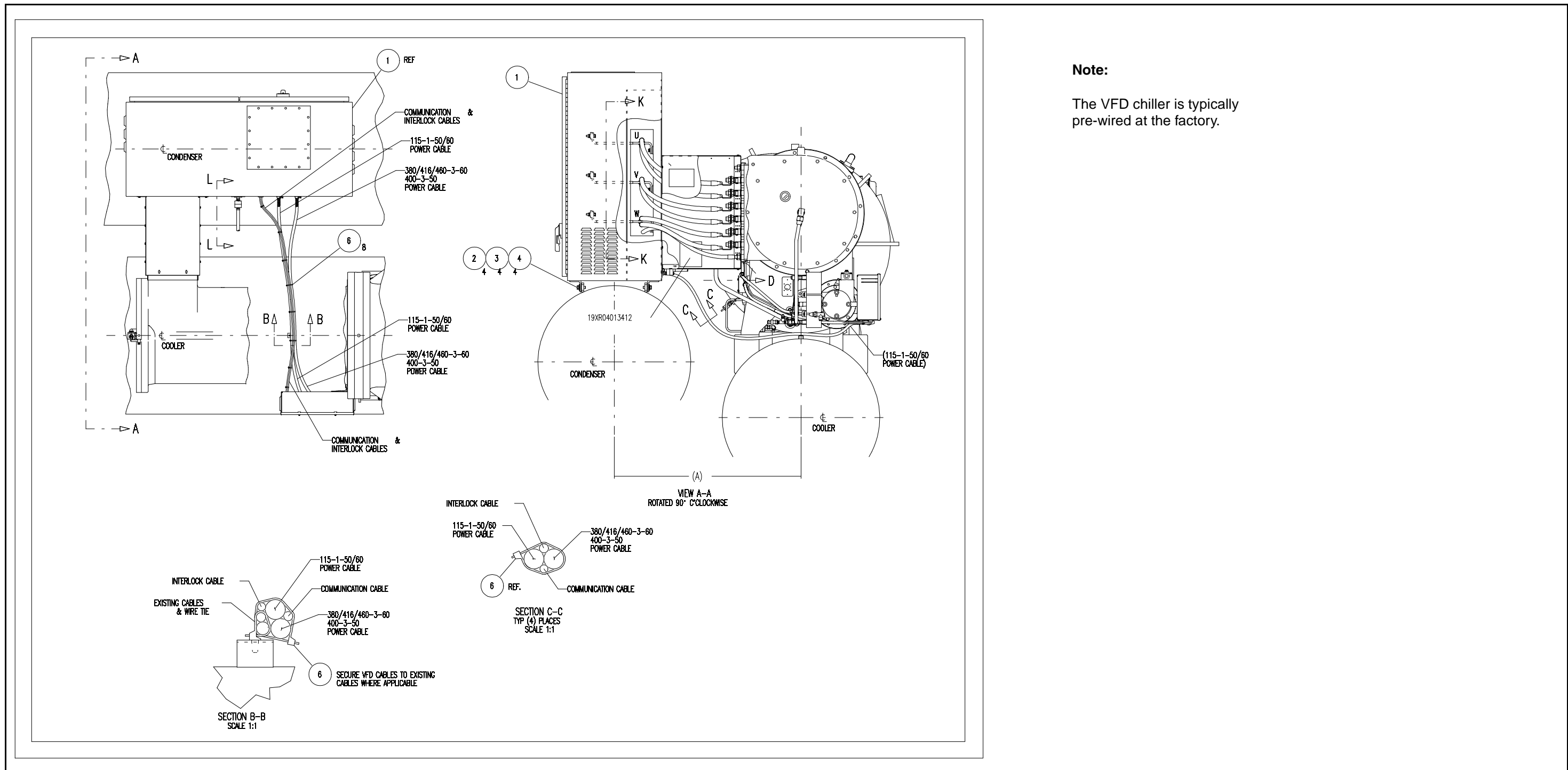
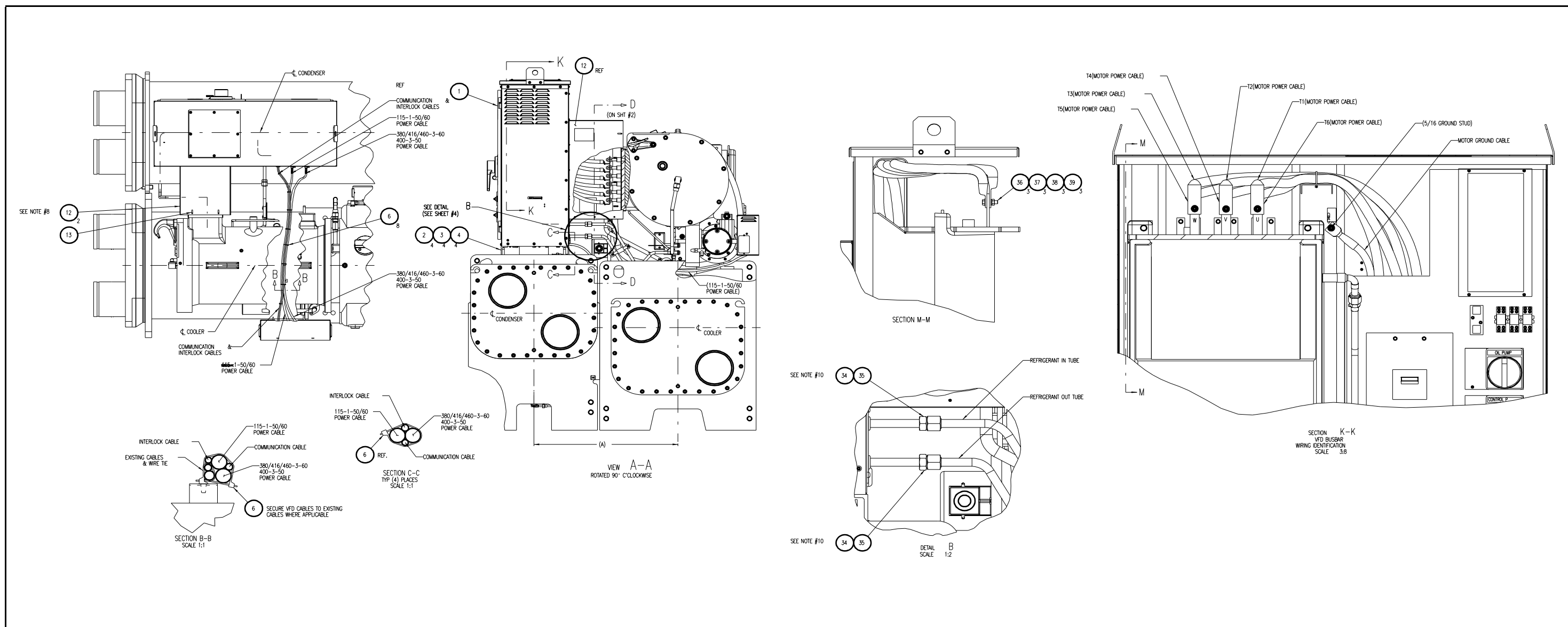


