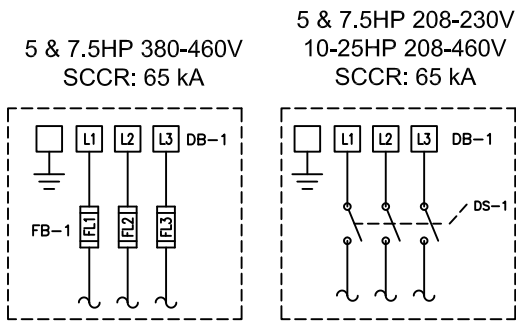


Notes:

1. MAIN DISCONNECT PROVIDED BY OTHERS.
2. FIELD WIRING TO BE COPPER RATED FOR 75°C MINIMUM.
3. - - - - INDICATES FIELD WIRING OUTSIDE OF BOX.
4. AUXILIARY CONTACTS LIST AND OPERATION NOTES ON SHEET 3.
5. THE AMPACITY OF CONDUCTORS SUPPLYING THE CONTROL PANEL TO BE ROUNDED UP TO THE NEXT SIZE LARGER STANDARD WIRE GAUGE.
6. MOP VALUES TO BE ROUNDED DOWN TO THE NEAREST STANDARD RATING OF THE OVERCURRENT PROTECTION DEVICE.
7. SHORT CIRCUIT CURRENT RATING (SCCR): 65kA
8. POWER TO TERMINAL BLOCKS 3 & 4 OPENS ISOLATION VALVE 1  
 POWER TO TERMINAL BLOCKS 5 & 6 CLOSES ISOLATION VALVE 1  
 POWER TO TERMINAL BLOCKS 13 & 14 OPENS ISOLATION VALVE 2  
 POWER TO TERMINAL BLOCKS 15 & 16 CLOSES ISOLATION VALVE 2  
 POWER TO TERMINAL BLOCKS 23 & 24 OPENS ISOLATION VALVE 3  
 POWER TO TERMINAL BLOCKS 25 & 26 CLOSES ISOLATION VALVE 3  
 POWER TO TERMINAL BLOCKS 33 & 34 OPENS ISOLATION VALVE 4  
 POWER TO TERMINAL BLOCKS 35 & 36 CLOSES ISOLATION VALVE 4



**MINIMUM CIRCUIT AMPACITY (MCA)**

SYSTEM HP	208 V	230 V	380 V	460 V
5 HP	74.5 AMPS	67.8 AMPS	43.7 AMPS	34.4 AMPS
7.5 HP	106.4 AMPS	96.7 AMPS	62.0 AMPS	48.8 AMPS
10 HP	134.4 AMPS	122.2 AMPS	79.0 AMPS	61.6 AMPS
15 HP	199.9 AMPS	181.7 AMPS	117.3 AMPS	91.3 AMPS
20 HP	256.0 AMPS	232.7 AMPS	147.0 AMPS	116.8 AMPS
25 HP	321.4 AMPS	292.2 AMPS	189.5 AMPS	146.6 AMPS

**MAXIMUM OVERCURRENT PROTECTION (MOP)**

SYSTEM HP	208 V	230 V	380 V	460 V
5 HP	87.7 AMPS	79.8 AMPS	50.9 AMPS	39.9 AMPS
7.5 HP	127.1 AMPS	115.5 AMPS	73.5 AMPS	57.8 AMPS
10 HP	161.7 AMPS	147.0 AMPS	94.5 AMPS	73.5 AMPS
15 HP	242.6 AMPS	220.5 AMPS	141.8 AMPS	110.3 AMPS
20 HP	311.9 AMPS	283.5 AMPS	178.5 AMPS	141.8 AMPS
25 HP	392.7 AMPS	357.0 AMPS	231.0 AMPS	178.5 AMPS

