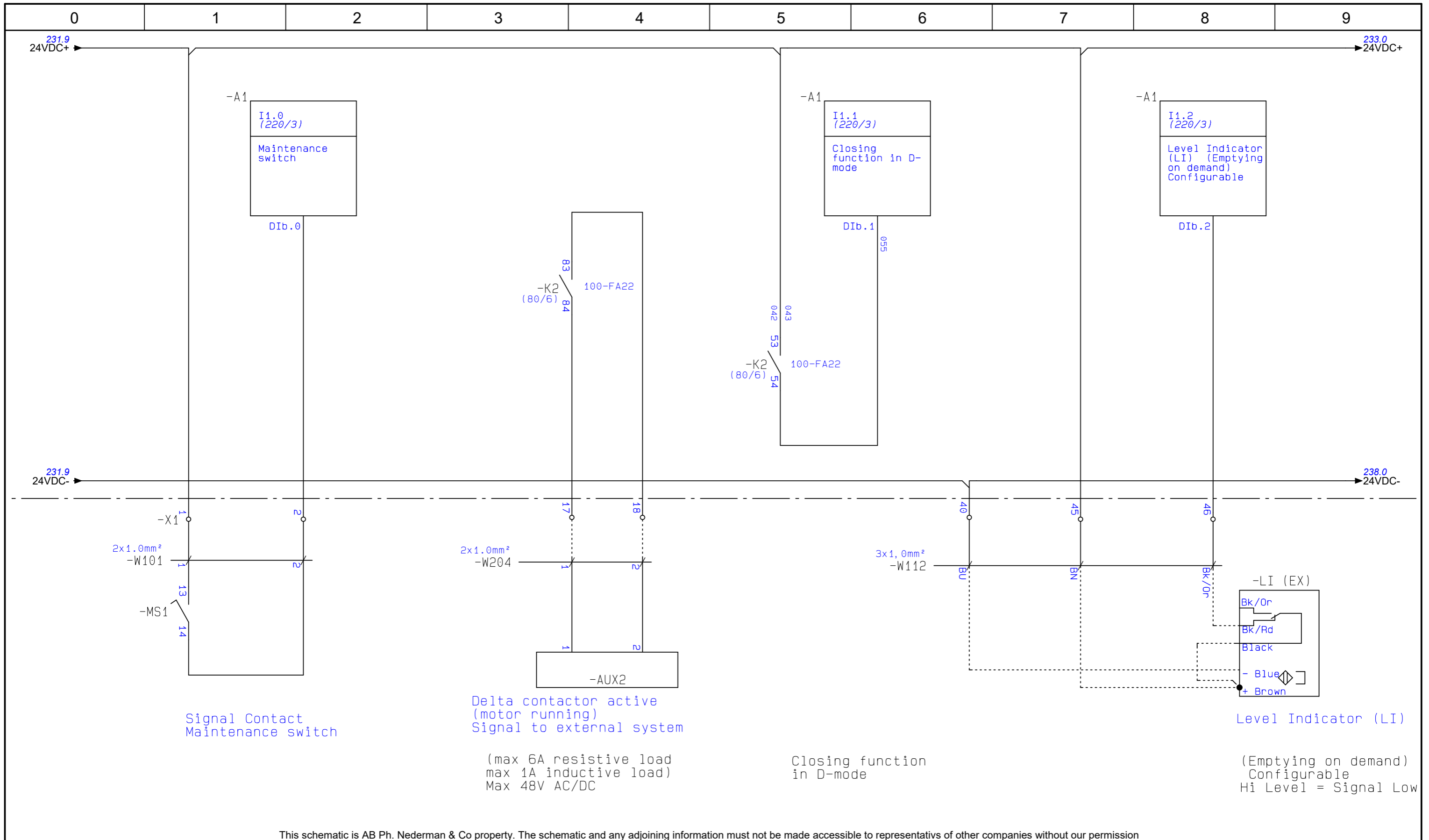


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Signal Contact
Maintenance switch

Delta contactor active
(motor running)
Signal to external system

(max 6A resistive load
max 1A inductive load)
Max 48V AC/DC

Closing function
in D-mode

Level Indicator (LI)

(Emptying on demand)
Configurable
Hi Level = Signal Low

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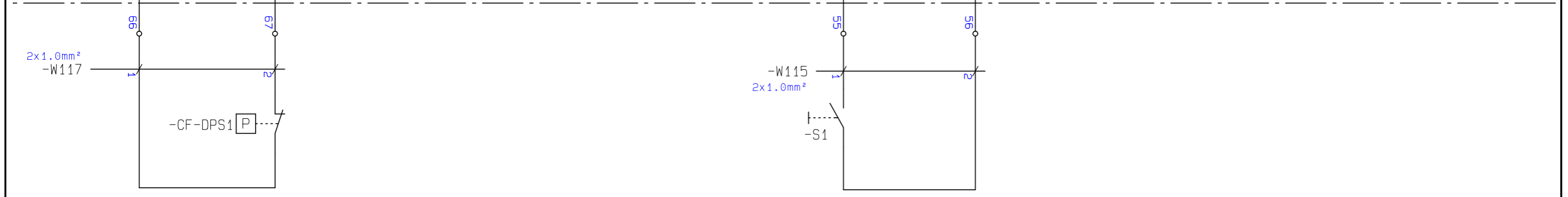
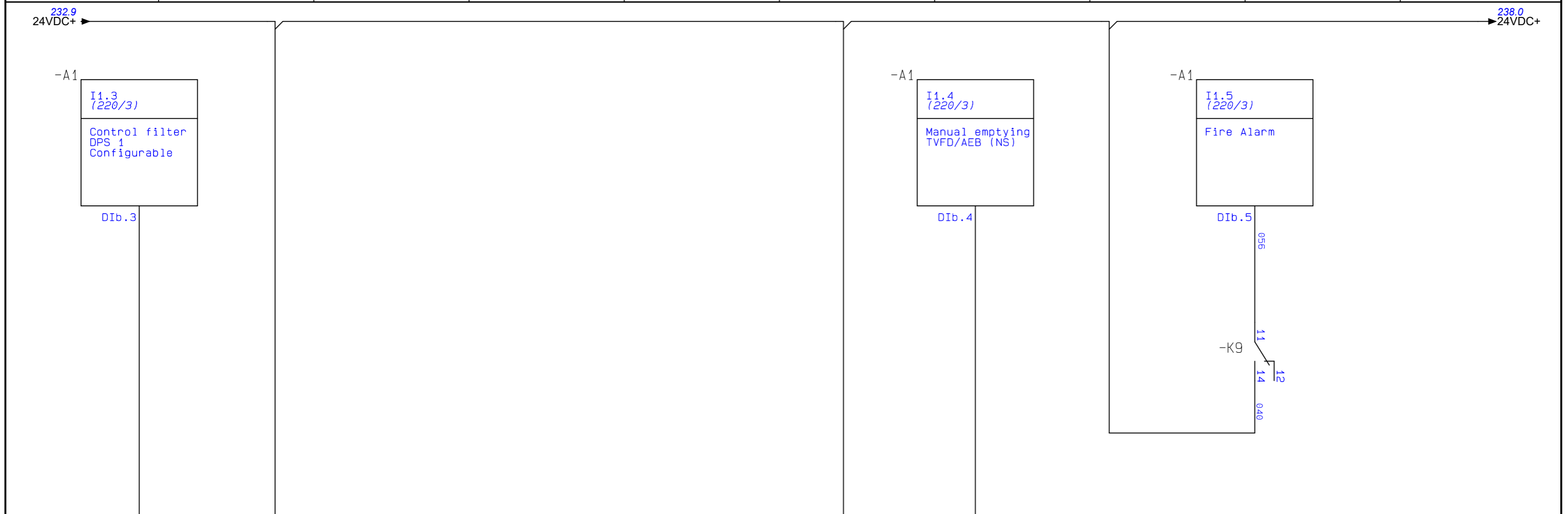
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Control filter DPS (1) - (1-2)

Manual emptying TVFD/AEB (NS)

Fire Alarm

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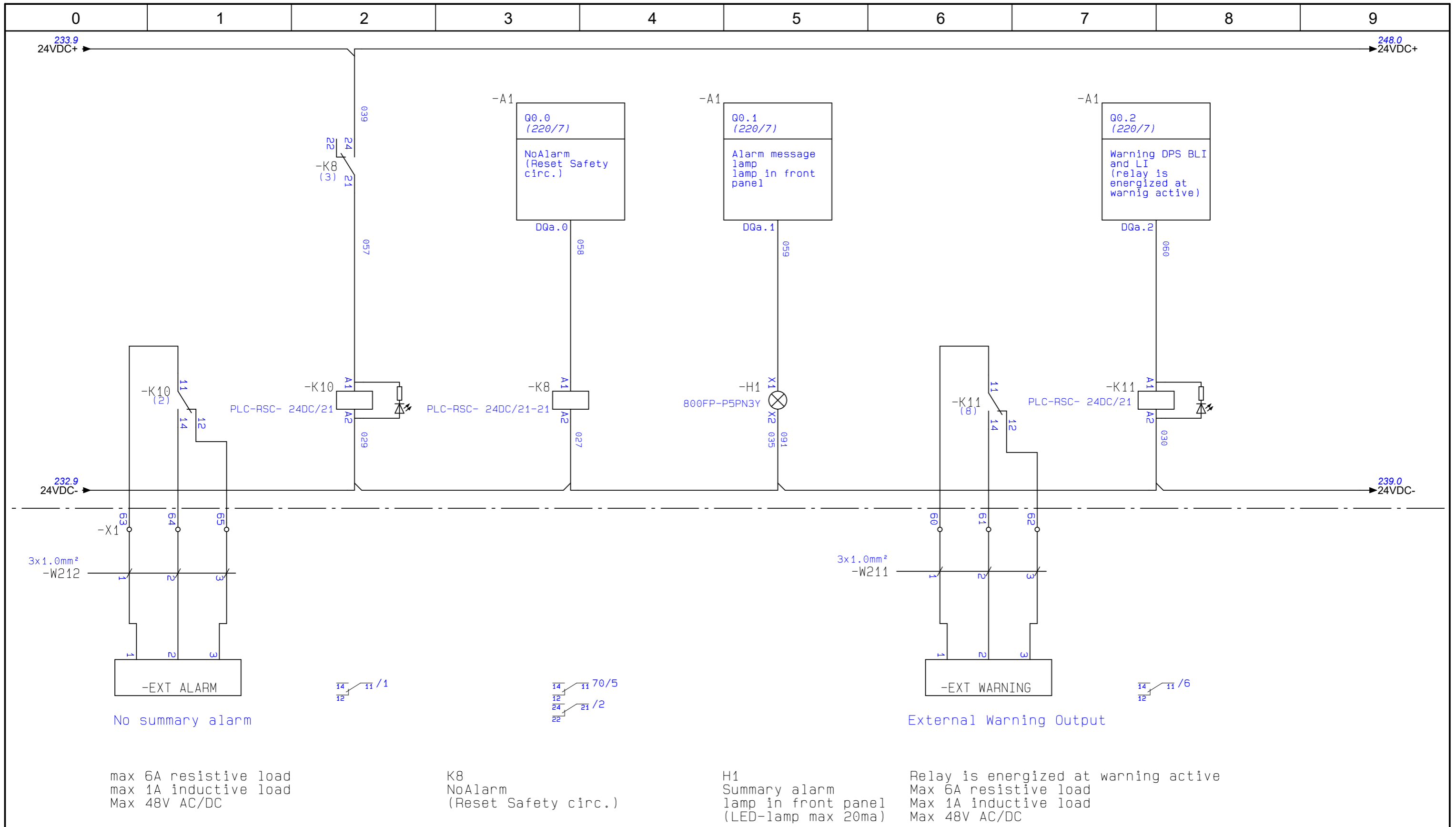
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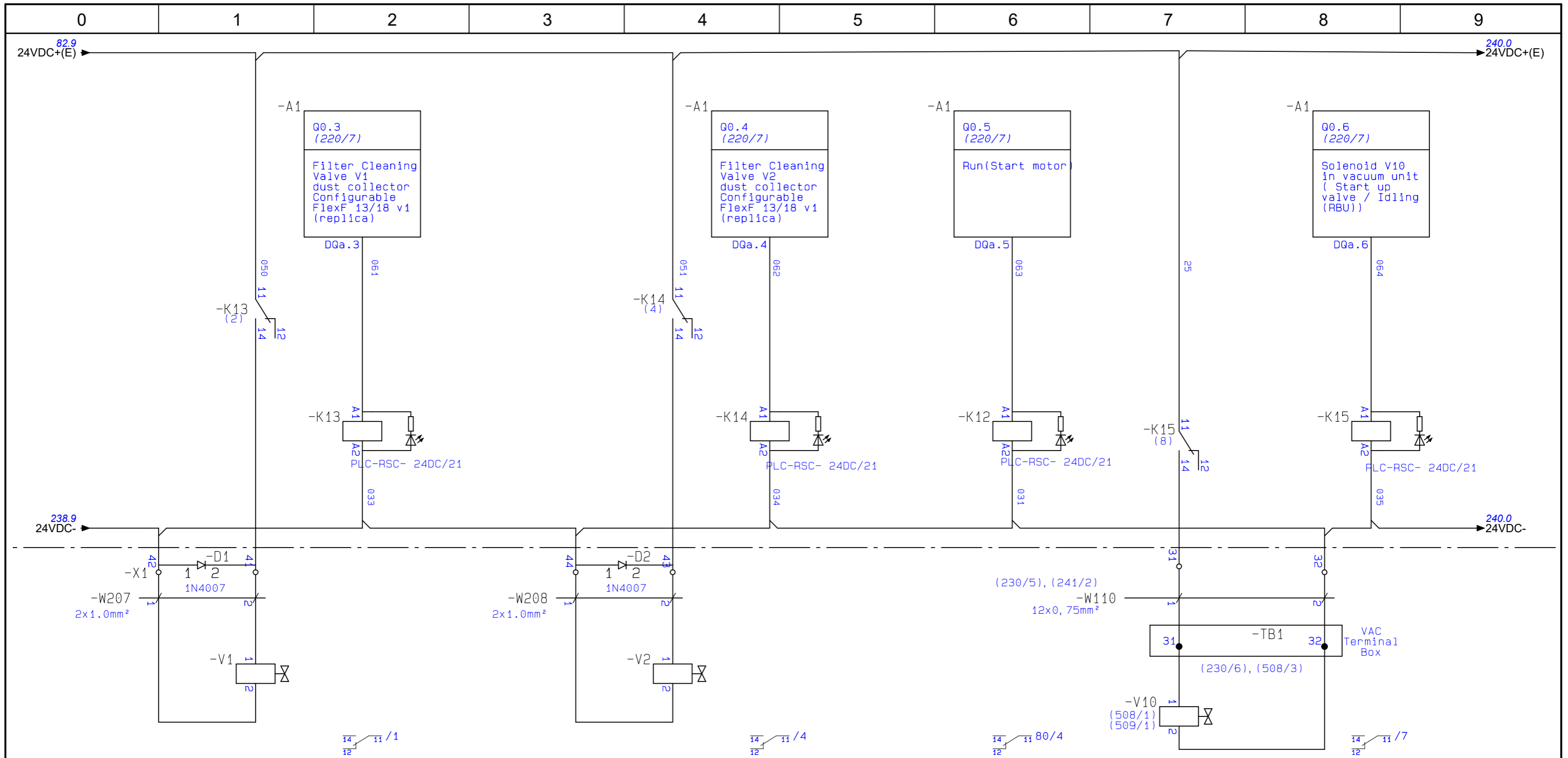
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Filter Cleaning Valve V1

