

Notes:

1. THE AMPACITY OF CONDUCTORS SUPPLYING THE CONTROL PANEL TO BE ROUNDED UP TO THE NEXT SIZE LARGER STANDARD WIRE GAUGE.
2. MOP VALUES TO BE ROUNDED DOWN TO THE NEAREST STANDARD RATING OF THE OVERCURRENT PROTECTION DEVICE.
3. SHORT CIRCUIT CURRENT RATING (SCCR): 65 kA

**AUTO OPERATION:**

DURING NORMAL OPERATION THE MASTER PCB WILL SIGNAL THE LEAD VACUUM PUMP TO START WHEN THE VACUUM FALLS BELOW THE SET-POINT. IF ONE PUMP CAN CARRY THE LOAD, THEN THE VACUUM WILL RISE TO THE SET-POINT. THE PUMP PCB WILL THEN TURN OFF THE LEAD VACUUM PUMP WHEN ITS RUN TIMER EXPIRES. WHEN THE SYSTEM VACUUM FALLS AGAIN, THE MASTER PCB WILL SEQUENCE THE LEAD ROLE TO THE NEXT PUMP PCB AND IT WILL START. IF DURING OPERATION THE SYSTEM VACUUM FALLS BELOW 15"Hg, THE LAG PUMP WILL START AND A LAG ALARM WILL OCCUR.

**PUMP PCB S1 POSITION:**

**POSITION (A) – AUTO (DEFAULT):**

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

**POSITION (X) – OFF:**

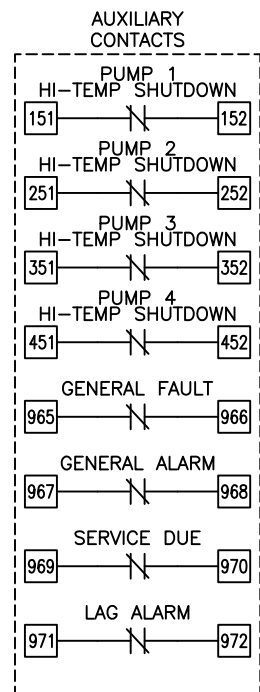
THE PUMP IS DISABLED FROM RUNNING.

**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 BVS-1 OPENS AND 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.

**MINIMUM CIRCUIT AMPACITY (MCA)**

SYSTEM HP	208 V	230 V	380 V	460 V
5.4 HP	74.5 AMPS	67.8 AMPS	43.7 AMPS	34.4 AMPS
6.4 & 7.5 HP	106.4 AMPS	96.7 AMPS	62.0 AMPS	48.8 AMPS
8.7 & 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

**MAXIMUM OVERCURRENT PROTECTION (MOP)**

SYSTEM HP	208 V	230 V	380 V	460 V
5.4 HP	87.7 AMPS	79.8 AMPS	50.9 AMPS	39.9 AMPS
6.4 & 7.5 HP	127.1 AMPS	115.5 AMPS	73.5 AMPS	57.8 AMPS
8.7 & 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

**INDIVIDUAL MOTOR NAMEPLATE FULL LOAD AMPERES**

SYSTEM HP	208 V	230 V	460 V	S.F.	380V/50Hz	S.F.
5.4 HP	12.4 AMPS	11.4 AMPS	5.7 AMPS	1.25	5.1 AMPS	1.15
6.4 HP	16.0 AMPS	15.8 AMPS	7.9 AMPS	1.25	8.6 AMPS	1.15
7.5 HP	22.0 AMPS	17.8 AMPS	8.9 AMPS	1.25	9.3 AMPS	1.15
8.7 HP	22.2 AMPS	21.2 AMPS	10.6 AMPS	1.25	11.3 AMPS	1.15
10 HP	27.2 AMPS	23.6 AMPS	11.8 AMPS	1.15	10.5 AMPS	1.15
15 HP	40.5 AMPS	35.0 AMPS	17.5 AMPS	1.15	14.5 AMPS	1.15

**INDIVIDUAL OPERATING FULL LOAD AMPERES**

SYSTEM HP	208 V	230 V	380V/50Hz	460 V
5.4 HP	13.7 AMPS	12.6 AMPS	5.6 AMPS	6.3 AMPS
6.4 HP	17.4 AMPS	17.2 AMPS	9.4 AMPS	8.6 AMPS
7.5 HP	24.2 AMPS	19.6 AMPS	10.2 AMPS	9.8 AMPS
8.7 HP	25.1 AMPS	24.0 AMPS	12.8 AMPS	12.0 AMPS
10 HP	27.2 AMPS	23.6 AMPS	14.0 AMPS	11.8 AMPS
15 HP	40.5 AMPS	35.0 AMPS	14.5 AMPS	17.5 AMPS

