

**CITY OF JEFFERSON
I-85 1.0 MGD WATER RECLAMATION FACILITY
SUBMITTAL FOR APPROVAL**

DATE: OCTOBER 25, 2022

PROJECT: I-85 1.0 MGD WATER RECLAMATION FACILITY

OWNER: CITY OF JEFFERSON

ENGINEER: CIVIL ENGINEERING CONSULTANTS

SECTION: 43 23 31 VERTICAL DRY PIT CHOPPER PUMPS

MANUFACTURER: VAUGHAN / ESG

MANUFACTURER'S REPRESENTATIVE: WC EQUIPMENT SALES
SUITE 200, 4324 BROGDON EXCHANGE
SUWANEE, GA 30024
678-730-0997 (PHONE)
770-614-5992 (FAX)

CIVIL ENGINEERING CONSULTANTS, INC. MARIETTA, GEORGIA 30068			
No Exceptions Taken	No Exceptions Taken With Comment	Make Corrections Noted	Rejected
			
DATE Jan 05, 2023			
BY 			
APPROVED FOR DESIGN ONLY. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND QUANTITIES.			

ESG CORRECTIONS



Shop Drawing Review

REVIEW OF SUBMITTAL

REVIEWED ACCEPTED	X REVIEWED WITH COMMENT
REJECTED	RESUBMIT AS INDICATED

Review is for conformance with only the general concepts of design and information given, or noted and acknowledged as exceptions on the submittal. The contractor is responsible for compliance with all requirements of the specifications and drawings, including but not limited to, dimensions, ratings, features, methods of construction and fabrication and coordination and fit with the building and work of others as installed.

BY: David M. Zimmer, P.E.

Date: August 19, 2022

Project: Jefferson WRF

Submittal #

Submittal: Vertical Dry Pit Chopper
Pumps - Vaughn

Comments:

1. Vaughn – **Reviewed with Comment**
 - a. Provide one low suction pressure switch for each set of pumps (two total). **n/a**
 - b. Provide a low oil level switch in each pump.
2. Control Panel – **Reviewed with Comment**
 - a. Label control panels as follows:
 - i. “Final Clarifier No. 1 RAS Pumps Control Panel” and “Final Clarifier No. 2 RAS Pumps Control Panel”.
 - b. On the panel diagrams, label pumps as follows:
 - i. Final Clarifier #1 RAS Pump 1
 - ii. Final Clarifier #1 RAS Pump 2
 - iii. Final Clarifier #2 RAS Pump 1
 - iv. Final Clarifier #2 RAS Pump 2
 - c. Do not say typical for 2. Provide panel schematics for each panel.
 - d. Each panel will have one 4-20mA input (not 2) for the TSS signal – “Final Clarifier No. 1 TSS” and “Final Clarifier No. 2 TSS”.
 - e. Each panel will be fed with a 30A/3P breaker from Panel HA. Please change the 60A/3P on line 107 to 30A/3P.
 - f. The motor will be furnished with an integral thermostat only. A moisture/temperature sensor will NOT be provided. Please delete the thermal/sensor wiring and macromatic relays from lines 732 through 758.
 - g. Update the field connection (page 3 of 4) and show one TSS meter, delete the pump seal/thermal inputs, and show the motor thermostats.
 - h. Provide screen shots of the HMI and logic control description.

TAB 2:

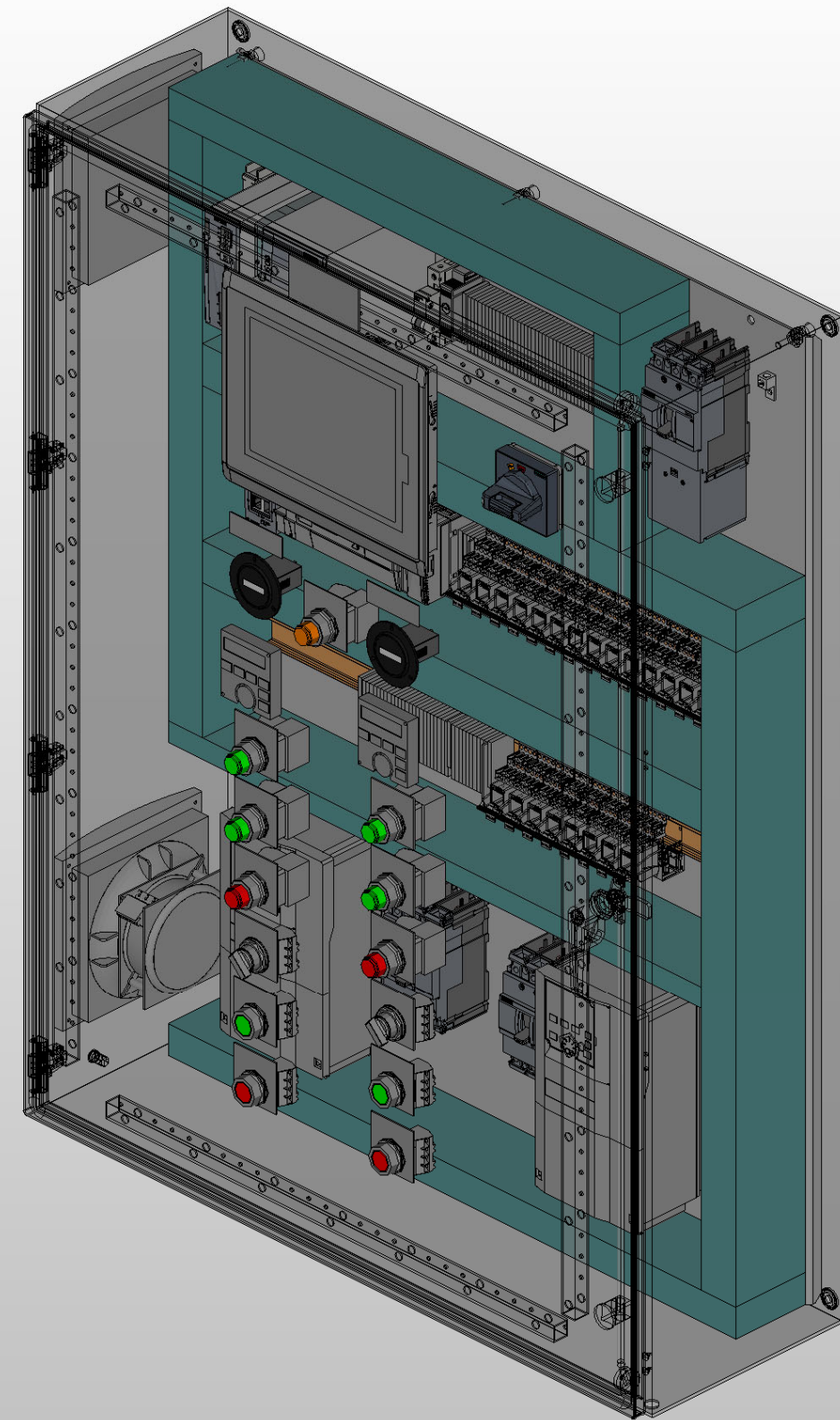
CONTROL PANEL SUBMITTAL

Control Panel (ISO SE)

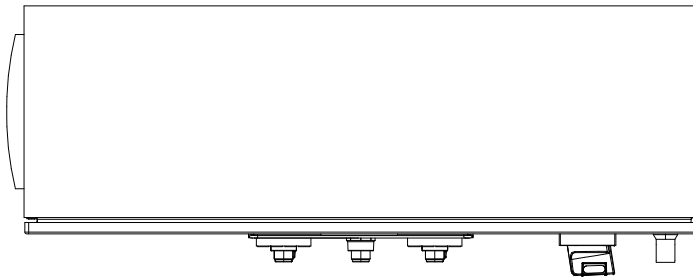
Control Panel Data	
Identifier:	FC1RASCP
Description:	DUPLEX CHOPPER PUMP CP
Project #:	12419
Supply Voltage:	480VAC
Phase:	3Ø
Frequency:	60Hz
Total FLA:	15.6A
FLA of Largest Motor:	7.6A
Number of Motors:	2
Short Circuit Current Rating:	5kAIC
Enclosure Rating:	12



UL508A for Industrial Control Panel
File# -E345960

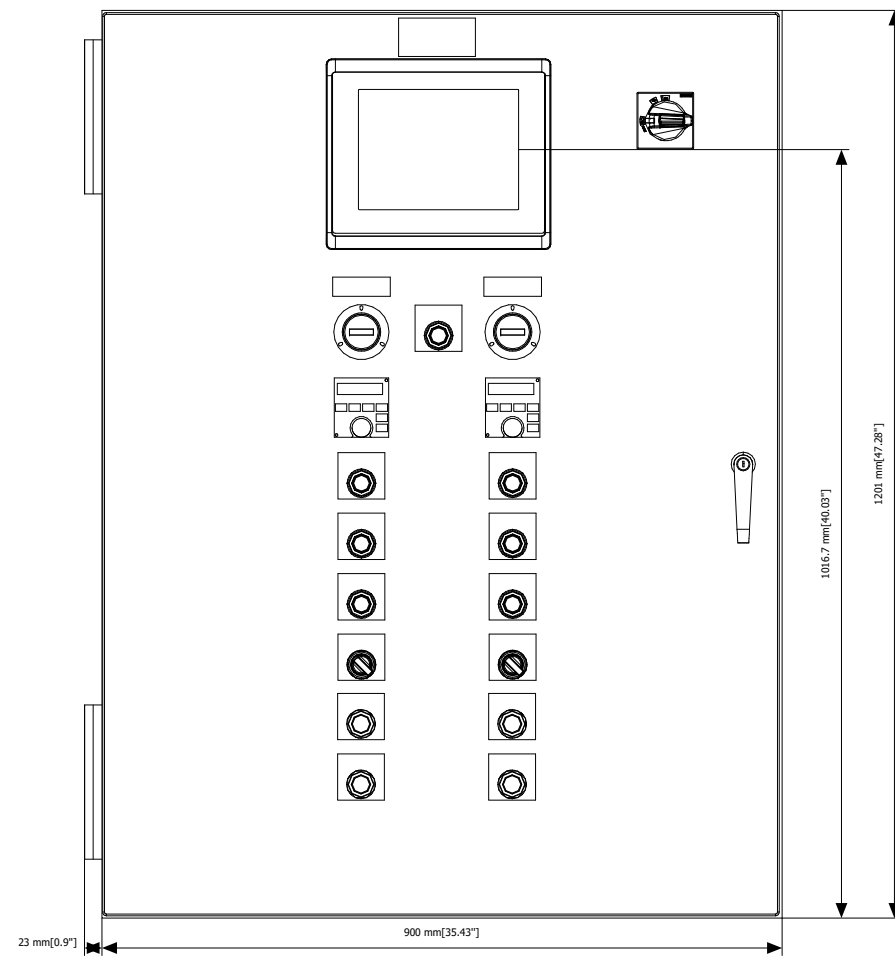


Top View

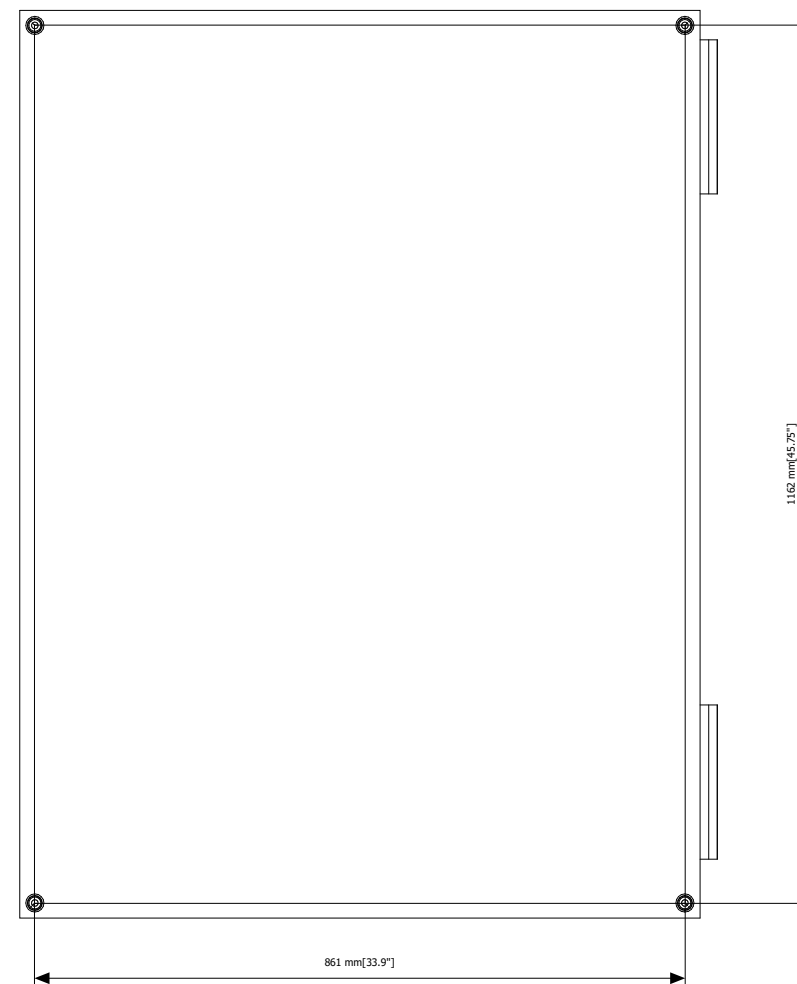


RITTAL 8017588, 36"x48"x12"
 Housing: CARBON STEEL, RAL 7035 POWDER COAT
 Door: CARBON STEEL, RAL 7035 POWDER COAT
 Mounting plate finish: CARBON STEEL, ZINC PLATED
 Protection category: UL Type 12

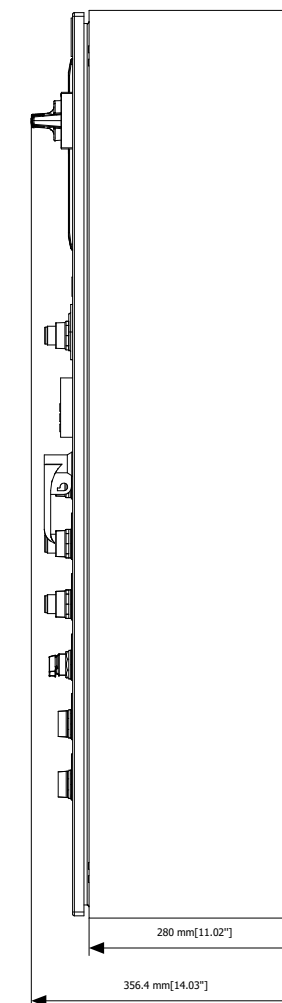
Front View



Rear View



Right Side View

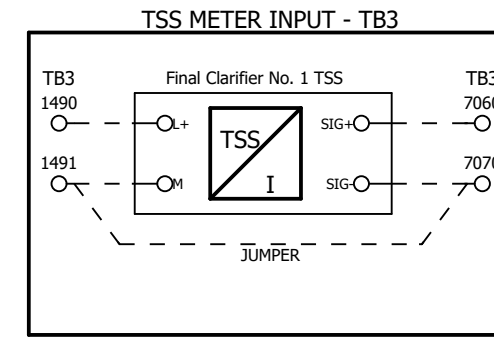
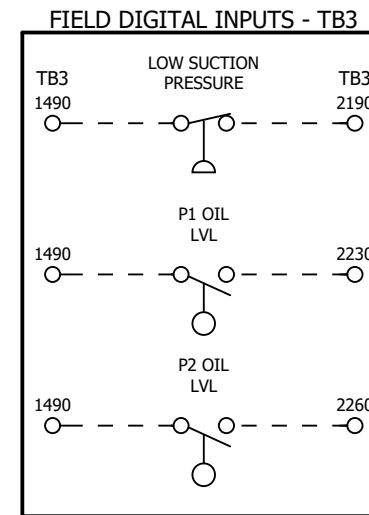
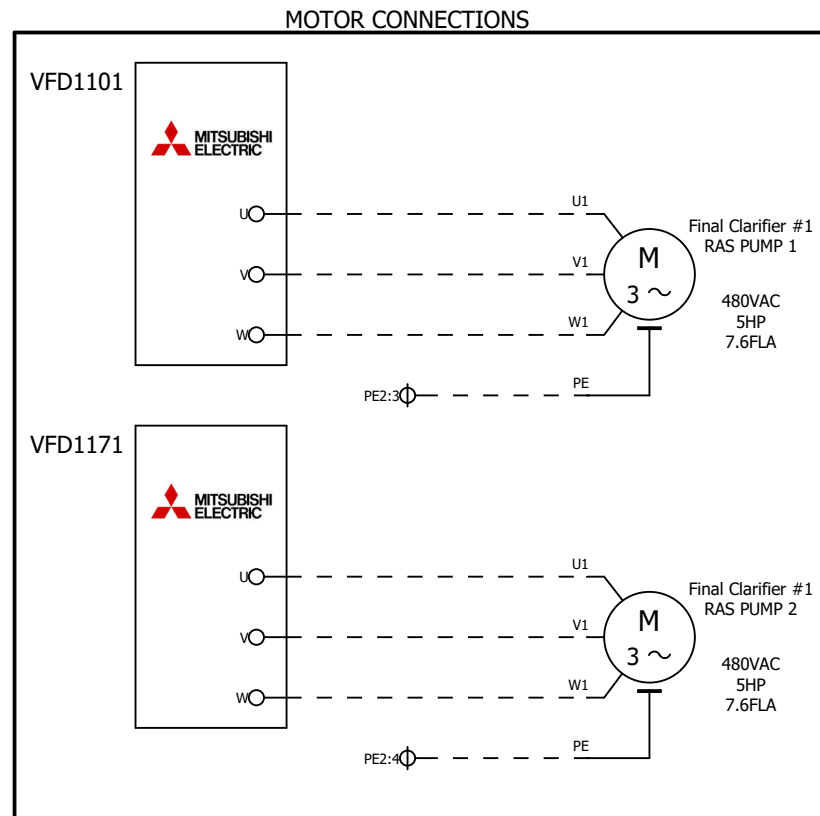
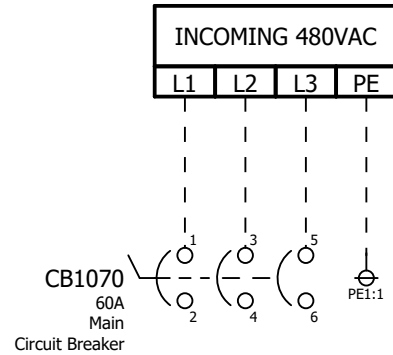


480 Power Feed Terminals		
Terminal	Range	Tightening Torque
CB1070 1,3,5	#8-10AWG	45 in-lb
PE	#8-10 AWG	35 in-lb

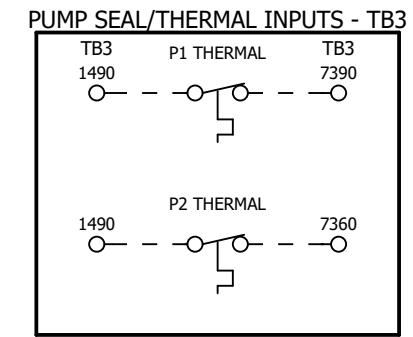
Motor Connections		
Terminal	Range	Tightening Torque
VFD1101, VFD1171 U, V, W	#10-14 AWG	13 in-lb
Ground	#10-14 AWG	35 in-lb

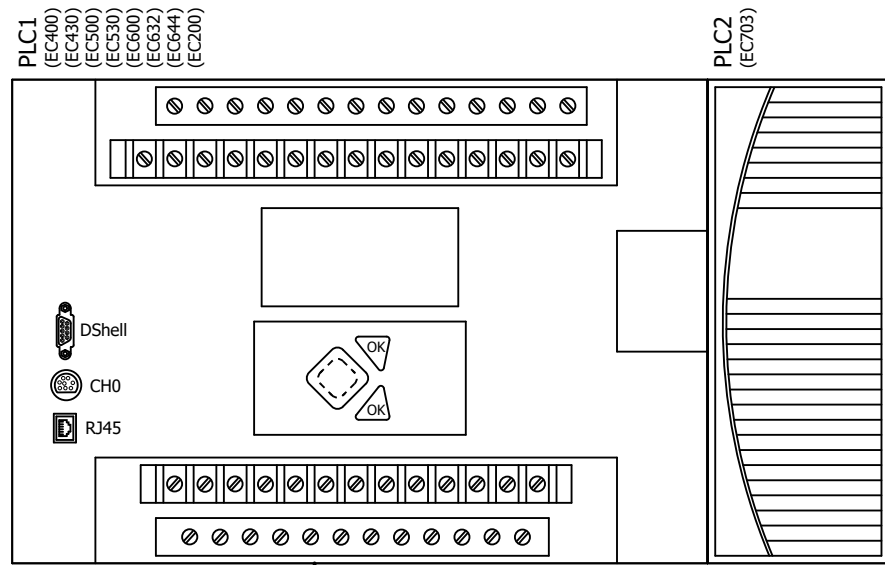
Note:
 Use Copper Conductors Only for all connections
 Use wires rated minimum 75°C for all power connections
 Use wires rated minimum 60°C for all control connections