Clean V1
 AEB 1 - Flush 11--Pre-Sep 1
 FlexF 13/18 v1 (replica)

Filter Cleaning Valve V2

Clean V2
 AEB 2 - Flush12 - Pre-Sep 2
 FlexF 13/18 v1 (replica)

Run(Start motor)

Solenoid valve V10 in vacuum unit

Start up valve / Idling (RBU)

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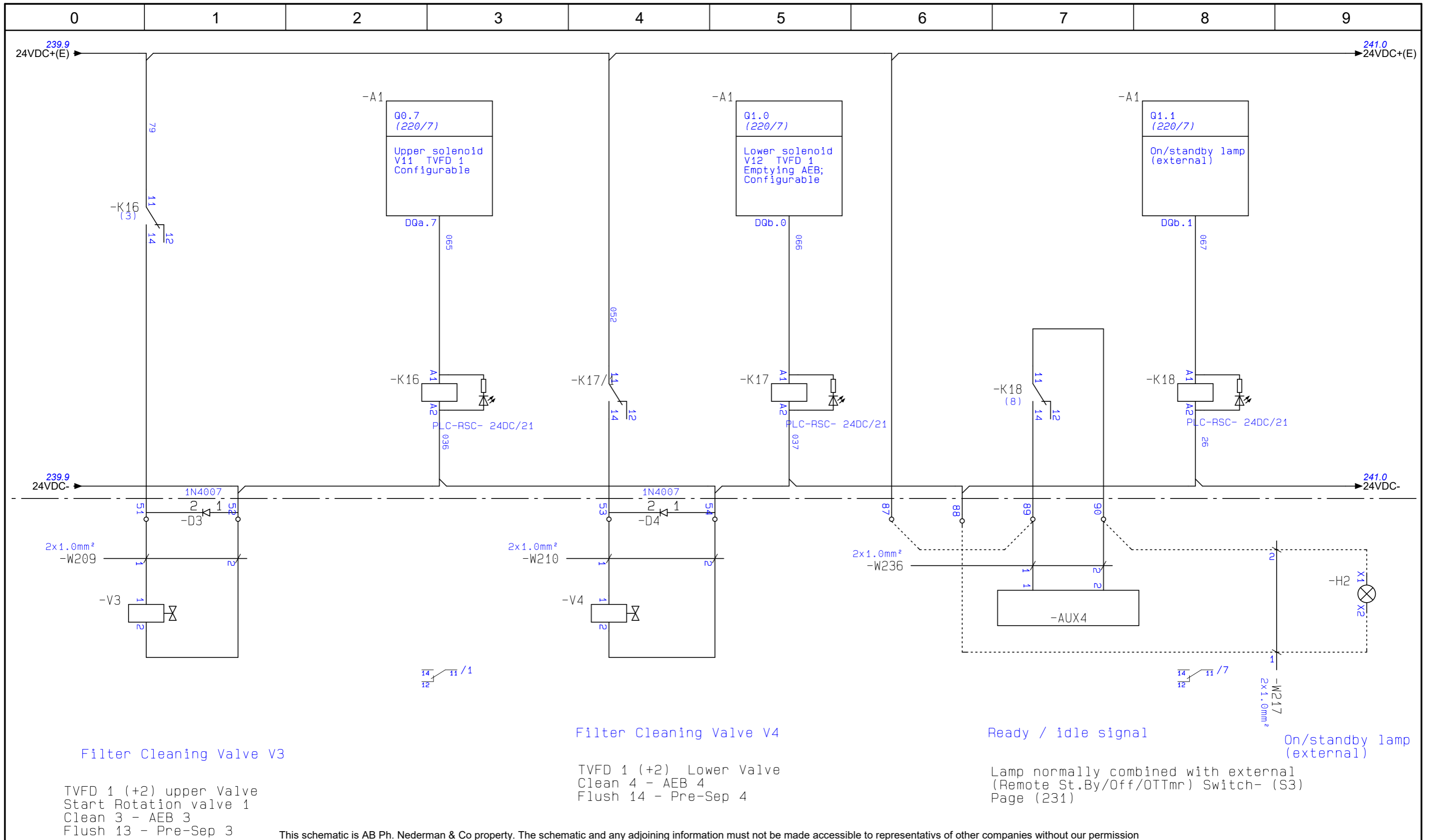
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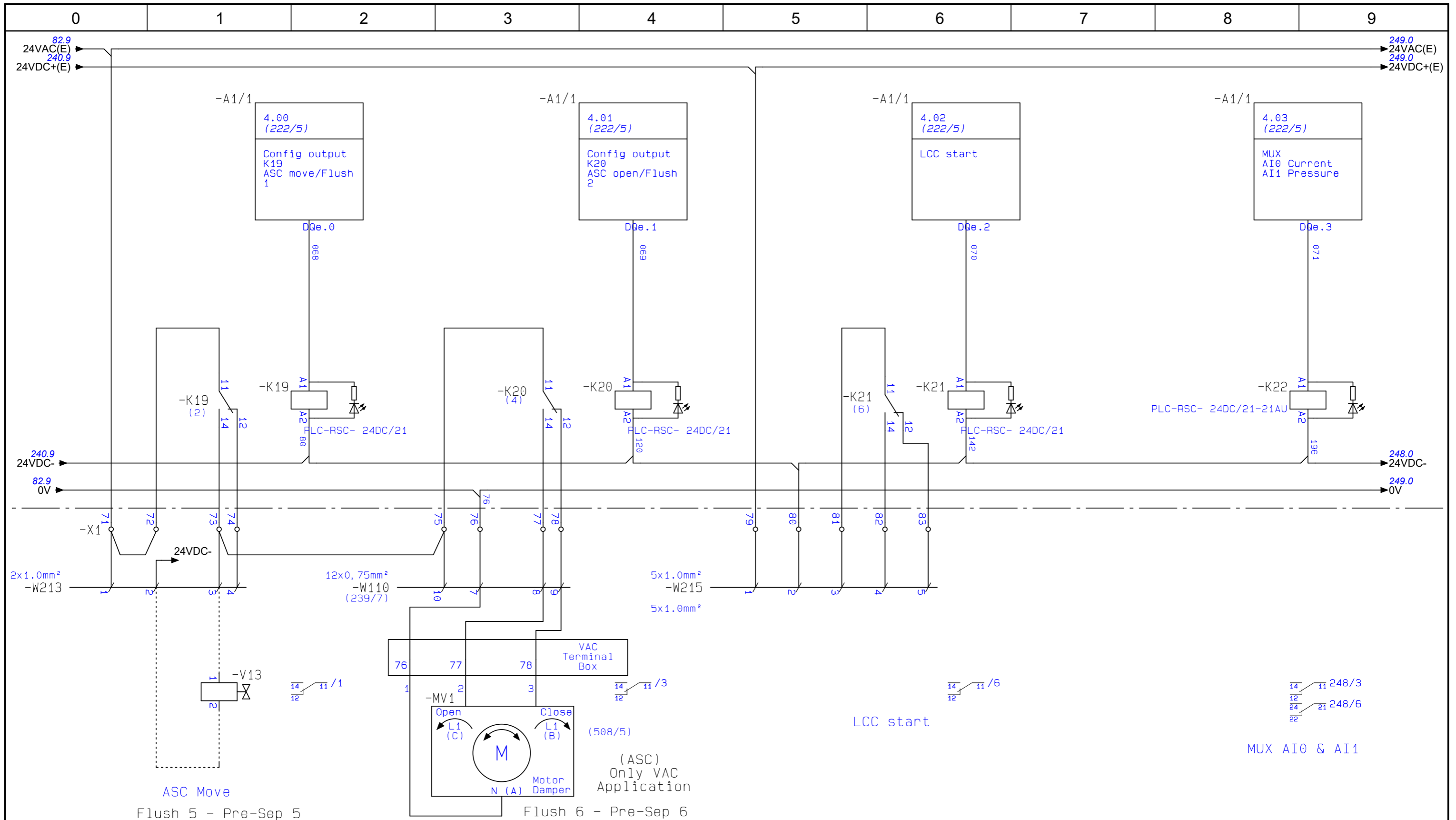
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PLC OUTPUT
TERMINALS

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2183823

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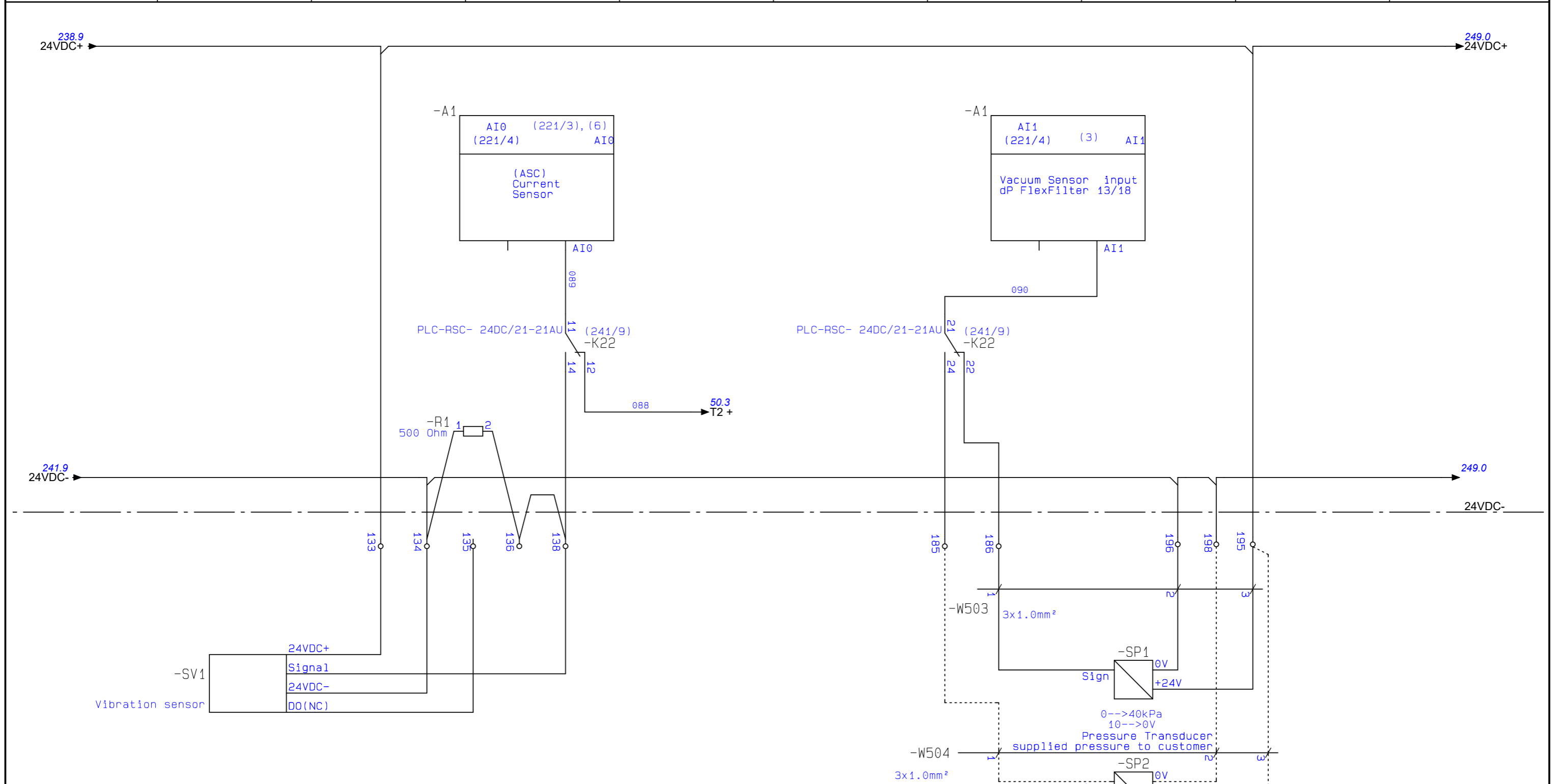
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SB1222 OUTPUT

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AI: 0
 MUX
 Motor Current Measurement
 Vibration sensor

Note: Remove jumper between X1:136 and X1:138 if supplied sensor signal is voltage 0-10 VDC
 Jumper needed for signal 4..20 mA

AI: 1
 Optional:
 Pressure Transducer
 Vacuum/dP or dP/dP
 dP FlexFilter 13/18

LCC, LCC- PU This schematic is AB Ph. Nederman & Co property. The schematic and any adjoining information must not be made accessible to representatives of other companies without our permission