**QUADRAPLEX SYSTEM FULL LOAD AMPERES**

SYSTEM HP	208 V	230 V	380V/50Hz	460 V
5.4 HP	57.6 AMPS	52.9 AMPS	24.4 AMPS	26.8 AMPS
6.4 HP	72.4 AMPS	71.3 AMPS	39.6 AMPS	36.0 AMPS
7.5 HP	99.6 AMPS	80.9 AMPS	42.8 AMPS	40.8 AMPS
8.7 HP	103.2 AMPS	98.5 AMPS	53.2 AMPS	49.6 AMPS
10 HP	111.6 AMPS	96.9 AMPS	58.0 AMPS	48.8 AMPS
15 HP	164.8 AMPS	142.5 AMPS	60.0 AMPS	71.6 AMPS

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

SYSTEM HP	FUSES	208 V	230 V	380 V	460 V
5.4 HP	FL1/FL2/FL3	---	60 AMPS	30 AMPS	35 AMPS
6.4 HP		---	---	45 AMPS	45 AMPS
7.5 HP		---	---	50 AMPS	50 AMPS
8.7 HP		---	---	---	60 AMPS
10 HP		---	---	---	60 AMPS
15 HP		---	---	---	---
ALL	F1/F2/F4/F5/F7/F8/F10/F11	6.0 AMPS	6.0 AMPS	6.0 AMPS	6.0 AMPS
	F3/F6/F9/F12	---	---	6.0 AMPS	6.0 AMPS
	F21-F24	2.5 AMPS	2.5 AMPS	2.5 AMPS	2.5 AMPS
	F33	1.0 AMP	1.0 AMP	1.0 AMP	1.0 AMP
	F34	0.4 AMP	0.4 AMP	0.4 AMP	0.4 AMP
	F35	0.5 AMP	0.5 AMP	0.5 AMP	0.5 AMP

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

**OVERLOAD SETTINGS**

SYSTEM HP	208 V	230 V	380V/50Hz	460 V
5.4 HP	15.1 AMPS	13.9 AMPS	6.2 AMPS	6.9 AMPS
6.4 HP	19.1 AMPS	18.9 AMPS	10.3 AMPS	9.5 AMPS
7.5 HP	26.6 AMPS	21.6 AMPS	11.2 AMPS	10.8 AMPS
8.7 HP	27.6 AMPS	26.4 AMPS	14.1 AMPS	13.2 AMPS
10 HP	29.9 AMPS	26.0 AMPS	15.4 AMPS	13.0 AMPS
15 HP	44.6 AMPS	38.5 AMPS	16.0 AMPS	19.3 AMPS

**DEFAULT VACUUM SETPOINT ("HgV)**

ALTITUDE	15HP O2A	
0-1000'	20	18
1001-2000'	19	17
2001-3000'	18	16
3001-4000'	17	16
>4000'	CONSULT FACTORY	

**RELIEF VALVE SETTINGS ("HgV)**

ALTITUDE	O2 ASSURED PUMPS						
	5.4HP	6.4-8.7HP	10-15HP	5.4HP	6.4-8.7HP	10HP	15HP
0-1000'	N/A	24	23	N/A	24	23	20
1001-2000'	N/A	23	22	N/A	23	22	19
2001-3000'	N/A	22	21	N/A	22	21	18
3001-4000'	N/A	21	20	N/A	21	20	18
>4000'	CONSULT FACTORY						