Control Contacts
 Pilot Duty Rated Only
 250 VAC, 30 VDC-6A Max. Load



NOTE:
 INSTALL JUMPER AS SHOWN
 TO USE LOOP POWERED DEVICE

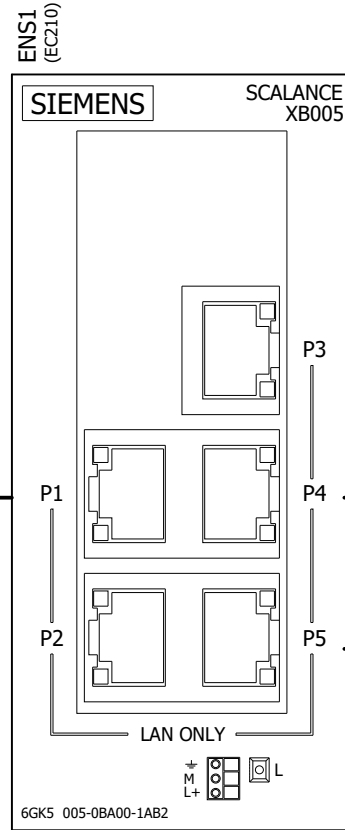




1766-L32BXBA
MicroLogix 1400
192.168.80.1

1762-IF4
MicroLogix 4 Point Analog Input Module

CAT6A
CBL1



6GK5005-0BA00-1AB2
SCALANCE XB005

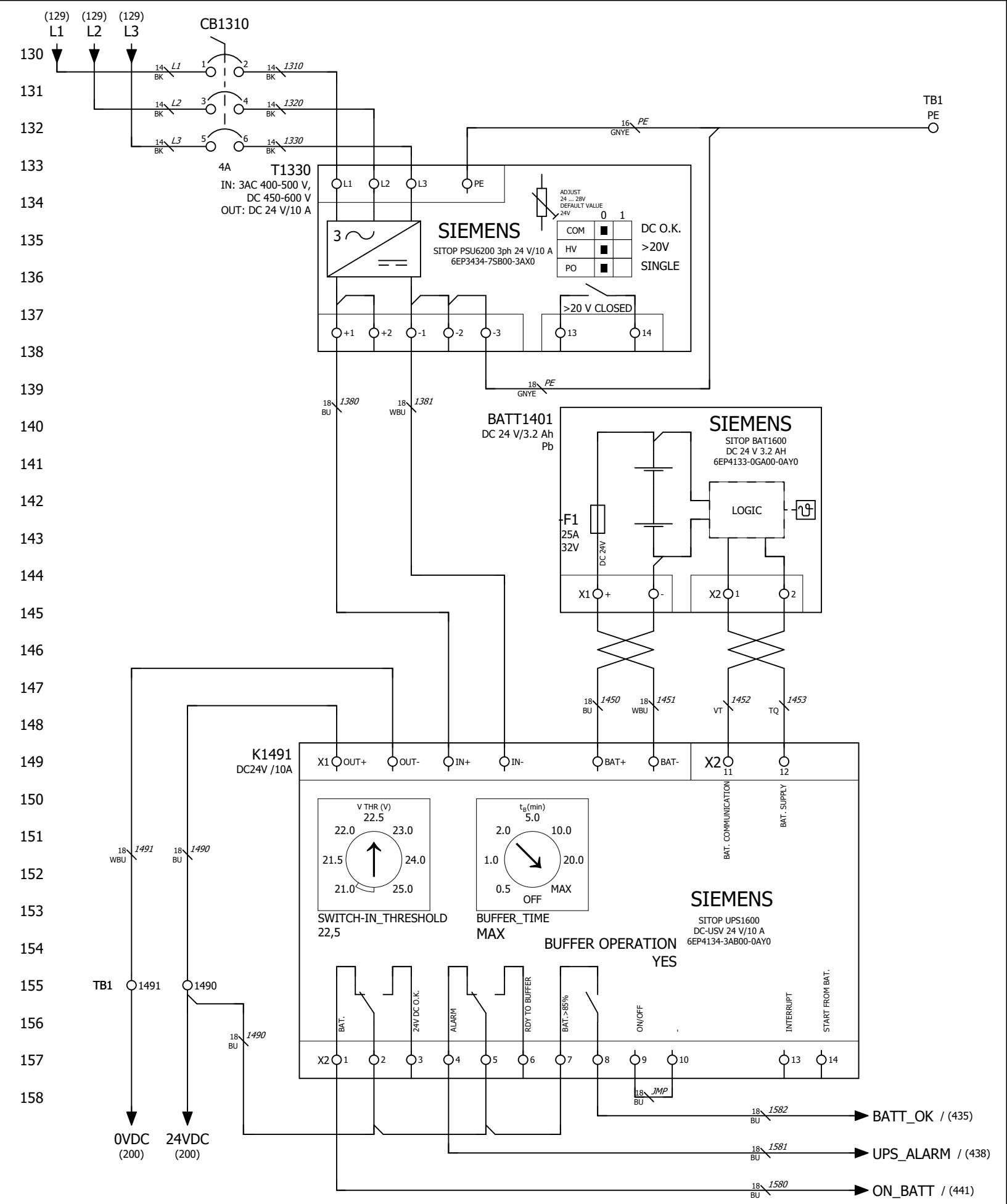
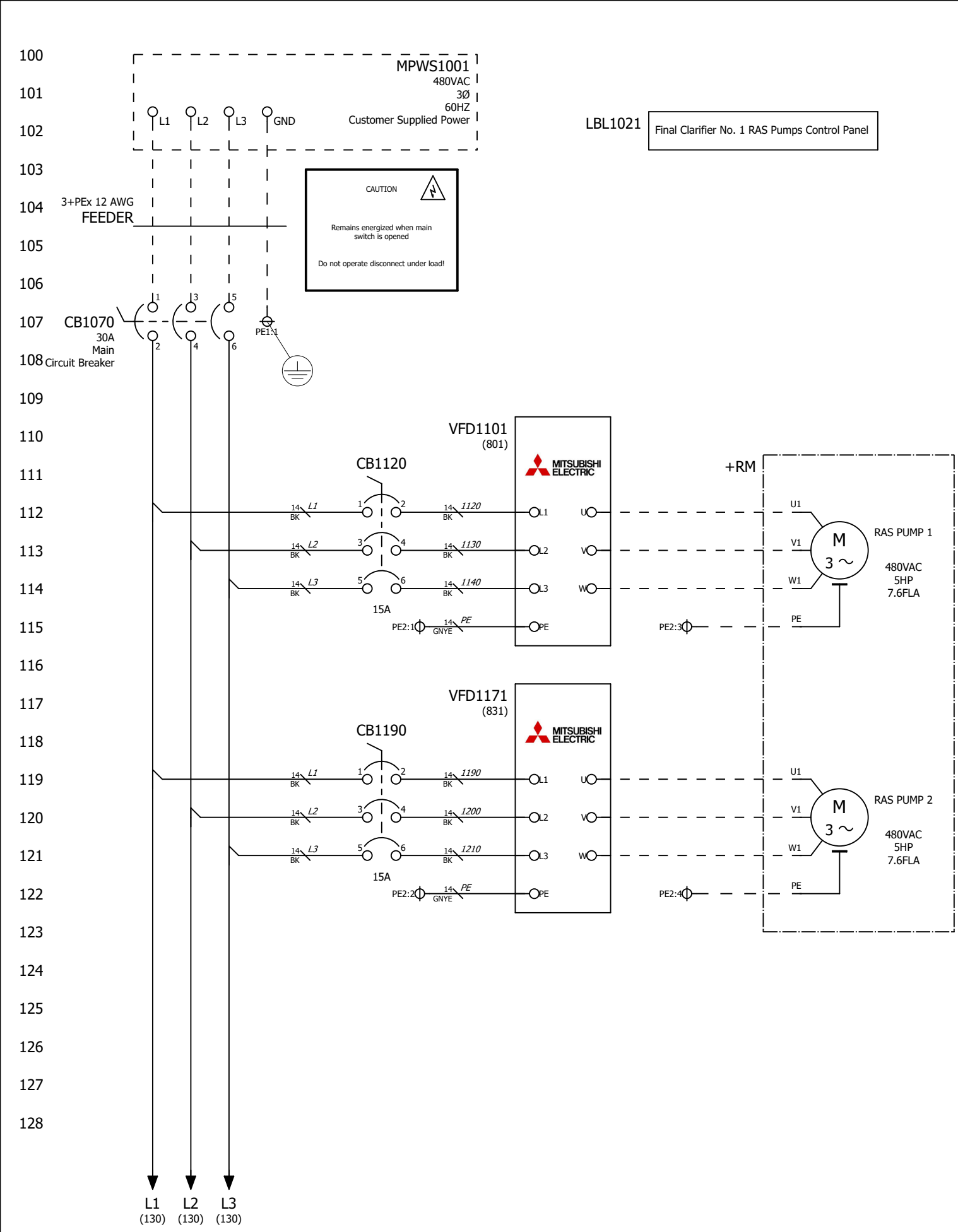
HMI1
(EC205)



2711P-T10C22D9P
PanelView Plus 7 Graphic Terminal
192.168.80.2

CAT6
CBL2

SITE NETWORK



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Project # 12419
Duplex Chopper Pump CP

Customer number
Customer
Templeton

Revision
0.2
SUBMITTAL

Date	Name
Created 05/25/22	akaduck
Edited 08/24/22	akaduck
App. 05/25/22	JSD

Engineered Systems Group, LLC.
4485 Commerce Dr, Suite 107
Buford, GA 30518
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Page Description
DUPLIX CHOPPER PUMP CP
Control Panel
Wiring Schematics

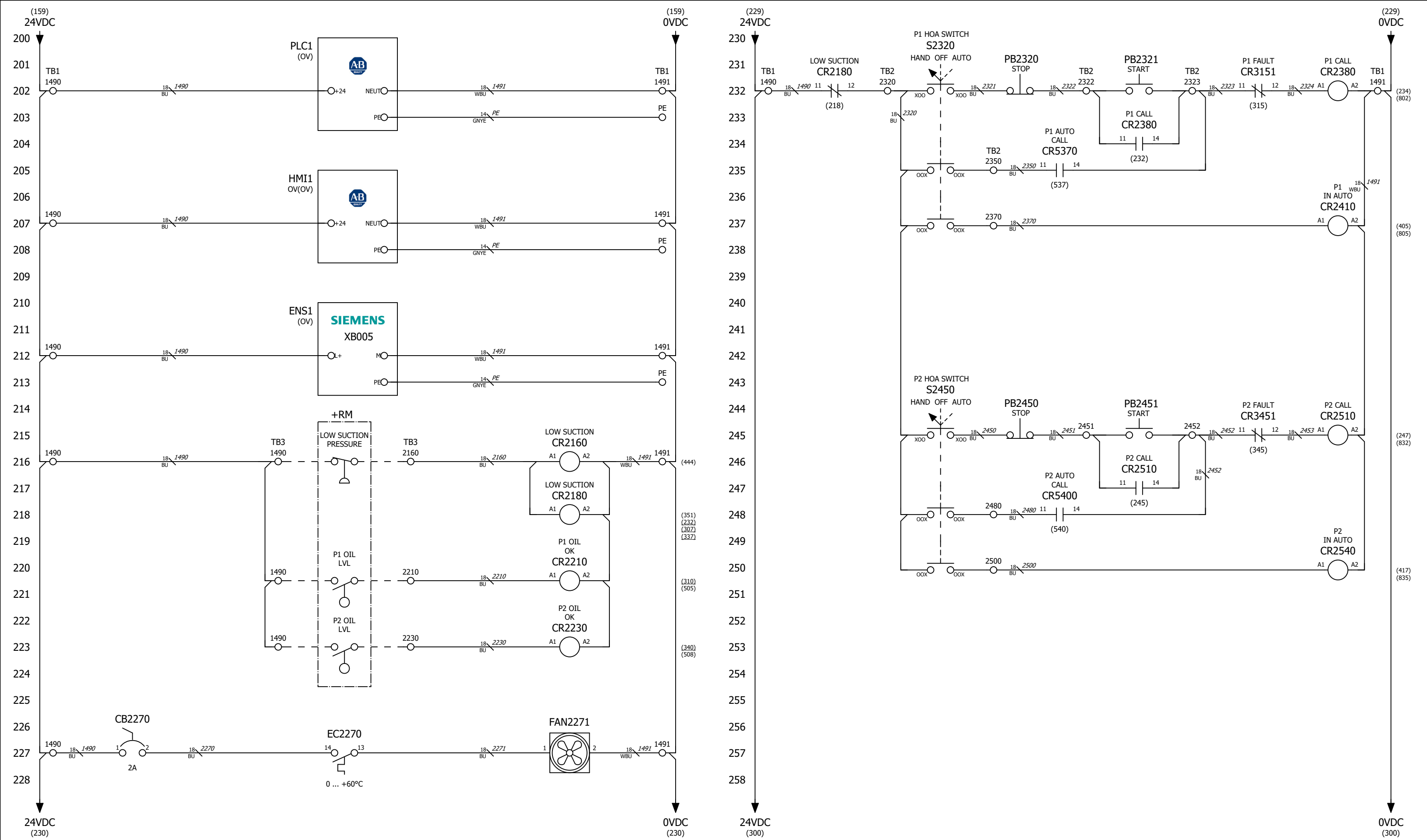
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Location Code
+CP