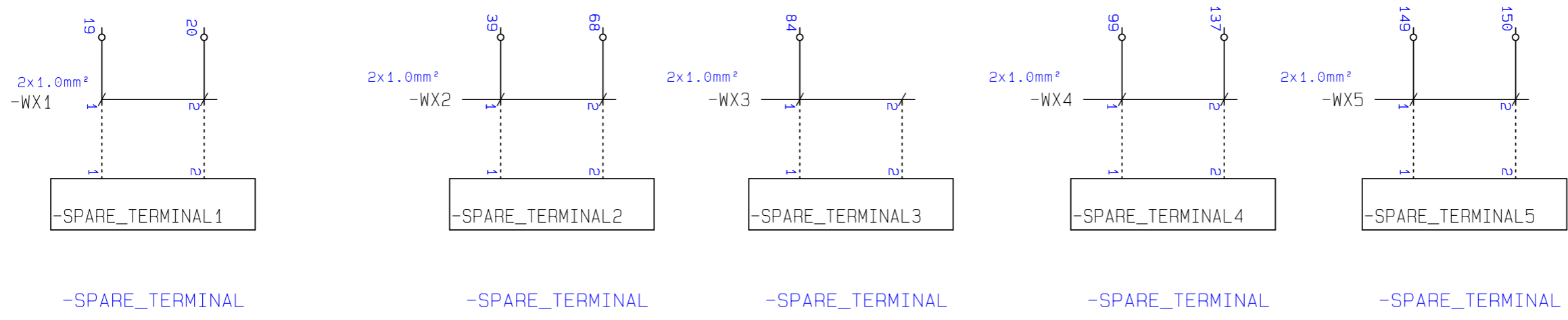
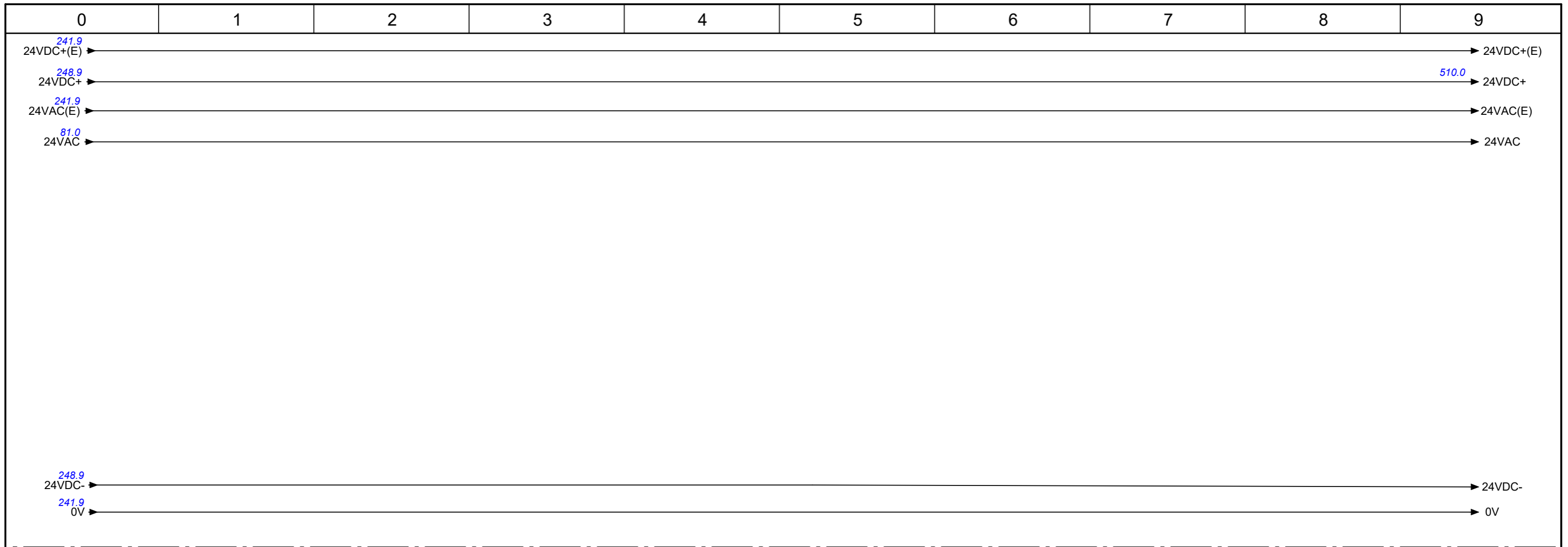
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PLC 0-10V DC
 ANALOGUE
 INPUT

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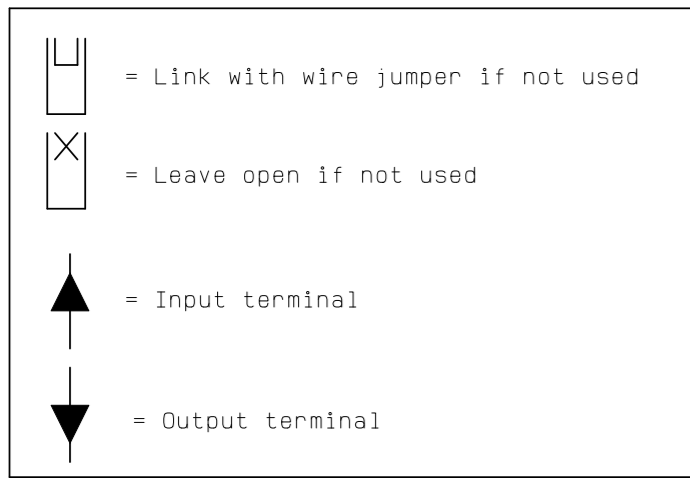
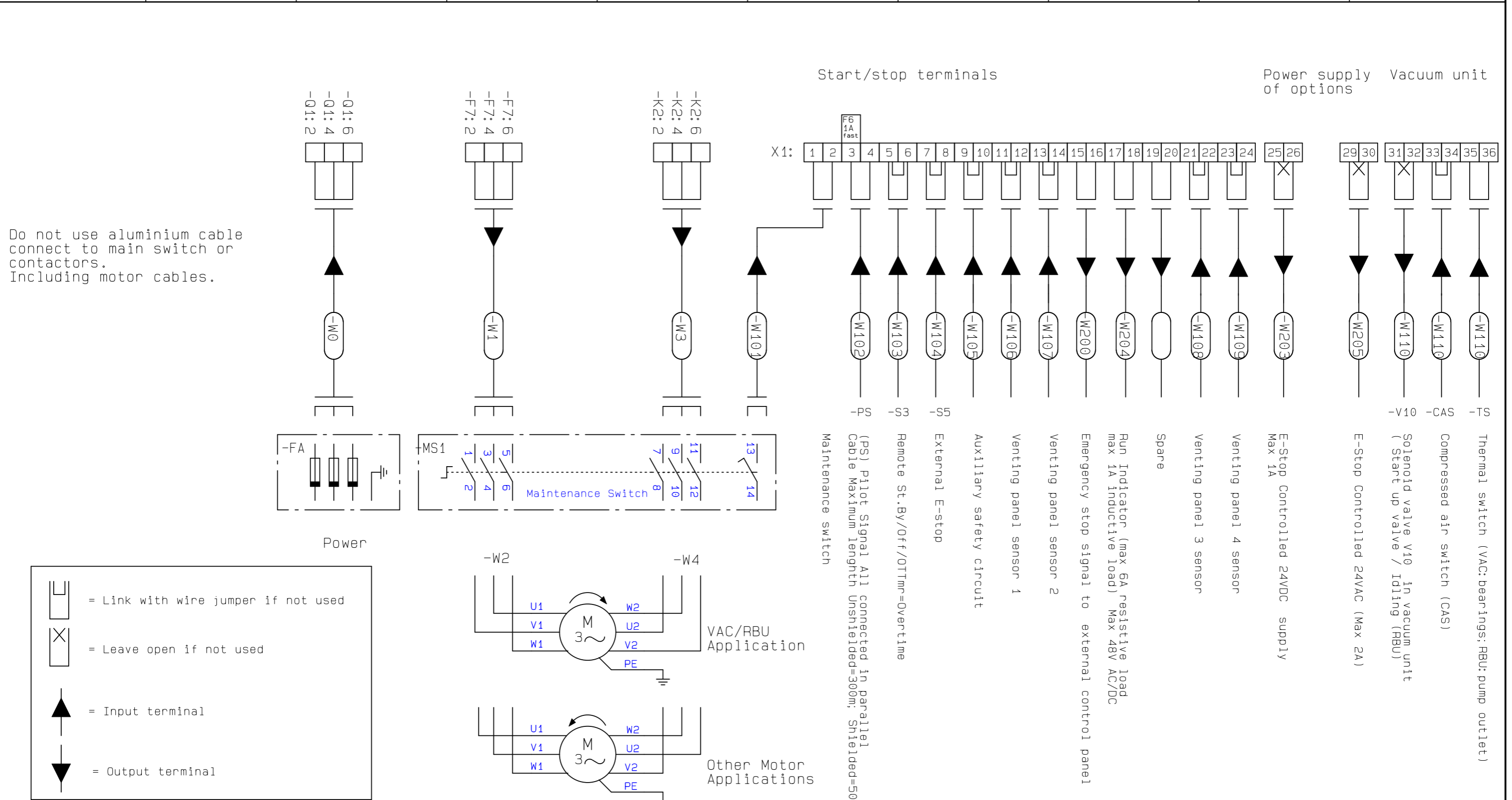


Spare Terminal

Drawing no.
2183823

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0	1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---	---



Note1: For terminals: use minimum 1.5mm² if cable is up to 10m long, and use minimum 2.5mm² if cable is up to 20m long, large area if cable is longer. small area in a 24V system can cause a poor short-cut protection

Note2: Check tightening of all power cable connections inside enclosure before putting into service.

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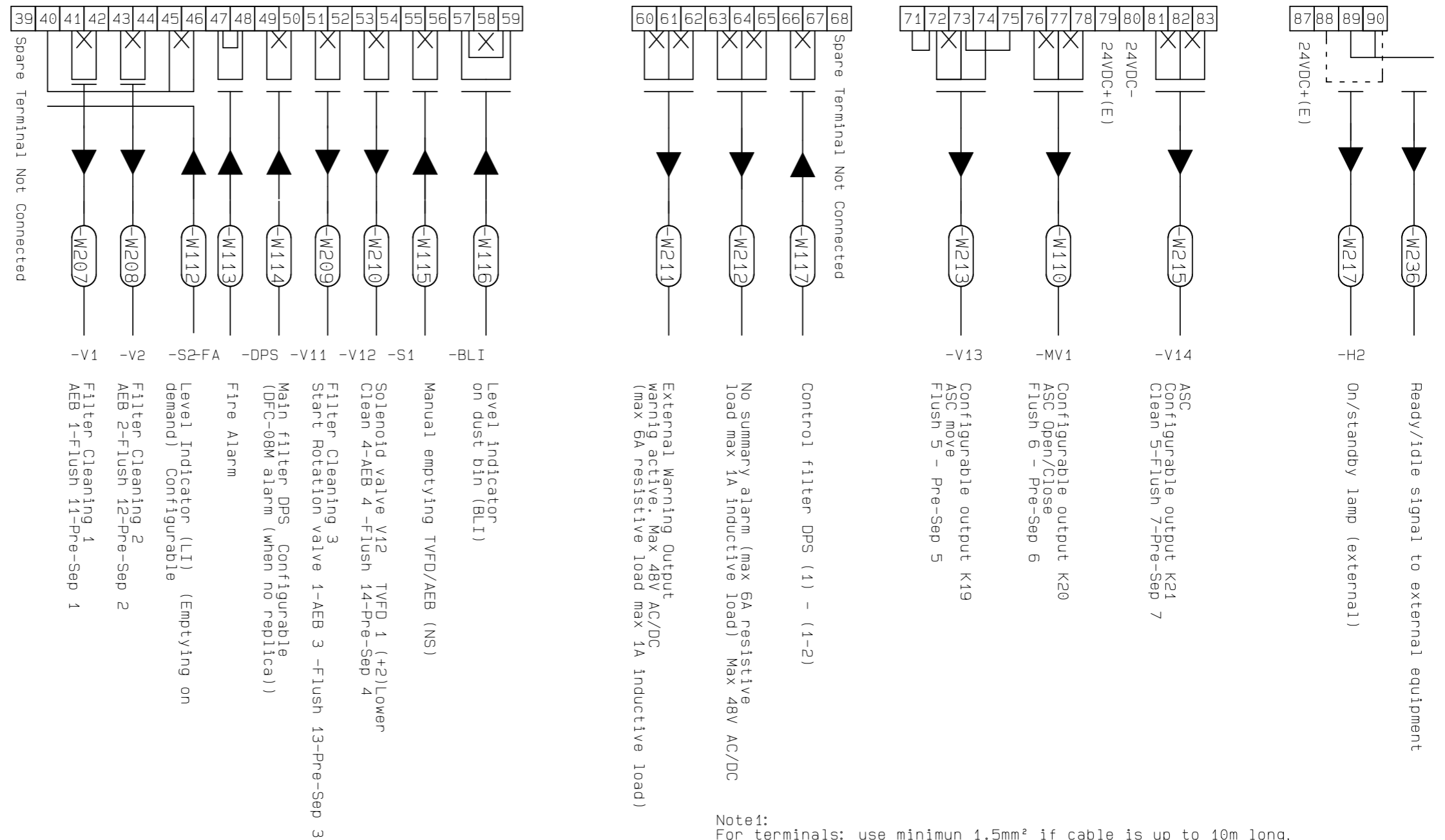
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STARTER EXTERNAL CONNECTIONS

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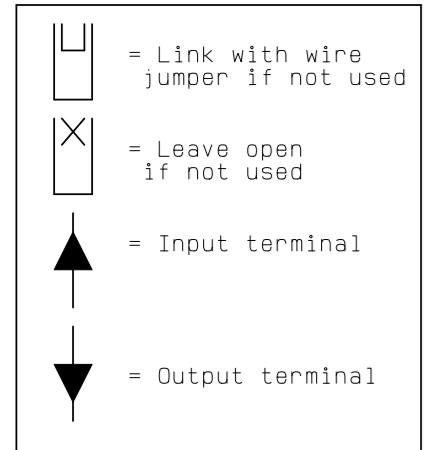
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Note1:
For terminals: use minimum 1.5mm² if cable is up to 10m long, and use minimum 2.5mm² if cable is up to 20m long, large area if cable is longer. small area in a 24V system can cause a poor short-cut protection

Note2:
Never link terminals 35-36 if vacuum unit is fitted with a thermal fuse/switch, guarantee is void if overheat protection is set out of function.