**QUADRAPLEX SYSTEM FULL LOAD AMPERES**

SYSTEM HP	208 V	230 V	380V/50Hz	460 V
5 HP	62.0 AMPS	54.1 AMPS	33.0 AMPS	27.4 AMPS
7.5 HP	96.4 AMPS	89.7 AMPS	47.6 AMPS	45.2 AMPS
10 HP	136.4 AMPS	107.3 AMPS	55.2 AMPS	54.0 AMPS
15 HP	202.8 AMPS	152.1 AMPS	91.2 AMPS	76.4 AMPS
20 HP	250.8 AMPS	210.5 AMPS	114.0 AMPS	105.6 AMPS
25 HP	290.8 AMPS	250.5 AMPS	150.0 AMPS	125.6 AMPS

**INDIVIDUAL FULL LOAD AMPERES**

SYSTEM HP	208 V	230 V	380V/50Hz	460 V
5 HP	14.8 AMPS	12.9 AMPS	7.7 AMPS	6.5 AMPS
7.5 HP	23.4 AMPS	21.8 AMPS	11.4 AMPS	10.9 AMPS
10 HP	33.4 AMPS	26.2 AMPS	13.3 AMPS	13.1 AMPS
15 HP	50.0 AMPS	37.4 AMPS	22.3 AMPS	18.7 AMPS
20 HP	62.0 AMPS	52.0 AMPS	28.0 AMPS	26.0 AMPS
25 HP	72.0 AMPS	62.0 AMPS	37.0 AMPS	31.0 AMPS

**FUSE SELECTION CHART (MAX FUSE SIZES SHOWN)**

SYSTEM HP	FUSES	208 V	230 V	380 V	460 V
5 HP	FL1/FL2/FL3	---	---	40 AMPS	35 AMPS
7.5 HP		---	---	60 AMPS	60 AMPS
10 HP		---	---	---	---
15 HP		---	---	---	---
20 HP		---	---	---	---
25 HP	---	---	---	---	
ALL	F1/F2/F4/F5/ F7/F8/F10/F11	6.0 AMPS	6.0 AMPS	6.0 AMPS	6.0 AMPS
ALL	F3/F6/F9/F12	---	---	6.0 AMPS	6.0 AMPS
1.5-15HP	F21-F24	4.0 AMPS	4.0 AMPS	4.0 AMPS	4.0 AMPS
20-25HP		---	---	---	---
ALL	F33	1.0 AMPS	1.0 AMPS	1.0 AMPS	1.0 AMPS
ALL	F35	0.5 AMPS	0.5 AMPS	0.5 AMPS	0.5 AMPS