Drawing Number: 12419FC1RASCPCEC

Document Code & EC

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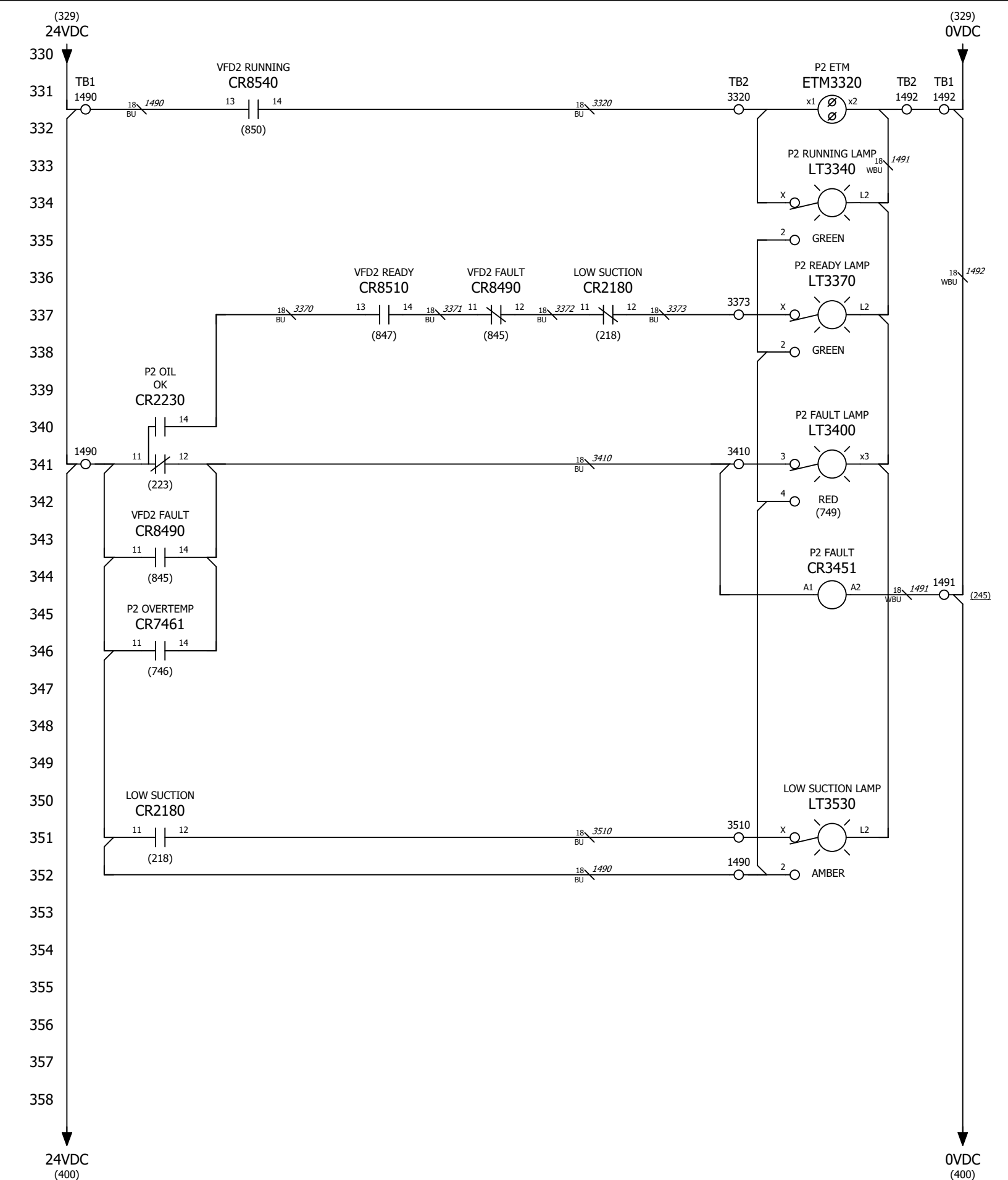
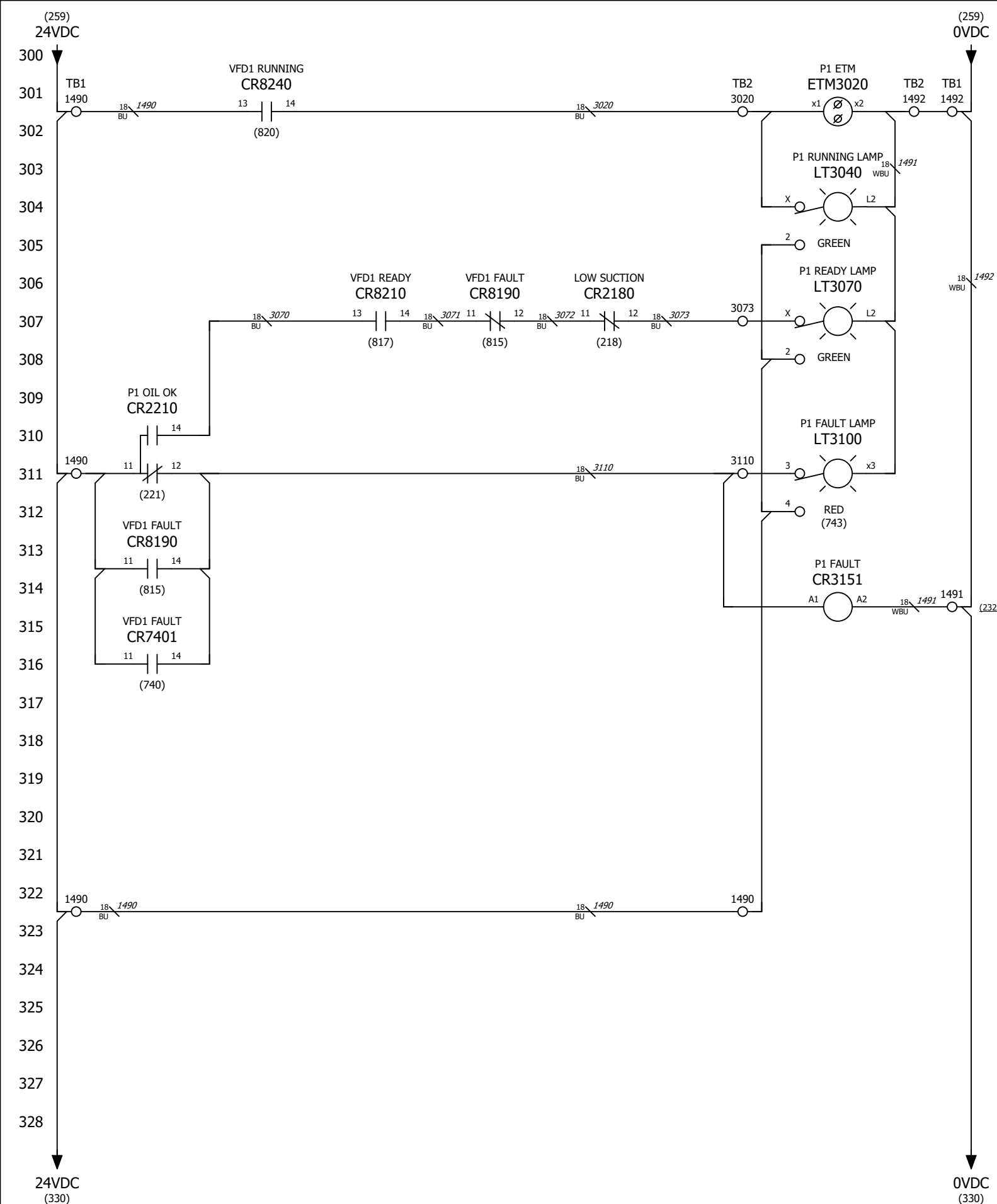
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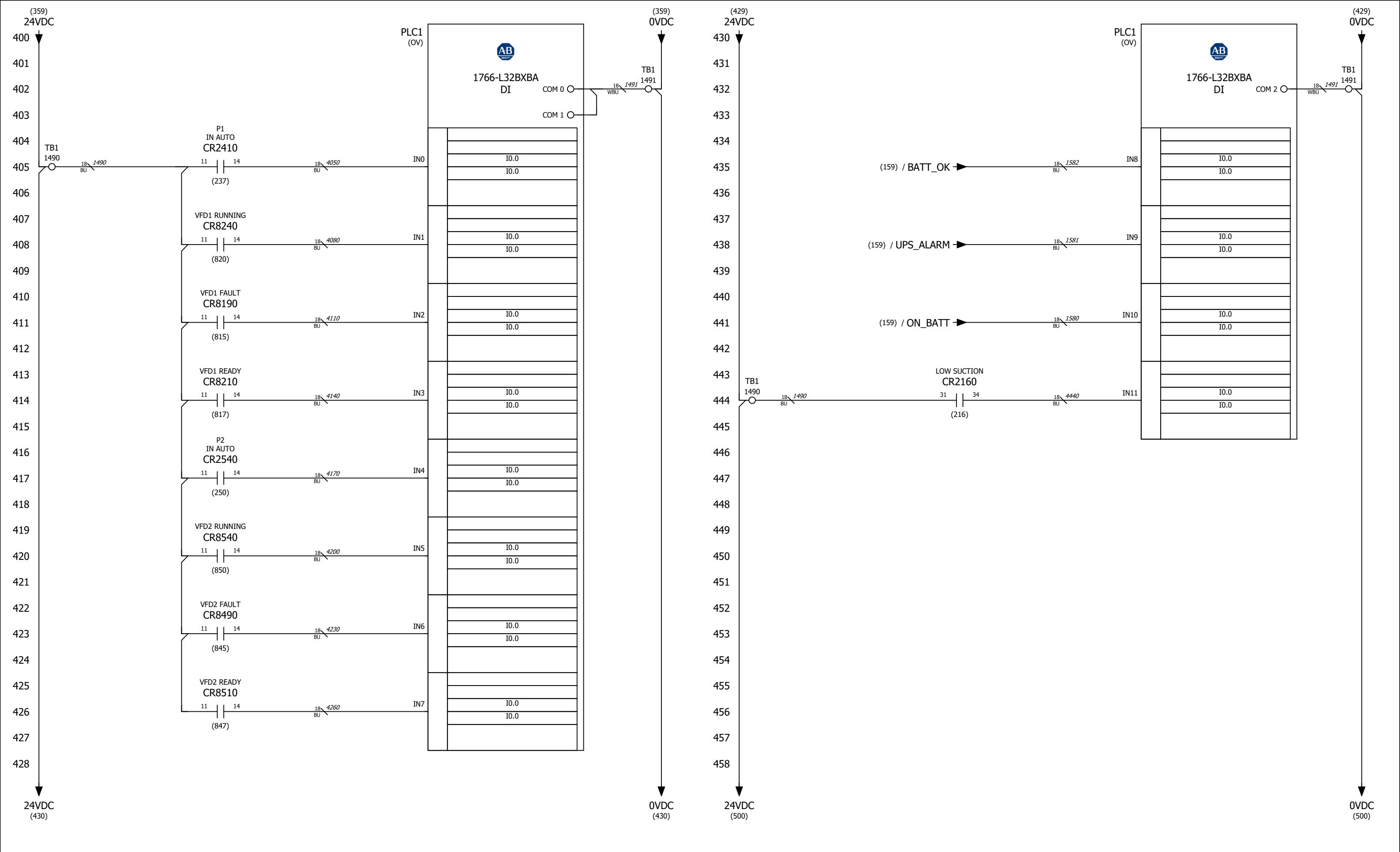
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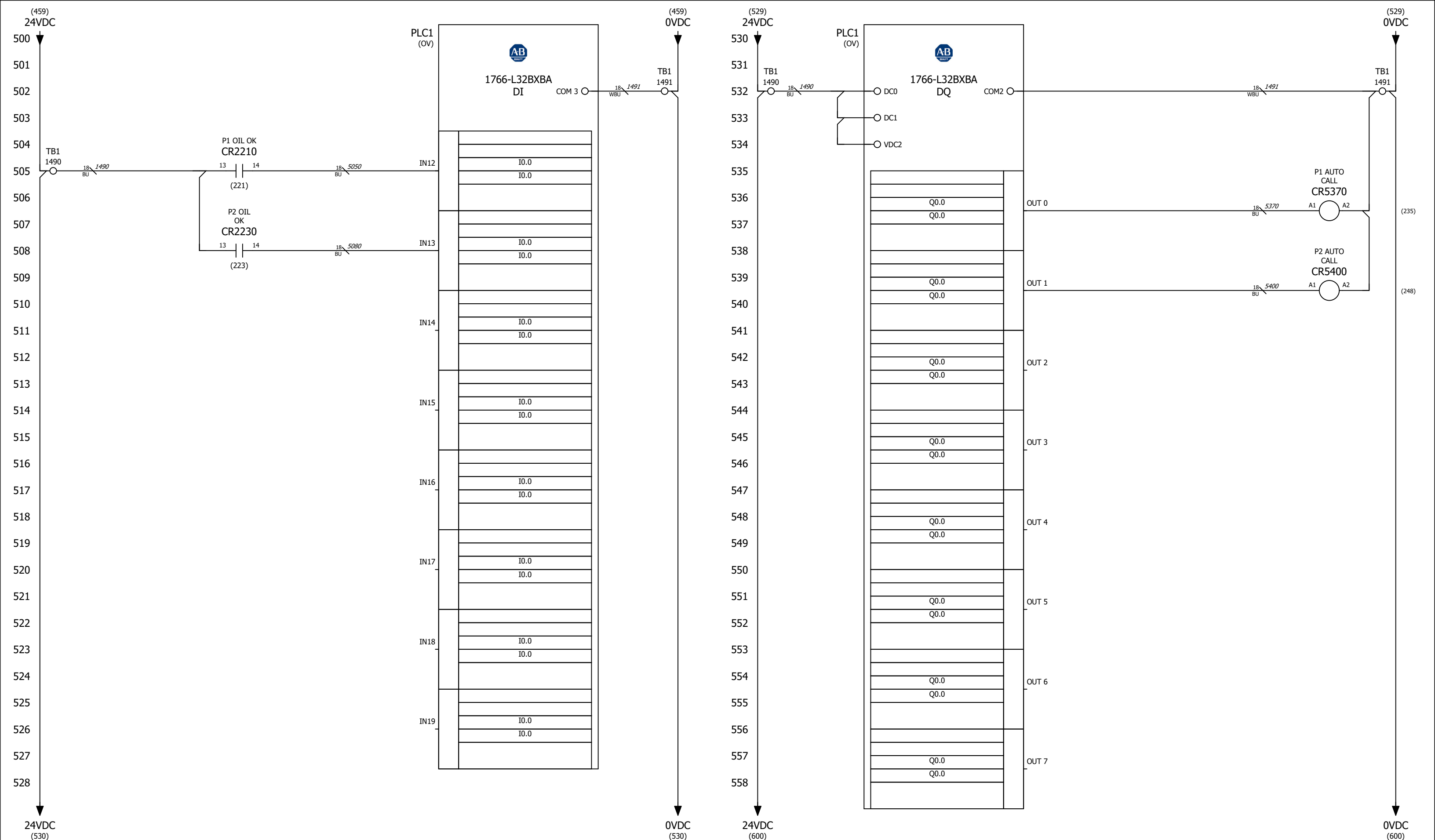
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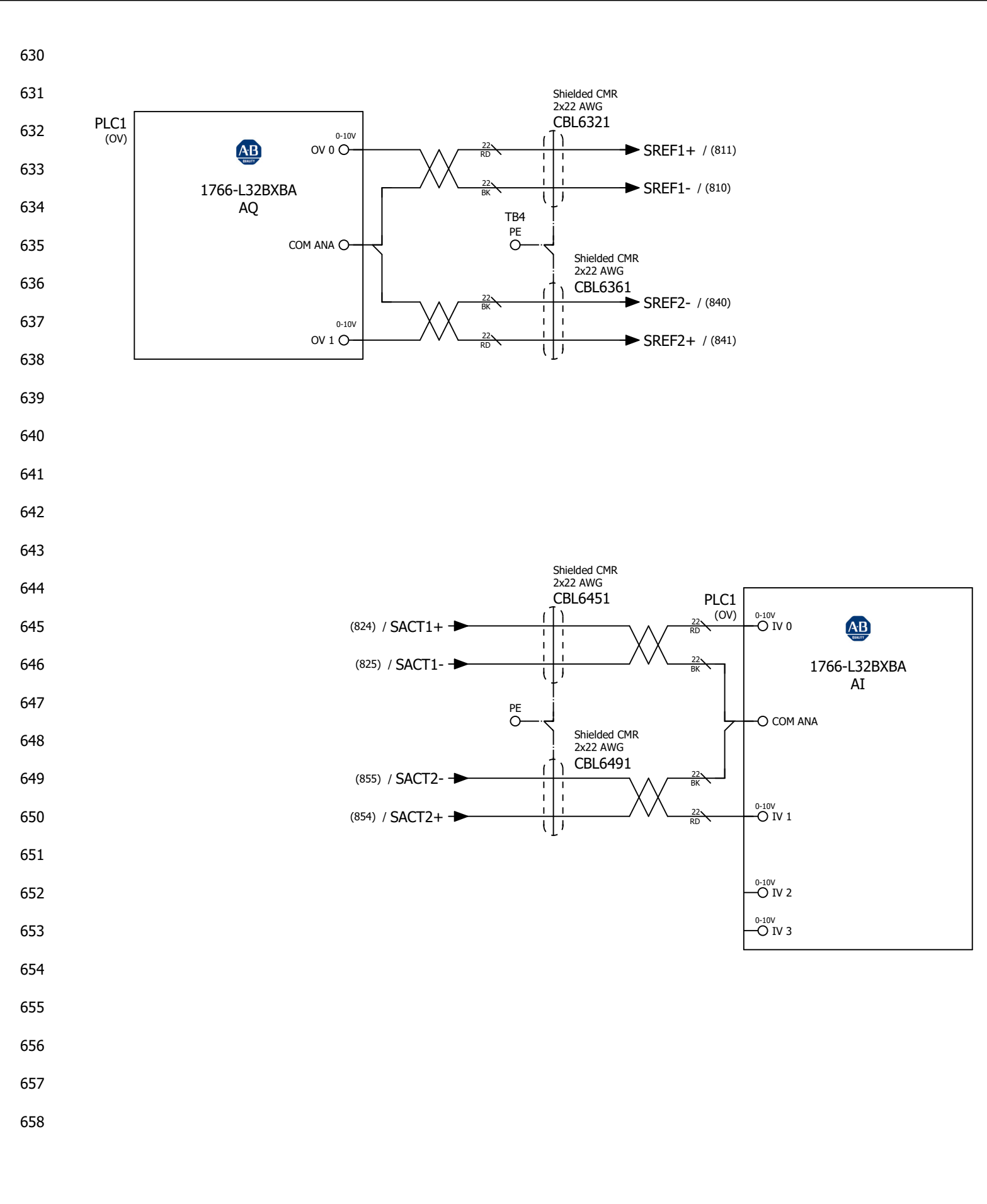
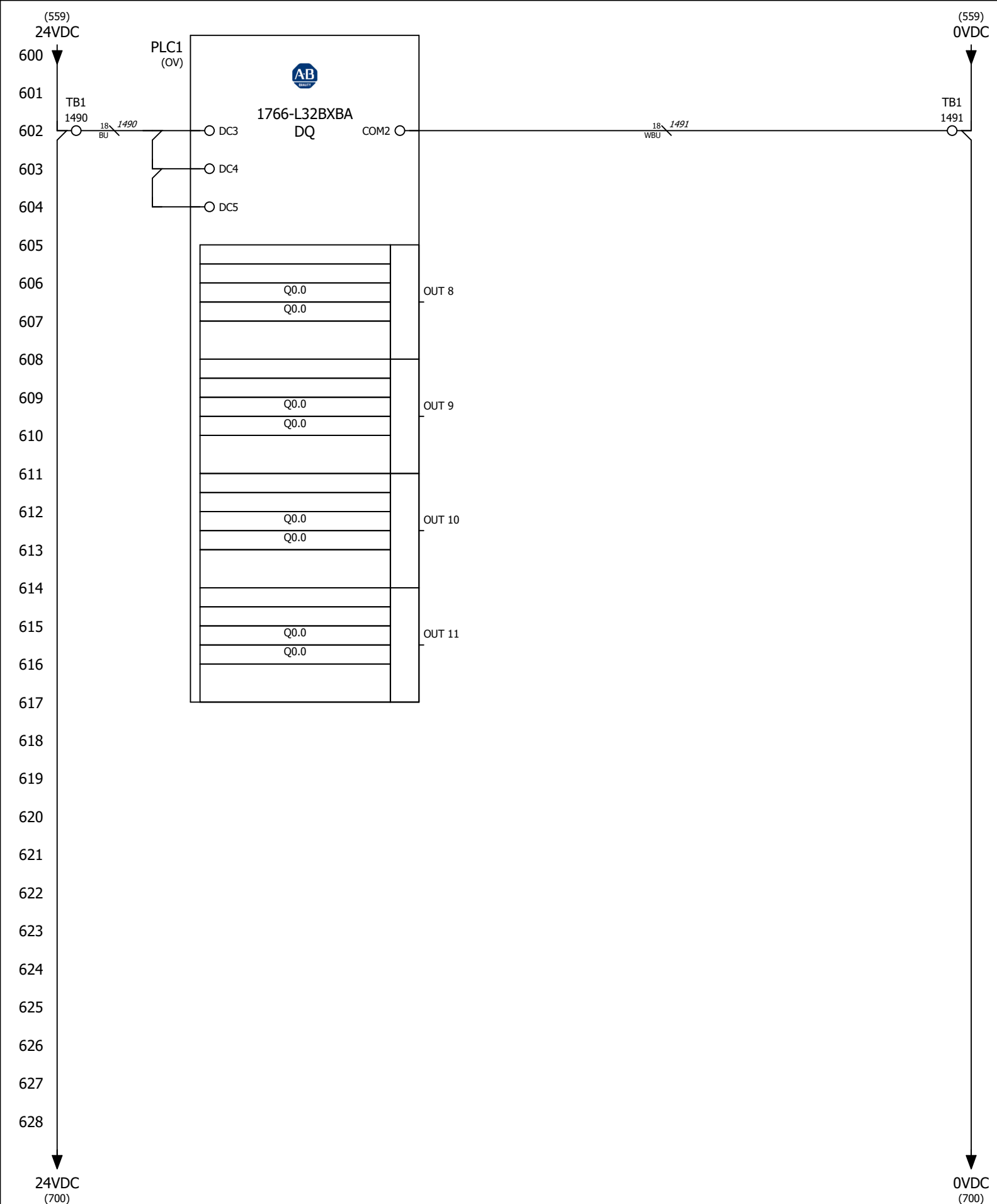
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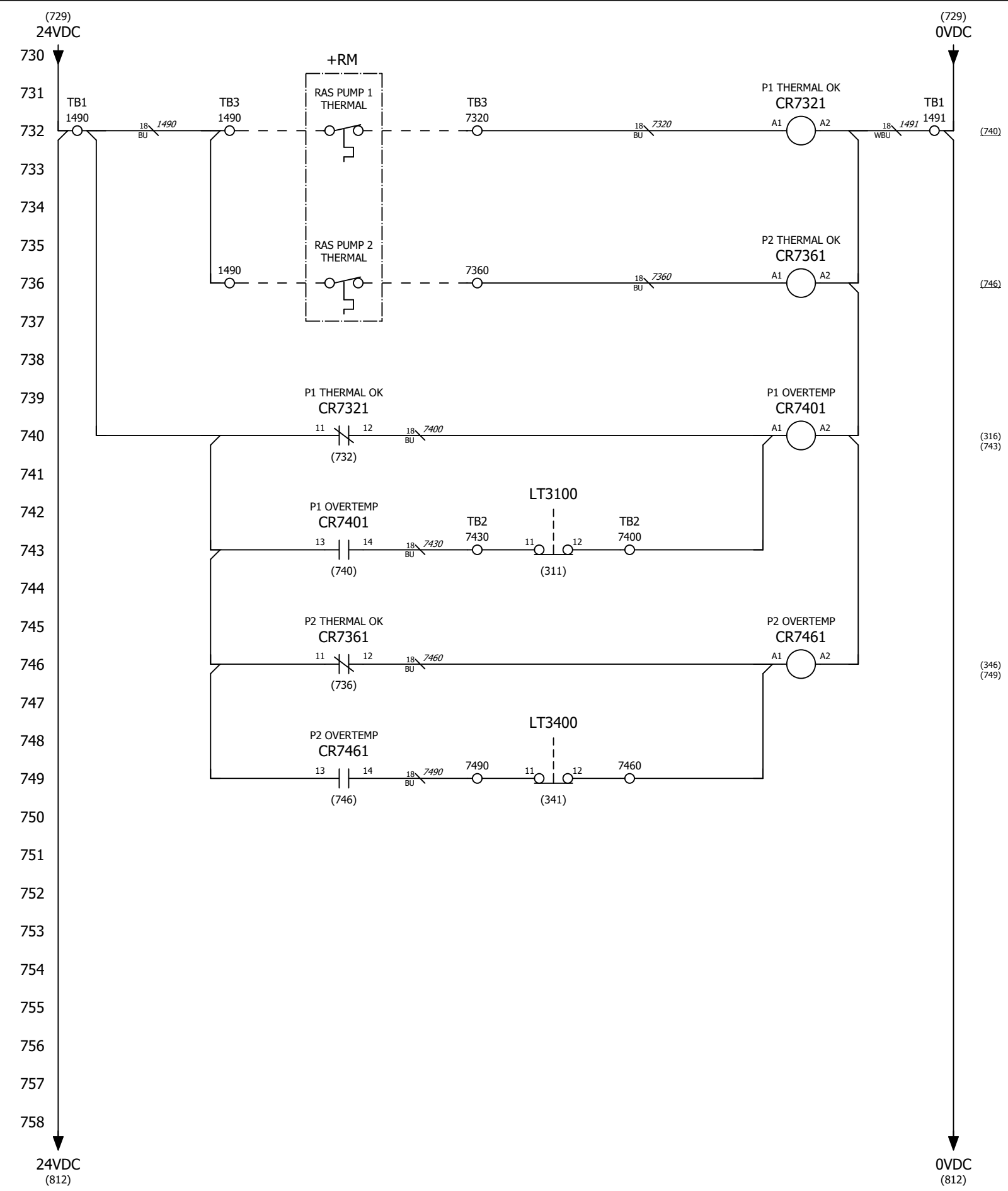
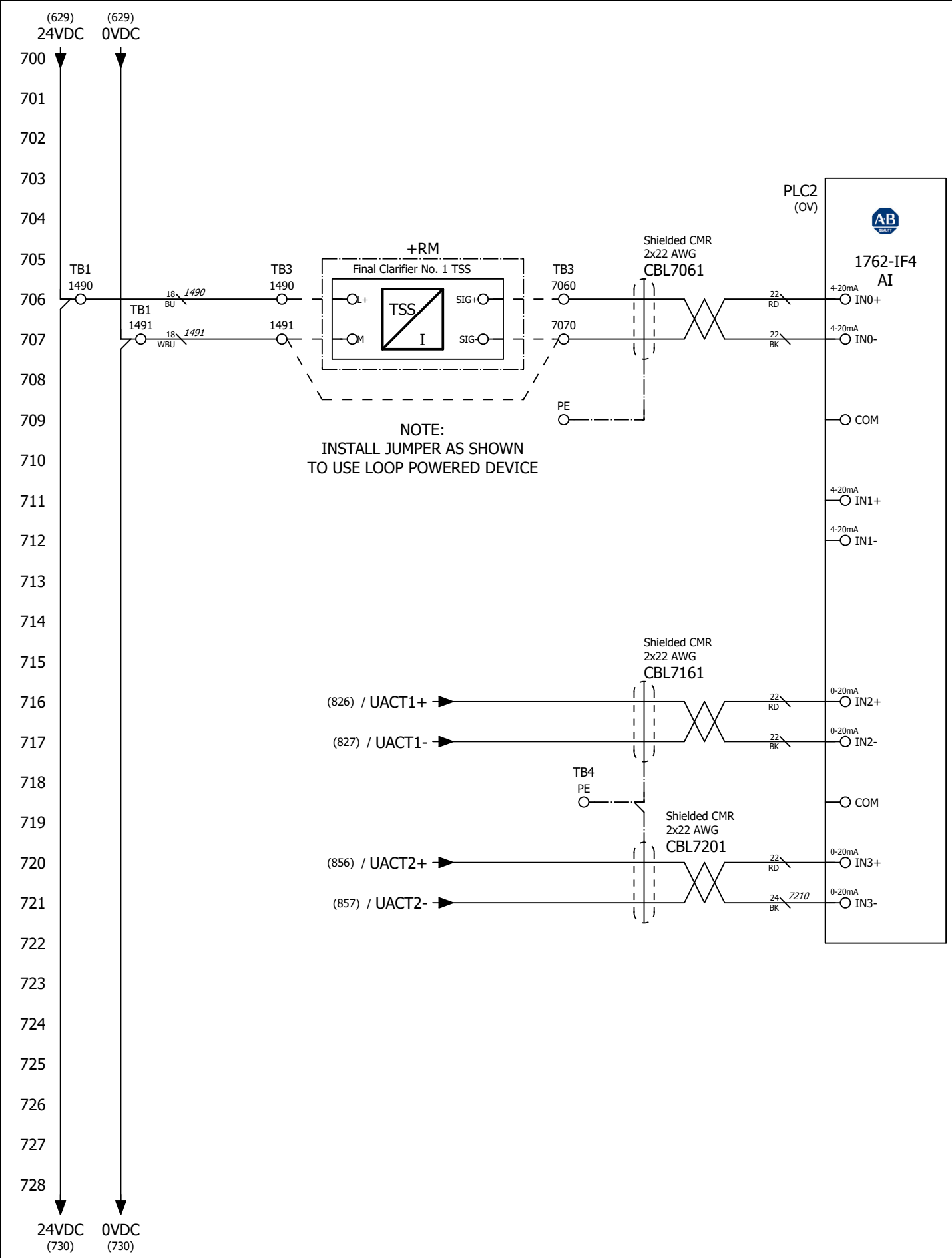
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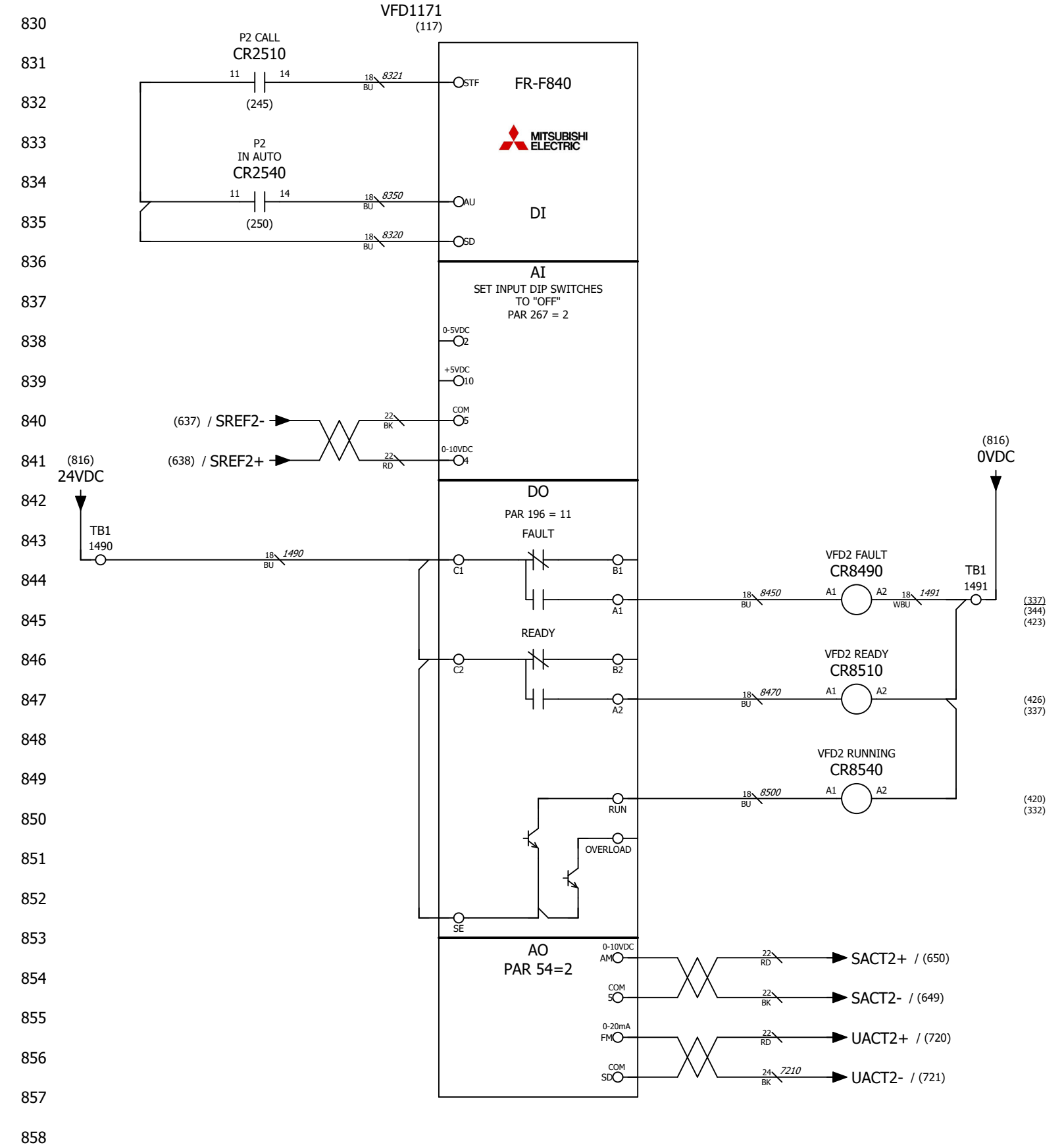
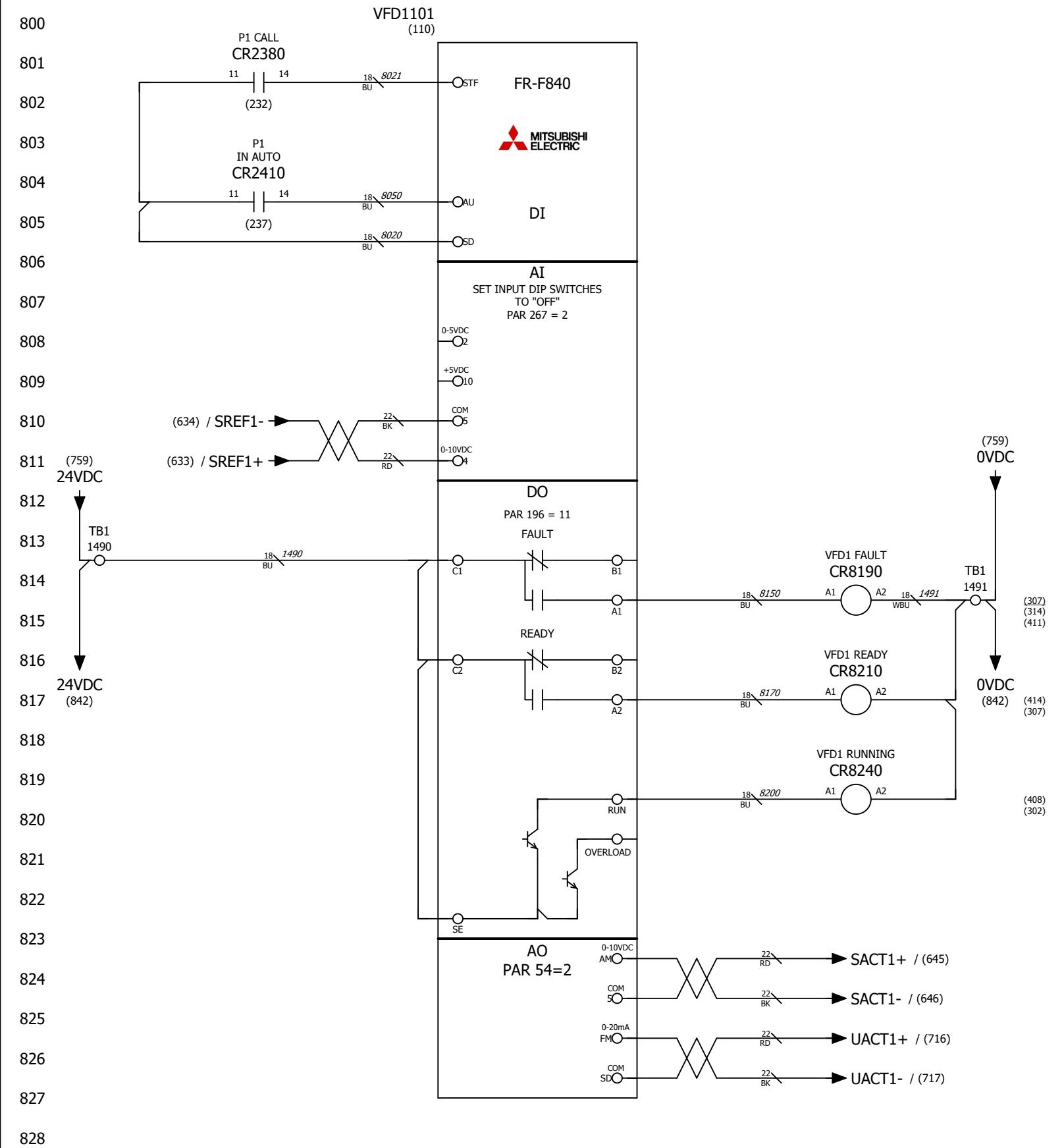
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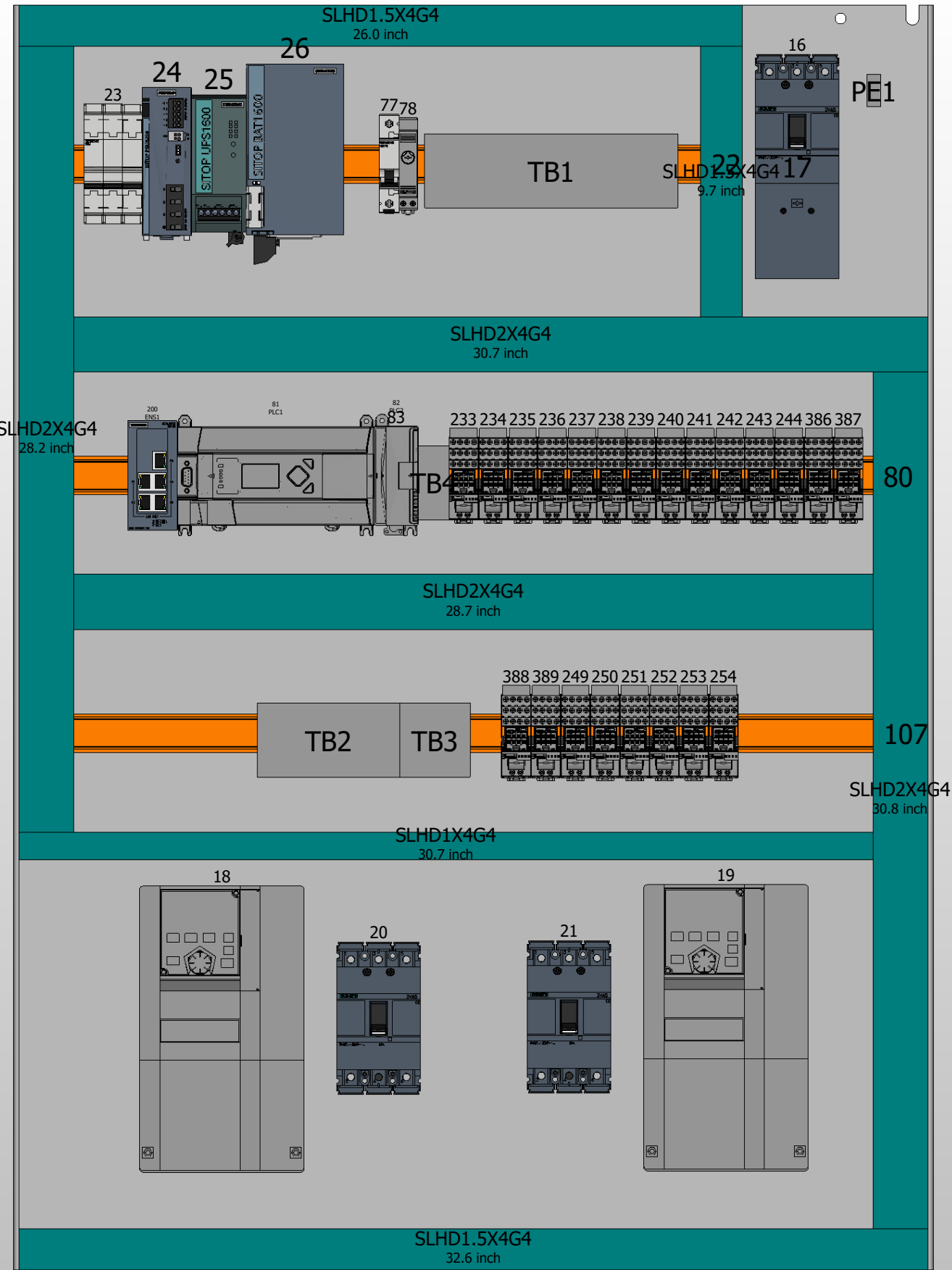
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Location Code +CP
Drawing Number: 12419FC1RASCPPEC