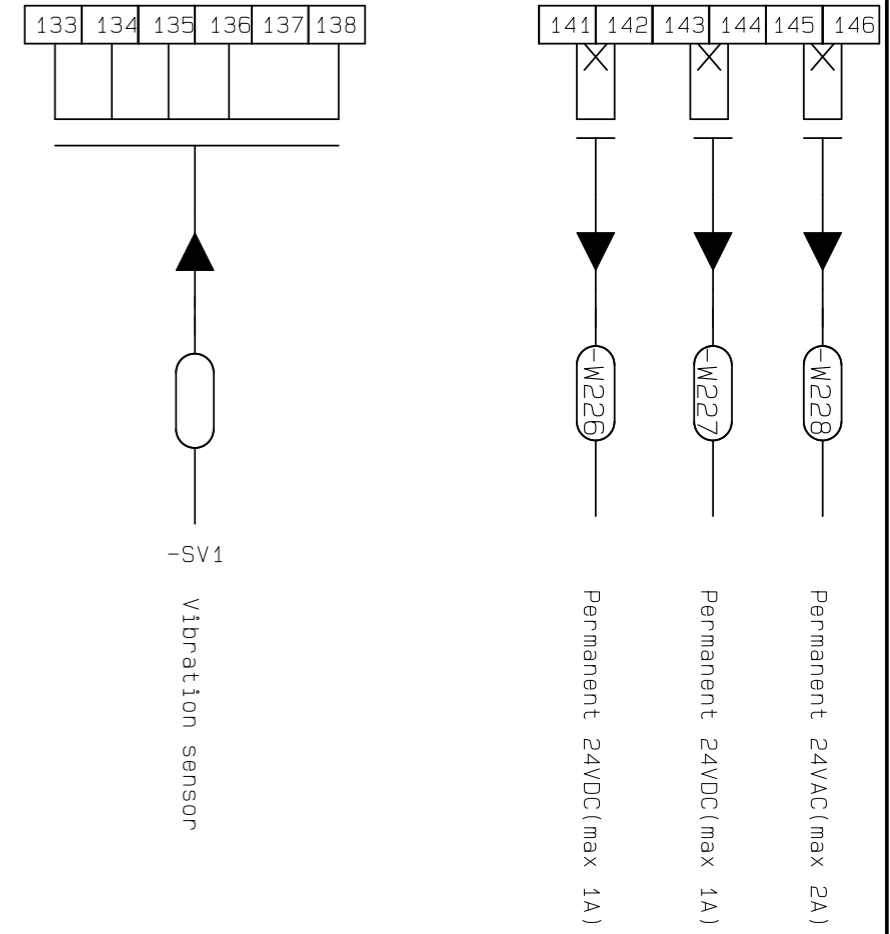
Note3:
Check tightening of all power cable connections inside enclosure before putting into service.



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99	101
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Spare Terminal Not Connected



Note1:
For terminals: use minimum 1.5mm² if cable is up to 10m long, and use minimum 2.5mm² if cable is up to 20m long, larger area if cable is longer. small area in a 24V system can cause a poor short-circuit protection

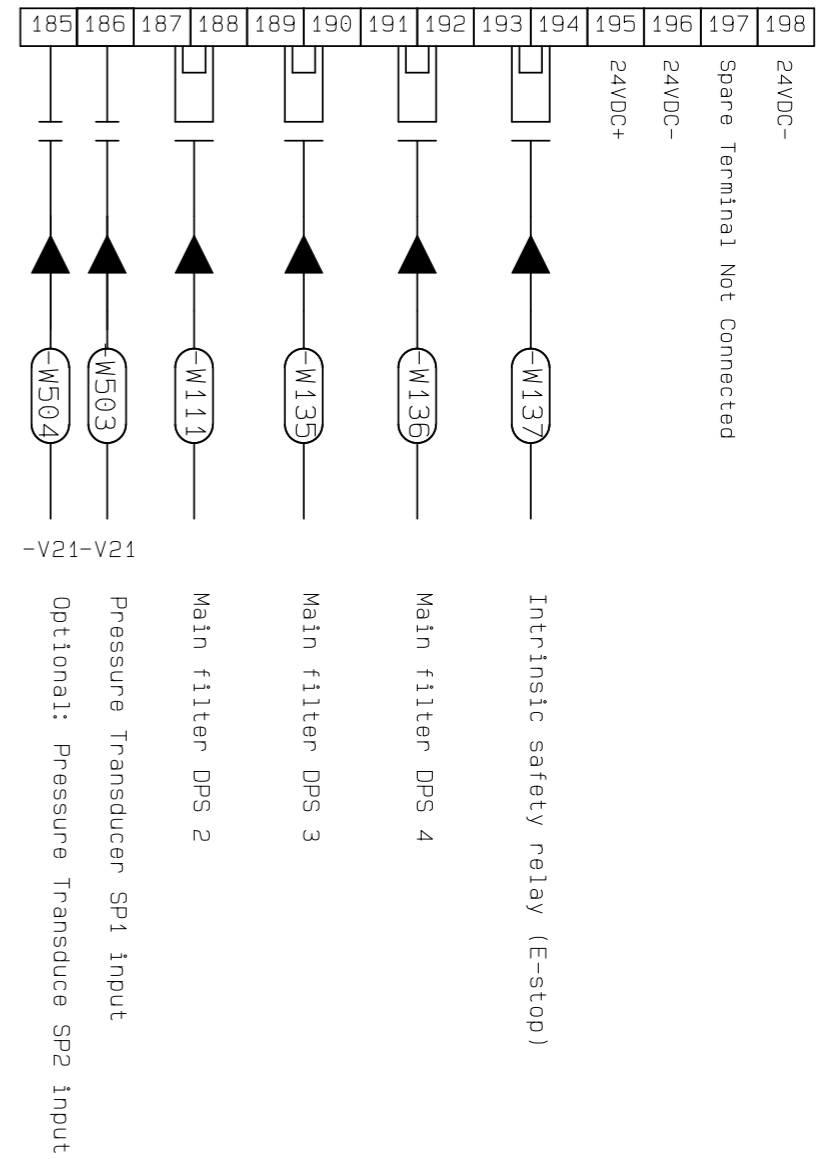
Note2:
Never link terminals 35-36 if vacuum unit is fitted with a thermal fuse/switch, guarantee is void if overheat protection is set out of function.

Note3:
Check tightening of all power cable connections inside enclosure before putting into service.

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0	1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---	---

149 150 151



Note1:
For terminals: use minimum 1.5mm² if cable is up to 10m long, and use minimum 2.5mm² if cable is up to 20m long, large area if cable is longer. small area in a 24V system can cause a poor short-cut protection

Note2:
Never link terminals 34-35 if vacuum unit is fitted with a thermal fuse/switch, guarantee is void if overheat protection is set out of function.

Note3:
Check tightening of all power cable connections inside enclosure before putting into service.

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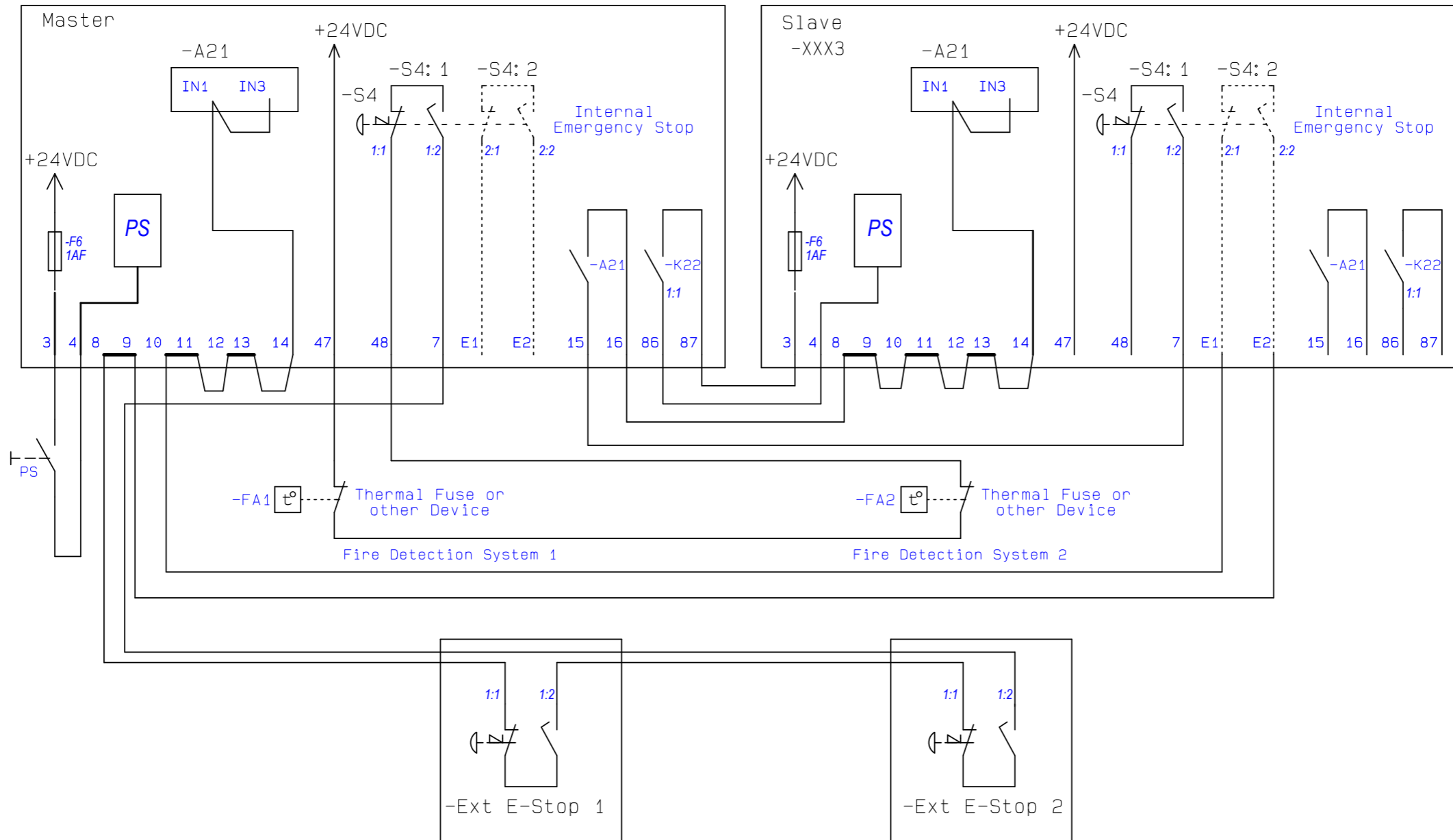


**STARTER
EXTERNAL
CONNECTIONS**

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Load Current Control (LCC) be cotrolled by PLC and E-stop interlock wiring



N.B
If masterunit is powered of or out of
comission the Slave will not start

Double E-Stop switch S4
Block S4:2 and The terminal E1 and E2
Are not included in the Cabinet

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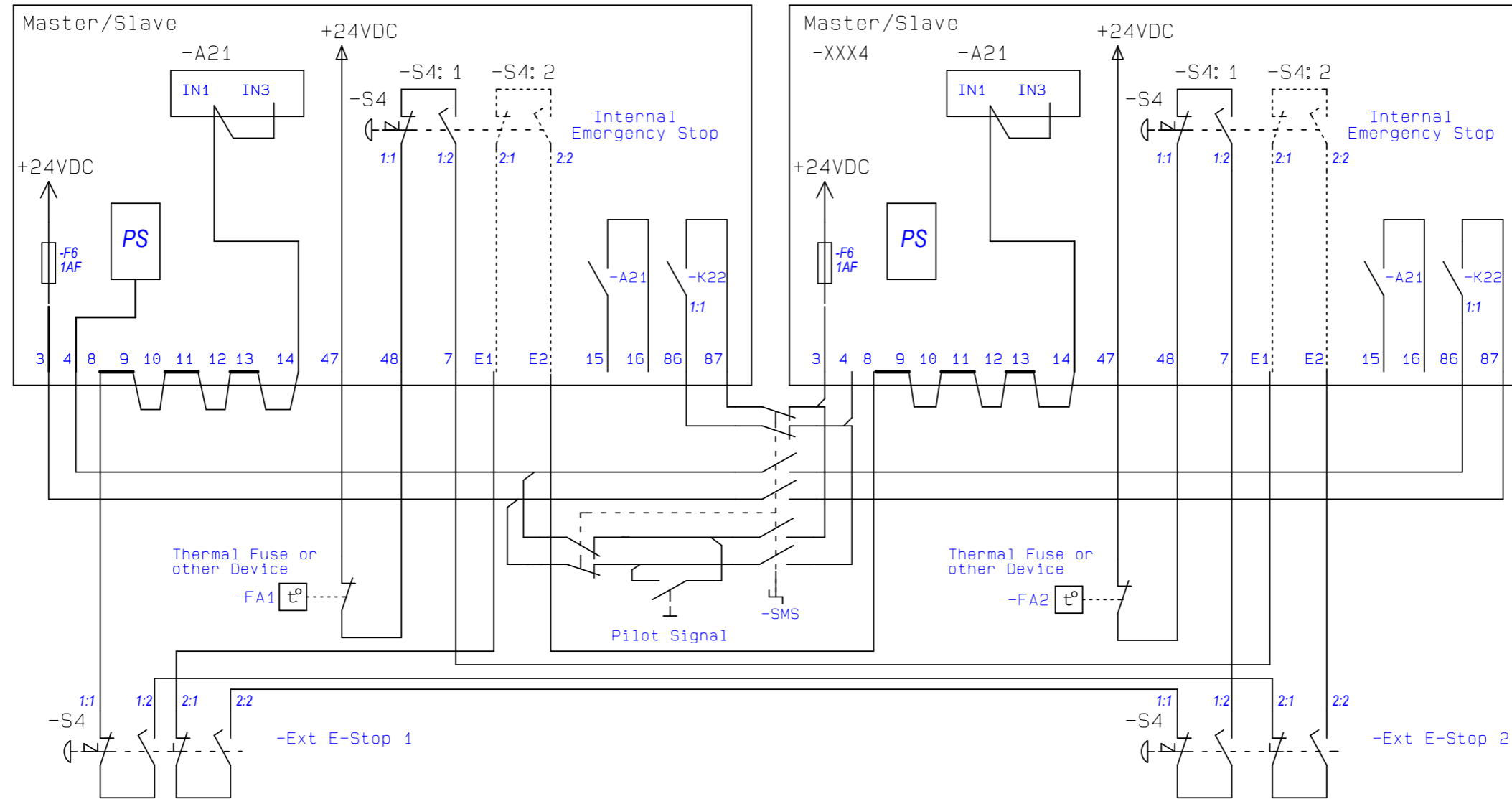