# Identifying Drive Components Using Reference Drawings and Parts Lists

## 2.1 VFD Chiller Installation Drawing (500A and 643A VFD)



# VFD Chiller Installation Drawing (414A VFD)



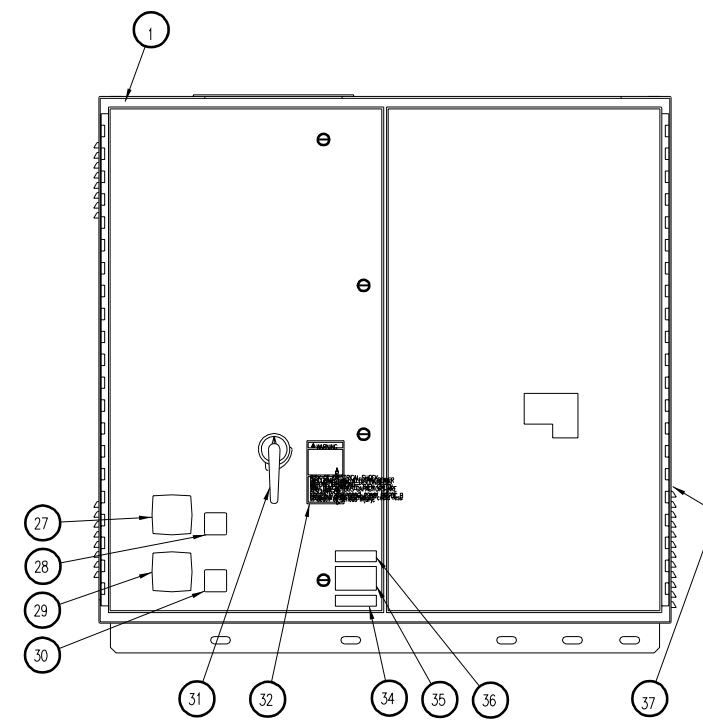
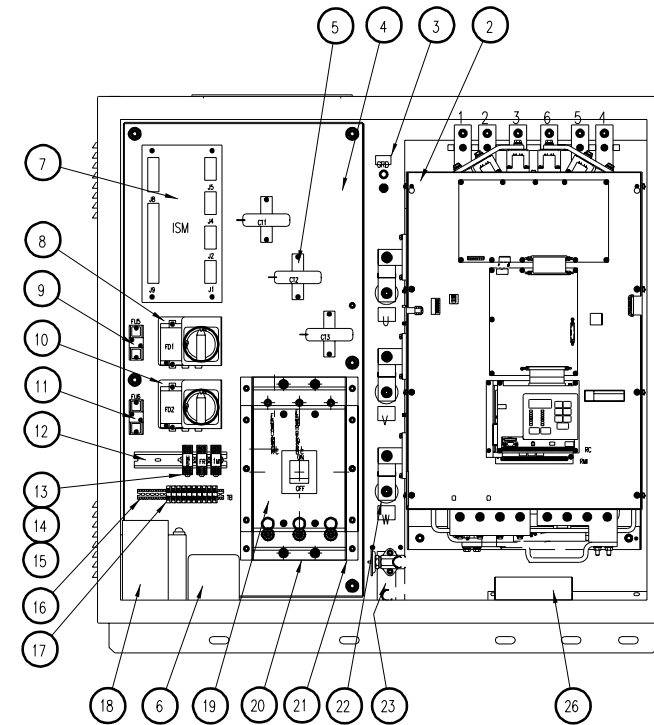
## 2.2 Front View of 500 and 643 Amp VFD with Parts List (19XV04000601 rev 4.0)

ITEM	QTY	DESCRIPTION	SUPPLIER	SUPPLIER PART NO.
1	1	ENCLOSURE, 46H" X 50W" X 22D"	KOESTER	807300-268A
2 (NOTE 1)	1	DRIVE MODULE, 500 AMP	RELIANCE	50LR4060-C
	4	BOLT, FLAT AND LOCKWASHERS		
2 (NOTE 2)	1	DRIVE MODULE, 643 AMP	RELIANCE	64LR4060-C
	4	BOLT, FLAT AND LOCKWASHERS		
	1	GROUND LUG, 1/0 TO 4/0	RELIANCE	68321-38AD
	1	NUT, FLAT AND LOCKWASHER		
	1	GREEN GRD WIRE, 4/0 PANEL TO STUD	RELIANCE	
	1	GROUND LABEL	RELIANCE	410267-12A
	1	COMPONENT MOUNTING PANEL	KOESTER	807300-268C
	6	NUT, FLAT AND LOCKWASHERS	RELIANCE	
	3	CURRENT TRANSFORMER, 800/5 (CT1, 2, 3)	RELIANCE	616300-245A
	6	MOUNTING BOLTS		
6 (OPTION)	4	XFMR, 150VA, 460 TO 150V (PT1, PT2)	ALLEN BRADLEY	25646-001-02
	4	MOUNTING BOLTS		
	1	INTEGRATED STARTER MODULE (ISM)	UTEC	CES0130037
	4	MOUNTING BOLTS		
	1	SW, FUSED, 3 POLE, 600V, 30A RATED (FD1)	ALLEN BRADLEY	194R-NJ030P3
	1	MOUNTING BRACKET	RELIANCE	710300-250A
	2	SWITCH / BRACKET MOUNTING BOLTS	RELIANCE	
	1	LABEL "OIL PUMP"	RELIANCE	616300-251B
	1	SW HANDLE	ALLEN BRADLEY	194R-HS1E
	2	HANDLE MOUNTING BOLTS	RELIANCE	
	1	SW SHAFT	ALLEN BRADLEY	194R-R1
	3	FUSE, CLASS J, 600V 6A	RELIANCE	64676-75W
	1	FUSE, CLASS M, 250V 10A (FU5)	RELIANCE	64676-1BJ
	1	FUSE BLOCK, CLASS M, 250V, 30A, 1 LINE	RELIANCE	49454-20A
	2	FUSE BLOCK MOUNTING BOLTS		
	1	SW, FUSED, 3 POLE, 600V, 30A RATED (FD2)	ALLEN BRADLEY	194R-NJ030P3
	1	MOUNTING BRACKET	RELIANCE	710300-250A
	2	SWITCH / BRACKET MOUNTING BOLTS	RELIANCE	
	1	LABEL "CONTROL POWER"	RELIANCE	616300-251A
	1	SW HANDLE	ALLEN BRADLEY	194R-HS1E
	2	HANDLE MOUNTING BOLTS	RELIANCE	
	1	SW SHAFT	ALLEN BRADLEY	194R-R1
	3	FUSE, CLASS J, 600V 10A	RELIANCE	64676-75AB
	1	FUSE, CLASS M, 250V 30A (FU6)	RELIANCE	64676-1Z
	1	FUSE BLOCK, CLASS M, 250V, 30A, 1 LINE	RELIANCE	49454-20A
	2	FUSE BLOCK MOUNTING BOLTS		
	1	RELAY DIN RAIL	ALLEN BRADLEY	199DR1
	2	RELAY DIN RAIL MOUNTING BOLTS		
	1	HPR RELAY, (2) FORM C, 24 VAC COIL	ALLEN BRADLEY	700-HF32A24
	1	HPR SPRING CLIP	ALLEN BRADLEY	700-HF114
	1	HPR RELAY SOCKET	ALLEN BRADLEY	700-HF116
	1	FR RELAY, (2) FORM C, 110 VAC COIL	ALLEN BRADLEY	700-HF32A1
	1	FR SPRING CLIP	ALLEN BRADLEY	700-HF114
	1	FR RELAY SOCKET	ALLEN BRADLEY	700-HF116
	1	1M RELAY, (2) FORM C, 110 VAC COIL	ALLEN BRADLEY	700-HF32A1
	1	1M SPRING CLIP	ALLEN BRADLEY	700-HF114
	1	1M RELAY SOCKET	ALLEN BRADLEY	700-HF116
	1	TB DIN RAIL	ALLEN BRADLEY	1492-N1
	2	TB DIN RAIL MOUNTING BOLTS	ALLEN BRADLEY	
	10	TB, 600V 20A	ALLEN BRADLEY	1492-CA1
	1	TB, END BARRIER	ALLEN BRADLEY	1492-N16
	2	TB, END ANCHOR	ALLEN BRADLEY	1492-N47
	1	XFMR, 3 KVA, 230/460V TO 115V (CPT)	RELIANCE	417155-X
	4	MOUNTING BOLTS FLAT AND LOCKWASHERS		
	1	DS, 3 POLE 600V 600A, MCS	RELIANCE	807300-303A
19 (NOTE #1)	4	DS MOUNTING BOLTS	RELIANCE	616300-242
	1	LOAD SIDE INSULATOR	RELIANCE	710300-246R
19 (NOTE #2)	4	DS MOUNTING BOLTS	RELIANCE	807300-303B
	1	LOAD SIDE INSULATOR	RELIANCE	616300-242
	1	DS TO DRV CABLES, "R" TO 1	RELIANCE	710300-246R
	1	DS TO DRV CABLES, "R" TO 4	RELIANCE	710300-246S
	1	DS TO DRV CABLES, "S" TO 2	RELIANCE	710300-246T
	1	DS TO DRV CABLES, "S" TO 5	RELIANCE	710300-246U
	1	DS TO DRV CABLES, "T" TO 3	RELIANCE	710300-246V
	1	DS TO DRV CABLES, "T" TO 6	RELIANCE	710300-246W
21 (NOTE #1)	1	DS MOUNTING BRACKET, 600 A SWITCH	RELIANCE	807300-299A
21 (NOTE #2)	4	DS BRACKET MOUNTING BOLTS	RELIANCE	807300-299B
	1	DS MOUNTING BRACKET, 800 A SWITCH	RELIANCE	807300-299B
	4	DS BRACKET MOUNTING BOLTS	RELIANCE	807300-299A
	3	OUTPUT BUS BARS, 1.5 X 3/8 FORMED	RELIANCE	807300-294A
	3	BUS BAR TO DRIVE MOUNTING BOLTS	RELIANCE	
	3	BUS BAR NUTS FLAT AND LOCKWASHERS	RELIANCE	
	3	BUS BAR TO STANDOFF MOUNTING BOLTS	RELIANCE	
	3	STANDOFFS, GLASTIC INSULATORS	RELIANCE	600856-A
	2	COOLANT SUPPORT PLATES	RELIANCE	616300-241A
	1	ENCLOSURE FAN, 115VAC, 235CFM	RELIANCE	103044-7
26	1	FAN GUARD	RELIANCE	175179
	3	MOUNTING BOLTS		