Document Code & EC
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Mounting Panel

Enclosure legend



Item number	Device tag	Type number	Function Text
16	CB1070	3VA5130-4ED31-0AA0	Main Circuit Breaker
17	CB1070	3VA9133-0JF60	Main Circuit Breaker
18	VFD1101	FR-F840-00083-3-N6	VFD 1 CONTROL PANEL
19	VFD1171	FR-F840-00083-3-N6	VFD 2 CONTROL PANEL
20	CB1120	3VA5195-4ED31-0AA0	MCCB_UL_FS125_15A_3P_25KA_TM_FTFM
21	CB1190	3VA5195-4ED31-0AA0	MCCB_UL_FS125_15A_3P_25KA_TM_FTFM
23	CB1310	5SJ4304-7HG42	CIRCUIT BREAKER 10KA, 3POLE, C, 4A
24	T1330	6EP3434-7SB00-3AX0	SITOP PSU6200 3ph 24 V/10 A
25	K1491	6EP4134-3AB00-0AY0	SITOP UPS1600
26	BATT1401	6EP4133-0GA00-0AY0	SITOP BAT1600
77	CB2270	5SY4102-7	CIRCUIT BREAKER 230/400V 10KA, 1-POLE, C, 2A, D=70MM
78	EC2270	7T.81.0.000.2303	Thermostat
81	PLC1	1766	MicroLogix 1400
82	PLC2	1762	MicroLogix 4 Point Analog Input Module
83			
156	=FC1RASCP+CP-TB4	BAZ1	End Stops - 5.2 mm 0.205 in spacing
200	ENS1	6GK5005-0BA00-1AB2	SCALANCE XB005
233	CR2160	58.34.9.24.0050	LOW SUCTION
234	CR2180	58.34.9.24.0050	LOW SUCTION
235	CR2210	58.34.9.24.0050	P1 OIL OK
236	CR2230	58.34.9.24.0050	P2 OIL OK
237	CR2380	58.34.9.24.0050	P1 CALL
238	CR2410	58.34.9.24.0050	P1 IN AUTO
239	CR2510	58.34.9.24.0050	P2 CALL
240	CR2540	58.34.9.24.0050	P2 IN AUTO
241	CR3151	58.34.9.24.0050	P1 FAULT
242	CR3451	58.34.9.24.0050	P2 FAULT
243	CR5370	58.34.9.24.0050	P1 AUTO CALL
244	CR5400	58.34.9.24.0050	P2 AUTO CALL
249	CR8190	58.34.9.24.0050	VFD1 FAULT
250	CR8210	58.34.9.24.0050	VFD1 READY
251	CR8240	58.34.9.24.0050	VFD1 RUNNING
252	CR8490	58.34.9.24.0050	VFD2 FAULT
253	CR8510	58.34.9.24.0050	VFD2 READY
254	CR8540	58.34.9.24.0050	VFD2 RUNNING
386	CR7321	58.34.9.24.0050	P1 THERMAL OK
387	CR7361	58.34.9.24.0050	P2 THERMAL OK
388	CR7401	58.34.9.24.0050	P1 OVERTEMP
389	CR7461	58.34.9.24.0050	P2 OVERTEMP
390	=FC1RASCP+CP-TB1	BAZ1	End Stops - 5.2 mm 0.205 in spacing
435	=FC1RASCP+CP-TB2	BAZ1	End Stops - 5.2 mm 0.205 in spacing
460	=FC1RASCP+CP-TB3	BAZ1	End Stops - 5.2 mm 0.205 in spacing

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Duplex Chopper Pump CP

Customer number
Customer
Templeton

Revision
0.2
SUBMITTAL

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App. 05/25/22	JSD

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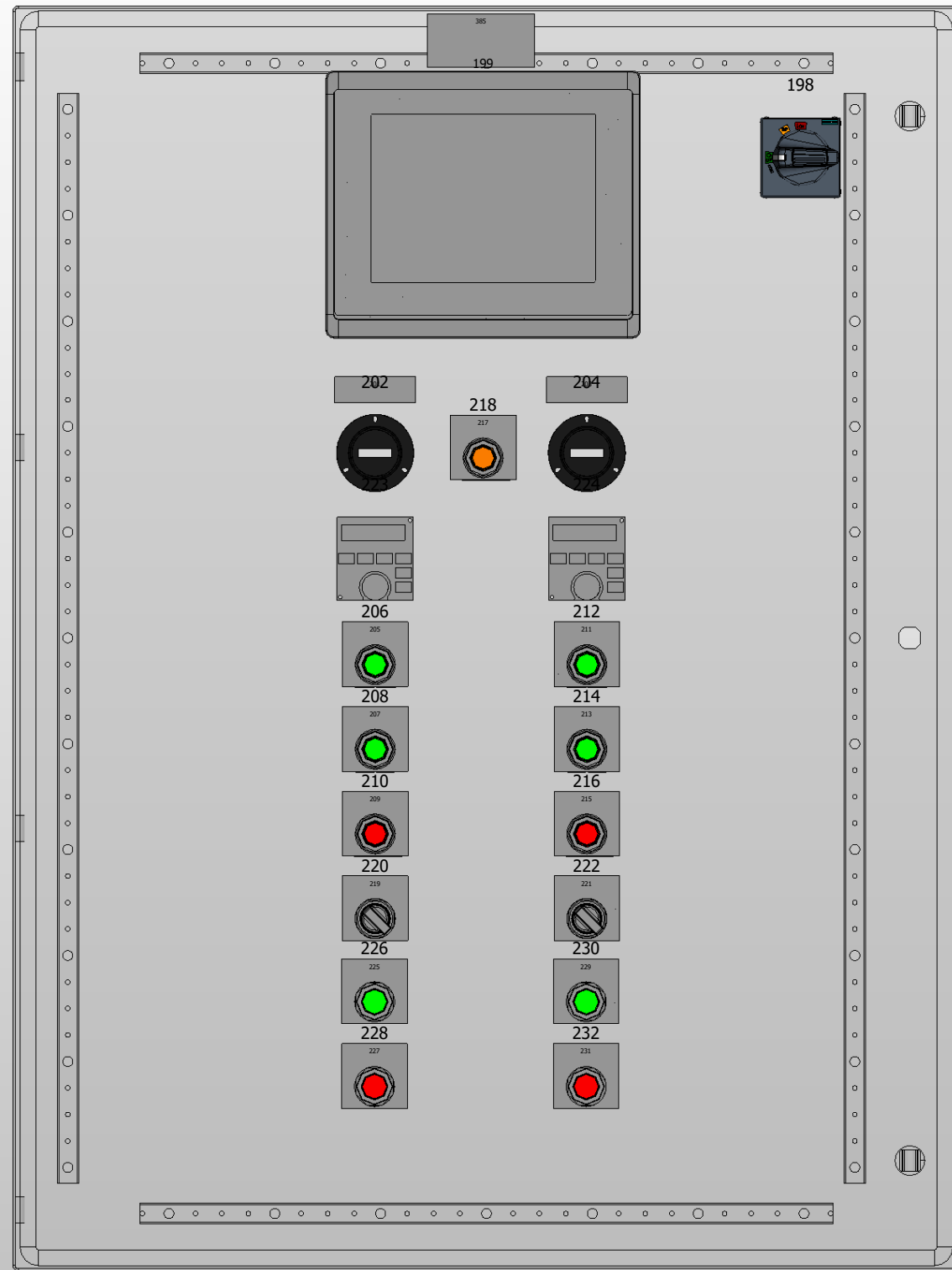
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Location Code
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Drawing Number: 12419FC1RASCPMD

Document Code & MD
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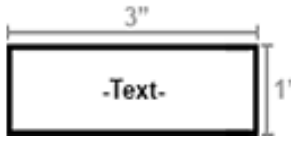
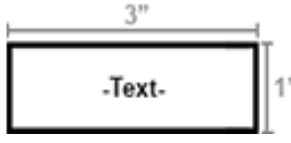
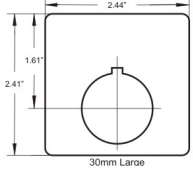
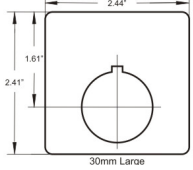
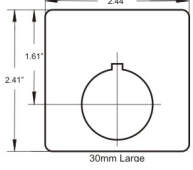
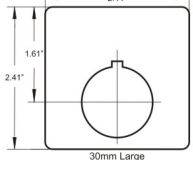
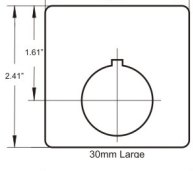
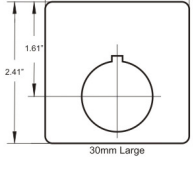
Door Layout

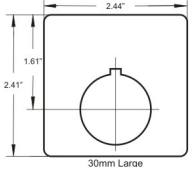
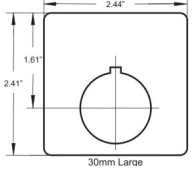
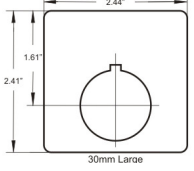
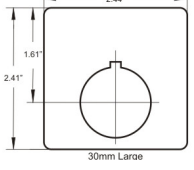
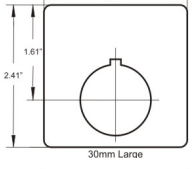
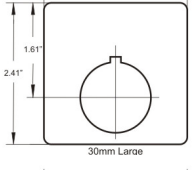
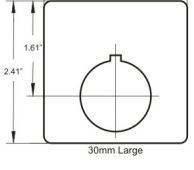


Enclosure legend

Item number	Device tag	Type number	Function Text
198	CB1070	3VA9137-0FK21	Main Circuit Breaker
199	HMI1	2711	PanelView Plus 7 Graphic Terminal
202	ETM3020	732-0001	P1 ETM
204	ETM3320	732-0001	P2 ETM
206	LT3040	52PT6D3AB	P1 RUNNING LAMP
208	LT3070	52PT6D3AB	P1 READY LAMP
210	LT3100	52PT6D2AB	P1 FAULT LAMP
212	LT3340	52PT6D3AB	P2 RUNNING LAMP
214	LT3370	52PT6D3AB	P2 READY LAMP
216	LT3400	52PT6D2AB	P2 FAULT LAMP
218	LT3530	52PT6D9AB	LOW SUCTION LAMP
220	S2320	52SA2BAB	P1 HOA SWITCH
222	S2450	52SA2BAB	P2 HOA SWITCH
223	VFD1101	FR-DU08_PANEL_MOUNT	VFD 1 CONTROL PANEL
224	VFD1171	FR-DU08_PANEL_MOUNT	VFD 2 CONTROL PANEL
226	PB2321	52PA8A3K	P1 START PB
228	PB2320	52PM8A2J	P1 STOP PB
230	PB2451	52PA8A3K	P2 START PB
232	PB2450	52PM8A2J	P2 STOP PB

Device Legends Report

Device tag Function Text Part Number	Engraving Text Material & Color	X-Ref	Legend Size
-ETM3020 P1 ETM ESG.LegendRect1x3	PUMP 1 Phenolic/	(EC302)	
-ETM3320 P2 ETM ESG.LegendRect1x3	PUMP 2 Phenolic/	(EC332)	
-LBL1021 CP LABEL PLATE ESG.LegendRect2x4	Final Clarifier No. 1 RAS Pumps Control Panel Phenolic/	(EC102)	
-LT3040 P1 RUNNING LAMP ESG.Legend30mm	RUNNING Phenolic/	(EC304)	
-LT3070 P1 READY LAMP ESG.Legend30mm	READY Phenolic/	(EC307)	
-LT3100 P1 FAULT LAMP ESG.Legend30mm	FAULT PUSH TO RESET Phenolic/	(EC311)	
-LT3340 P2 RUNNING LAMP ESG.Legend30mm	RUNNING Phenolic/	(EC334)	
-LT3370 P2 READY LAMP ESG.Legend30mm	READY Phenolic/	(EC337)	
-LT3400 P2 FAULT LAMP ESG.Legend30mm	FAULT PUSH TO RESET Phenolic/	(EC341)	