OPTIONAL
CONNECTIONS
MASTER-SLAVE

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Load Current Control (LCC) be cotrolled by PLC and E-stop interlock wiring



N.B
SMS Switches to select wich unit is Master or Slave
Both system can run individually even if the other is off or out of commissioning

N.B
Double E-Stop switch S4
Block S4:2 and The terminal E1 and E2
Are not included in the Cabinet

N.B
SMS Switch is not avavible as a Nederman part

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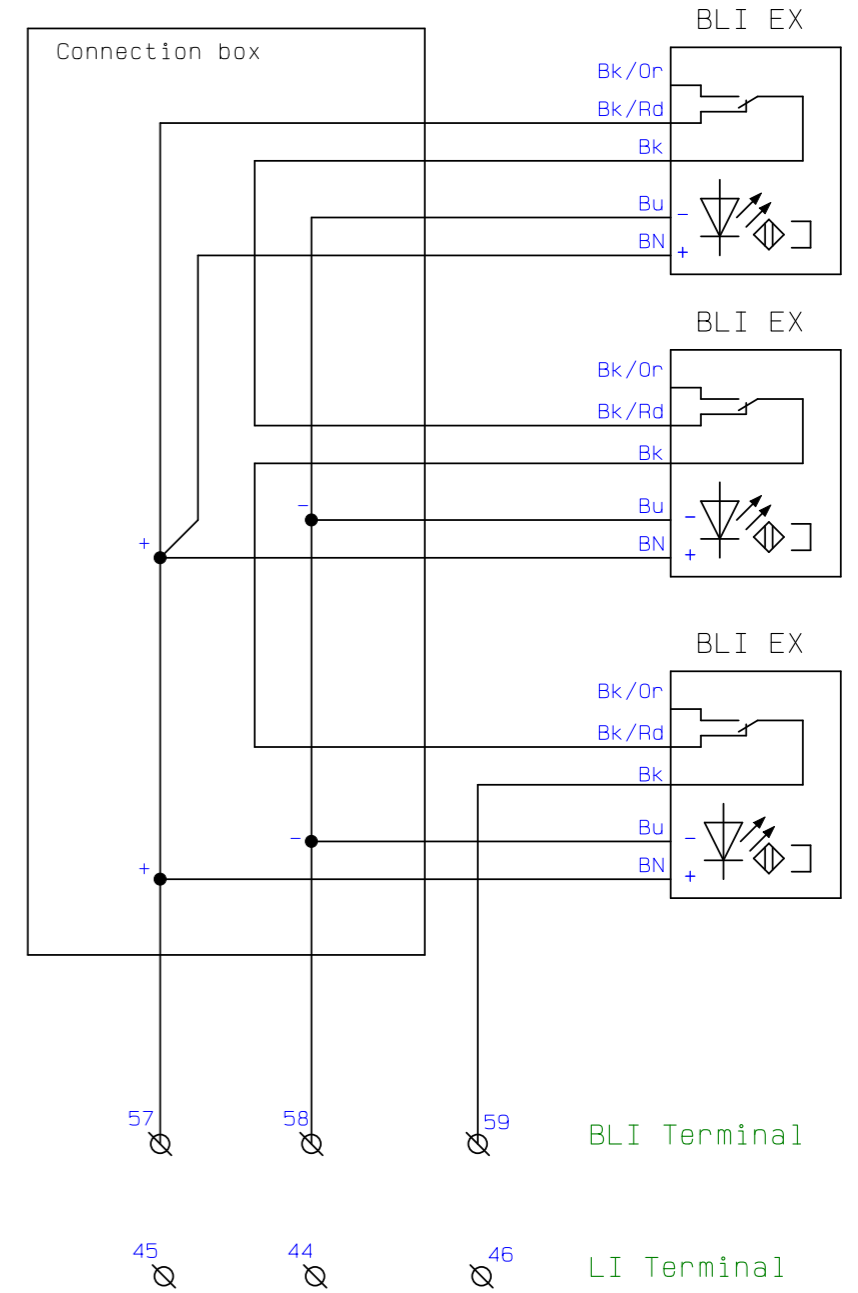
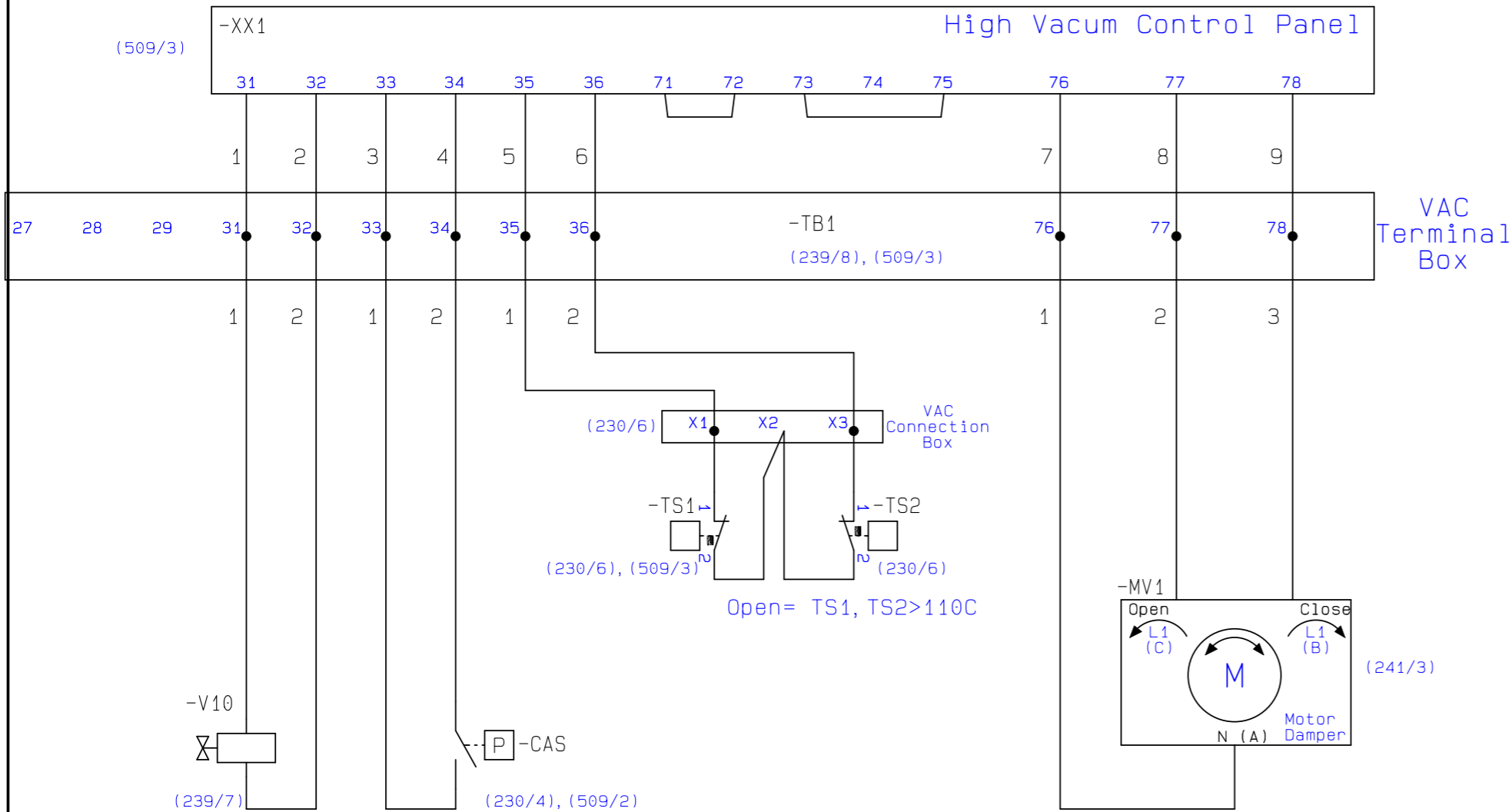
OPTIONAL
CONNECTIONS
MASTER-SLAVE

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Connection of anti surge control (ASC) to starter
 ASC be controlled by PLC, Current sensor connect to PLC AI0

Principal schematic Multiple BLI or LI
 Used sensor (EX sensors with relay output)



START UPP VALVE (239/7) (CAS) Open = P<3Bar (230/4), (509/2) Thermal Supervision VAC- Fan Shaft Bearings (230/6), (509/3) (ASC) Only VAC Application (241/3)

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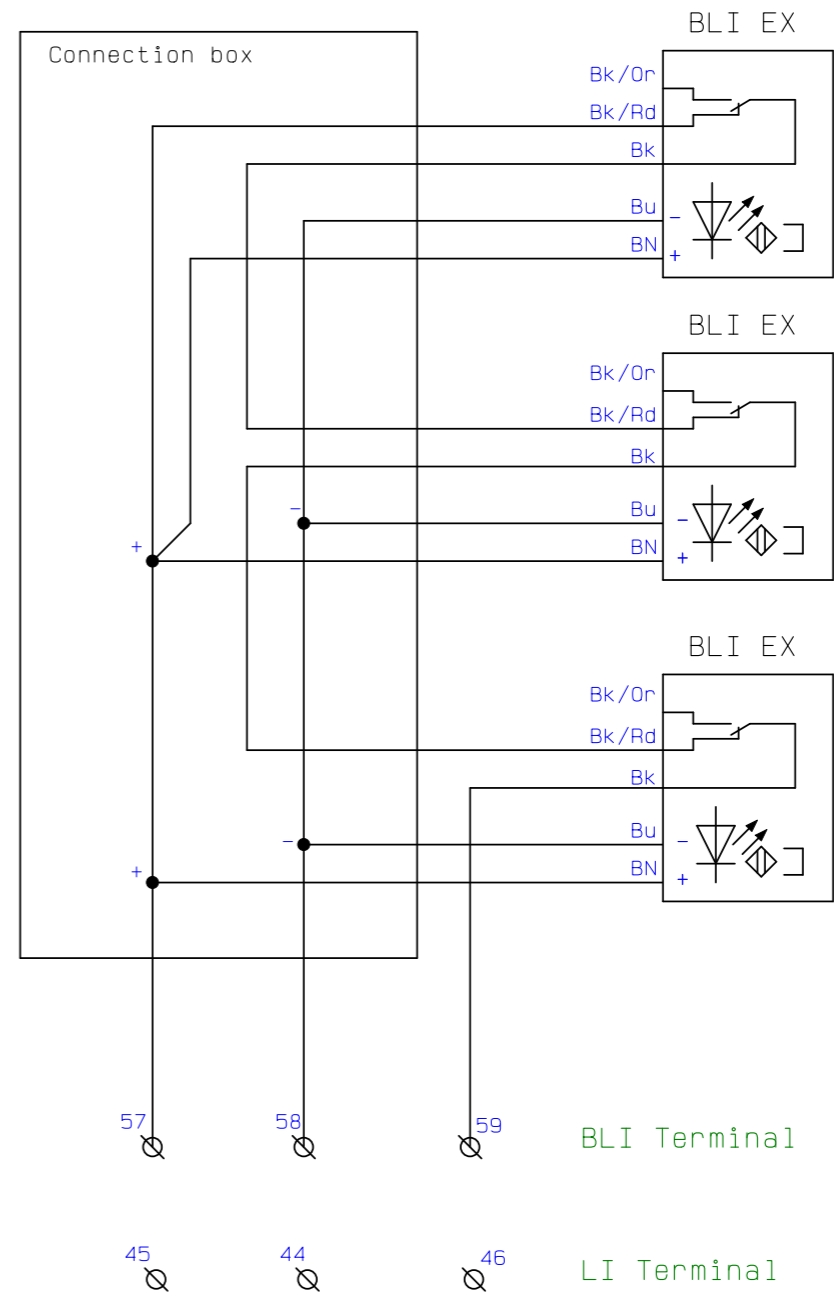
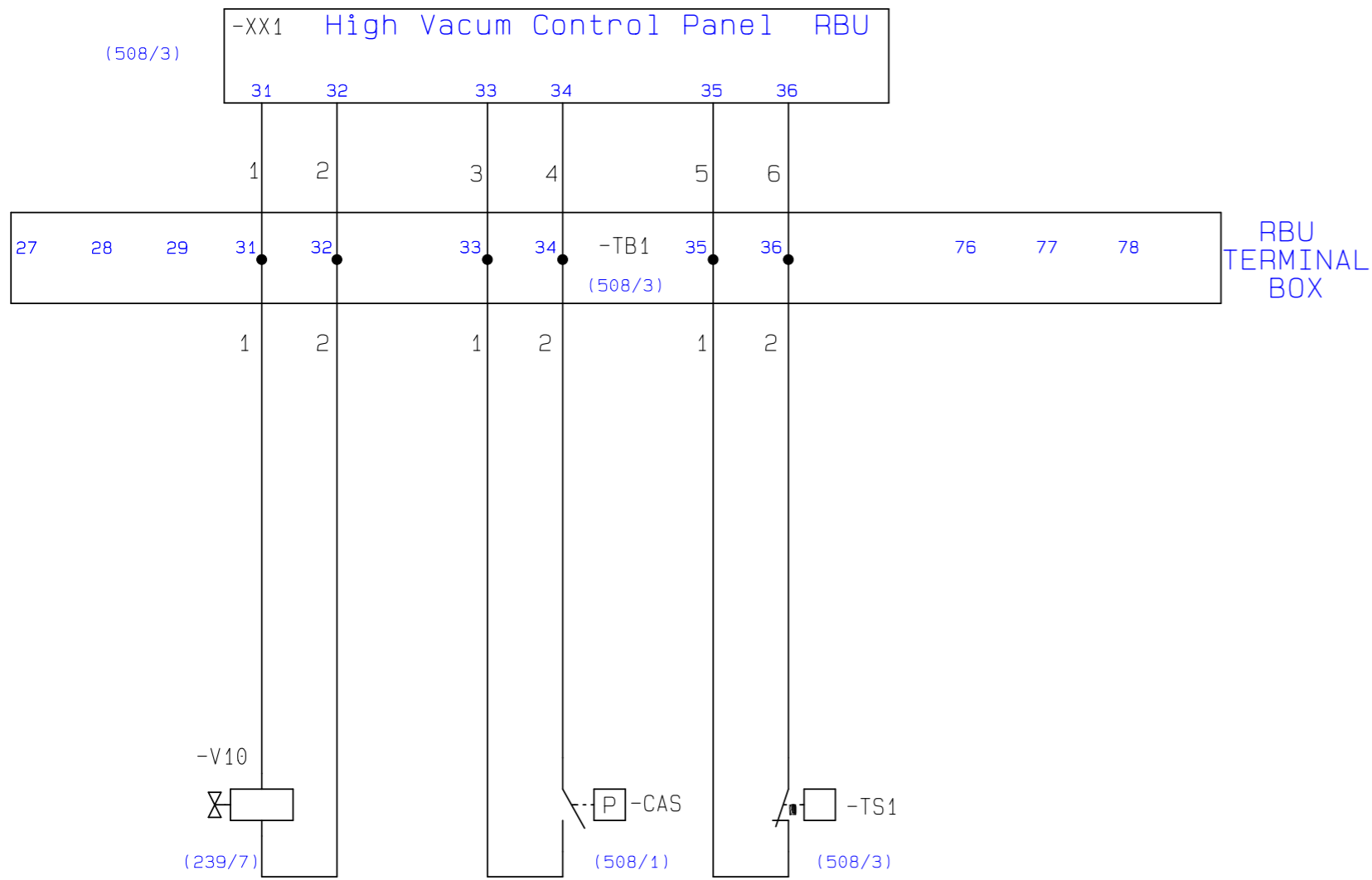
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VAC ASC CONNECTIONS and OPTIONAL BLI	Drawing no. 2183823	Page no. 508	Next page 509
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Connection of HVAC to RBU Unit