27 (OPTION)	1	AC VOLTMETER 0-600 V	ALLEN BRADLEY	22951-003-01
28 (OPTION)	1	AC VOLTMETER SWITCH	ALLEN BRADLEY	25135-012-01
29 (OPTION)	1	AC AMMETER 0-800 A	ALLEN BRADLEY	22901-002-18
30 (OPTION)	1	AC AMMETER SWITCH	ALLEN BRADLEY	25135-011-01
NOT SHOWN	2	CURRENT TRANSFORMERS, AMMETER	ALLEN BRADLEY	25645-008-10
31 (NOTE #1)	1	DS HANDLE KIT, HANDLE AND SHAFT	RELIANCE	77800-22W
31 (NOTE #2)	1	DS HANDLE KIT, HANDLE AND SHAFT	RELIANCE	77800-28X
	32	WARNING LABEL	RELIANCE	616300-250A
	33			
	34	ULC-UL100C CERTIFICATION LABEL	RELIANCE	SEE M/N
35 (NOTE #1)	1	RATING NAMEPLATE, 500 A UNIT	RELIANCE	616300-243A
35 (NOTE #2)	1	RATING NAMEPLATE, 643 A UNIT	RELIANCE	616300-243B
	36	CARRIER MANUFACTURED TO Z-417 LABEL	RELIANCE	616300-252A
	37	CARRIER_VFD_ORDER_CODE	RELIANCE	616300-253A

ITEM	QTY	DESCRIPTION	SUPPLIER	PART NO.
OPTIONAL DISCONNECT				
19 (NOTE #1)	1	DS, 3 POLE 600 V 600 A, MAG ONLY	RELIANCE	807300-311A
	4	DS MOUNTING BOLTS		
19 (NOTE #2)	1	DS, 3 POLE 600 V 800 A, MAG ONLY	RELIANCE	807300-311B
	4	DS MOUNTING BOLTS		
CONTROL CABLES				
	1	INTERLOCK CABLE ASSEMBLY	CARRIER	19XV04000604
	1	COMMUNICATION CABLE ASSEMBLY	CARRIER	19XV04000605
	1	115V 50/60HZ POWER CABLE ASSY	CARRIER	19XV04000606
	1	200/575-3-50/60 HZ CABLE ASSY	CARRIER	19XV04000607
	1	SET OF LABELS TO ID COMP, "HPR" etc	RELIANCE	
	1	EDGING FOR MOTOR LEAD OPENINGS	RELIANCE	
	2	DOOR GROUNDING CABLES, 10 AWG	RELIANCE	
	1	SHIPPING LABEL	RELIANCE	

NOTE 1: USE FOR THE 500 AMP UNIT, NOTE 2: USE FOR THE 643 AMP UNIT.



### Notes:

Refer to section 2.3 for drive module parts.

Replacement parts not in the drive module are available from Reliance Electric.

Call 1-888-DRIVES-0.

Note: Use this phone number only for replacement parts listed on this page.

## 2.3 500 Amp and 643 Amp 19XRV Drive Module Component Locations and Parts List

Note: When replacing the Regulator board, verify that jumper J4 is on pins 1 and 2, as shown in the detail below. You also may need to perform an initialization procedure. See section 6.7 of instruction manual D2-3411 for more information.

**Regulator Board Detail**

Set jumper J4 to pins 1 and 2.

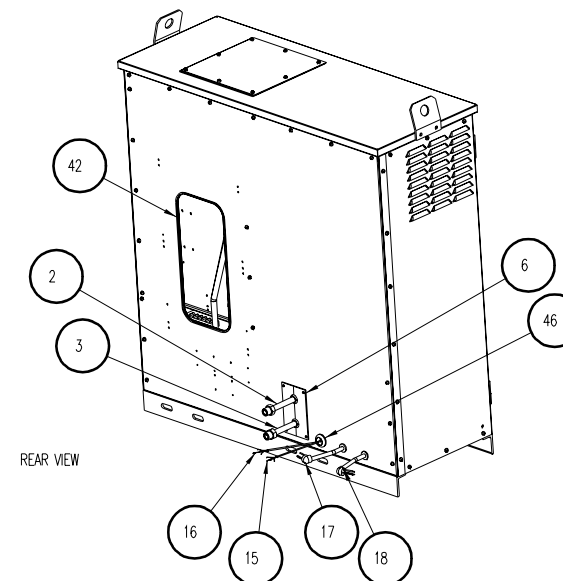
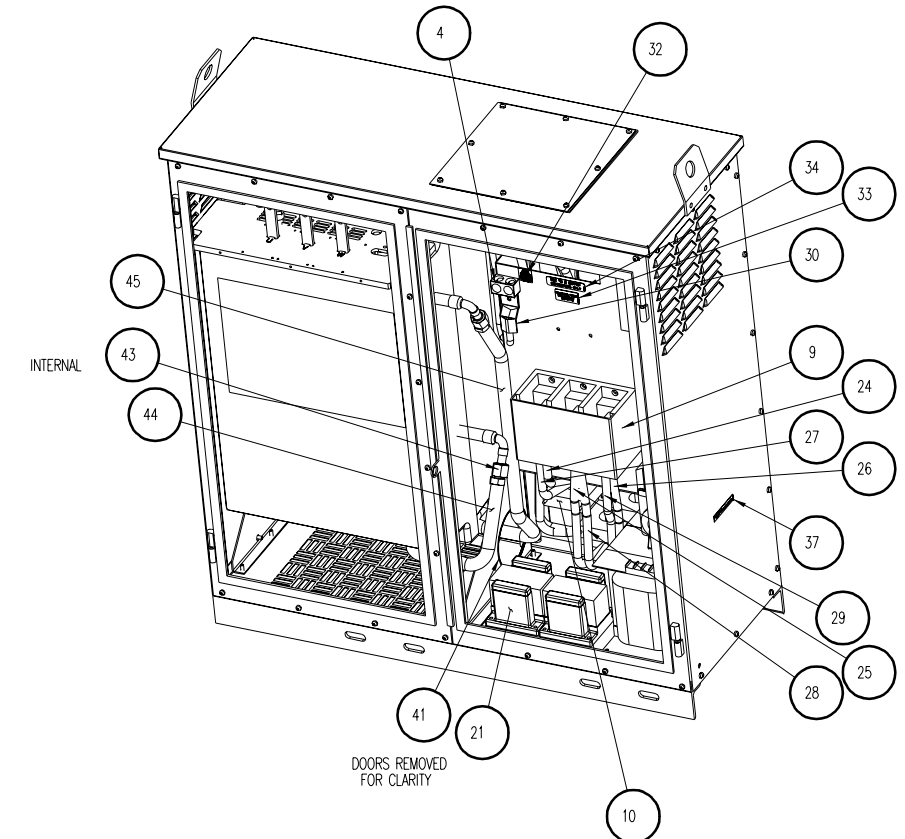
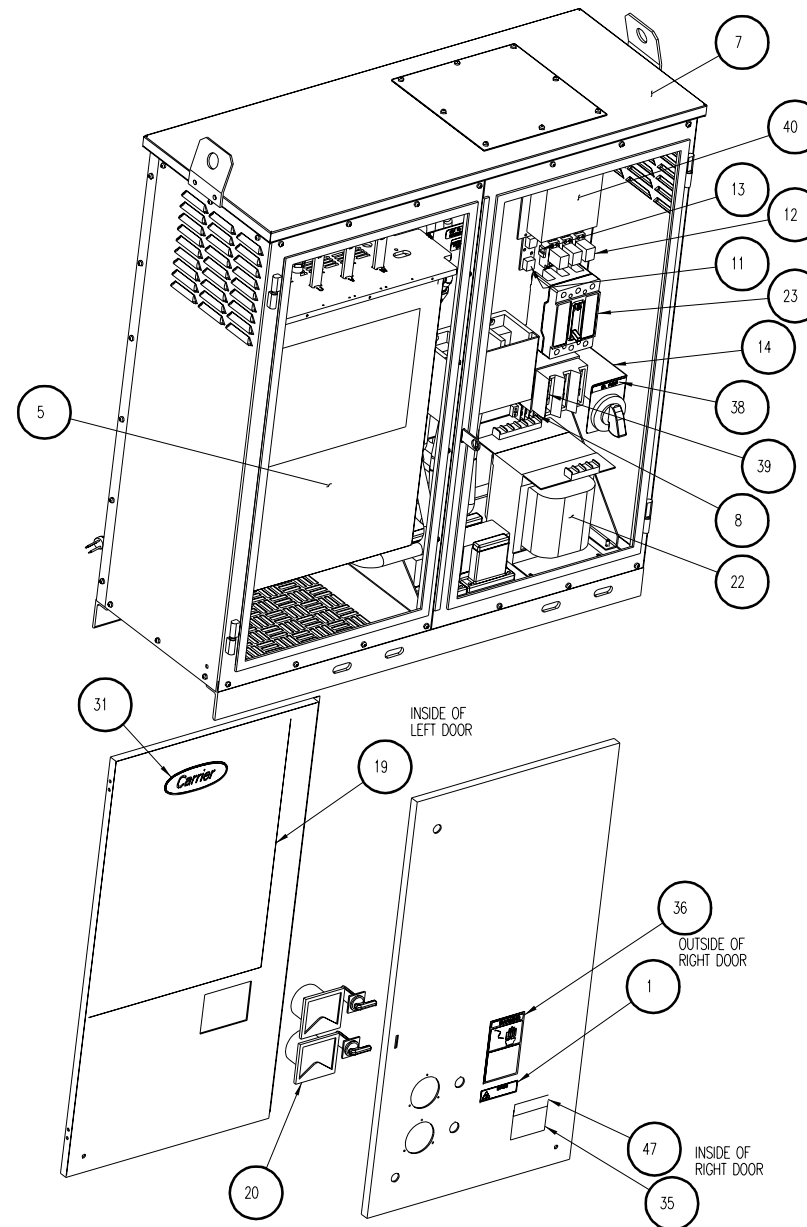
Regulator Board