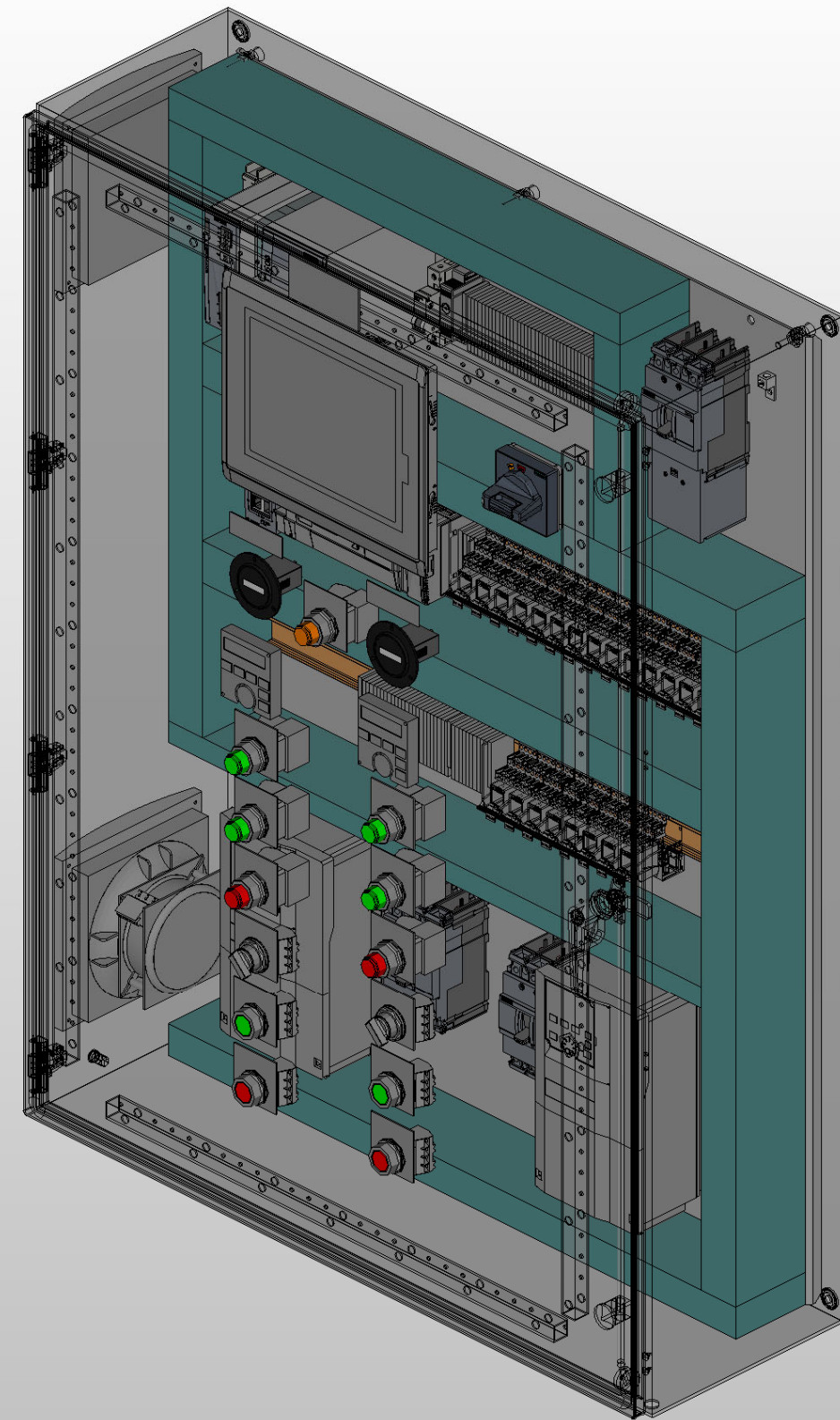
Device tag Function Text Part Number	Engraving Text Material & Color	X-Ref	Legend Size
-LT3530 LOW SUCTION LAMP ESG.Legend30mm	LOW SUCTION Phenolic/	(EC351)	
-PB2320 P1 STOP PB ESG.Legend30mm	STOP Phenolic/	(EC232)	
-PB2321 P1 START PB ESG.Legend30mm	START Phenolic/	(EC232)	
-PB2450 P2 STOP PB ESG.Legend30mm	STOP Phenolic/	(EC245)	
-PB2451 P2 START PB ESG.Legend30mm	START Phenolic/	(EC245)	
-S2320 P1 HOA SWITCH ESG.Legend30mm	HAND OFF AUTO Phenolic/	(EC232)	
-S2450 P2 HOA SWITCH ESG.Legend30mm	HAND OFF AUTO Phenolic/	(EC245)	

Control Panel (ISO SE)

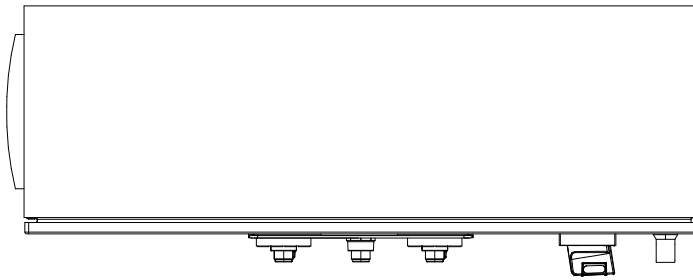
Control Panel Data	
Identifier:	FC2RASCP
Description:	DUPLEX CHOPPER PUMP CP
Project #:	12419
Supply Voltage:	480VAC
Phase:	3Ø
Frequency:	60Hz
Total FLA:	15.6A
FLA of Largest Motor:	7.6A
Number of Motors:	2
Short Circuit Current Rating:	5kAIC
Enclosure Rating:	12



UL508A for Industrial Control Panel
File# -E345960

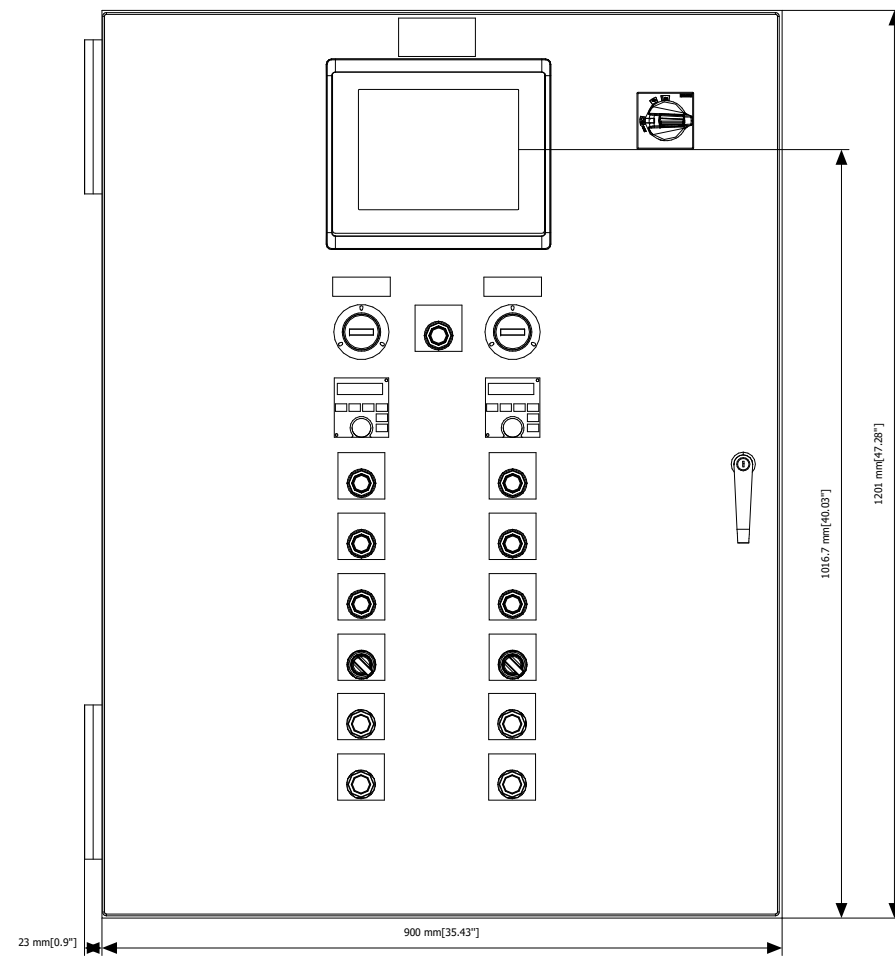


Top View

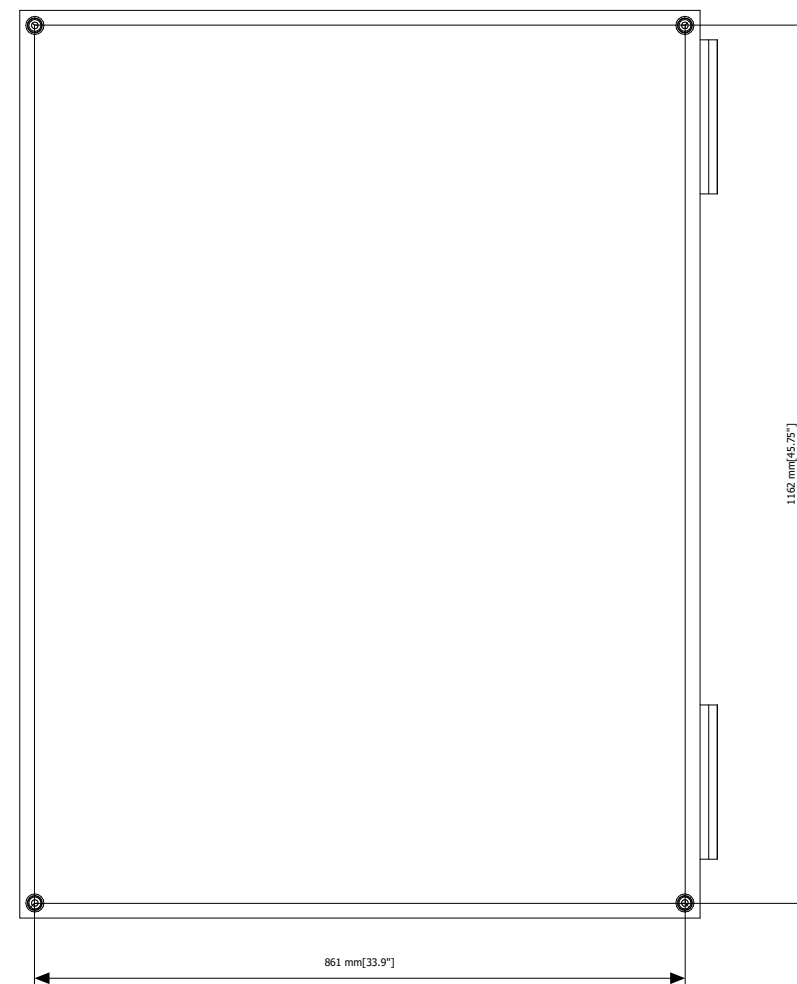


RITTAL 8017588, 36"x48"x12"
 Housing: CARBON STEEL, RAL 7035 POWDER COAT
 Door: CARBON STEEL, RAL 7035 POWDER COAT
 Mounting plate finish: CARBON STEEL, ZINC PLATED
 Protection category: UL Type 12

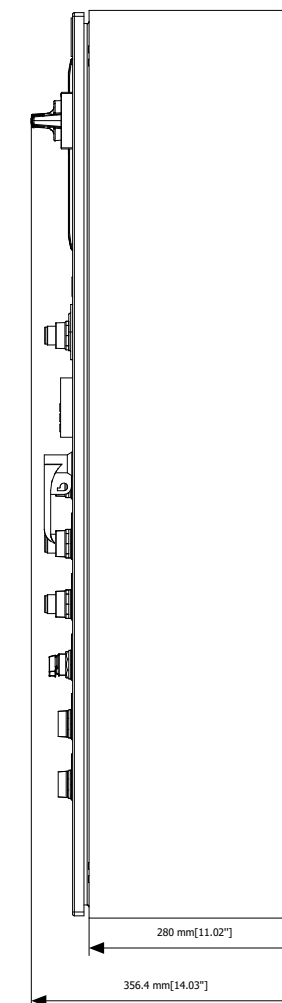
Front View



Rear View



Right Side View

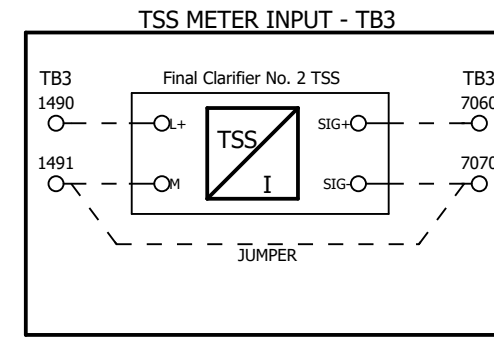
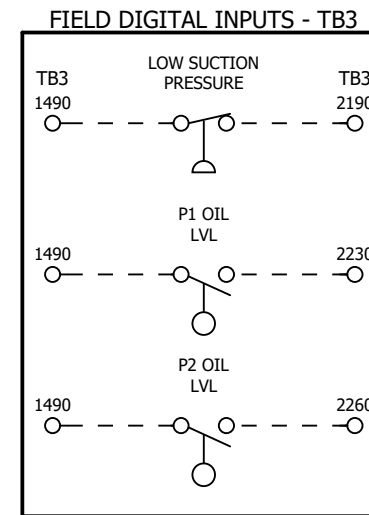
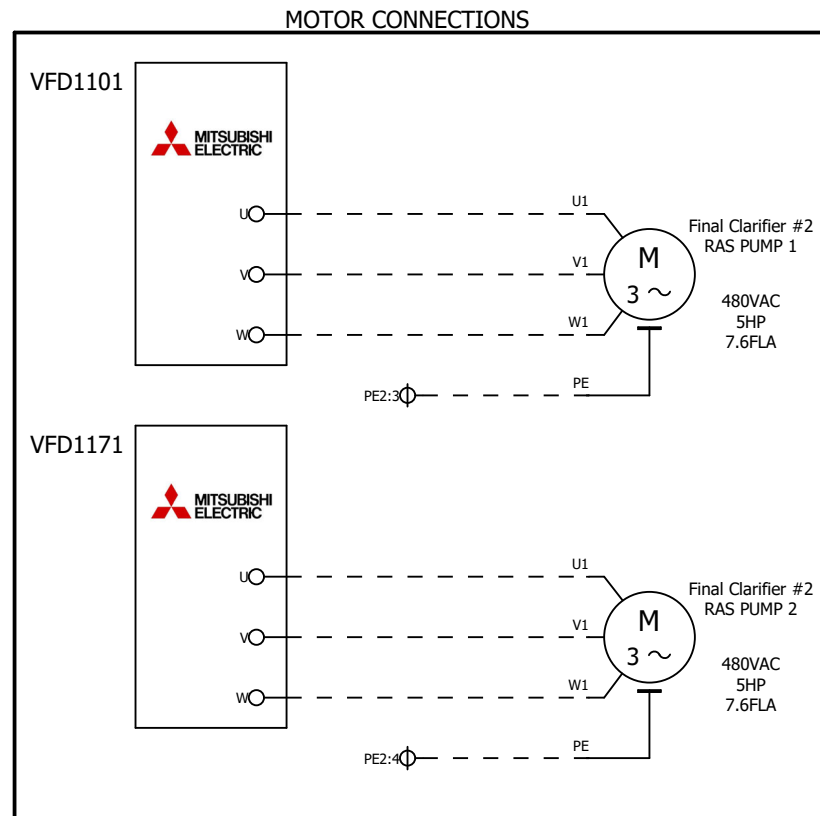
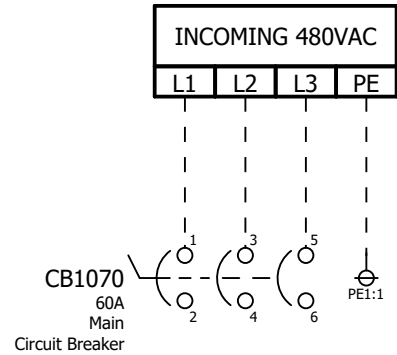


480 Power Feed Terminals		
Terminal	Range	Tightening Torque
CB1070 1,3,5	#8-10AWG	45 in-lb
PE	#8-10 AWG	35 in-lb

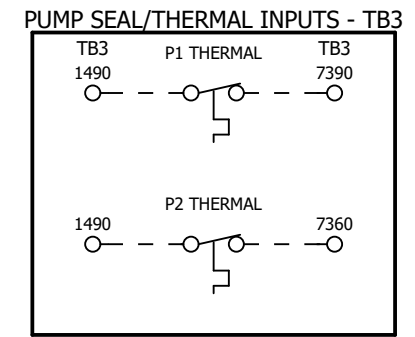
Motor Connections		
Terminal	Range	Tightening Torque
VFD1101, VFD1171 U, V, W	#10-14 AWG	13 in-lb
Ground	#10-14 AWG	35 in-lb

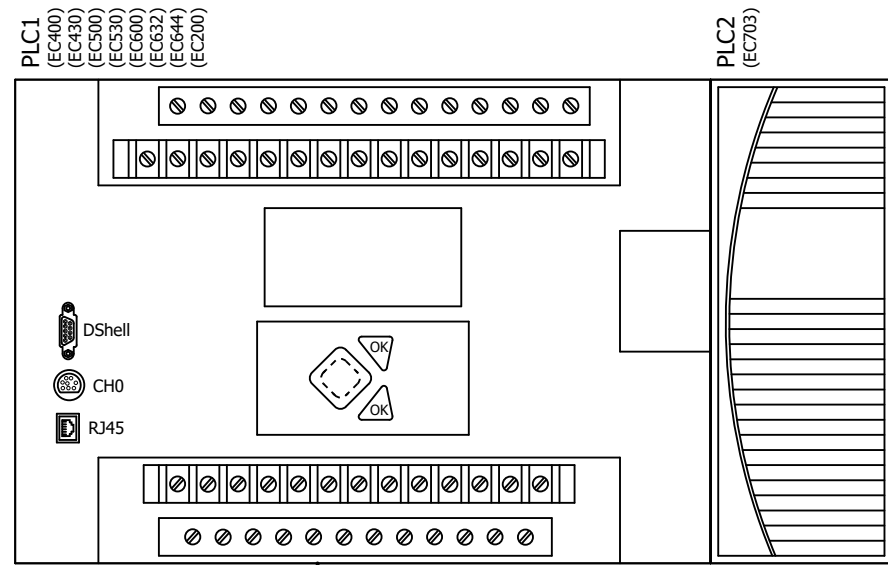
Note:
 Use Copper Conductors Only for all connections
 Use wires rated minimum 75°C for all power connections
 Use wires rated minimum 60°C for all control connections