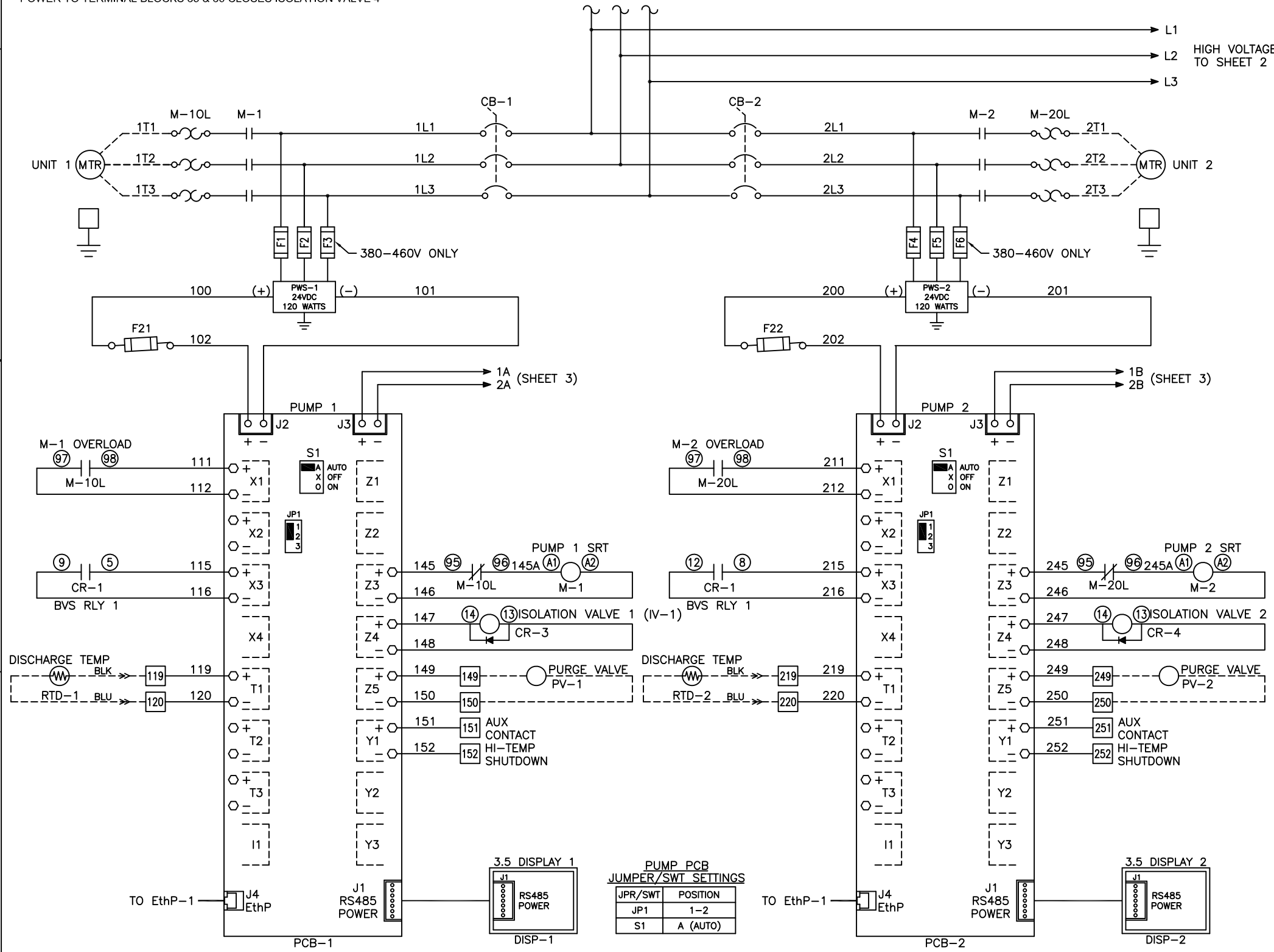
FL1/FL2/FL3 ARE LITTELFUSE JTD 600V TYPE  
 F1-F12 ARE LITTELFUSE KLDK 600V TYPE  
 F21-F24/F33/F35 ARE LITTELFUSE 2AG 250V TYPE

**DEFAULT VACUUM SETTINGS**

ALTITUDE	LEAD CUT-OFF ("Hg)	LAG CUT-ON ("Hg)	Maximum Limits ("Hg)	Minimum Limits ("Hg)
0-3000'	25	19	25	22
3001-4000'	24	19	25	22
4001-5000'	23	18	25	22
5001-6000'	22	18	24	21
6001-7000'	21	17	23	20
7001-8000'	20	17	22	20
8001-9000'	19	16	21	19
9001-10,000'	18	16	20	18
>10,000'	CONSULT FACTORY			

**BACKUP VACUUM SWITCH**

BVS-1	CUT-ON	15"
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**PUMP PCB JUMPER/SWT SETTINGS**

JPR/SWT	POSITION
JP1	1-2
S1	A (AUTO)

Revised: MDB Date: 03/19/20 Drawn: MDB Date: 10/30/18  
 Scale: NTS  
 DWG WIRING CONTROL  
 QX LAB LUBE 5-15HP 208-460V  
 & 20-25HP 380-460V, 65kA  
 Part Number: 4107 8568 67  
 DN: HOP200150 Rev: 01  
 Sheet 1 of 3 DOCUMENT