Item #	Description	Rockwell Automation Part #	Qty
1	Bus Bars (AC Input)	n/a	6
2	SCR Module	22501-025-04	1
3	Power Module Adapter (PCB) 500 A Frame	179134	1
	Power Module Adapter (PCB) 643 A Frame	179067	1
4	Power Interface Harness	179058	
5	Bus Bars (AC Output)	n/a	3
6	LEM Interface Harness	179061	1
7	DC Bus Control PCB	179069	1
8	Gate Driver PCB - Low Side	179065	
9	DC Bus Laminate Assembly	n/a	1
10	Current Feedback Devices	25503-011-01	3
11	IGBT Modules	n/a	6
12	Chillplate (Heatsink)	n/a	1
13	Capacitors	n/a	36
14	Drive Baseplate	n/a	1
15	Coolant Lines (not shown)	n/a	2
16	Discharge Resistor (not shown)	n/a	3
17	Control Panel Assembly	n/a	1
18	Bus Control - PMA Harness	179057	1
19	Bus Control - Gate Driver Harness	179055	1
20	Gate Driver PCB - High Side (not shown)	170065	1
21	Membrane Switch Keypad/Bracket	410483-15B	1
22	Regulator PCB	179116	1
23	Remote Meter Interface (RMI) PCB	814.56.00	1
24	Reactor (not shown)	n/a	1
(not shown)	Gate Driver Jumper Harness	179056	1
(not shown)	SCR (S1, S2, S3) Gate Interface Harness	179059	1
(not shown)	SCR (S4, S5, S6) Gate Interface Harness	179060	1
(not shown)	Laminate PMA Interface Harness	179062	1
(not shown)	Chillplate Interface Harness	179063	1

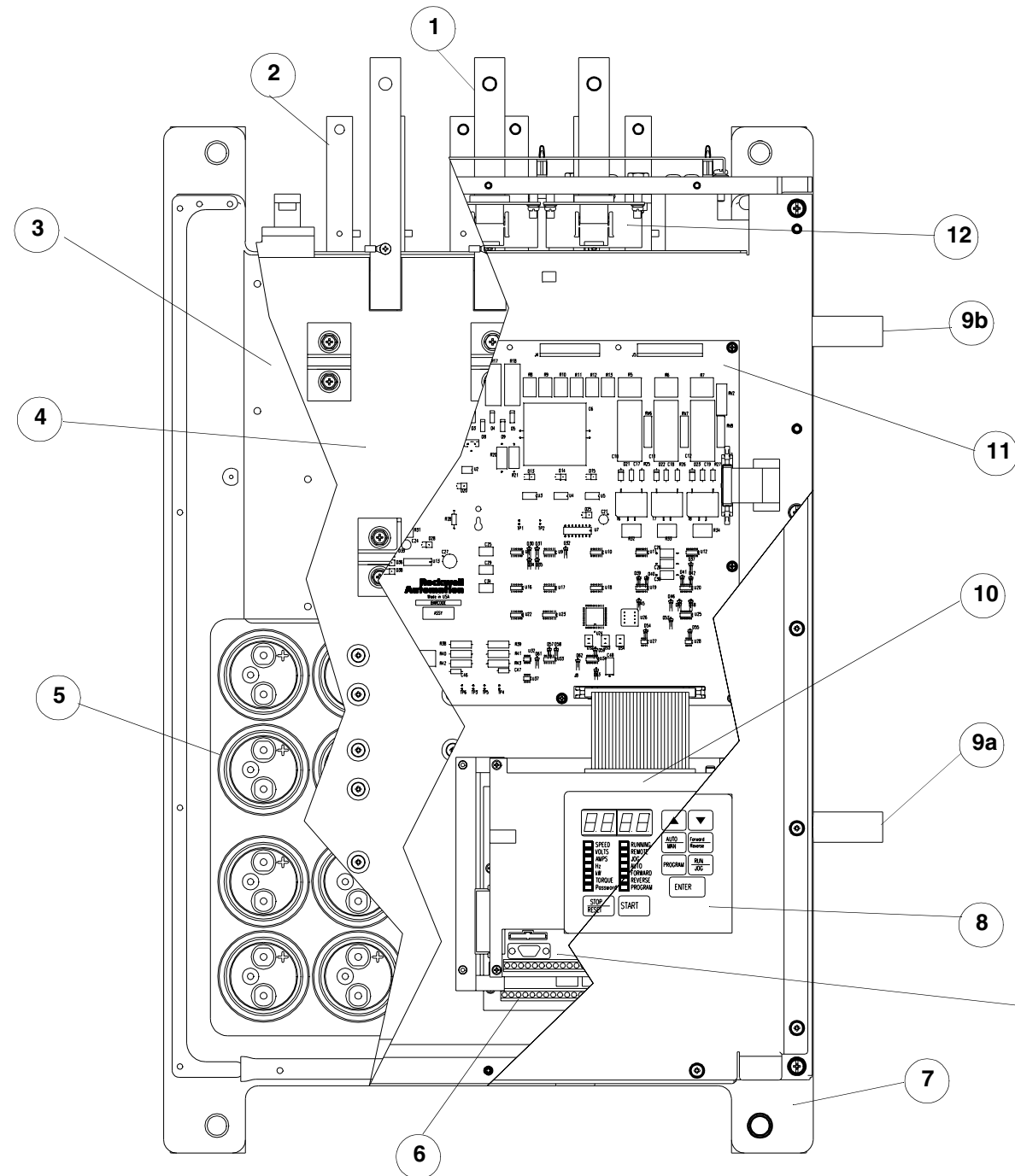
Contact Reliance Electric at 1-440-646-6650 for replacement parts.  
Note: Use this phone number only for replacement parts listed on this page.