Control Contacts
 Pilot Duty Rated Only
 250 VAC, 30 VDC-6A Max. Load



NOTE:
 INSTALL JUMPER AS SHOWN
 TO USE LOOP POWERED DEVICE

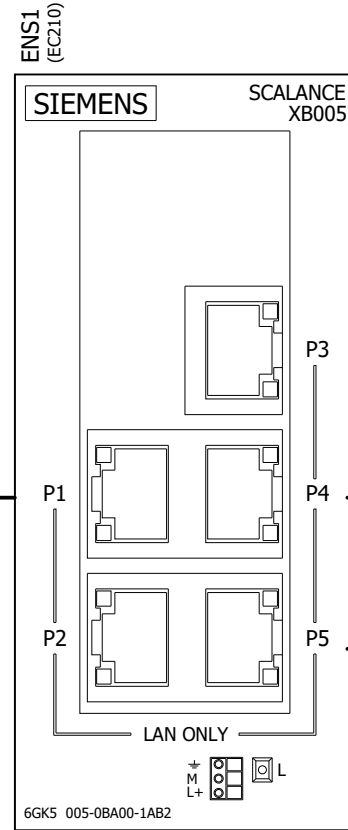




1766-L32BXBA
 MicroLogix 1400
192.168.80.1

1762-IF4
 MicroLogix 4 Point Analog Input Module

CAT6A
 CBL1



6GK5005-0BA00-1AB2
 SCALANCE XB005

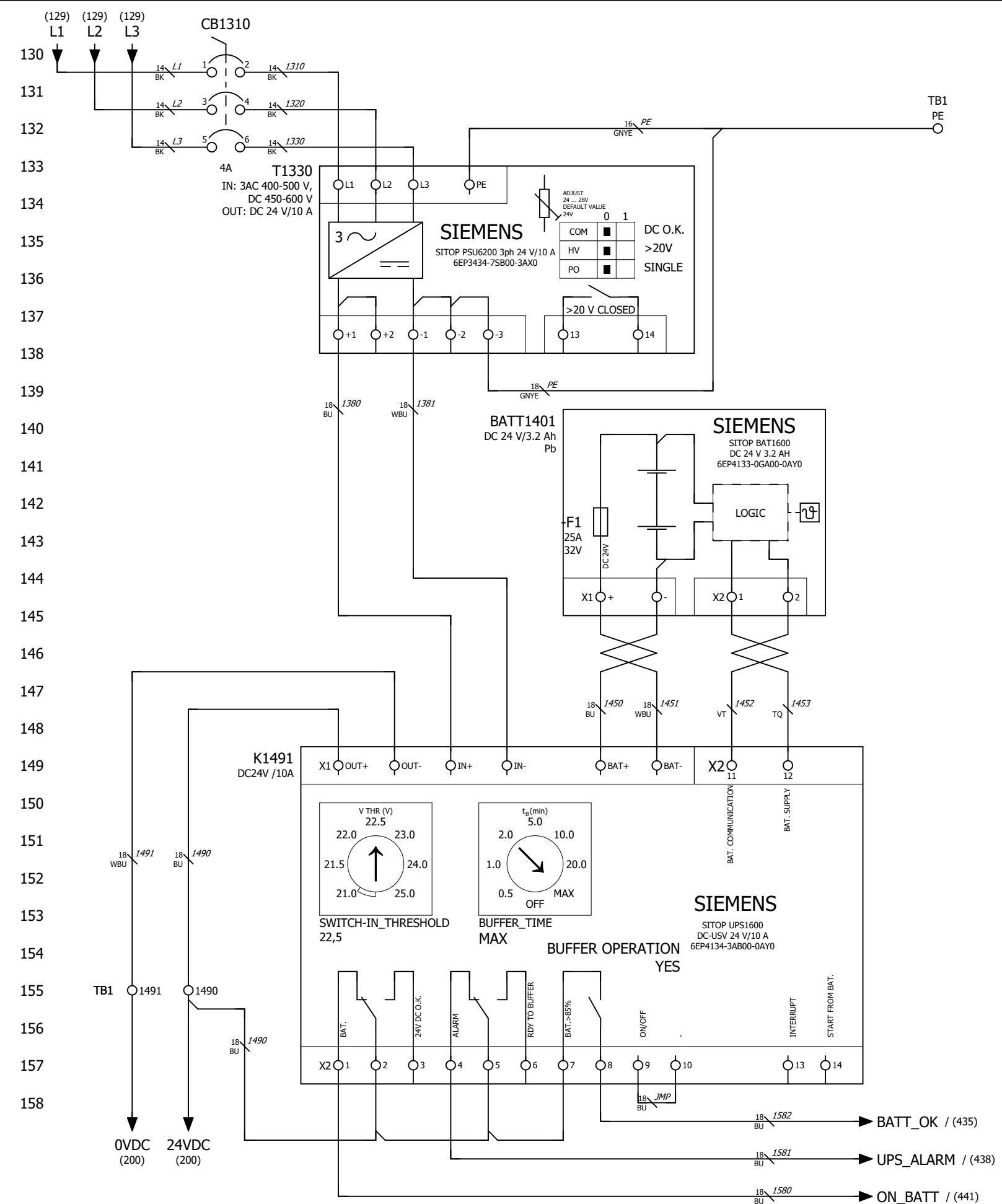
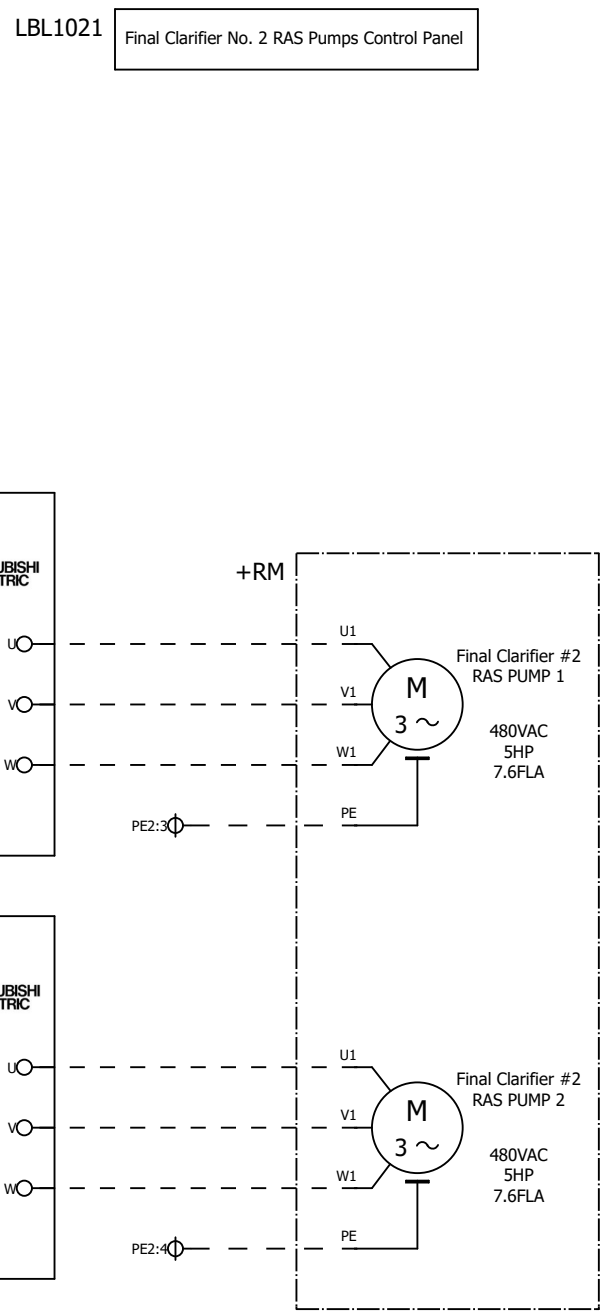
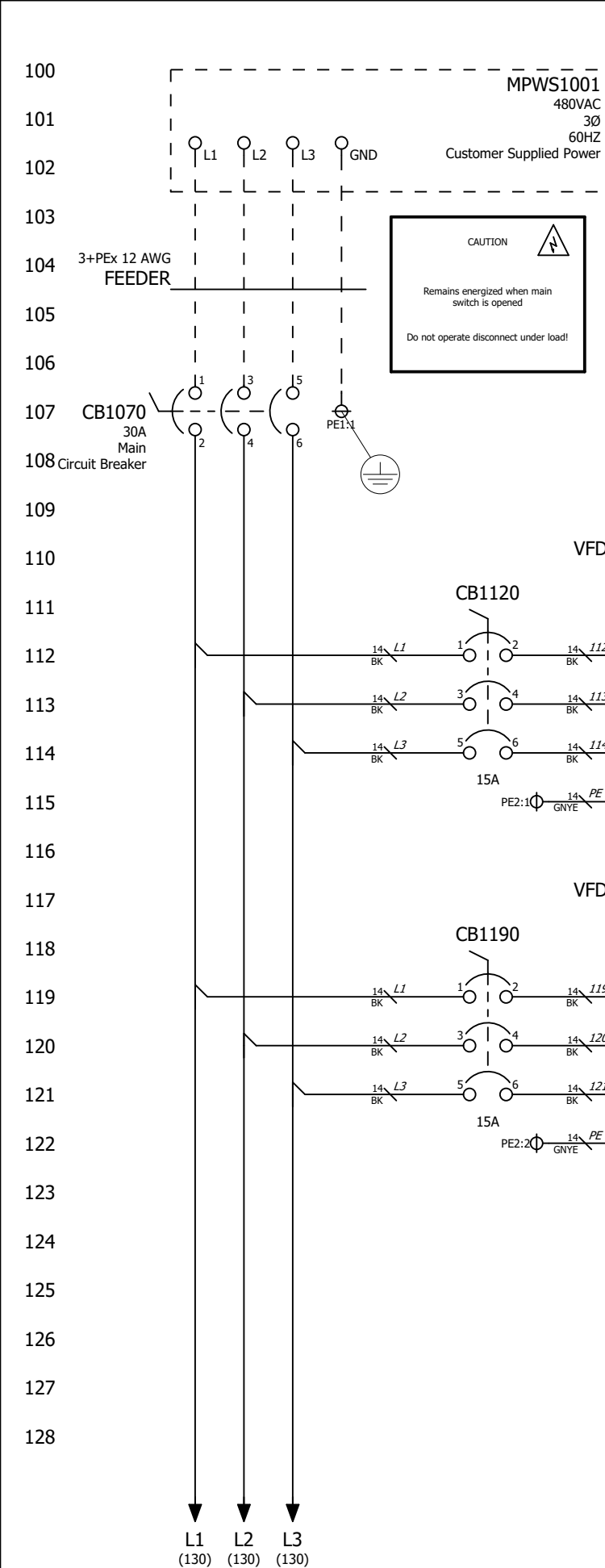
HMI1 (EC205)



2711P-T10C22D9P
 PanelView Plus 7 Graphic Terminal
192.168.80.2

CAT6
 CBL2

SITE NETWORK



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Project # 12419
Duplex Chopper Pump CP

Customer number
Customer
Templeton

Revision
0.2
SUBMITTAL

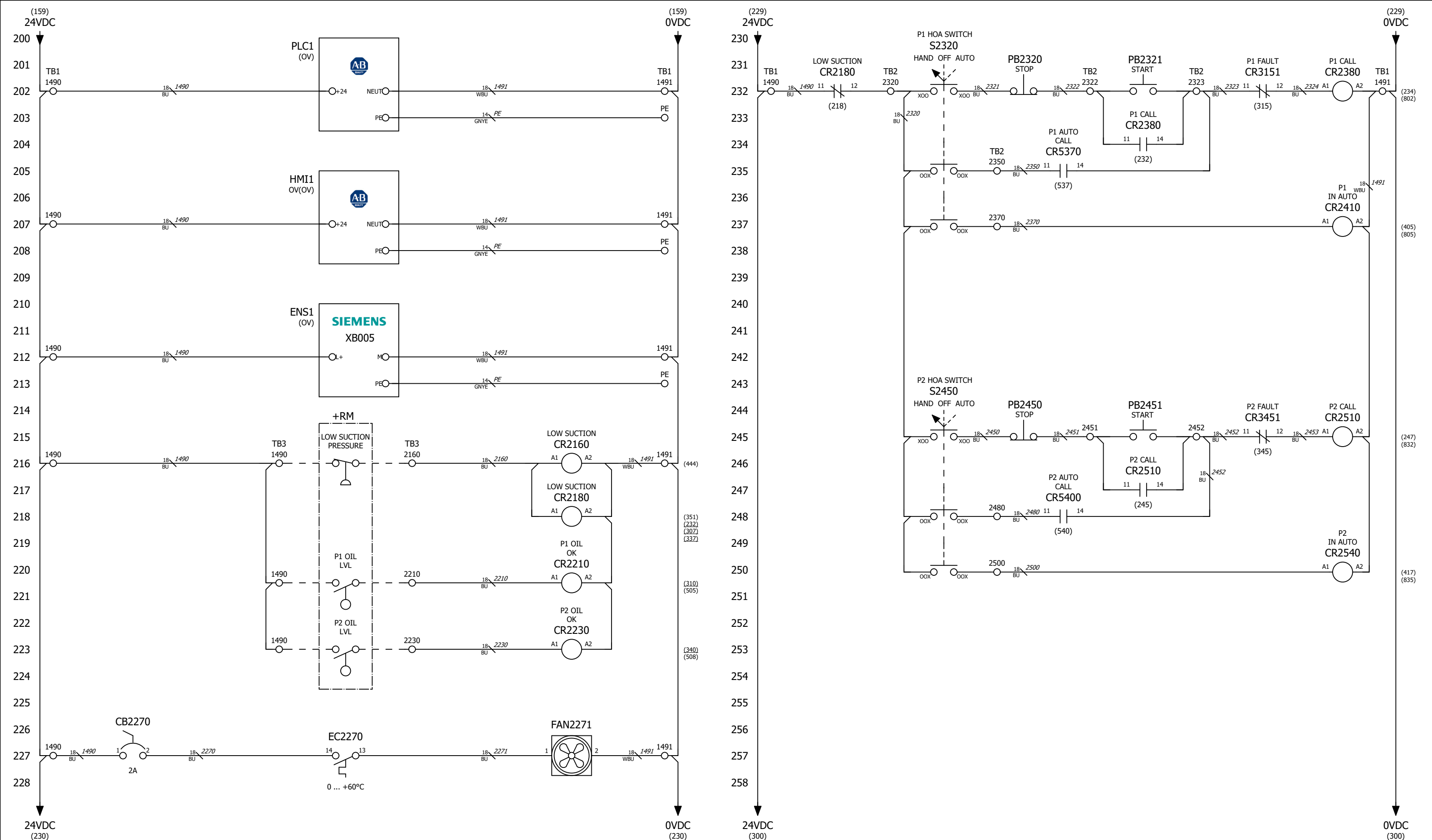
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Edited 08/24/22	akaduck
App. 05/25/22	JSD

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4485 Commerce Dr, Suite 107
Buford, GA 30518
+1-678-765-0985

Page Description
DUPLIX CHOPPER PUMP CP
Control Panel
Wiring Schematics

Function Code =FC2RASCPC
Location Code +CP
Drawing Number: 12419FC2RASCPCPEC

Document Code & EC
Page 1 / 8



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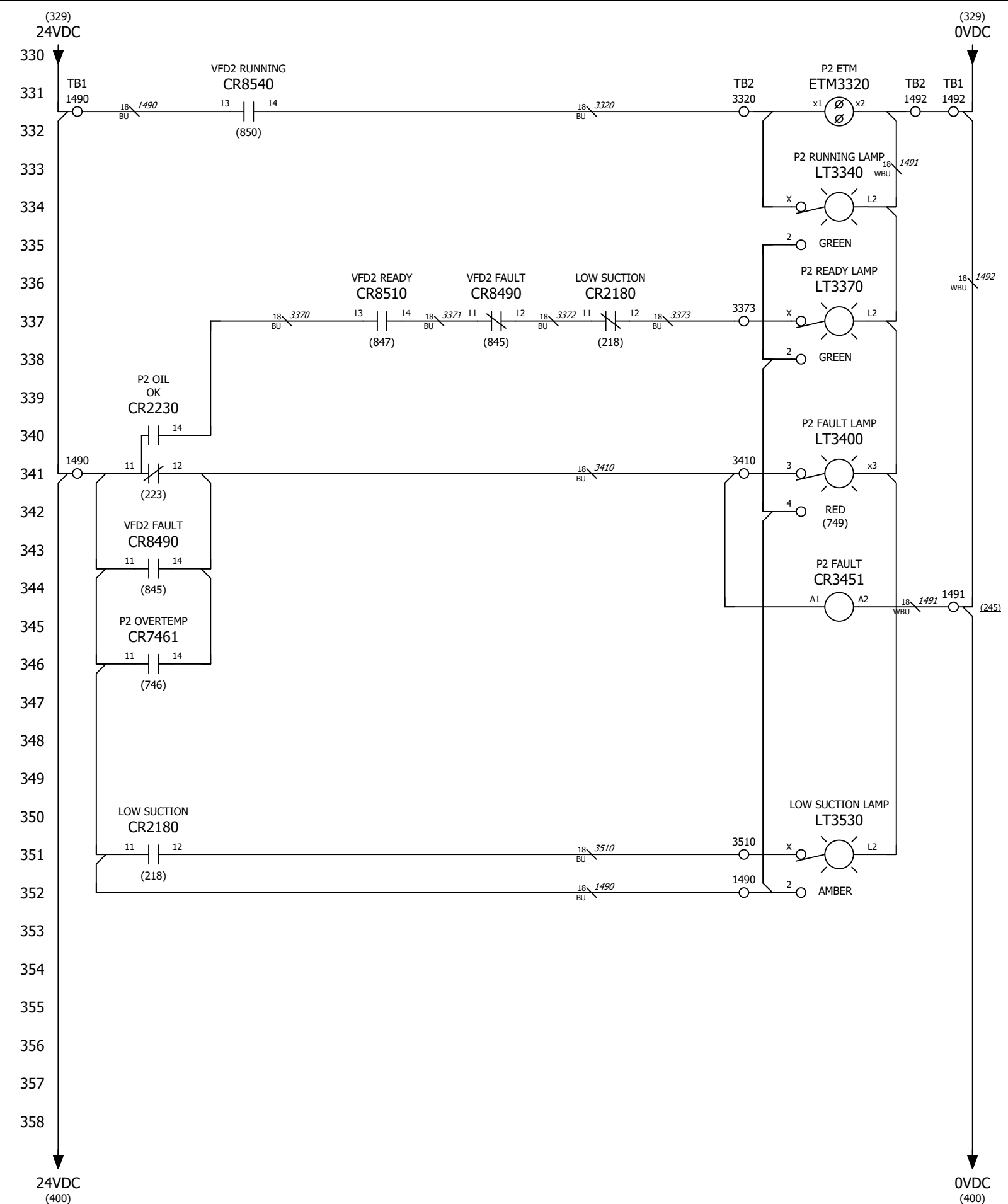
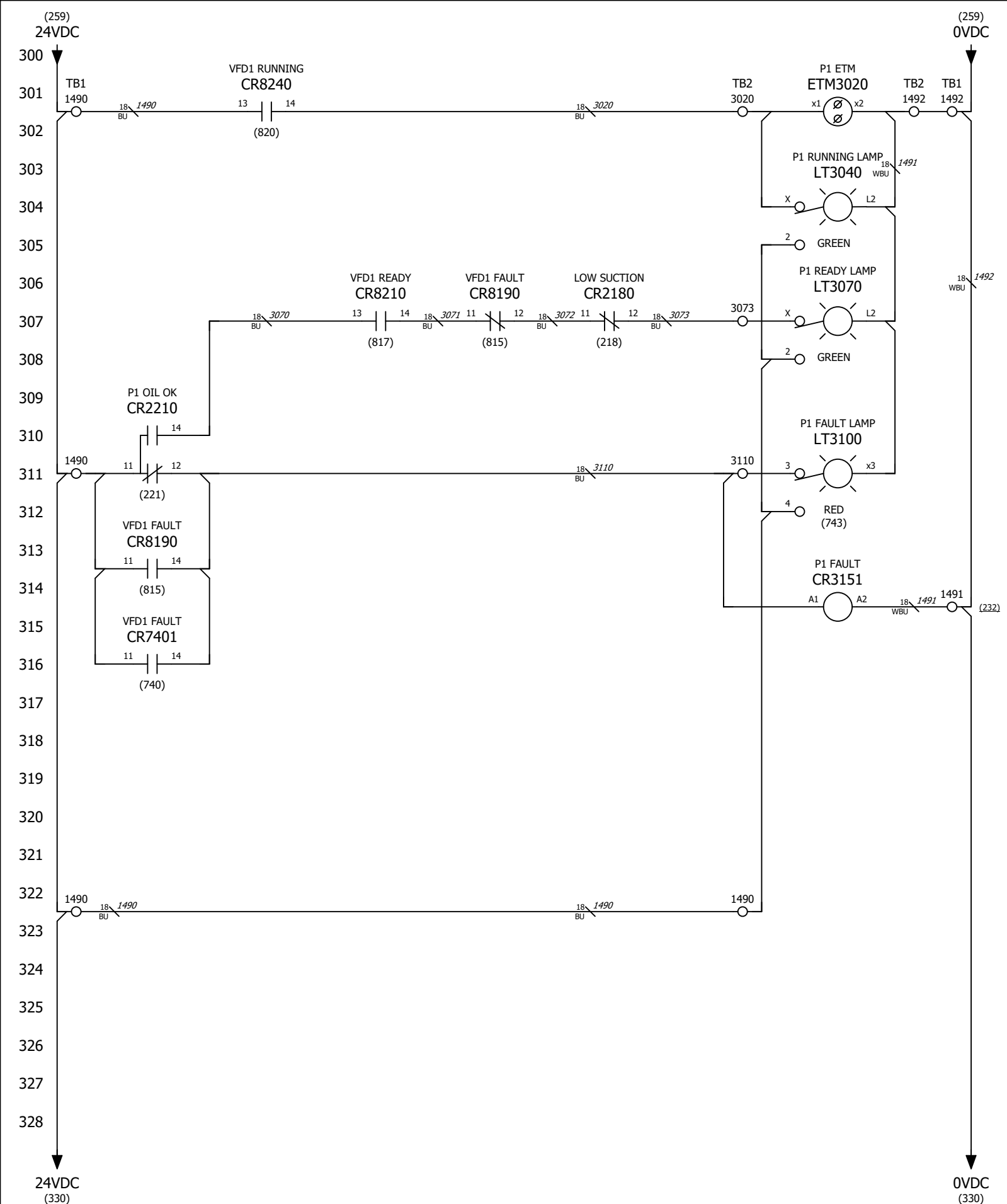
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Edited 08/24/22	akaduck
App. 05/25/22	JSD

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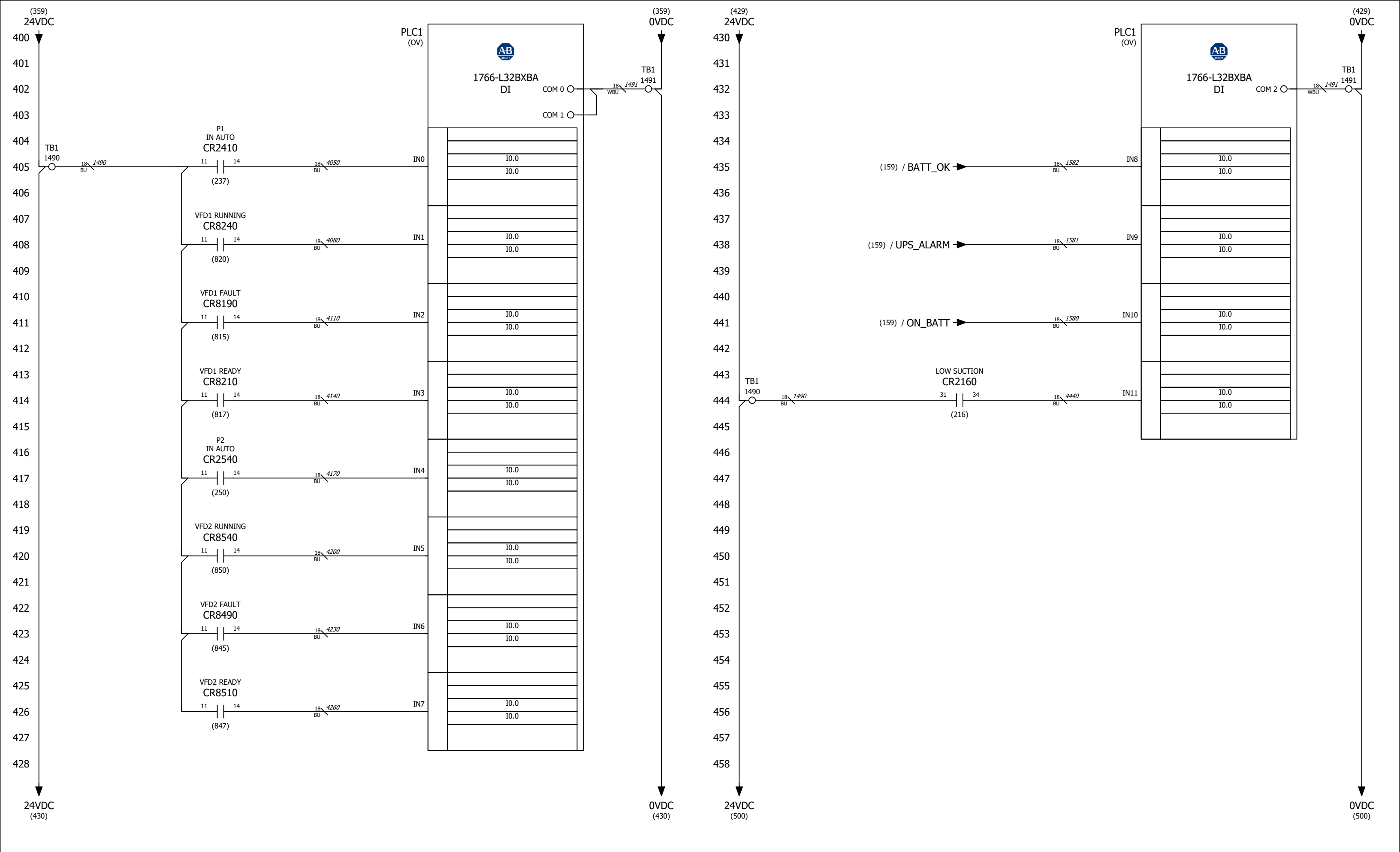
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akaduck	08/24/22	
JSD	05/25/22	