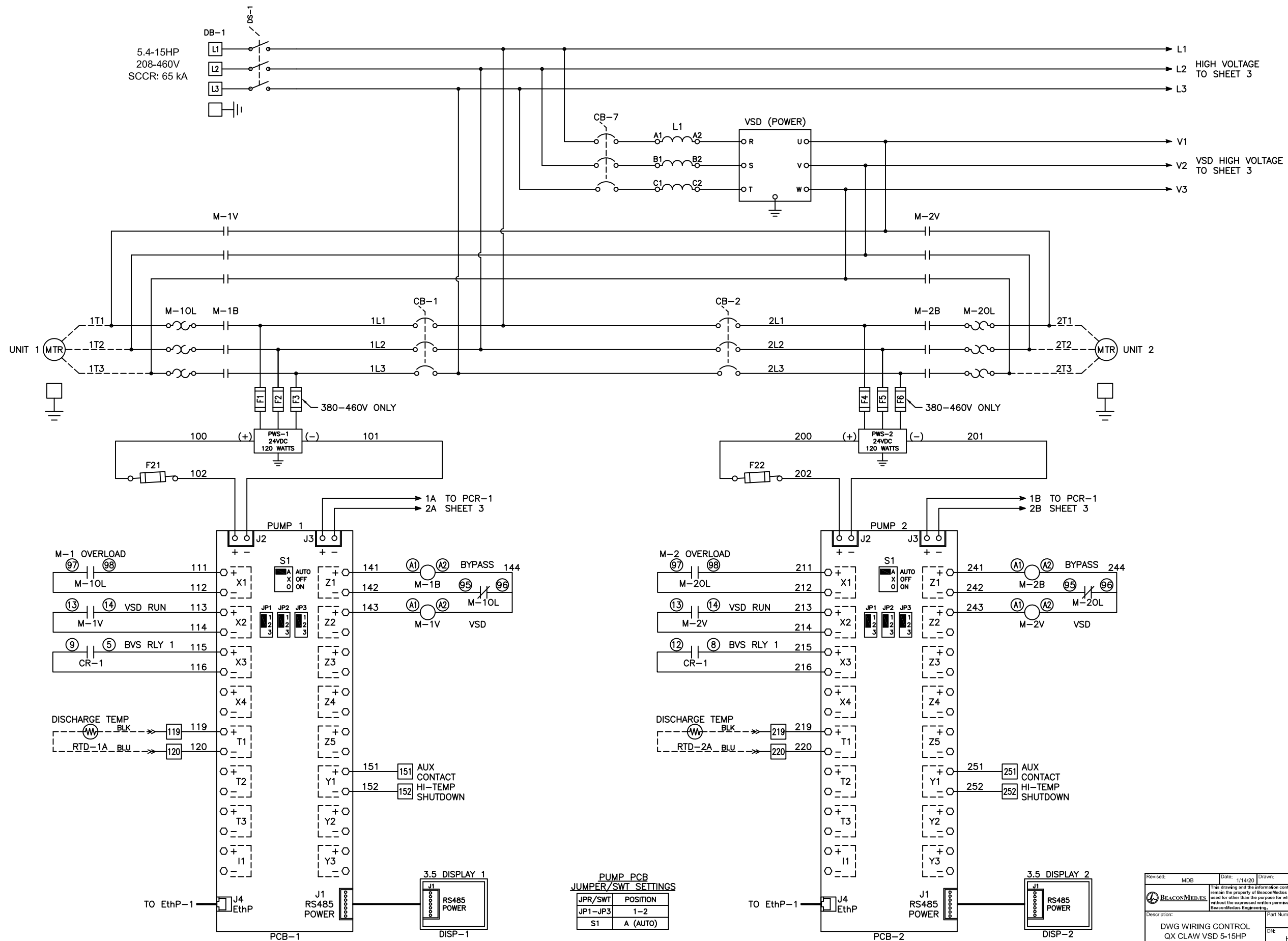
**BACKUP VACUUM SWITCH ("HgV)**

BVS-1	CUT-ON	15	14

Revised: MDB	Date: 1/14/20	Drawn: MDB	Date: 10/30/18
		Scale: NTS <b>D</b>	
Description: DWG WIRING CONTROL OX CLAW VSD 5-15HP 208-460/3/50-60, 65kA		Part Number: 4107 8568 50	
DN: HOP201388		Rev: 01	
Sheet 1 of 4		DO NOT SCALE THIS DOCUMENT	

Notes:

1. MAIN DISCONNECT PROVIDED BY OTHER.
2. FIELD WIRING TO BE COPPER RATED FOR 75°C MINIMUM.
3. - - - - - INDICATES FIELD WIRING OUTSIDE OF CABINET.