## 2.4 Front View of 414 Amp VFD with Parts List (19XV04003001 rev 2.0)

Item	Description	Component Number	Quantity							
			19XR0414100	19XR0414101	19XR0414102	19XR0414103	19XR0414200	19XR0414201	19XR0414202	19XR0414203
1	Warning Label	179725-8	1	x	1	x	1	x	1	x
		610293-201A	x	1	x	1	x	1	x	1
2	Tube Assembly	19XR04021301	1	1	1	1	1	1	1	1
3	Tube Assembly	19XR04021401	1	1	1	1	1	1	1	1
4	Customer Ground	19XR05023001	1	1	1	1	1	1	1	1
5	Drive Unit	19XR04003201	1	1	1	1	1	1	1	1
6	Plate Assembly	19XR04003301	1	1	1	1	1	1	1	1
7	VFD Assembly	19XR05004801	1	x	1	x	1	x	1	x
		19XR05004802	x	1	x	1	x	1	x	1
8	Terminal Strip	19XR05005001	1	1	1	1	1	1	1	1
9	Terminal Block	19XR05005101	1	x	1	x	1	x	1	x
		19XV05004901	x	1	x	1	x	1	x	1
10	Transformer, Current	19XR05005201	3	3	3	3	3	3	3	3
11	Fuse Assembly	19XR05005401	1	1	1	1	1	1	1	1
12	Relay Socket	19XR05005502	2	2	2	2	2	2	2	2
13	Relay Socket	19XR05005503	1	1	1	1	1	1	1	1
14	Disconnect Switch	19XR05005601	1	1	1	1	1	1	1	1
15	Cable Assembly	19XR05005701	1	1	1	1	1	1	1	1
16	Cable Assembly	19XR05005801	1	1	1	1	1	1	1	1
17	Cable Assembly	19XR05005901	1	1	1	1	1	1	1	1
18	Cable Assembly	19XR05006001	1	1	1	1	1	1	1	1
19	Label, Wiring	19XR05006301	1	1	1	1	1	1	1	1
20	Meter Kit	19XR05006601	x	x	1	1	x	x	1	1
21	Potential Transformer	19XR05007101	x	x	2	2	x	x	2	2
22	Transformer	19XR05007201	1	1	1	1	1	1	1	1
23	Circuit Breaker	19XR05007501	1	1	1	1	1	1	1	1
24	Cable - L1	19XV04003801_MU	1	1	1	1	1	1	1	1
25	Cable - L2	19XV04003802_MU	1	1	1	1	1	1	1	1
26	Cable - L3	19XV04003803_MU	1	1	1	1	1	1	1	1
27	Cable - L4	19XV04003804_MU	1	1	1	1	1	1	1	1
28	Cable - L5	19XV04003805_MU	1	1	1	1	1	1	1	1
29	Cable - L6	19XV04003806_MU	1	1	1	1	1	1	1	1
30	Ground Cable	19XV04003901_MU	1	1	1	1	1	1	1	1
31	Label	23XL05005303	1	1	1	1	1	1	1	1
32	Label	410267-12	1	1	1	1	1	1	1	1
		50D00032	1	x	1	x	1	x	1	x
33	Label - Torque (275 in-lb)	50D00033	x	1	x	1	x	1	x	1
		50D00034	1	1	1	1	1	1	1	1
34	Label - Conductors	616300-243	1	1	1	1	1	1	1	
35	Nameplate, Data	616300-250	1	1	1	1	1	1	1	
36	Label, Warning	616300-253	1	1	1	1	1	1	1	
37	Label, VFD Order Code	616300-251B	1	1	1	1	1	1	1	
38	Label, Oil Pump	64676-75W	3	3	3	3	3	3	3	
39	6 A Fuse	CSE0130037	1	1	1	1	1	1	1	
40	ISM	GES144FA-C-08	1	1	1	1	1	1	1	
41	Edging	GSE144FA-C	1	1	1	1	1	1	1	
42	Edging	KK71EW016	2	2	2	2	2	2	2	
43	O-Ring	QR09-47-625-28	1	1	1	1	1	1	1	
44	Insulation	QR09-47-625-40	1	1	1	1	1	1	1	
45	Insulation	T_B-2522	1	1	1	1	1	1	1	
46	Gland, Cable	Z-417	1	1	1	1	1	1	1	
47	Label - Z-417		1	1	1	1	1	1	1	



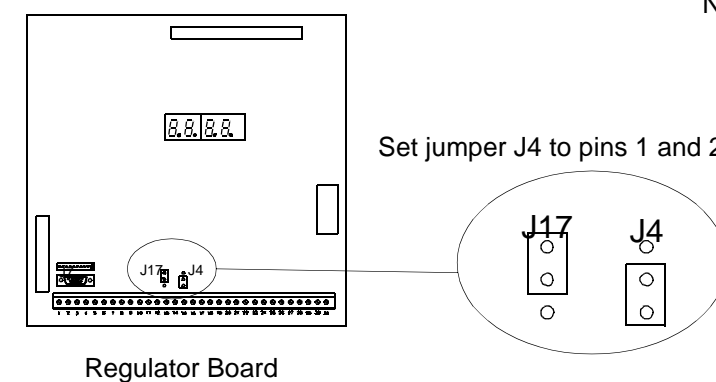
## 2.5 414 Amp 19XRV Drive Module Component Locations and Parts List



Item #	Description	Rockwell Automation Part #	Qty
1	Bus Bars (3) AC Output to motor	n/a	3
2	Bus Bars (3) AC Input from supply	n/a	3
3	IGBT Modules	n/a	6
4	Output Laminate	n/a	1
5	Capacitors	n/a	24
6	Remote Meter Interface (RMI) PCB	814.56.00	1
7	Casting	n/a	1
8	Membrane Switch Keypad/Bracket	410483-15B	1
9	Coolant Lines - (a) Inlet, (b) Outlet	n/a	2
10	Regulator PCB	179116	1
11	HP Power Module Control (PMC) PCB	179170	1
12	Current Feedback Devices (3)	25503-012-01	3
(not shown)	Gate Driver PCB	179168	1
(not shown)	LEM Harness	179215-8	1
(not shown)	Laminate Harness	179216-8	1
(not shown)	Chillplate Harness	179217-8	1
(not shown)	SCR Gate Harness	179218-8	1
(not shown)	Internal Fan	179196	1

Contact Reliance Electric at 1-440-646-6650 for replacement parts.