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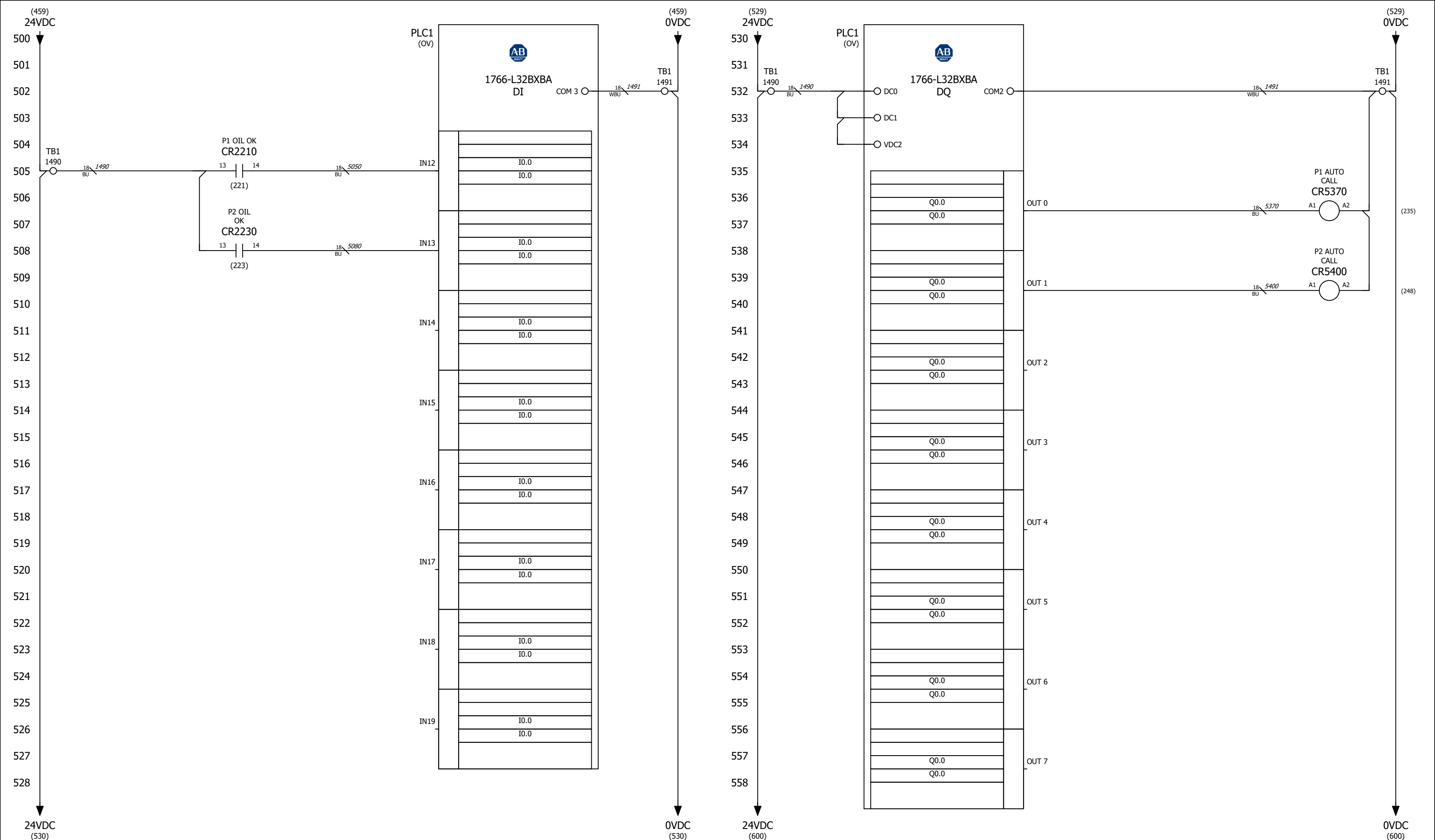


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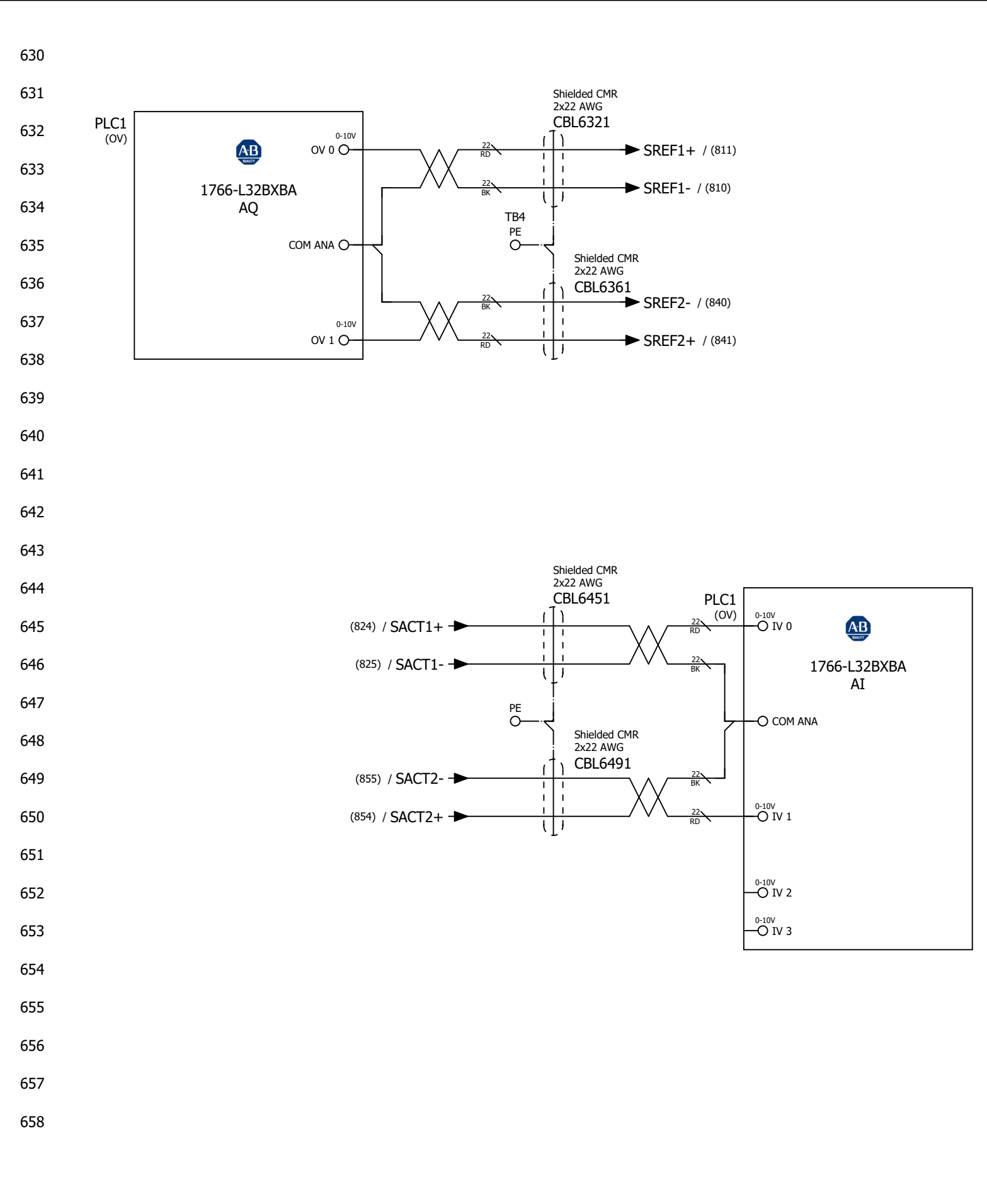
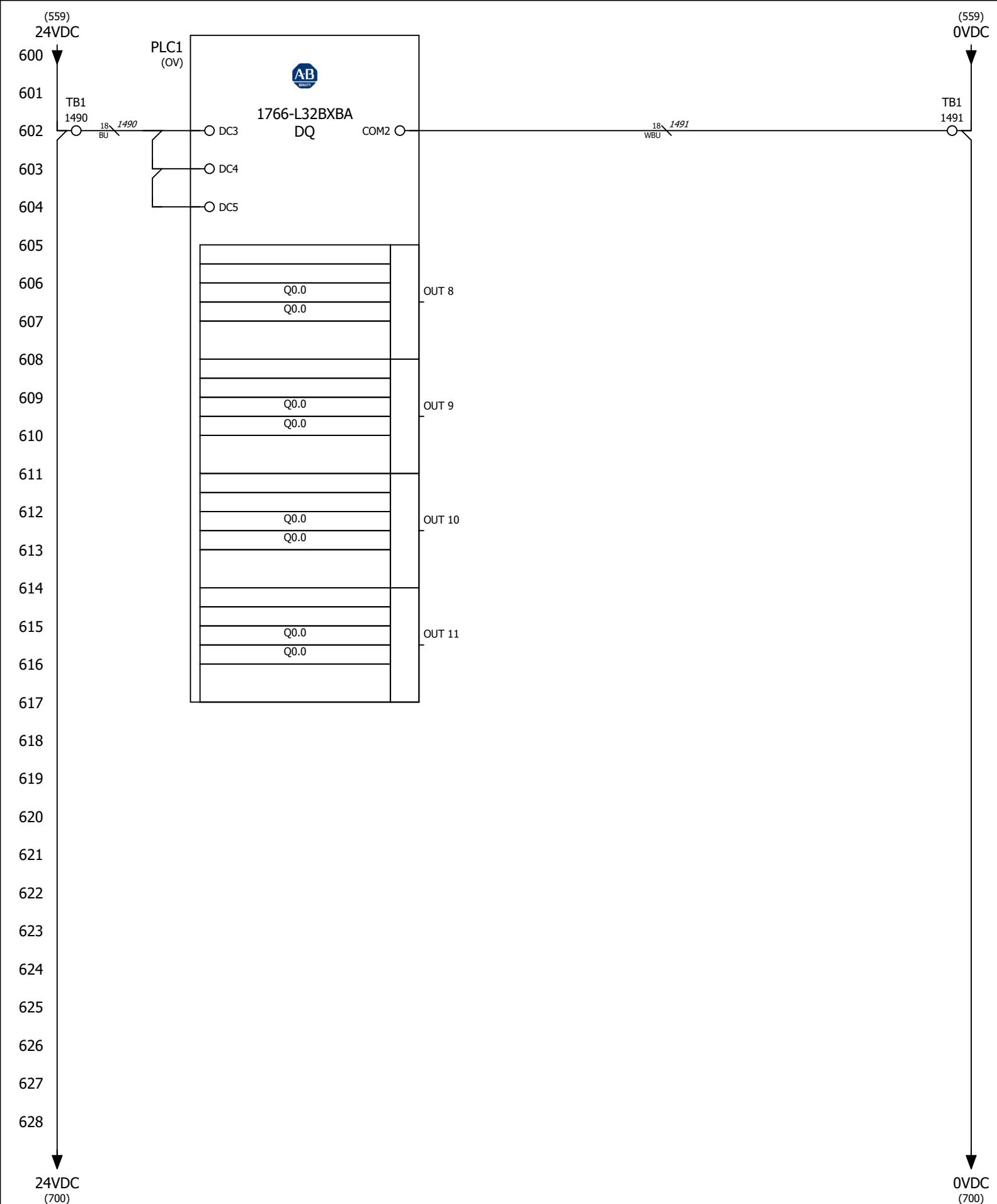
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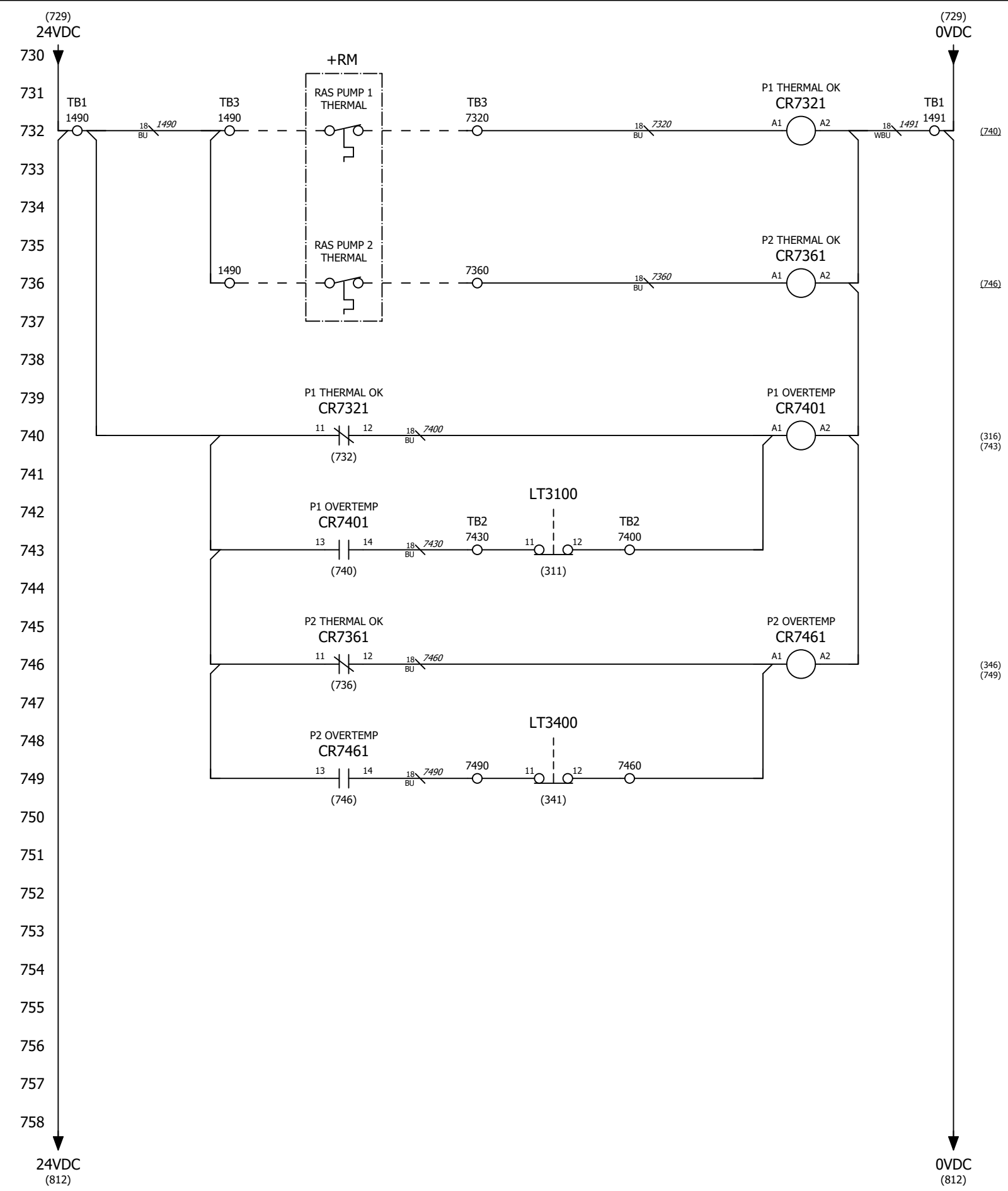
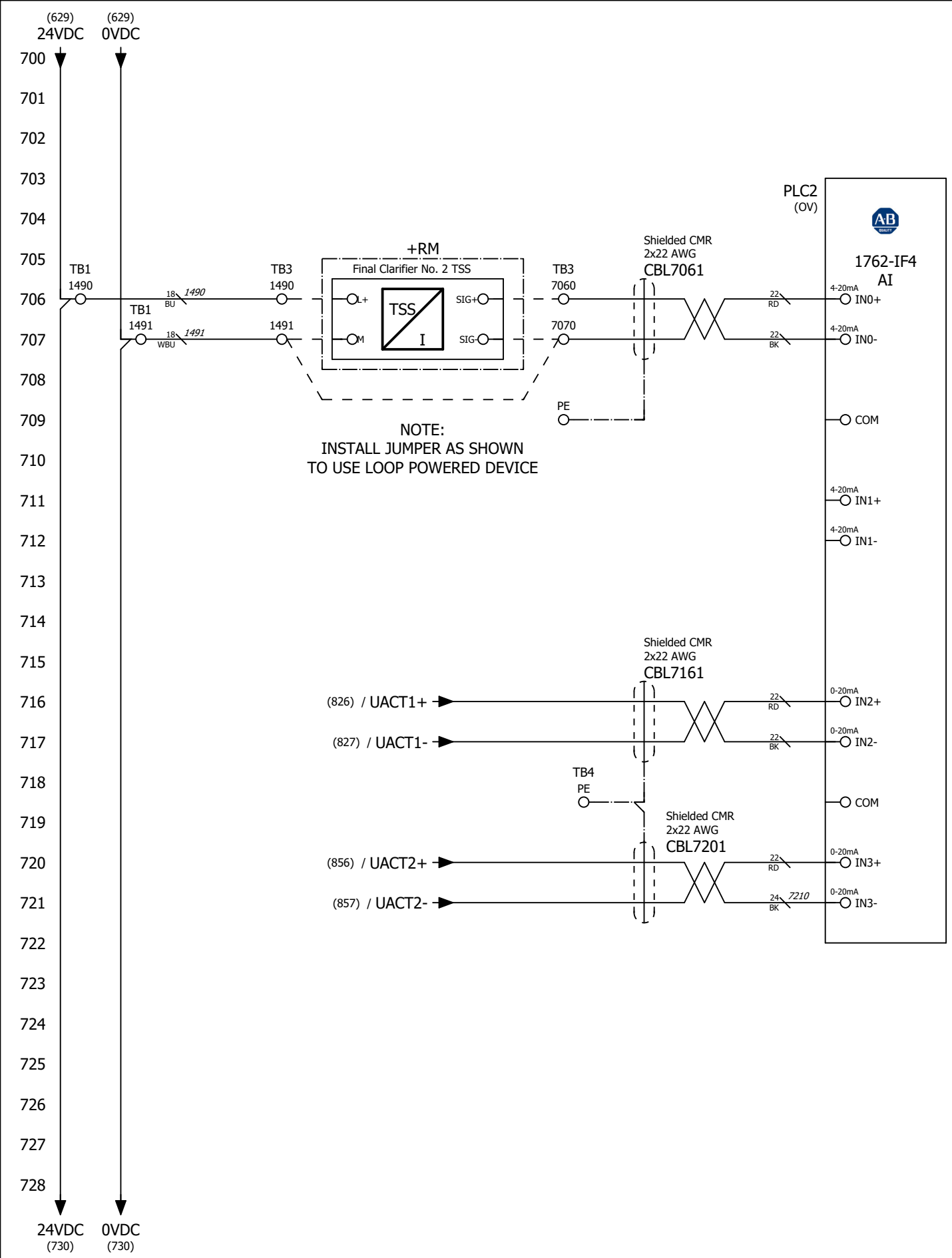
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Function Code =FC2RASCPC	Location Code +CP	Document Code &EC
Drawing Number: 12419FC2RASCPCPEC		Page 6 / 8