Principal schematic Multiple BLI or LI
Used sensor (EX sensors with relay output)



Open = TS1>140C
Not Resettable

START
UPP VALVE

(CAS)
Open = P<3Bar

Thermal Supervision
RBU- Air Outlet

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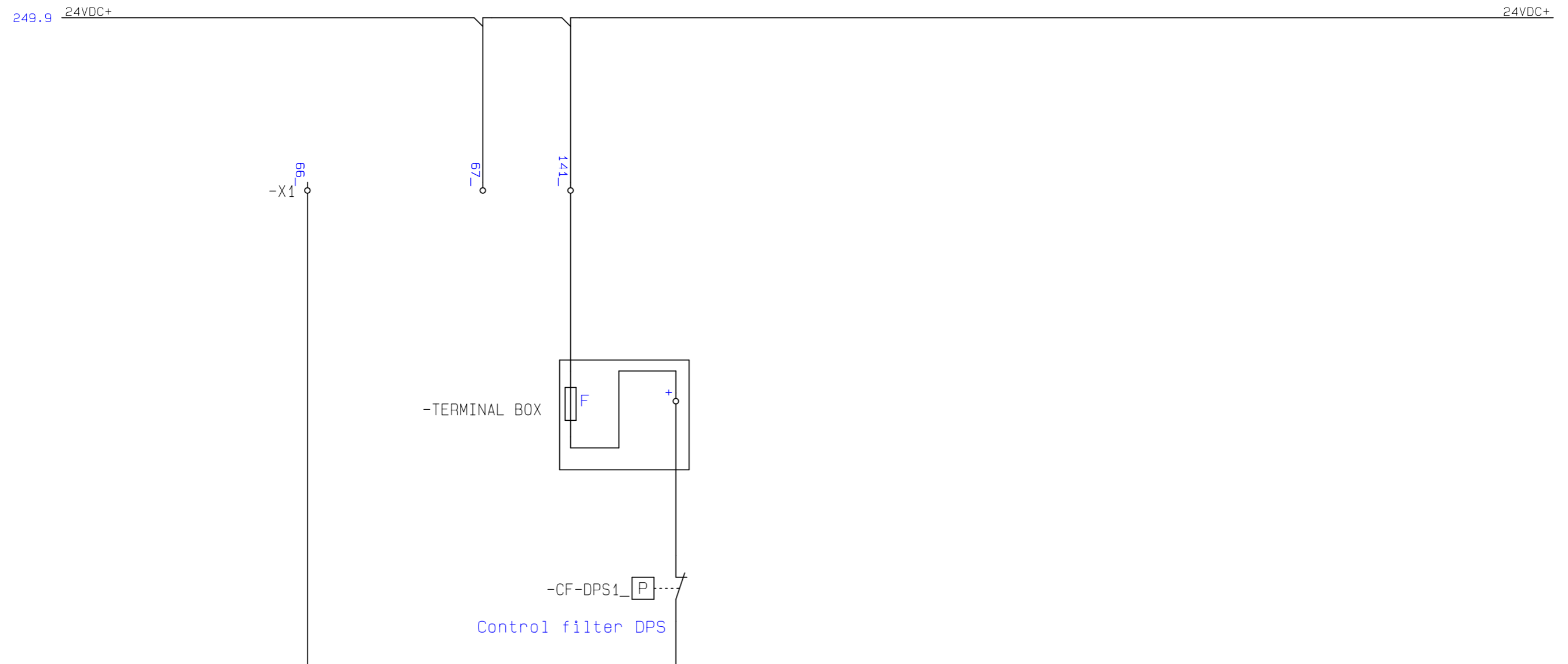
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RBU
CONNECTIONS
and OPTIONAL BLI

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Principal schematic, connection of sensors using auxilliary connection box.

With sensors connected via auxiliary connection devices the schematic supplied with the auxiliary equipment is governing.

In the displayed example the DPS is connected via the terminal box instead of X1:67.

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Revision	1	Product		<h1 style="color:blue; margin:0;">Nederman</h1>	SENSORS VIA AUXILIARY CONNECTION BOX	Drawing no.	Page no.
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Lists

Nederman

No.	Name	EAN-no.	Type	Description	Manufacture	Ref. position	Remarks
1			800F-X01S			70/3	
2	-A1		6ES7214-1AG31-0XB0			248/3	Optional
3	-A1/1		6ES7222-1BD30-0XB0			10/4	
4	-A2		6ES7223-1BH30-0XB0			200/8	*
5	-A11		6AV6647-0AA11-3AX0			9/3	*
6	-A21		3SK1111-1AB30			10/4	*
7	-A21/1/1		3SK1111-1AB30			70/2	*
8	-AUX1					82/2	*
9	-AUX2					232/4	*
10	-AUX3					82/6	*
11	-AUX4					240/7	*
12	-AUX- E-STOP					71/6	*
13	-AUX-SAFE					70/5	*
14	-BLI (EX)					231/2	*
15	-D1		1N4007			239/1	*
16	-D2		1N4007			239/3	*
17	-D3		1N4007			240/1	*
18	-D4		1N4007			240/4	*
19	-E1		Rital AE 800x600x300			9/3	*
20	-E1		Rital AE 600x600x250			10/4	*
21	-E2		Cable channel 360X25X80			10/5	*
22	-E3		Cable channel 380X25X80			10/4	*
23	-E4		Cable channel 295X40X80			10/5	*
24	-E5		Cable channel 405X40X80			10/6	*
25	-E6		Cable channel 360X40X80			10/5	*
26	-E01		550x550mm			10/4	*
27	-EBR					10/3	*
28	-ET1		UK 2,5 N			210/7	*

* Use of components with equivalent electric, mechanical and approval specifications is acceptable

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No.	Name	EAN-no.	Type	Description	Manufacture	Ref. position	Remarks
29	-EXT ALARM					238/1	*
30	-EXT WARNING					238/6	*
31	-F2		140M-C2E-B16			10/5	*
32	-F4		Fuse 5X20m 4A Slow			10/6	*
33	-F4		Auto Fuse 6A			60/3	*
34	-F5		Auto Fuse 16A			60/2	*
35	-F6		1A 5x20mm fast			230/1	*
36	-F6		WK 4 TKG/U/V0			10/4	*
37	-F7		193-EEGE			10/2	*
38	-F8		817-E1			80/4	*
39	-FA		(Thermal Fuse or other device)			70/1	*
40	-G1		6EP1333-1LB00			60/5	*
41	-H1		800FP-P5PN3Y			238/5	*
42	-H2					240/9	*
43	-K1		100-FA11			70/6	*
44	-K1		100-C60KJ00			10/2	*
45	-K1		100-FA11			10/2	*
46	-K1		100-FA11			80/8	*
47	-K2		100-C60KJ00			10/3	*
48	-K2		100-FA22			10/3	*
49	-K3		100-C37KJ00			10/3	*
50	-K3		100-FA02			10/3	*
51	-K4T		700-FSY2DU23			80/8	*
52	-K8		PLC-RSC- 24DC/21-21			238/3	*
53	-K8		PLC-RSC- 24DC/21-21			10/5	*
54	-K9		PLC-RSC- 24DC/21			233/8	*
55	-K9		PLC-RSC- 24DC/21			10/5	*
56	-K9/1		PLC-RSC- 24DC/21			70/2	*

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No.	Name	EAN-no.	Type	Description	Manufacture	Ref. position	Remarks
57	-K10		PLC-RSC- 24DC/21			238/2	*
58	-K10		PLC-RSC- 24DC/21			10/5	*
59	-K11		PLC-RSC- 24DC/21			238/8	*
60	-K11		PLC-RSC- 24DC/21			10/5	*
61	-K12		PLC-RSC- 24DC/21			239/6	*
62	-K12		PLC-RSC- 24DC/21			10/5	*
63	-K13		PLC-RSC- 24DC/21			239/2	*
64	-K13		PLC-RSC- 24DC/21			10/5	*
65	-K14		PLC-RSC- 24DC/21			239/4	*
66	-K14		PLC-RSC- 24DC/21			10/5	*
67	-K15		PLC-RSC- 24DC/21			239/8	*
68	-K15		PLC-RSC- 24DC/21			10/5	*
69	-K16		PLC-RSC- 24DC/21			240/3	*
70	-K16		PLC-RSC- 24DC/21			10/5	*
71	-K17		PLC-RSC- 24DC/21			240/5	*
72	-K17		PLC-RSC- 24DC/21			10/5	*
73	-K17/1		PLC-RSC- 24DC/21			240/4	*
74	-K18		PLC-RSC- 24DC/21			240/8	*
75	-K18		PLC-RSC- 24DC/21			10/5	*
76	-K19		PLC-RSC- 24DC/21			241/2	*
77	-K19		PLC-RSC- 24DC/21			10/5	*
78	-K20		PLC-RSC- 24DC/21			241/4	*
79	-K20		PLC-RSC- 24DC/21			10/6	*
80	-K21		PLC-RSC- 24DC/21			241/6	*
81	-K21		PLC-RSC- 24DC/21			10/6	*
82	-K22		PLC-RSC- 24DC/21-21AU			10/6	*
83	-LI (EX)					232/9	*
84	-MV1					241/3	*

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No.	Name	EAN-no.	Type	Description	Manufacture	Ref. position	Remarks
85	-P1					210/9	*
86	-PE		WT 4 PE			60/6	*
87	-PTC-MOTOR		PTC Built in Monitoring overhe			80/1	*
88	-Q1		Main Switch 160A			10/3	*
89	-Q1		3LD2814-0TK51			50/1	*
90	-Q4					70/1	*
91	-R1		500 Ohm			248/3	*
92	-S3		Switch NC			231/8	*
93	-S4		800FP-MT44			9/3	*
94	-S5		External E-stop 800FP-MT44			70/3	*
95	-S19		Venting panel sensor 3 Flexfilter	EX		70/8	*
96	-S20		Venting panel sensor 4 Flexfilter	EX		70/9	*
97	-SP1		0-->40kPa 10-->0V			248/7	*
98	-SP2		0-->40kPa 10-->0V			248/7	*
99	-SPARE_TERMINAL1					249/1	*
100	-SPARE_TERMINAL2					249/3	*
101	-SPARE_TERMINAL3					249/4	*
102	-SPARE_TERMINAL4					249/6	*
103	-SPARE_TERMINAL5					249/7	*
104	-SV1					248/1	*
105	-T1		Transfo 230-460V 24V/230V			60/2	*
106	-T1		Transformer 230-460V 24VAC/24VDC			10/6	*
107	-T2					10/3	*
108	-T2		Current Sensor LEM AT 100 B10			50/1	*
109	-TB1					230/6	*
110	-TERMINAL BOX					510/3	*
111	-U1		EWON FLEXY 205			10/4	*
112	-U1		eWon flexy205			210/7	*

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No.	Name	EAN-no.	Type	Description	Manufacture	Ref. position	Remarks
113	-V1					239/1	*
114	-V2					239/4	*
115	-V3					240/1	*
116	-V4					240/4	*
117	-V10		START UPP VALVE			508/1	*
118	-W0		Power Cable			50/1	*
119	-W1		Motor Cable >= 3x10mm ² + PE			80/1	*
120	-W2		Motor Cable >= 3x10mm ² + PE			80/2	*
121	-W3		Motor Cable >= 3x10mm ² + PE			80/1	*
122	-W4		Motor Cable >= 3x10mm ² + PE			80/2	*
123	-W101		2x1.0mm ²			232/1	*
124	-W102		2x1.0mm ²			230/1	*
125	-W103		2x1.0mm ²			231/7	*
126	-W104		2x1.0mm ²			70/3	*
127	-W105		2x1.0mm ²			70/5	*
128	-W106		2x1.0mm ²			70/6	*
129	-W107		2x1.0mm ²			70/7	*
130	-W108		2x1.0mm ²			70/8	*
131	-W109		2x1.0mm ²			70/9	*
132	-W110		0,75mm ²			230/3	*
133	-W111		2x1.0mm ²			231/4	*
134	-W112		3x1,0mm ²			232/6	*
135	-W113		2x1.0mm ²			70/1	*
136	-W114		2x1.0mm ²			231/3	*
137	-W115		2x1.0mm ²			233/5	*
138	-W116		3x1.0mm ²			231/0	*
139	-W117		2x1.0mm ²			233/0	*
140	-W135		2x1.0mm ²			231/5	*