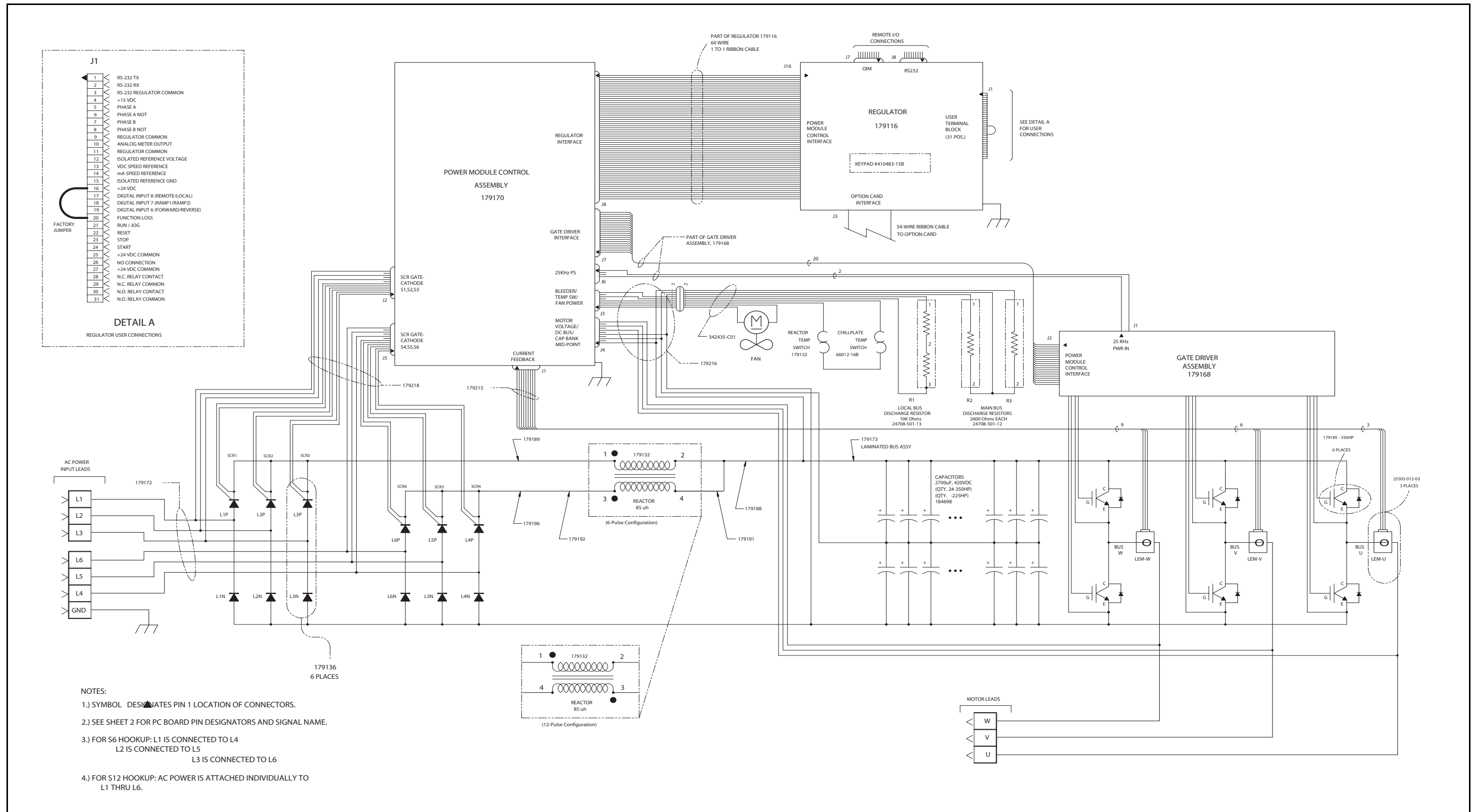
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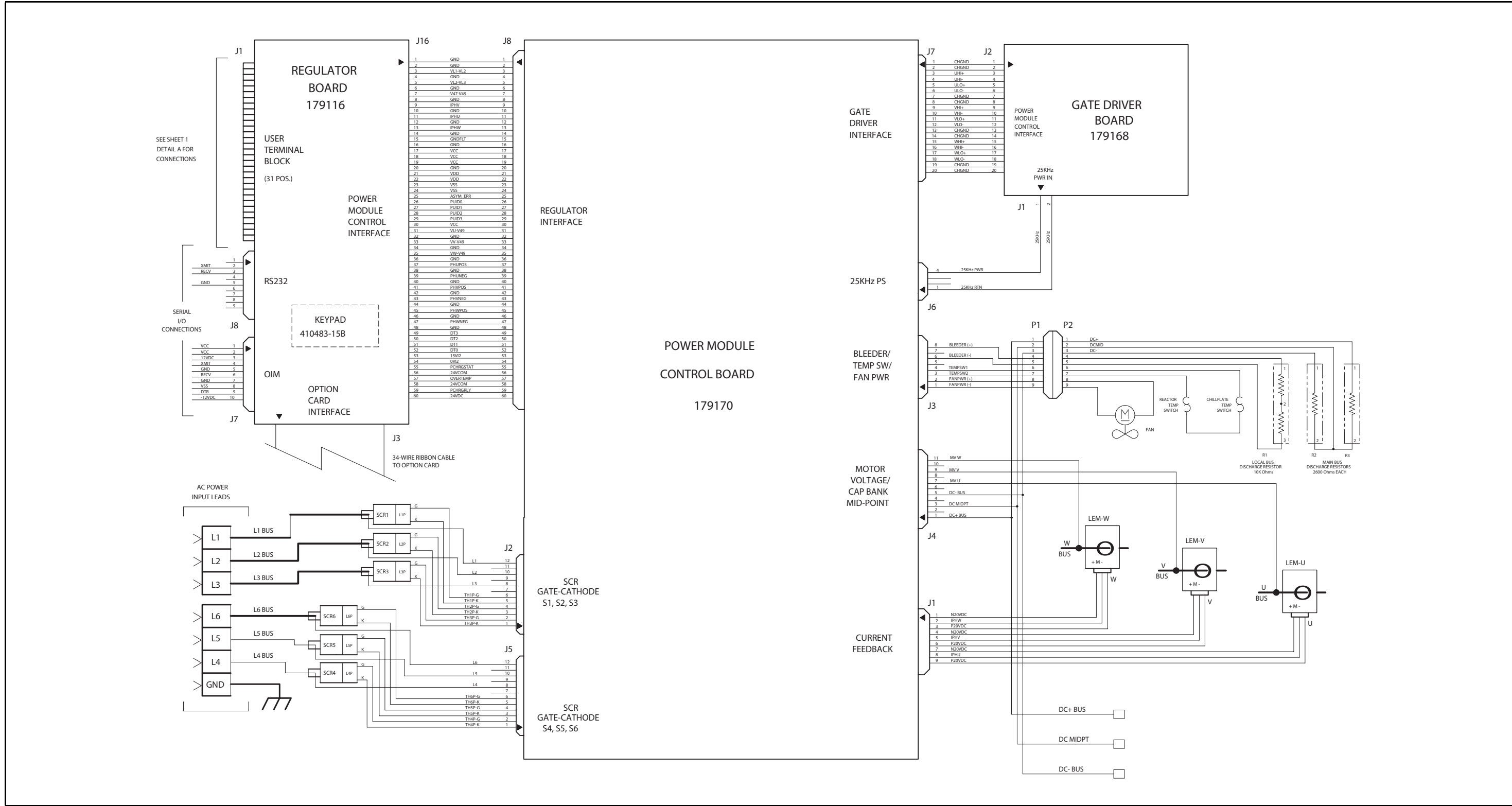