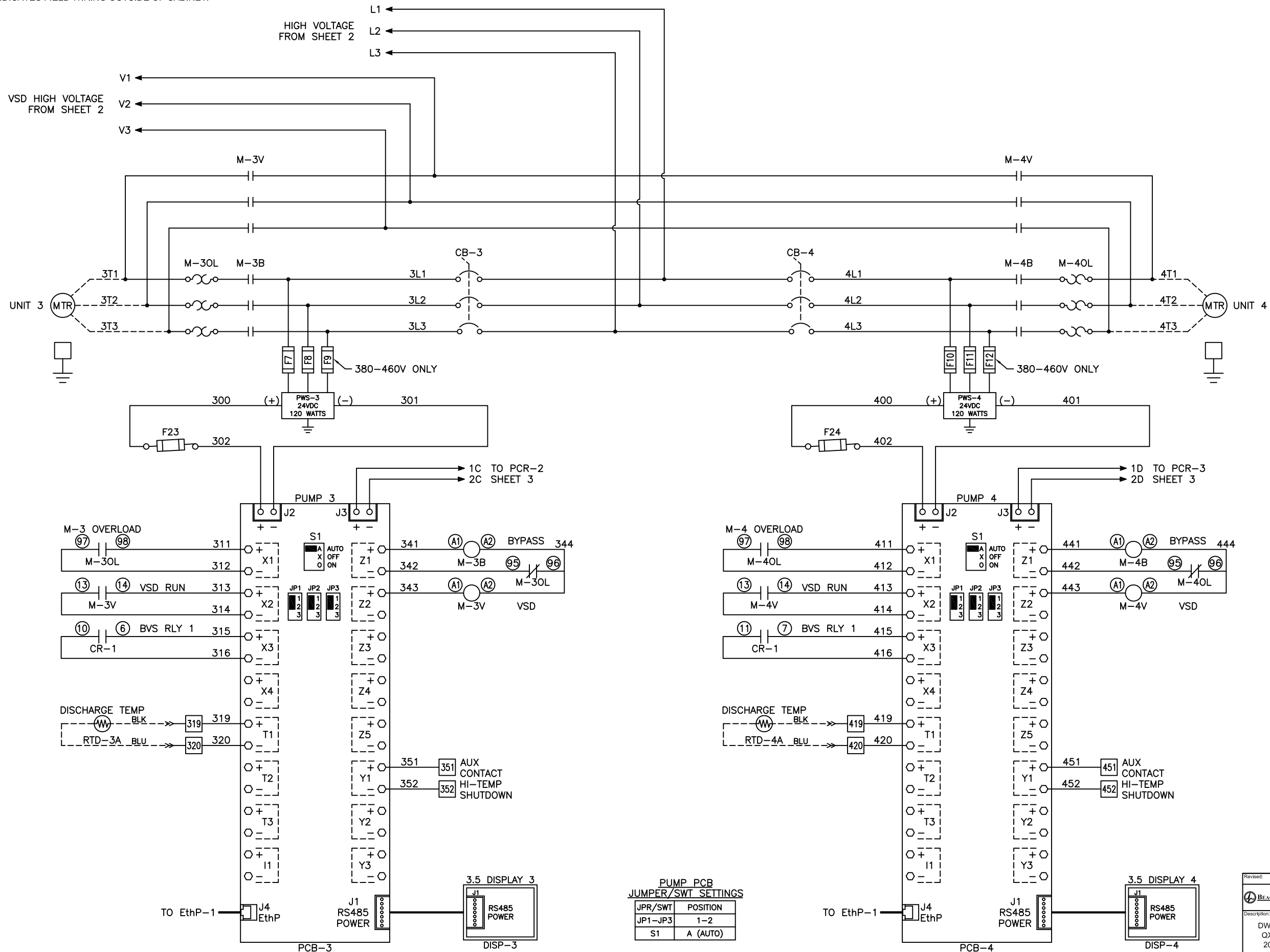
**PUMP PCB JUMPER/SWT SETTINGS**

JPR/SWT	POSITION
JP1-JP3	1-2
S1	A (AUTO)

Revised:	MDB	Date:	1/14/20	Drawn:	MDB	Date:	10/30/18
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<b>D</b>						Scale: NTS	
Description: DWG WIRING CONTROL QX CLAW VSD 5-15HP 208-460/3/50-60, 65kA				Part Number: 4107 8568 50			
DNE HOP201388				Rev: 01			
Sheet 2 of 4				DO NOT SCALE THIS DOCUMENT			