Notes:

1. FIELD WIRING TO BE COPPER RATED FOR 75°C MINIMUM.

**AUTO OPERATION:**

THE PUMP PCB WILL SIGNAL THE LEAD PUMP TO START AND THE ISOLATION VALVE TO OPEN WHEN THE VACUUM FALLS BELOW THE SET POINT. THE PUMP WILL CONTINUE TO RUN UNTIL THE VACUUM LEVEL SET POINT IS REACHED AND THE PUMP PCB WILL SIGNAL THE ISOLATION VALVE TO CLOSE AND THE PURGE VALVE TO OPEN. THE PUMP WILL THEN PURGE UNTIL THE PURGE TIMER EXPIRES. AFTER THE PURGE TIMER EXPIRES, THE PUMP PCB WILL SIGNAL THE PURGE VALVE TO CLOSE AND THE PUMP TO TURN OFF. IF THE VACUUM LEVEL FALLS BELOW THE SET POINT DURING THE PURGE CYCLE THE PCB WILL SIGNAL THE PURGE VALVE TO CLOSE, THE ISOLATION VALVE TO OPEN AND THE PUMP WILL RUN UNTIL THE VACUUM LEVEL SET POINT IS REACHED AND THEN BEGIN THE PURGE PROCESS AGAIN.

THE LEAD PUMP WILL ALTERNATE WHEN THE PUMP ALTERNATION TIME COMPLETES, FACTORY SET AT 10 HOURS. IF THE LEAD PUMP FAILS THE NEXT AVAILABLE PUMP WILL BECOME LEAD.

**PUMP PCB S1 POSITION:**

**POSITION (A) - AUTO (DEFAULT):**

THE PUMP WILL OPERATE NORMALLY AS DESCRIBED ABOVE IN "AUTO OPERATION".