Regulator Board

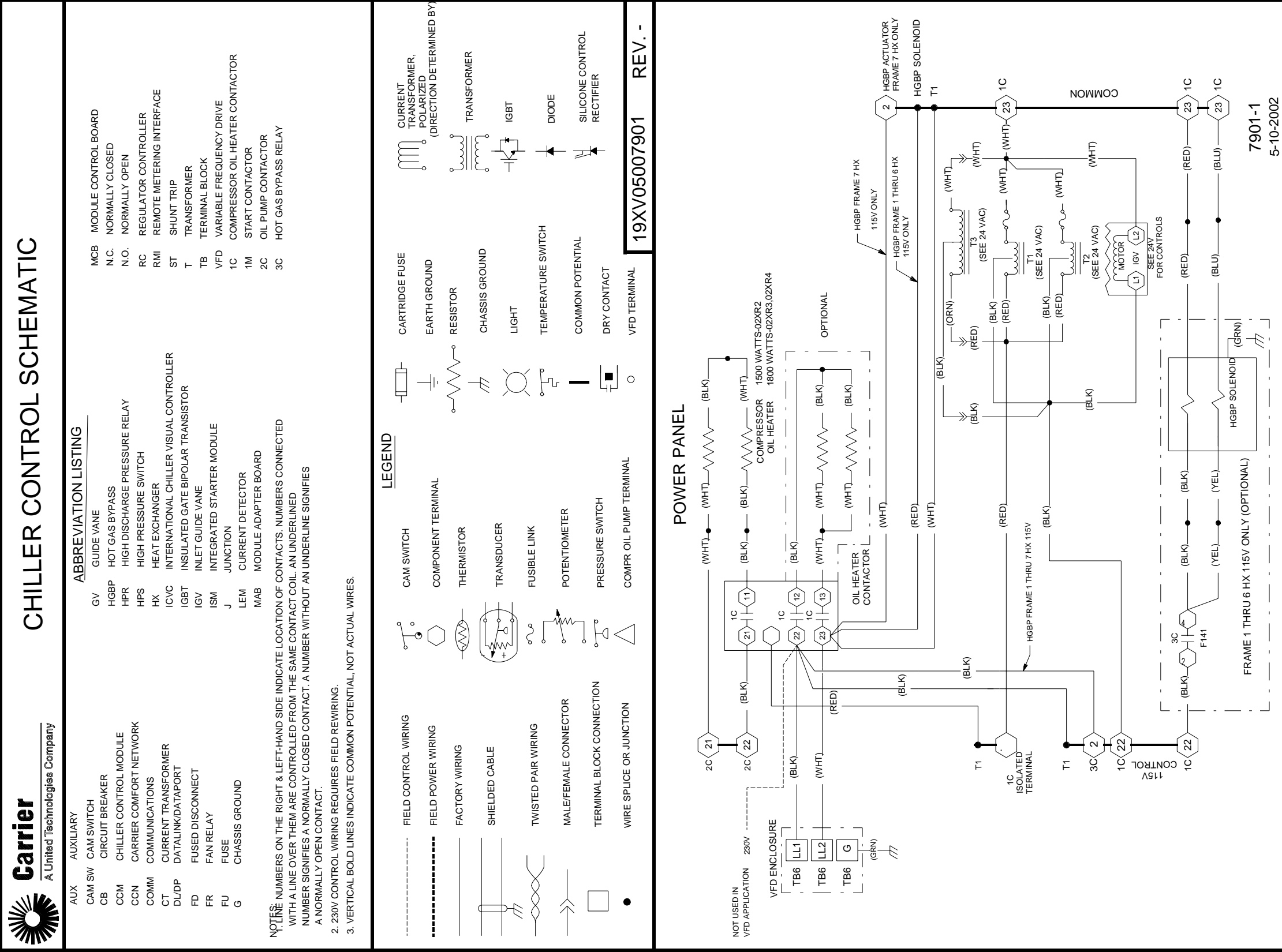
Note: When replacing the Regulator board, verify that jumper J4 is on pins 1 and 2, as shown in the detail below. You also may need to perform an initialization procedure. See section 6.7 or instruction manual D2-3411 for more information.