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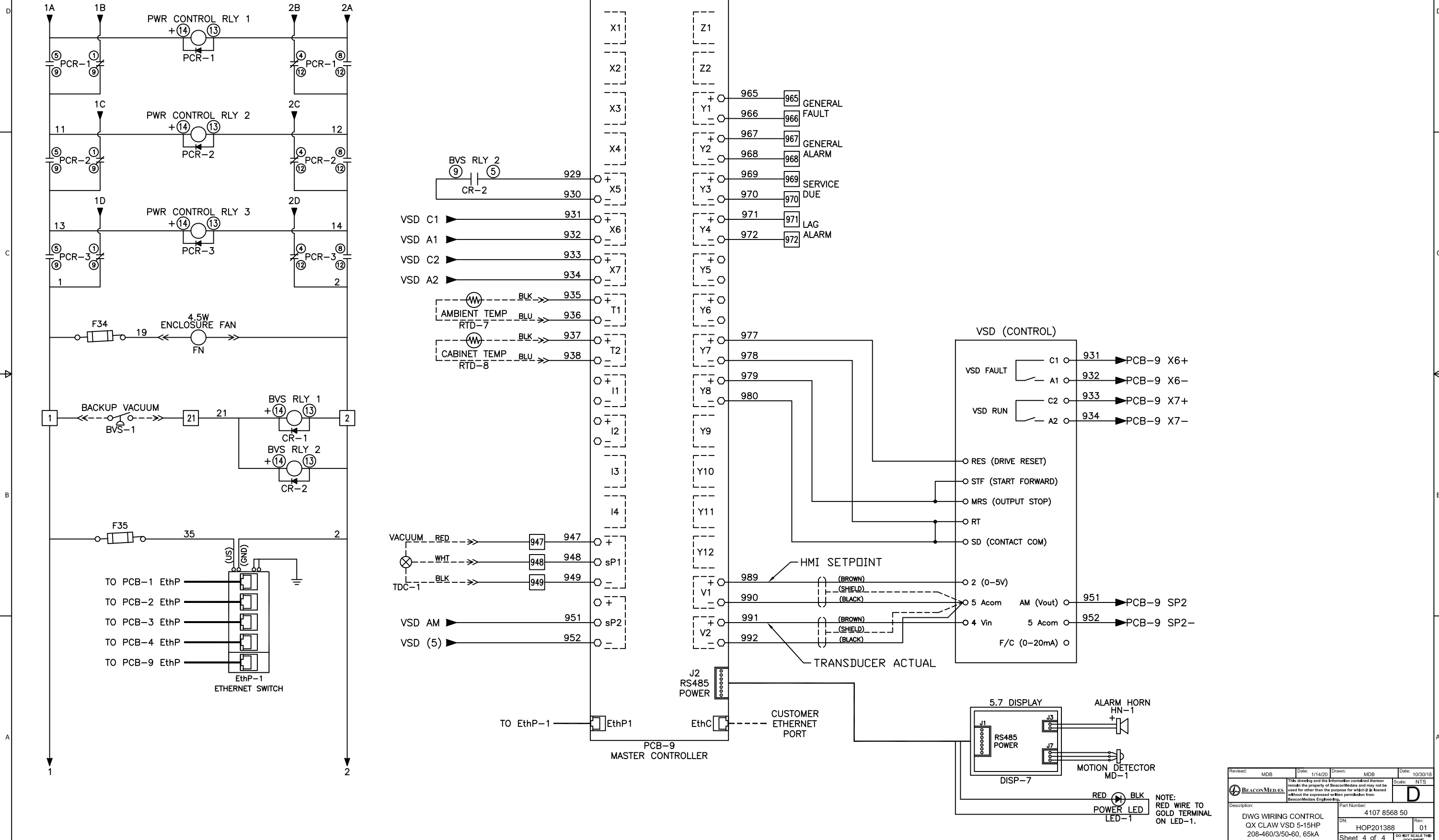
**PUMP PCB JUMPER/SWT SETTINGS**

JPR/SWT	POSITION
JP1-JP3	1-2
S1	A (AUTO)

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Description: DWG WIRING CONTROL QX CLAW VSD 5-15HP 208-460/3/50-60, 65KA		Part Number: 4107 8568 50 Rev: 01 HOP201388 Sheet 3 of 4	

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Description: DWG WIRING CONTROL QX CLAW VSD 5-15HP 208-460/3/50-60, 65kA		Part Number: 4107 8568 50	
DR: HOP201388	Rev: 01	Sheet 4 of 4	

NOTE: RED WIRE TO GOLD TERMINAL ON LED-1.