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No.	Name	EAN-no.	Type	Description	Manufacture	Ref. position	Remarks
141	-W136		2x1.0mm ²			231/5	*
142	-W137		2x1.0mm ²			70/0	*
143	-W200		2x1.0mm ²			71/6	*
144	-W203		2x1.0mm ²			82/1	*
145	-W204		2x1.0mm ²			232/3	*
146	-W205		2x1.0mm ²			82/6	*
147	-W207		2x1.0mm ²			239/0	*
148	-W208		2x1.0mm ²			239/3	*
149	-W209		2x1.0mm ²			240/0	*
150	-W210		2x1.0mm ²			240/3	*
151	-W211		3x1.0mm ²			238/6	*
152	-W212		3x1.0mm ²			238/0	*
153	-W213		2x1.0mm ²			241/0	*
154	-W215		5x1.0mm ²			241/4	*
155	-W217		2x1.0mm ²			240/9	*
156	-W226		Permanent 24VDC(max 1A)			81/4	*
157	-W227		PTC inside motor 2x1.0mm ²			81/5	*
158	-W228		PTC inside motor 2x1.0mm ²			81/7	*
159	-W236		2x1.0mm ²			240/6	*
160	-W500		Shielded ethernet cable			210/3	*
161	-W501		Shielded ethernet cable			210/6	*
162	-W503		3x1.0mm ²			248/6	*
163	-W504		3x1.0mm ²			248/6	*
164	-WX1		2x1.0mm ²			249/1	*
165	-WX2		2x1.0mm ²			249/2	*
166	-WX3		2x1.0mm ²			249/4	*
167	-WX4		2x1.0mm ²			249/6	*
168	-WX5		2x1.0mm ²			249/7	*

* Use of components with equivalent electric, mechanical and approval specifications is acceptable

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Pos.	Name	I/O	Description	Signalway	Connected to	Card type
1	-A1:AI0	AI0	(ASC) Current Sensor			6ES7214-1AG31-0XB0
2	-A1:AI1	AI1	Vacuum Sensor input dP FlexFilter 13/18			6ES7214-1AG31-0XB0
3	-A1:DIB.5	I0.5	Main filter DPS Configurable (DFC-08M alarm (when no replica))			6ES7214-1AG40-0XB0
4	-A1:Dla.0	I0.0	Pilot Signal (PS)	-X1:4,-W102:2,-PS,-PS	-PS	6ES7214-1AG31-0XB0
5	-A1:Dla.1	I0.1	Compressed air switch (CAS)	-X1:34,-W110:3	-CAS	6ES7214-1AG31-0XB0
6	-A1:Dla.2	I0.2	Thermal switches (TS)	-X1:36,-W110:6,-TB1:36,-TB1:35-XX2		6ES7214-1AG31-0XB0
7	-A1:Dla.3	I0.3	Motor protector +(PTC (EX))		-F8	6ES7214-1AG31-0XB0
8	-A1:Dla.4	I0.4	Level indicator on dust bin (BLI)	-X1:59,-W116:BN	-BLI (EX)	6ES7214-1AG31-0XB0
9	-A1:Dla.5	I0.5	Main filter DPS Configurable (DFC-08M alarm (when no replica))	-X1:192,-W136:1	-MF-DPS4	6ES7214-1AG31-0XB0
10	-A1:Dla.6	I0.6	Remote St.By/Off/OTTmr	-X1:6,-W103:1	-S3	6ES7214-1AG31-0XB0
11	-A1:Dla.7	I0.7	Emergency stop (EX-Venting panel)		-A21	6ES7214-1AG31-0XB0
12	-A1:Dlb.0	I1.0	Maintenance switch	-X1:2,-W101:2	-MS1	6ES7214-1AG31-0XB0
13	-A1:Dlb.1	I1.1	Closing function in D-mode		-K2	6ES7214-1AG31-0XB0
14	-A1:Dlb.2	I1.2	Level Indicator (LI) (Emptying on demand) Configurable	-X1:46,-W112:Bk/Or	-LI (EX)	6ES7214-1AG31-0XB0
15	-A1:Dlb.3	I1.3	Control filter DPS 1 Configurable	-X1:66,-W117:1	-CF-DPS1	6ES7214-1AG31-0XB0
16	-A1:Dlb.4	I1.4	Manual emptying TVFD/AEB (NS)	-X1:56,-W115:2	-S1	6ES7214-1AG31-0XB0
17	-A1:Dlb.5	I1.5	Fire Alarm		-K9	6ES7214-1AG31-0XB0
18	-A1:DQa.0	Q0.0	NoAlarm (Reset Safety circ.)		-K8	6ES7214-1AG31-0XB0
19	-A1:DQa.1	Q0.1	Alarm message lamp lamp in front panel		-H1	6ES7214-1AG31-0XB0
20	-A1:DQa.2	Q0.2	Warning DPS BLI and LI (relay is energized at warnig active)		-K11	6ES7214-1AG31-0XB0
21	-A1:DQa.3	Q0.3	Filter Cleaning Valve V1 dust collector Configurable FlexF 13/18 v1 (replica)		-K13	6ES7214-1AG31-0XB0
22	-A1:DQa.4	Q0.4	Filter Cleaning Valve V2 dust collector Configurable FlexF 13/18 v1 (replica)		-K14	6ES7214-1AG31-0XB0
23	-A1:DQa.5	Q0.5	Run(Start motor)		-K12	6ES7214-1AG31-0XB0
24	-A1:DQa.6	Q0.6	Solenoid V10 in vacuum unit (Start up valve / Idling (RBU))		-K15	6ES7214-1AG31-0XB0
25	-A1:DQa.7	Q0.7	Upper solenoid V11 TVFD 1 Configurable		-K16	6ES7214-1AG31-0XB0
26	-A1:DQb.0	Q1.0	Lower solenoid V12 TVFD 1 Emptying AEB; Configurable		-K17	6ES7214-1AG31-0XB0
27	-A1:DQb.1	Q1.1	On/standby lamp (external)		-K18	6ES7214-1AG31-0XB0
28	-A1/1:DQe.0	4.00	Config output K19 ASC move/Flush 1		-K19	6ES7222-1BD30-0XB0
29	-A1/1:DQe.1	4.01	Config output K20 ASC open/Flush 2		-K20	6ES7222-1BD30-0XB0

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Pos.	Name	I/O	Description	Signalway	Connected to	Card type
30	-A1/1:DQe.2	4.02	LCC start		-K21	6ES7222-1BD30-0XB0
31	-A1/1:DQe.3	4.03	MUX AI0 Current AI1 Pressure	-K22:A1,-K21:A2,-K21:A1	-A1/1	6ES7222-1BD30-0XB0
32						
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From			Cable		To			Type	Length
Description	Ref. position	Function	Description	Page/lineway	Description	Ref. position	Function		
-Q1	50/1	Main Switch 125A	-W0	50/1	-MF	50/1	Main fuse	Power Cable	
-F7	80/0	18-90A	-W1	80/0	-MS1	80/0	Maintenance Switch	Motor Cable >= 3x10mm ² + PE	
-K2	80/2	D Contactor	-W2	80/2	-MS1	80/2	Maintenance Switch	Motor Cable >= 3x10mm ² + PE	
-MS1	80/0	Maintenance Switch	-W3	80/0	-M1	80/1	VAC/RBU Motor	Motor Cable >= 3x10mm ² + PE	
-MS1	80/2	Maintenance Switch	-W4	80/2	-M1	80/2	VAC/RBU Motor	Motor Cable >= 3x10mm ² + PE	
-X1	232/1		-W101	232/1	-MS1	232/1	Signal Contact Maintenance switch	2x1.0mm ²	
-X1	230/1		-W102	230/1	-PS	230/1	Pilot Signal	2x1.0mm ²	
-X1	231/8		-W103	231/8	-S3	231/8	Remote St.By/Off/OTTmr=Overtime	2x1.0mm ²	
-X1	70/3		-W104	70/3	-S5	70/3	External E-stop	2x1.0mm ²	
-X1	70/5		-W105	70/5	-AUX-SAFE	70/5	Auxiliary safety circuit	2x1.0mm ²	
-X1	70/6		-W106	70/6	-S11	70/6	Venting sensor 1	2x1.0mm ²	
-X1	70/7		-W107	70/7	-S12	70/7	Venting sensor 2	2x1.0mm ²	
-X1	70/8		-W108	70/8	-S19	70/8	Venting sensor 3	2x1.0mm ²	
-X1	70/9		-W109	70/9	-S20	70/9	Venting sensor 4	2x1.0mm ²	
-X1	239/7		-W110	239/7	-TB1	239/7		12x0,75mm ²	
-X1	231/4		-W111	231/4	-MF-DPS2	231/4	Main Filter DPS	2x1.0mm ²	
-X1	232/7		-W112	232/7	-LI (EX)	232/8	Level Indicator (LI)	3x1,0mm ²	
-X1	70/1		-W113	70/1	-FA	70/1	Fire alarm	2x1.0mm ²	
-X1	231/3		-W114	231/3	- MF-DPS1	231/3	Main Filter DPS.	2x1.0mm ²	
-X1	233/5		-W115	233/5	-S1	233/5	Manual emptying TVFD/AEB (NS)	2x1.0mm ²	
-X1	231/1		-W116	231/1	-BLI (EX)	231/2	Level indicator on dust bin (BLI)	3x1.0mm ²	
-X1	233/0		-W117	233/0	-CF-DPS1	233/1	Control filter DPS (1) - (1-2)	2x1.0mm ²	
-X1	231/5		-W135	231/5	-MF-DPS3	231/5	Main Filter DPS	2x1.0mm ²	
-X1	231/5		-W136	231/5	-MF-DPS4	231/5	Main Filter DPS	2x1.0mm ²	
-X1	70/0		-W137	70/0	-Q4	70/0	Intrinsically safe circuit (external)	2x1.0mm ²	
-X1	71/6		-W200	71/6	-AUX- E-STOP	71/6	E-Stop signal to external control panel	2x1.0mm ²	
-X1	82/1		-W203	82/1	-AUX1	82/1	E-Stop Controlled 24VDC supply	2x1.0mm ²	
-X1	232/4		-W204	232/4	-AUX2	232/4	Delta contactor active (motor running) Signal to external system	2x1.0mm ²	

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From			Cable		To			Type	Length
Description	Ref. position	Function	Description	Page/lineway	Description	Ref. position	Function		
-X1	82/6		-W205	82/6	-AUX3	82/6	E-Stop Controlled, 24VAC	2x1.0mm ²	
-X1	239/1		-W207	239/1	-V1	239/1	Filter Cleaning Valve V1	2x1.0mm ²	
-X1	239/3		-W208	239/3	-V2	239/4	Filter Cleaning Valve V2	2x1.0mm ²	
-X1	240/1		-W209	240/1	-V3	240/1	Filter Cleaning Valve V3	2x1.0mm ²	
-X1	240/4		-W210	240/4	-V4	240/4	Filter Cleaning Valve V4	2x1.0mm ²	
-X1	238/6		-W211	238/6	-EXT WARNING	238/6	External Warning Output	3x1.0mm ²	
-X1	238/0		-W212	238/0	-EXT ALARM	238/0	No summary alarm	3x1.0mm ²	
-PE	60/6	PE	-W213	241/1	-V13	241/1	ASC Move	2x1.0mm ²	
-X1	241/5		-W215	241/5				5x1.0mm ²	
-X1	240/6		-W217	240/9	-H2	240/9	On/standby lamp (external)	2x1.0mm ²	
-X1	81/4		-W226	81/4				Permanent 24VDC(max 1A)	
-X1	81/5		-W227	81/5				PTC inside motor 2x1.0mm ²	
-X1	81/8		-W228	81/8				PTC inside motor 2x1.0mm ²	
-X1	240/7		-W236	240/7	-AUX4	240/7	Ready / idle signal	2x1.0mm ²	
-PBC1	210/2	KTP401 Touch panel	-W500	210/2	-PBC1	210/5	PLC S7-1200 input	Shielded ethernet cable	
-X1	248/6	Spare Terminal (20) Not Specified	-W503	248/6	-SP1	248/7	AI:1 Optional: Pressure Transducer	3x1.0mm ²	
-X1	248/6	Spare Terminal (20) Not Specified	-W504	248/6	-SP2	248/7	AI:1 Optional: Pressure Transducer	3x1.0mm ²	
-X1	249/1	Spare Term	-WX1	249/1	-SPARE_TERMINAL	249/1	-SPARE_TERMINAL	2x1.0mm ²	
-X1	249/3	Spare Term	-WX2	249/3	-SPARE_TERMINAL	249/3	-SPARE_TERMINAL	2x1.0mm ²	
-X1	249/4	Spare Term	-WX3	249/4	-SPARE_TERMINAL	249/4	-SPARE_TERMINAL	2x1.0mm ²	
-X1	249/6	Spare Term	-WX4	249/6	-SPARE_TERMINAL	249/6	-SPARE_TERMINAL	2x1.0mm ²	
-X1	249/7	Spare Term	-WX5	249/7	-SPARE_TERMINAL	249/7	-SPARE_TERMINAL	2x1.0mm ²	