## 2.6 414 Amp 19XRV Drive Wiring Diagrams



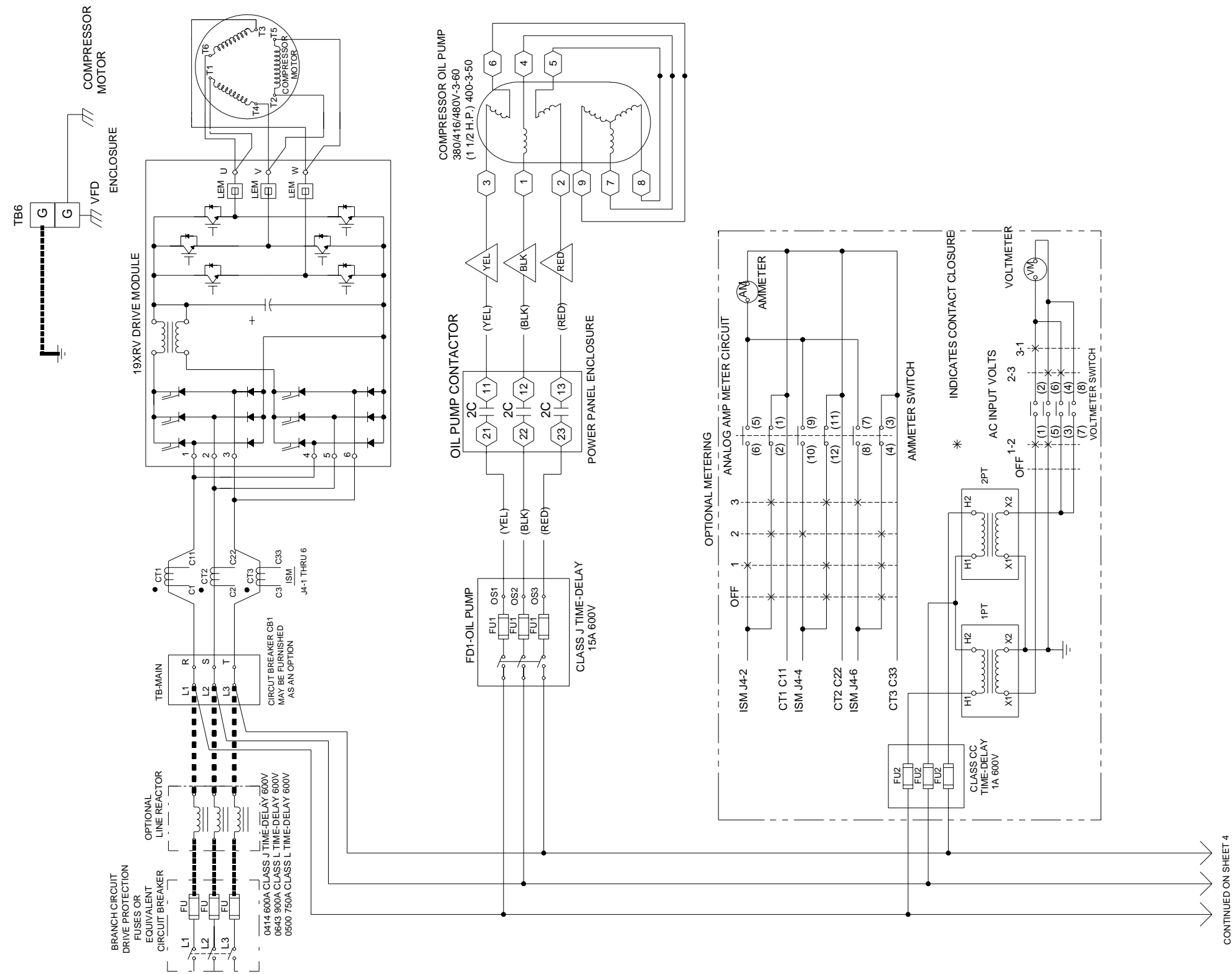


## 2.7 VFD System Wiring Diagram (19XV05007901 rev A)



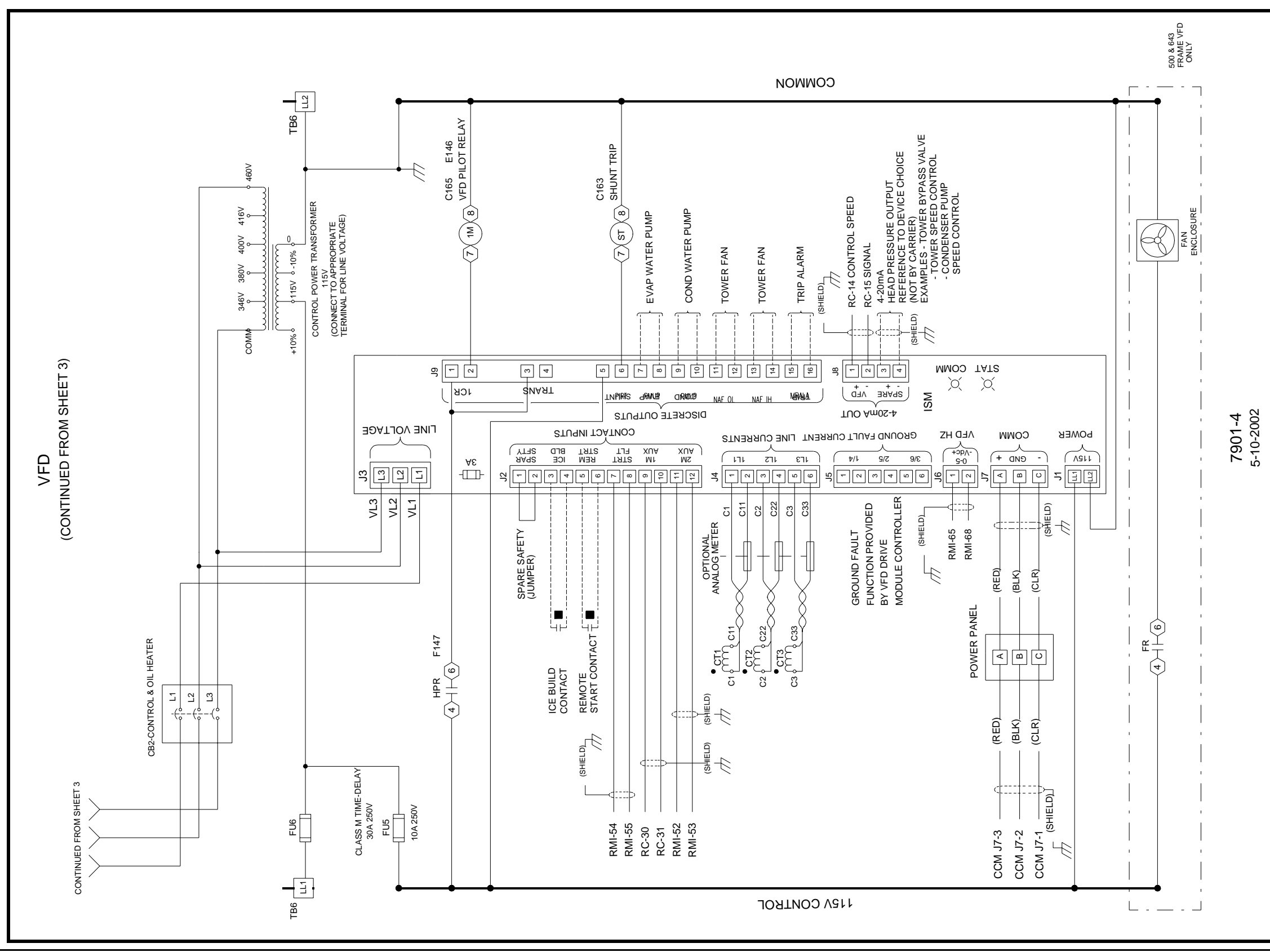


VFD



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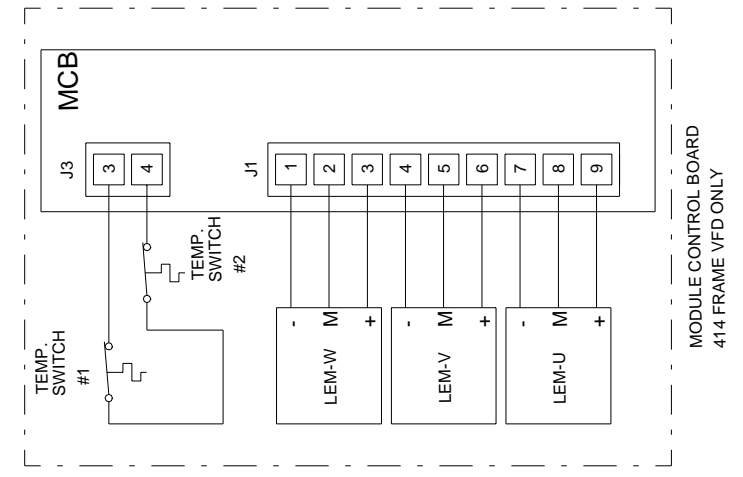
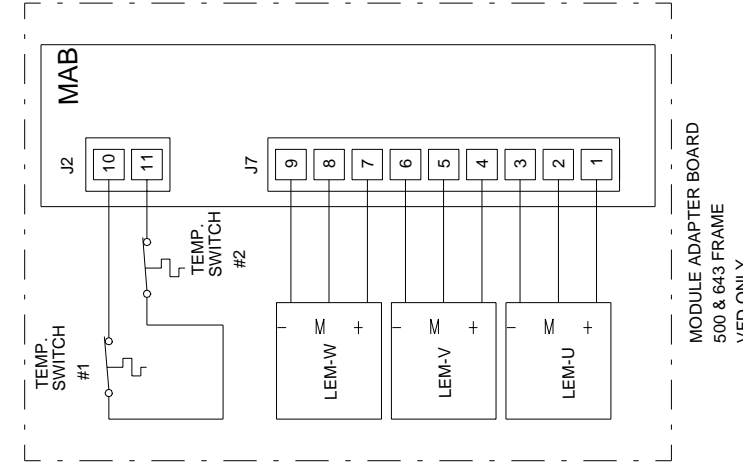
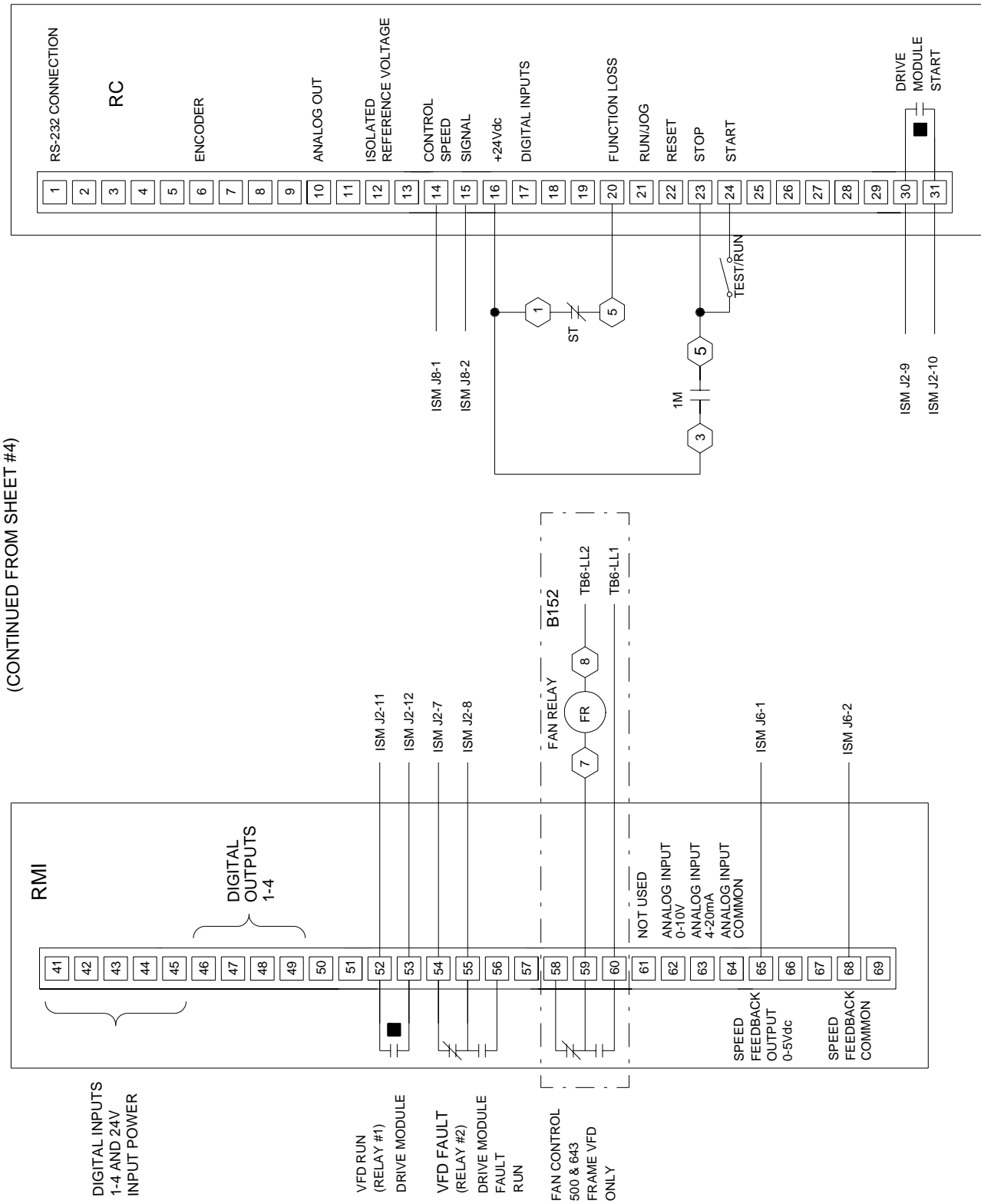
VFD  
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500 & 643  
FRAME VFD  
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VFD  
(CONTINUED FROM SHEET #4)



7901-5  
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## 2.8 500 Amp and 643 Amp 19XRV Drive Wiring Diagrams