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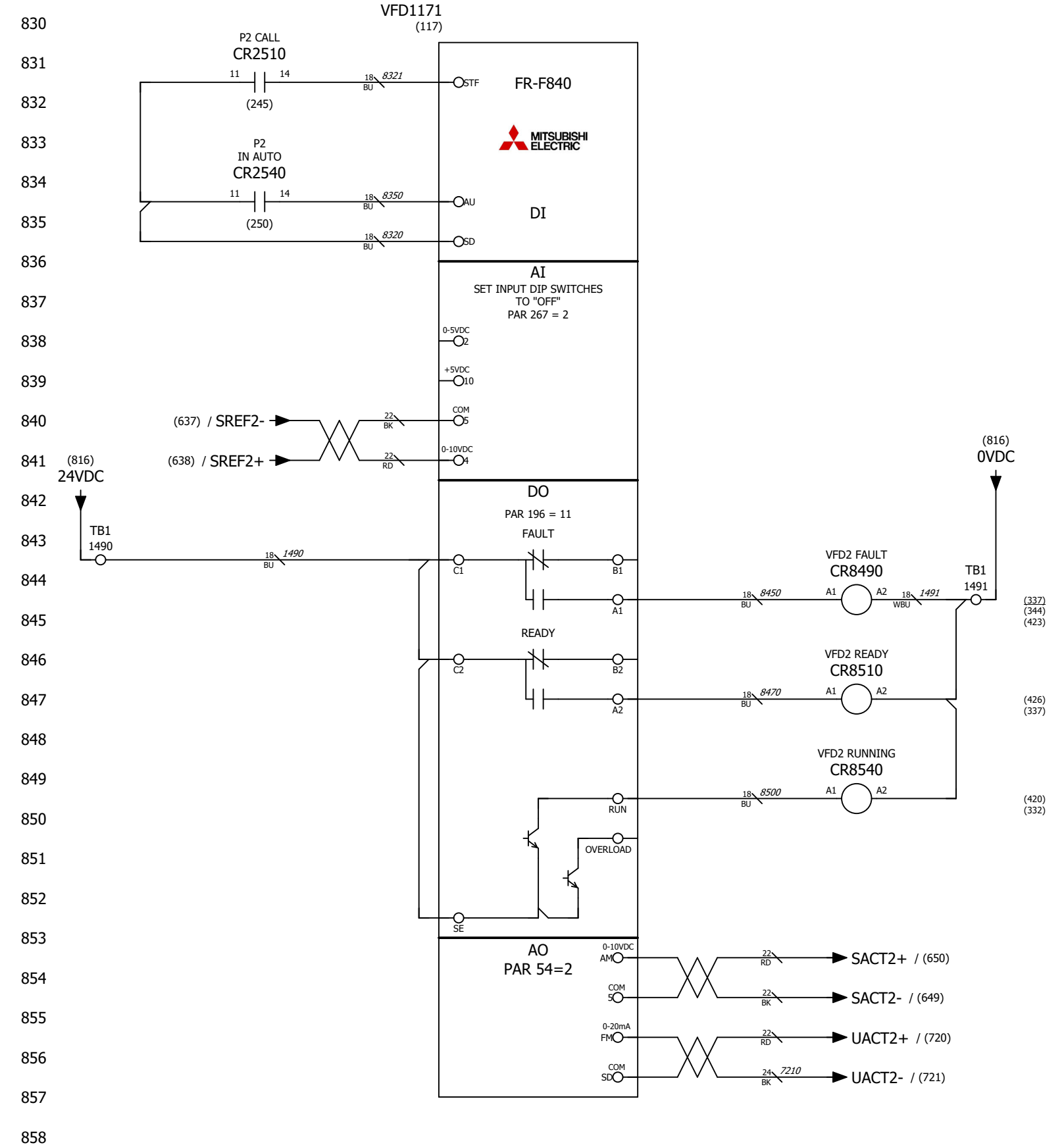
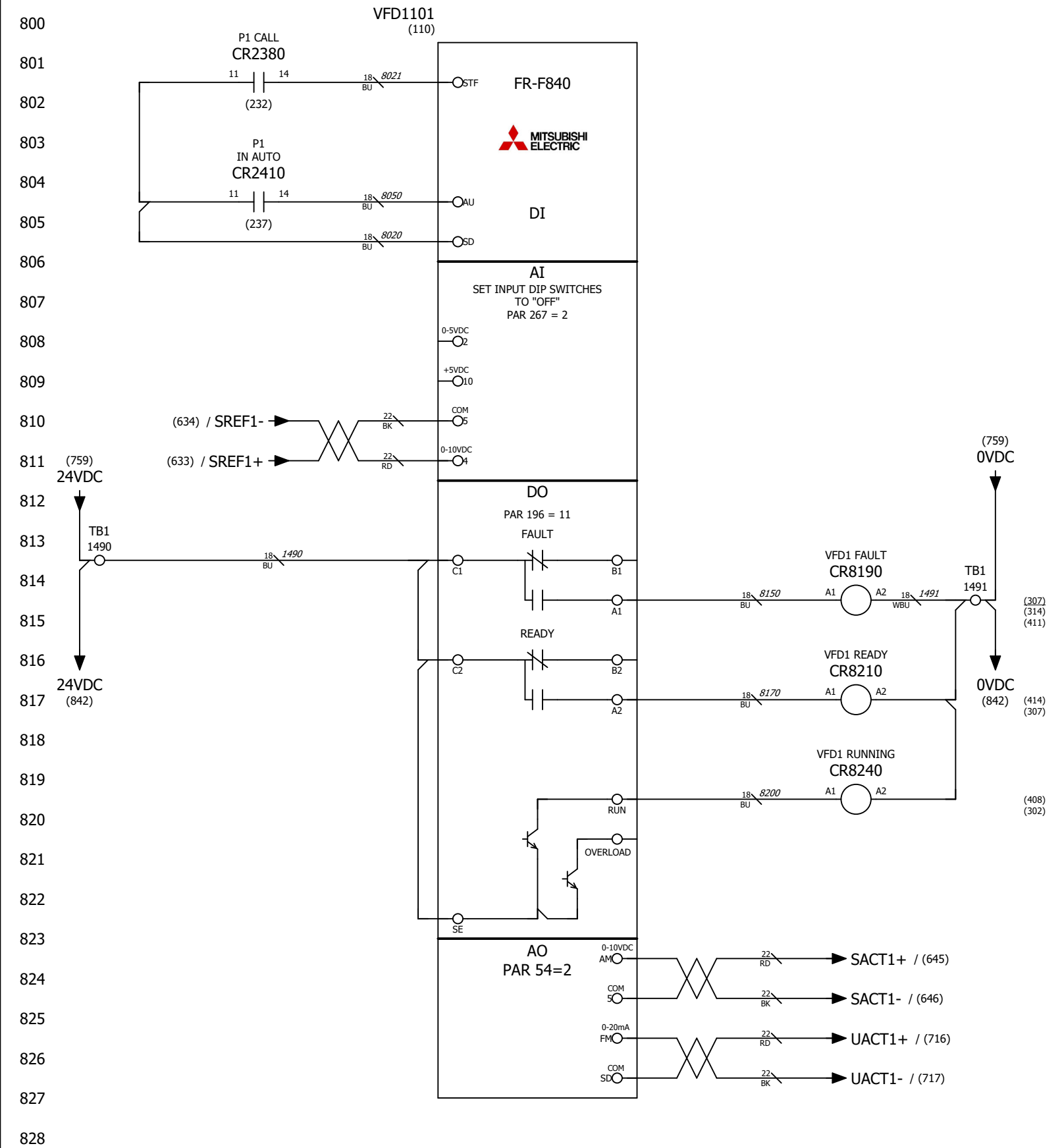
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Function Code	Location Code	Document Code
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Drawing Number: 12419FC2RASCPCPEC		Page 7 / 8



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Project # 12419
Duplex Chopper Pump CP

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Page Description
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 Control Panel
 Wiring Schematics

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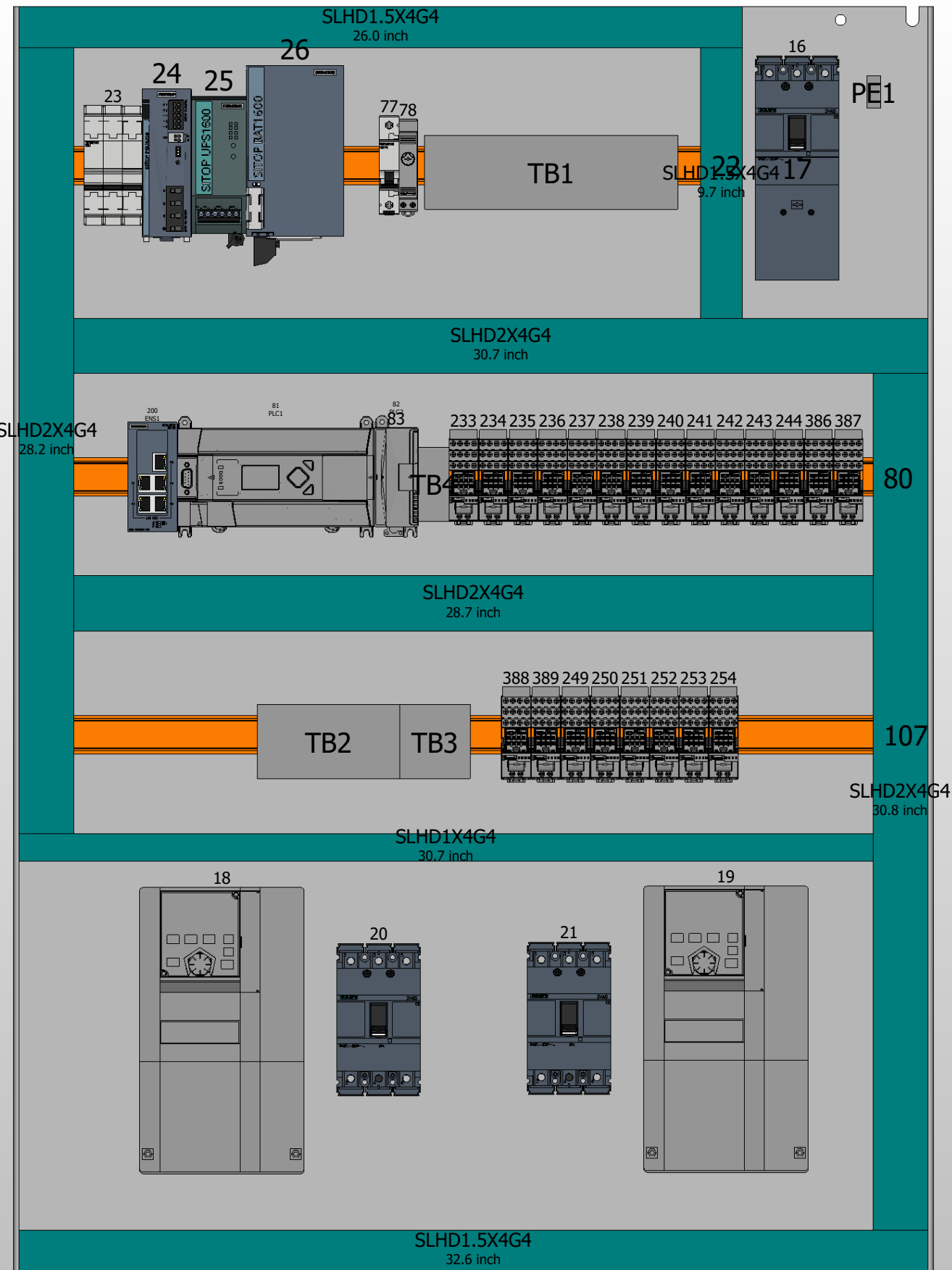
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Document Code & EC
 Page 8 / 8

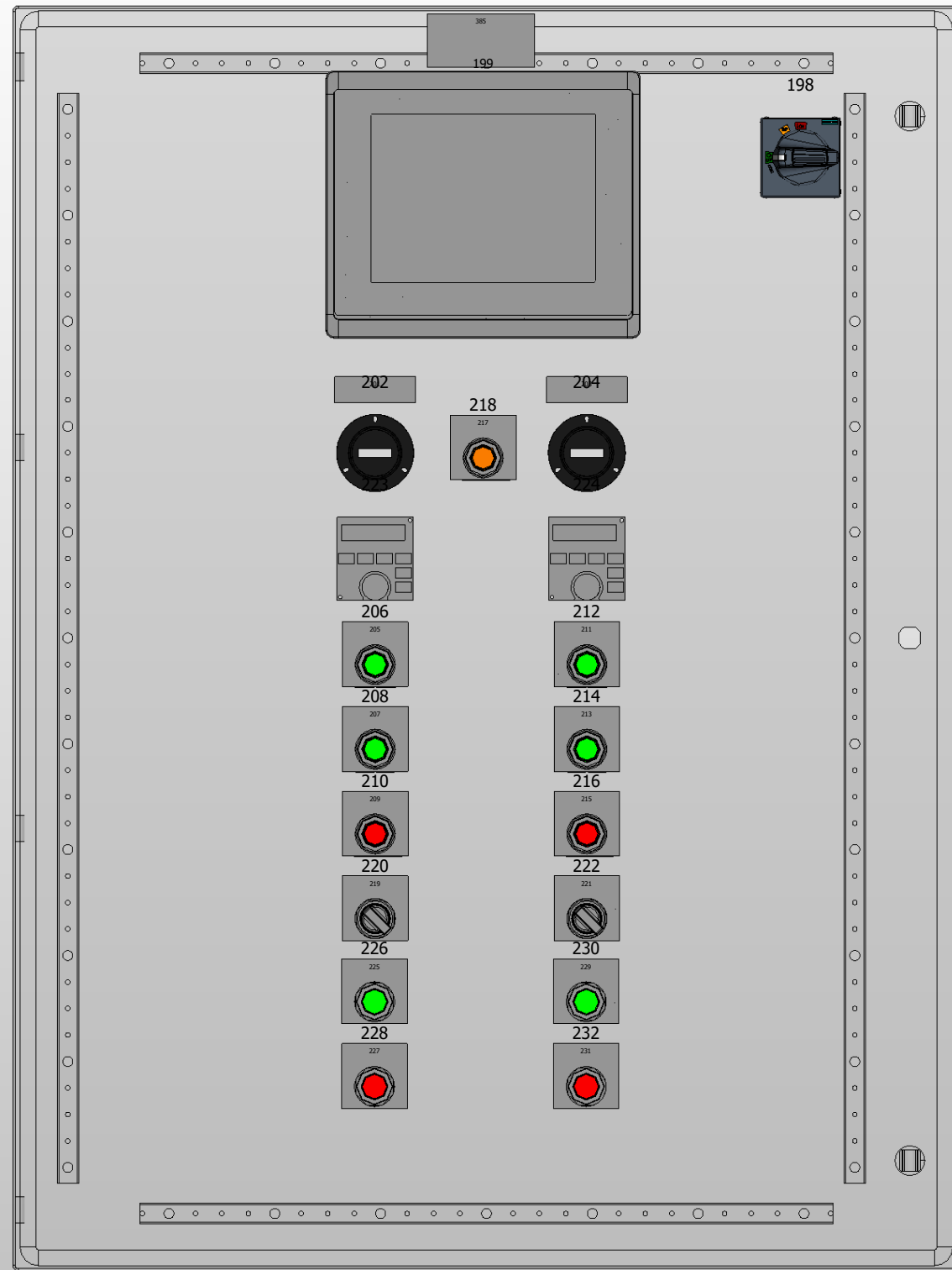
Mounting Panel

Enclosure legend



Item number	Device tag	Type number	Function Text
16	CB1070	3VA5130-4ED31-0AA0	Main Circuit Breaker
17	CB1070	3VA9133-0JF60	Main Circuit Breaker
18	VFD1101	FR-F840-00083-3-N6	VFD 1 CONTROL PANEL
19	VFD1171	FR-F840-00083-3-N6	VFD 2 CONTROL PANEL
20	CB1120	3VA5195-4ED31-0AA0	MCCB_UL_FS125_15A_3P_25KA_TM_FTFM
21	CB1190	3VA5195-4ED31-0AA0	MCCB_UL_FS125_15A_3P_25KA_TM_FTFM
23	CB1310	5SJ4304-7HG42	CIRCUIT BREAKER 10KA, 3POLE, C, 4A
24	T1330	6EP3434-7SB00-3AX0	SITOP PSU6200 3ph 24 V/10 A
25	K1491	6EP4134-3AB00-0AY0	SITOP UPS1600
26	BATT1401	6EP4133-0GA00-0AY0	SITOP BAT1600
77	CB2270	5SY4102-7	CIRCUIT BREAKER 230/400V 10KA, 1-POLE, C, 2A, D=70MM
78	EC2270	7T.81.0.000.2303	Thermostat
81	PLC1	1766	MicroLogix 1400
82	PLC2	1762	MicroLogix 4 Point Analog Input Module
83			
156	=FC2RASCPCP-TB4	BAZ1	End Stops - 5.2 mm 0.205 in spacing
200	ENS1	6GK5005-0BA00-1AB2	SCALANCE XB005
233	CR2160	58.34.9.24.0050	LOW SUCTION
234	CR2180	58.34.9.24.0050	LOW SUCTION
235	CR2210	58.34.9.24.0050	P1 OIL OK
236	CR2230	58.34.9.24.0050	P2 OIL OK
237	CR2380	58.34.9.24.0050	P1 CALL
238	CR2410	58.34.9.24.0050	P1 IN AUTO
239	CR2510	58.34.9.24.0050	P2 CALL
240	CR2540	58.34.9.24.0050	P2 IN AUTO
241	CR3151	58.34.9.24.0050	P1 FAULT
242	CR3451	58.34.9.24.0050	P2 FAULT
243	CR5370	58.34.9.24.0050	P1 AUTO CALL
244	CR5400	58.34.9.24.0050	P2 AUTO CALL
249	CR8190	58.34.9.24.0050	VFD1 FAULT
250	CR8210	58.34.9.24.0050	VFD1 READY
251	CR8240	58.34.9.24.0050	VFD1 RUNNING
252	CR8490	58.34.9.24.0050	VFD2 FAULT
253	CR8510	58.34.9.24.0050	VFD2 READY
254	CR8540	58.34.9.24.0050	VFD2 RUNNING
386	CR7321	58.34.9.24.0050	P1 THERMAL OK
387	CR7361	58.34.9.24.0050	P2 THERMAL OK
388	CR7401	58.34.9.24.0050	P1 OVERTEMP
389	CR7461	58.34.9.24.0050	P2 OVERTEMP
390	=FC2RASCPCP-TB1	BAZ1	End Stops - 5.2 mm 0.205 in spacing
435	=FC2RASCPCP-TB2	BAZ1	End Stops - 5.2 mm 0.205 in spacing
460	=FC2RASCPCP-TB3	BAZ1	End Stops - 5.2 mm 0.205 in spacing

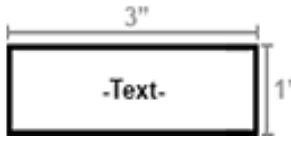
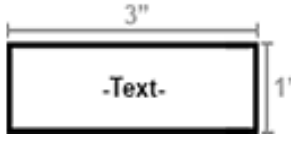
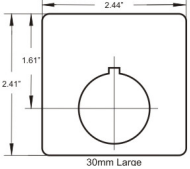
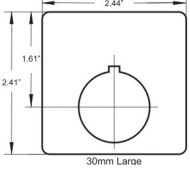
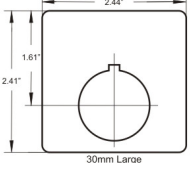
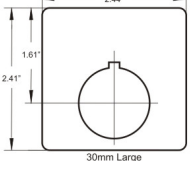
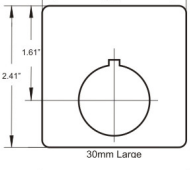
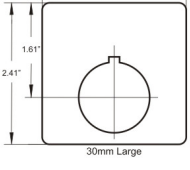
Door Layout

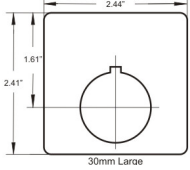
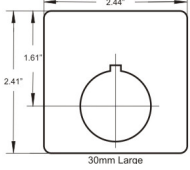
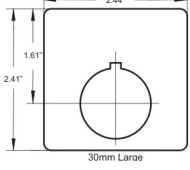
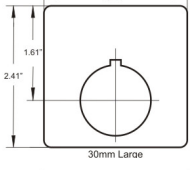
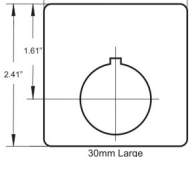
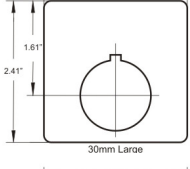


Enclosure legend

Item number	Device tag	Type number	Function Text
198	CB1070	3VA9137-0FK21	Main Circuit Breaker
199	HMI1	2711	PanelView Plus 7 Graphic Terminal
202	ETM3020	732-0001	P1 ETM
204	ETM3320	732-0001	P2 ETM
206	LT3040	52PT6D3AB	P1 RUNNING LAMP
208	LT3070	52PT6D3AB	P1 READY LAMP
210	LT3100	52PT6D2AB	P1 FAULT LAMP
212	LT3340	52PT6D3AB	P2 RUNNING LAMP
214	LT3370	52PT6D3AB	P2 READY LAMP
216	LT3400	52PT6D2AB	P2 FAULT LAMP
218	LT3530	52PT6D9AB	LOW SUCTION LAMP
220	S2320	52SA2BAB	P1 HOA SWITCH
222	S2450	52SA2BAB	P2 HOA SWITCH
223	VFD1101	FR-DU08_PANEL_MOUNT	VFD 1 CONTROL PANEL
224	VFD1171	FR-DU08_PANEL_MOUNT	VFD 2 CONTROL PANEL
226	PB2321	52PA8A3K	P1 START PB
228	PB2320	52PM8A2J	P1 STOP PB
230	PB2451	52PA8A3K	P2 START PB
232	PB2450	52PM8A2J	P2 STOP PB

Device Legends Report

Device tag Function Text Part Number	Engraving Text Material & Color	X-Ref	Legend Size
-ETM3020 P1 ETM ESG.LegendRect1x3	PUMP 1 Phenolic/	(EC302)	
-ETM3320 P2 ETM ESG.LegendRect1x3	PUMP 2 Phenolic/	(EC332)	
-LBL1021 CP LABEL PLATE ESG.LegendRect2x4	Final Clarifier No. 2 RAS Pumps Control Panel Phenolic/	(EC102)	
-LT3040 P1 RUNNING LAMP ESG.Legend30mm	RUNNING Phenolic/	(EC304)	
-LT3070 P1 READY LAMP ESG.Legend30mm	READY Phenolic/	(EC307)	
-LT3100 P1 FAULT LAMP ESG.Legend30mm	FAULT PUSH TO RESET Phenolic/	(EC311)	
-LT3340 P2 RUNNING LAMP ESG.Legend30mm	RUNNING Phenolic/	(EC334)	
-LT3370 P2 READY LAMP ESG.Legend30mm	READY Phenolic/	(EC337)	
-LT3400 P2 FAULT LAMP ESG.Legend30mm	FAULT PUSH TO RESET Phenolic/	(EC341)	

Device tag Function Text Part Number	Engraving Text Material & Color	X-Ref	Legend Size
-LT3530 LOW SUCTION LAMP ESG.Legend30mm	LOW SUCTION Phenolic/	(EC351)	
-PB2320 P1 STOP PB ESG.Legend30mm	STOP Phenolic/	(EC232)	
-PB2321 P1 START PB ESG.Legend30mm	START Phenolic/	(EC232)	
-PB2450 P2 STOP PB ESG.Legend30mm	STOP Phenolic/	(EC245)	
-PB2451 P2 START PB ESG.Legend30mm	START Phenolic/	(EC245)	
-S2320 P1 HOA SWITCH ESG.Legend30mm	HAND OFF AUTO Phenolic/	(EC232)	
-S2450 P2 HOA SWITCH ESG.Legend30mm	HAND OFF AUTO Phenolic/	(EC245)	