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No.	Connected to (external)		Terminal			Connected to (internal)		Type	Ref. position	Remarks
	Destination	Connection	Name	Number	Jumper	Destination	Connection			
1			-ET1	1		24VDC+		UK 2,5 N	210/7	
2			-ET1	2		24VDC-		UK 2,5 N	210/7	
3			-K22			-A1/1	DQe.3	PLC-RSC- 24DC/21-21AU	241/9	
4			-K22			24VDC-		PLC-RSC- 24DC/21-21AU	241/9	
5	-PE		-PE			0V		WT 4 PE	60/3	
6	-PE		-PE			24VDC-		WT 4 PE	60/6	
7	-CF-DPS1_		-X1	66_					510/2	
8			-X1	67_		24VDC+			510/3	
9	-TERMINAL BOX	1	-X1	141_		24VDC+			510/3	
10	-LI (EX)	- Blue	-X1	40		24VDC-		UTTBT 2,5 - 3044636	232/6	
11	-W226	1	-X1	141		24VDC+		UTTBT 2,5 - 3044636	81/4	
12	-W227	1	-X1	143		24VDC+		UTTBT 2,5 - 3044636	81/5	
13	-W228	1	-X1	145		24VAC		UTTBT 2,5 - 3044636	81/8	
14	-MS1	13	-X1	1		24VDC+		UTTBT 2,5 - 3044636	232/1	
15	-W226	2	-X1	142		24VDC-		UTTBT 2,5 - 3044636	81/4	
16	-W227	2	-X1	144		24VDC-		UTTBT 2,5 - 3044636	81/6	
17	-W228	2	-X1	146		0V		UTTBT 2,5 - 3044636	81/8	
18	-MS1	14	-X1	2		-A1	D1b.0	UTTBT 2,5 - 3044636	232/2	
19	-PS		-X1	3		-F6	2	UTTBT 2,5 - 3044636	230/1	
20	-PS		-X1	4		-A1	D1a.0	UTTBT 2,5 - 3044636	230/2	
21	-X1	6	-X1	5				UTTBT 2,5 - 3044636	231/8	
22	-S3	1	-X1	5		24VDC+		UTTBT 2,5 - 3044636	231/8	
23	-X1	5	-X1	6				UTTBT 2,5 - 3044636	231/9	
24	-S3	2	-X1	6		-A1	D1a.6	UTTBT 2,5 - 3044636	231/9	
25	-SPARE_TERMINAL4	2	-X1	137				UTTBT 2,5 - 3044636	249/6	
26	-SPARE_TERMINAL5	2	-X1	150				UTTBT 2,5 - 3044636	249/8	
27	-AUX- E-STOP	1	-X1	15		-A21	34	UTTBT 2,5 - 3044636	71/6	
28	-SPARE_TERMINAL1	1	-X1	19				UTTBT 2,5 - 3044636	249/1	

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No.	Connected to (external)		Terminal			Connected to (internal)		Type	Ref. position Page / Lineway	Remarks
	Destination	Connection	Name	Number	Jumper	Destination	Connection			
29	-SPARE_TERMINAL2	1	-X1	39				UTTBT 2,5 - 3044636	249/3	
30	-SPARE_TERMINAL3	1	-X1	84				UTTBT 2,5 - 3044636	249/4	
31	-SPARE_TERMINAL4	1	-X1	99				UTTBT 2,5 - 3044636	249/6	
32	-SPARE_TERMINAL5	1	-X1	149				UTTBT 2,5 - 3044636	249/7	
33	-AUX- E-STOP	2	-X1	16		-A21	33	UTTBT 2,5 - 3044636	71/6	
34	-SPARE_TERMINAL1	2	-X1	20				UTTBT 2,5 - 3044636	249/1	
35	-SPARE_TERMINAL2	2	-X1	68				UTTBT 2,5 - 3044636	249/3	
36			-X1	136		-R1	2	UTTBT 2,5 - 3044636	248/3	
37	-AUX1	2	-X1	26	a	24VDC-		UTTBT 2,5 - 3044636	82/2	
38	-AUX1	1	-X1	25		24VDC+(E)		UTTBT 2,5 - 3044636	82/1	
39	-AUX3	1	-X1	29		24VAC(E)		UTTBT 2,5 - 3044636	82/6	
40	-AUX3	2	-X1	30		0V		UTTBT 2,5 - 3044636	82/6	
41	-TB1	32	-X1	32		24VDC-		UTTBT 2,5 - 3044636	239/8	
42	-TB1	31	-X1	31		-K15	14	UTTBT 2,5 - 3044636	239/7	
43	-X1	34	-X1	33				UTTBT 2,5 - 3044636	230/4	
44	-CAS		-X1	33		24VDC+		UTTBT 2,5 - 3044636	230/4	
45	-X1	33	-X1	34				UTTBT 2,5 - 3044636	230/5	
46	-CAS		-X1	34		-A1	D1a.1	UTTBT 2,5 - 3044636	230/5	
47	-TB1	35	-X1	35		24VDC+		UTTBT 2,5 - 3044636	230/6	
48	-TB1	36	-X1	36		-A1	D1a.2	UTTBT 2,5 - 3044636	230/7	
49	-V1	2	-X1	42		24VDC-		UTTBT 2,5-DIO/O-U	239/1	
50			-X1	41		-K13	14	UTTBT 2,5-DIO/O-U	239/1	
51	-V1	1	-X1	41		-D1	2	UTTBT 2,5-DIO/O-U	239/1	
52	-V2	2	-X1	44		24VDC-		UTTBT 2,5-DIO/O-U	239/3	
53			-X1	43		-K14	14	UTTBT 2,5-DIO/O-U	239/4	
54	-V2	1	-X1	43		-D2	2	UTTBT 2,5-DIO/O-U	239/4	
55	-LI (EX)	+ Brown	-X1	45		24VDC+		UTTBT 2,5 - 3044636	232/7	
56	-LI (EX)	Bk/Rd	-X1	46		-A1	D1b.2	UTTBT 2,5 - 3044636	232/8	

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No.	Connected to (external)		Terminal			Connected to (internal)		Type	Ref. position	Remarks
	Destination	Connection	Name	Number	Jumper	Destination	Connection			
57	- MF-DPS1		-X1	49		24VDC+		UTTBT 2,5 - 3044636	231/3	
58	- MF-DPS1		-X1	50		-X1	187	UTTBT 2,5 - 3044636	231/4	
59	-S1		-X1	55		24VDC+		UTTBT 2,5 - 3044636	233/5	
60	-S1		-X1	56		-A1	D1b.4	UTTBT 2,5 - 3044636	233/6	
61	-BLI (EX)	Black	-X1	57				UTTBT 2,5 - 3044636	231/1	
62	-BLI (EX)	+ Brown	-X1	57				UTTBT 2,5 - 3044636	231/1	
63	-X1	59	-X1	57		24VDC+		UTTBT 2,5 - 3044636	231/1	
64	-BLI (EX)	Bk/Rd	-X1	59				UTTBT 2,5 - 3044636	231/1	
65	-X1	57	-X1	59		-A1	D1a.4	UTTBT 2,5 - 3044636	231/1	
66	-BLI (EX)	- Blue	-X1	58		24VDC-		UTTBT 2,5 - 3044636	231/1	
67	-EXT WARNING	1	-X1	60		-K11	11	UTTBT 2,5 - 3044636	238/6	
68	-EXT WARNING	2	-X1	61		-K11	14	UTTBT 2,5 - 3044636	238/6	
69	-EXT WARNING	3	-X1	62		-K11	12	UTTBT 2,5 - 3044636	238/7	
70	-EXT ALARM	1	-X1	63		-K10	11	UTTBT 2,5 - 3044636	238/0	
71	-AUX2	1	-X1	17		-K2	84	UTTBT 2,5 - 3044636	232/4	
72	-AUX2	2	-X1	18	a	-K2	83	UTTBT 2,5 - 3044636	232/4	
73	-SV1	Signal	-X1	138	↓	-K22	14	UTTBT 2,5 - 3044636	248/3	
74	-X1	188	-X1	187				UTTBT 2,5	231/4	
75	-MF-DPS2		-X1	187		-X1	50	UTTBT 2,5	231/4	
76	-X1	187	-X1	188				UTTBT 2,5	231/4	
77	-MF-DPS2		-X1	188		-X1	189	UTTBT 2,5	231/4	
78	-X1	190	-X1	189				UTTBT 2,5	231/5	
79	-MF-DPS3		-X1	189		-X1	188	UTTBT 2,5	231/5	
80	-X1	189	-X1	190				UTTBT 2,5	231/5	
81	-MF-DPS3		-X1	190		-X1	191	UTTBT 2,5	231/5	
82	-X1	192	-X1	191				UTTBT 2,5	231/5	
83	-MF-DPS4		-X1	191		-X1	190	UTTBT 2,5	231/5	
84	-X1	191	-X1	192				UTTBT 2,5	231/6	

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No.	Connected to (external)		Terminal			Connected to (internal)		Type	Ref. position	Remarks
	Destination	Connection	Name	Number	Jumper	Destination	Connection			
85	-MF-DPS4		-X1	192		-A1	Dla.5	UTT B 2,5	231/6	
86	-EXT ALARM	2	-X1	64		-K10	14	UTT B 2,5 - 3044636	238/1	
87	-EXT ALARM	3	-X1	65		-K10	12	UTT B 2,5 - 3044636	238/1	
88	-CF-DPS1		-X1	67		24VDC+		UTT B 2,5 - 3044636	233/1	
89	-CF-DPS1		-X1	66		-A1	Dlb.3	UTT B 2,5 - 3044636	233/0	
90	-X1	72	-X1	71				UTT B 2,5 - 3044636	241/0	
91	-W213	1	-X1	71		24VAC(E)		UTT B 2,5 - 3044636	241/0	
92	-X1	71	-X1	72		-K19	11	UTT B 2,5 - 3044636	241/1	
93	-X1	75	-X1	73				UTT B 2,5 - 3044636	241/1	
94	-V13	1	-X1	73		-K19	14	UTT B 2,5 - 3044636	241/1	
95	-W213	4	-X1	74		-K19	12	UTT B 2,5 - 3044636	241/1	
96	-W110	10	-X1	75				UTT B 2,5 - 3044636	241/3	
97	-X1	73	-X1	75		-K20	11	UTT B 2,5 - 3044636	241/3	
98	-MV1	76	-X1	76		0V		UTT B 2,5 - 3044636	241/3	
99	-MV1	77	-X1	77		-K20	14	UTT B 2,5 - 3044636	241/3	
100	-MV1	78	-X1	78		-K20	12	UTT B 2,5 - 3044636	241/3	
101	-W215	1	-X1	79		24VDC+(E)		UTT B 2,5 - 3044636	241/5	
102	-W215	3	-X1	81		-K21	11	UTT B 2,5 - 3044636	241/5	
103	-W215	4	-X1	82		-K21	14	UTT B 2,5 - 3044636	241/6	
104	-W215	5	-X1	83		-K21	12	UTT B 2,5 - 3044636	241/6	
105	-W215	2	-X1	80		24VDC-		UTT B 2,5 - 3044636	241/5	
106			-X1	87		24VDC+(E)		UTT B 2,5 - 3044636	240/6	
107	-H2	X2	-X1	88	b	24VDC-		UTT B 2,5 - 3044636	240/6	
108	-SP1	0V	-X1	196		24VDC-		UTT B 2,5 - 3044636	248/7	
109	-SP1	+24V	-X1	195				UTT B 2,5 - 3044636	248/8	
110	-SP2	+24V	-X1	195		24VDC+		UTT B 2,5 - 3044636	248/8	
111	-SV1	DO(NC)	-X1	135				UTT B 2,5 - 3044636	248/3	
112	-SV1	24VDC-	-X1	134		24VDC-		UTT B 2,5 - 3044636	248/2	

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No.	Connected to (external)		Terminal			Connected to (internal)		Type	Ref. position	Remarks
	Destination	Connection	Name	Number	Jumper	Destination	Connection			
113	-SV1	24VDC+	-X1	133		24VDC+		UTTBT 2,5 - 3044636	248/2	
114	-SP2	Sign	-X1	185		-K22	24	UTTBT 2,5 - 3044636	248/6	
115	-SP1	Sign	-X1	186		-K22	22	UTTBT 2,5 - 3044636	248/6	
116	-SP2	0V	-X1	198		24VDC-		UTTBT 2,5 - 3044636	248/7	
117	-H2	X1	-X1	90				UTTBT 2,5 - 3044636	240/7	
118	-AUX4	2	-X1	90	b	-K18	11	UTTBT 2,5 - 3044636	240/7	
119	-AUX4	1	-X1	89	•	-K18	14	UTTBT 2,5 - 3044636	240/7	
120	-V3	2	-X1	52		24VDC-		UTTBT 2,5-DIO/O-U	240/1	
121			-X1	51		-D3	2	UTTBT 2,5-DIO/O-U	240/1	
122	-V3	1	-X1	51		-K16	14	UTTBT 2,5-DIO/O-U	240/1	
123	-V4	2	-X1	54		24VDC-		UTTBT 2,5 - 3044636	240/5	
124			-X1	53		-D4	2	UTTBT 2,5 - 3044636	240/4	
125	-V4	1	-X1	53		-K17/1	14	UTTBT 2,5 - 3044636	240/4	
126	-X1	7	-X1	8				UTTBT 2,5 - 3044636	70/3	
127		12	-X1	8		-X1	9	UTTBT 2,5 - 3044636	70/3	
128	-X1	10	-X1	9				UTTBT 2,5 - 3044636	70/5	
129	-AUX-SAFE	1	-X1	9		-X1	8	UTTBT 2,5 - 3044636	70/5	
130	-AUX-SAFE	2	-X1	10	•			UTTBT 2,5 - 3044636	70/5	
131	-X1	9	-X1	10	•			UTTBT 2,5 - 3044636	70/5	
132	-X1	12	-X1	11	•			UTTBT 2,5 - 3044636	70/6	
133	-S11	2	-X1	11	•			UTTBT 2,5 - 3044636	70/6	
134	-X1	22	-X1	21	•			UTTBT 2,5 - 3044636	70/8	
135	-S19	2	-X1	21	•			UTTBT 2,5 - 3044636	70/8	
136	-S11	1	-X1	12	•			UTTBT 2,5 - 3044636	70/6	
137	-X1	11	-X1	12	•			UTTBT 2,5 - 3044636	70/6	
138	-S19	1	-X1	22	•			UTTBT 2,5 - 3044636	70/8	
139	-X1	21	-X1	22	•			UTTBT 2,5 - 3044636	70/8	
140	-X1	14	-X1	13	•			UTTBT 2,5 - 3044636	70/7	

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