**POSITION (X) - OFF:**

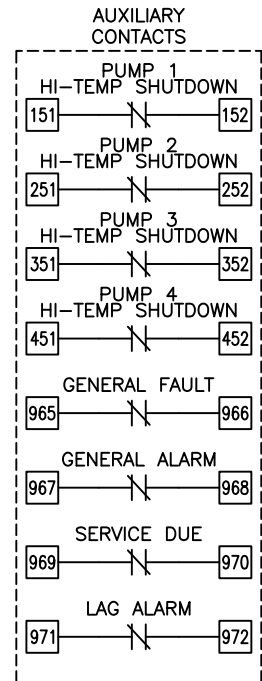
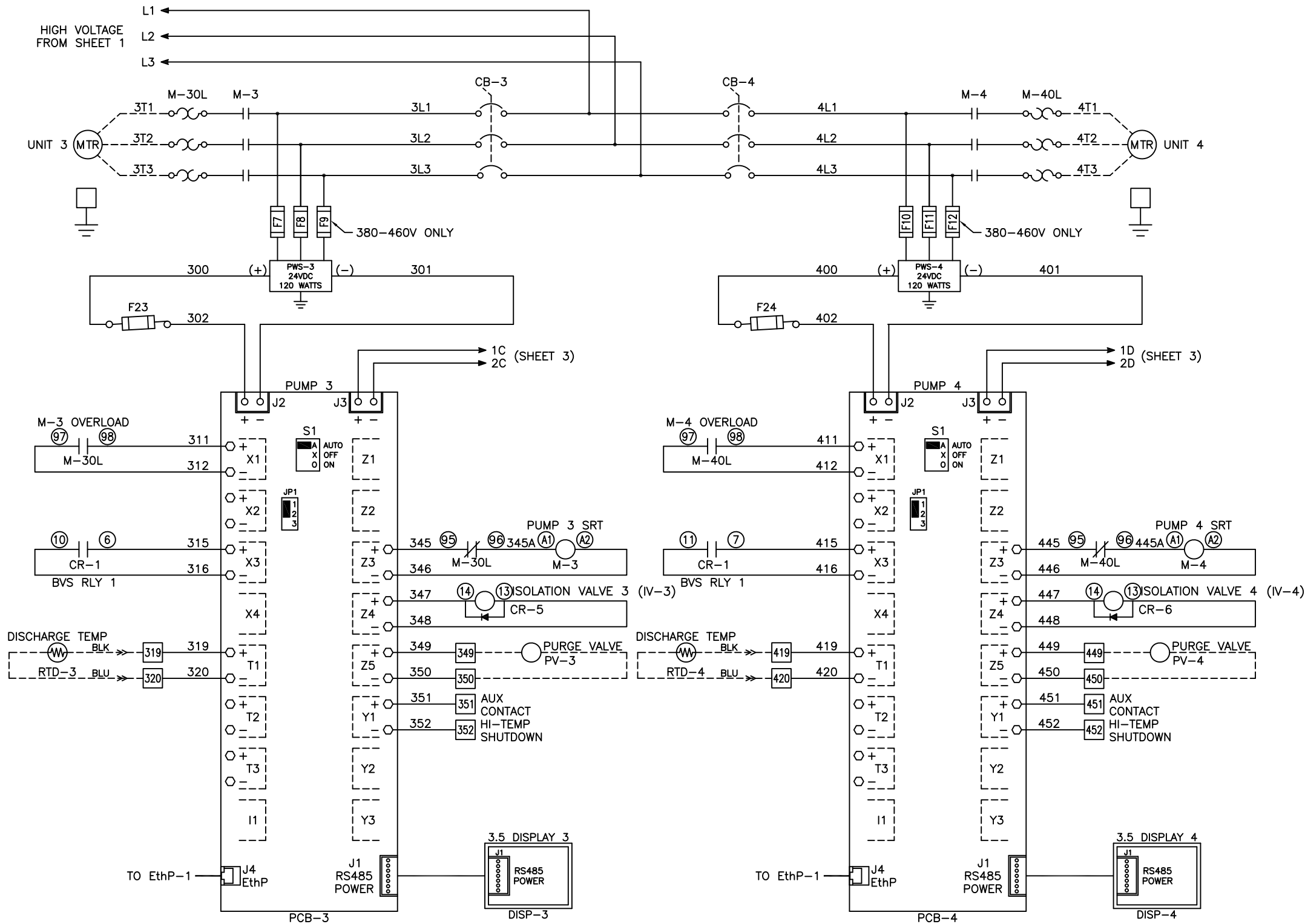
THE PUMP IS DISABLED FROM RUNNING.

**POSITION (O) - MANUAL:**

THE PUMP WILL RUN CONTINUOUSLY.

**PCB FAULT:**

IF A PUMP PCB ETHERNET FAULT OR A TRANSDUCER FAULT OCCURS, THE PUMP PCB WILL AUTOMATICALLY SWITCH TO EMERGENCY MANUAL MODE. VACUUM PUMPS WILL START WHEN BVS-1 (BACKUP VACUUM SWITCH) CLOSSES AND STOP WHEN THE RUN TIMER EXPIRES.



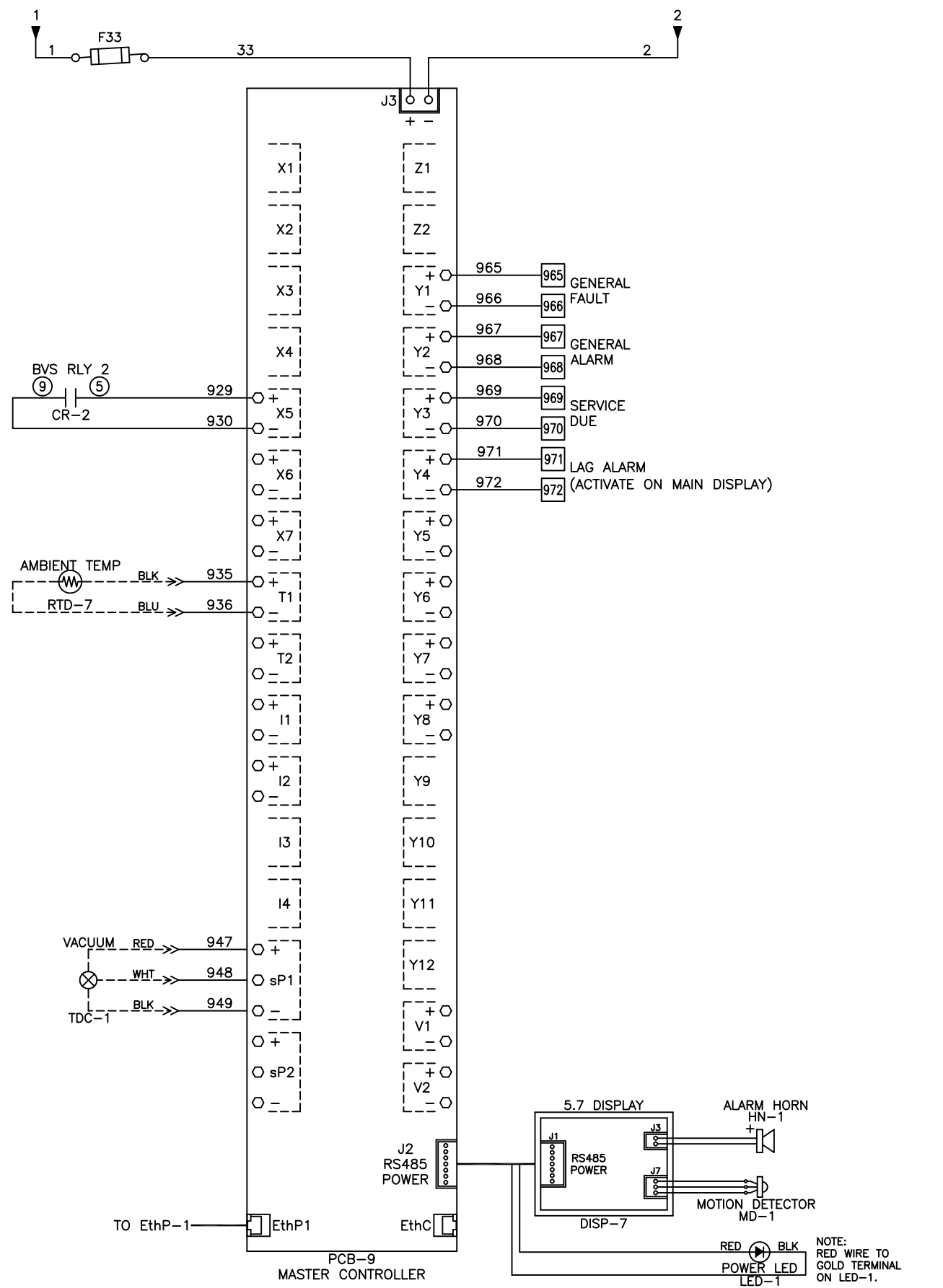
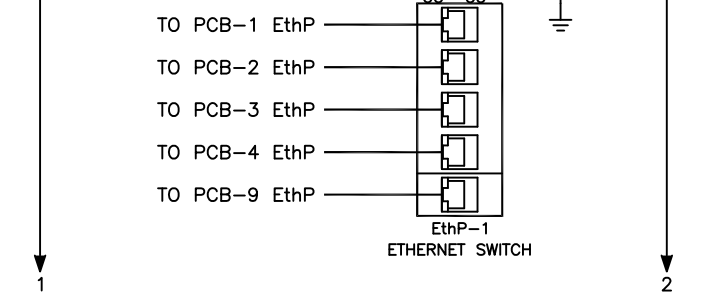
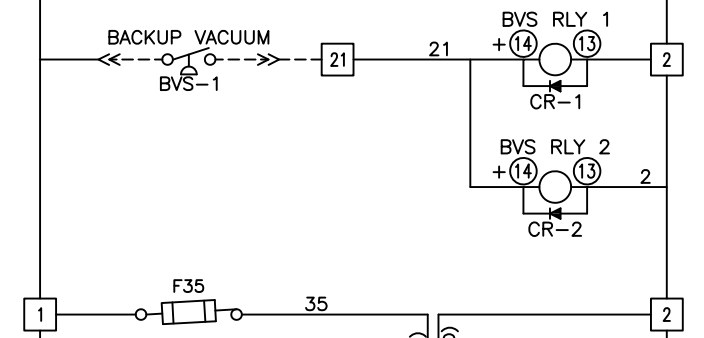
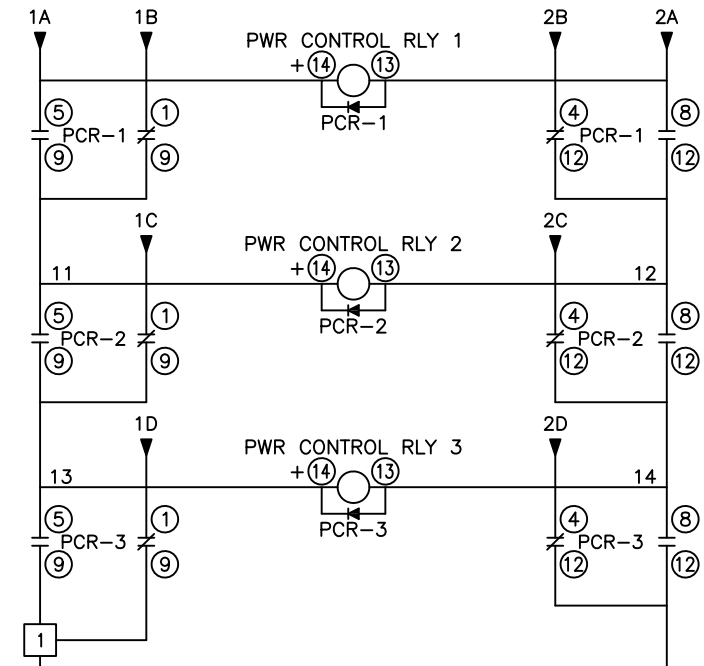
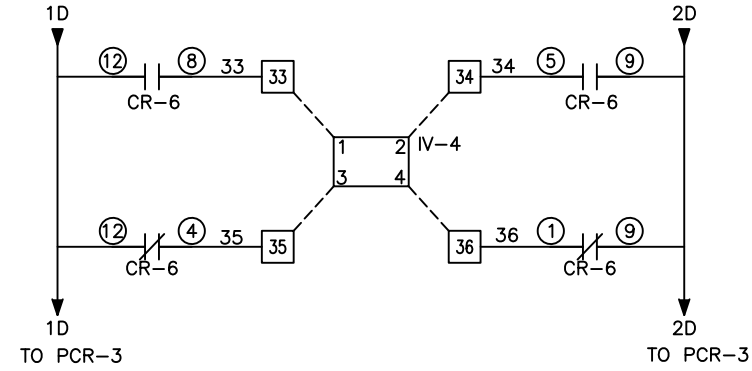
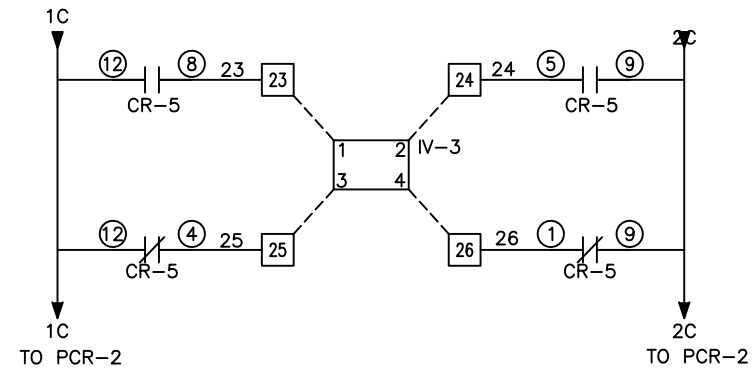
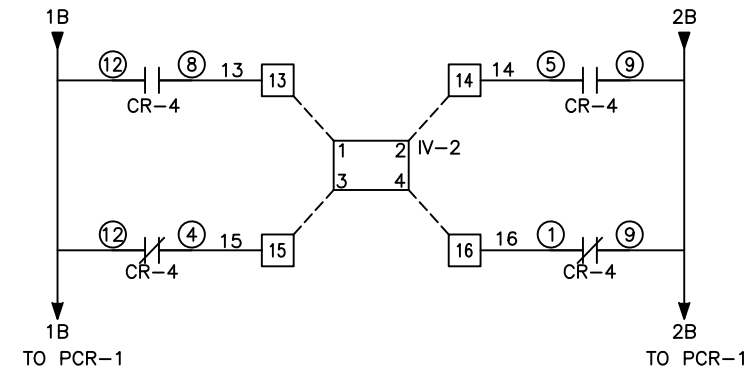
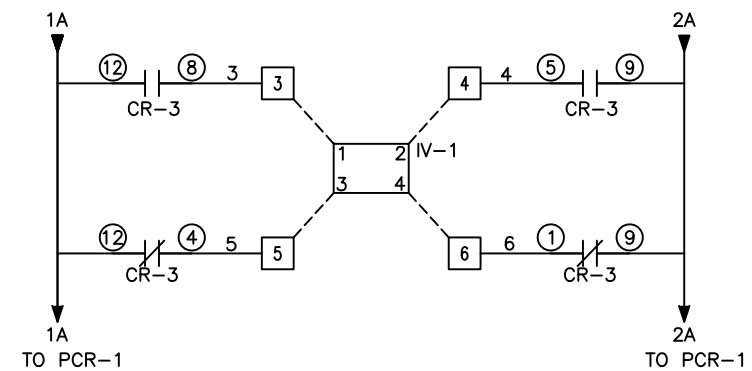
**NOTE:**  
 AUXILIARY CONTACTS 151-152, 251-252, 351-352, 451-452, & 965-972 ARE "CLASS 1 CONTROL CIRCUITS. USE CLASS 1 CONDUCTORS."  
 AUX CONTACTS ARE RATED 0.7A<sub>dc</sub>/0.7A<sub>rms</sub> @ 24V MAX. UNLESS OTHERWISE NOTED.

AUX CONTACTS CLOSED DURING NORMAL OPERATION.

Revised: MDB	Date: 03/19/20	Drawn: MDB	Date: 10/30/18
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Description: DWG WIRING CONTROL QX LAB LUBE 5-15HP 208-460V & 20-25HP 380-460V, 65KA		Part Number: 4107 8568 67	
DN: HOP200150		Rev: 01	
Sheet 2 of 3		DO NOT SCALE THIS DOCUMENT	

Notes:

1. FIELD WIRING TO BE COPPER RATED FOR 75°C MINIMUM.



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Description: DWG WIRING CONTROL QX LAB LUBE 5-15HP 208-460V & 20-25HP 380-460V, 65KA		Part Number: 4107 8568 67 D/N: HOP200150 Rev: 01 Sheet 3 of 3 DO NOT SCALE THIS DOCUMENT	