

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:**

THE MASTER PCB WILL CONTROL THE ADAPTIVE FUNCTIONALITY OF THE SYSTEM. THE ADAPTIVE CONTROL CAUSES THE VACUUM PUMPS TO START BASED ON THE VACUUM LEVEL. THE SIGNAL TO STOP IS BASED ON THE LENGTH OF TIME THE VACUUM SYSTEM WAS NOT RUNNING. THE MASTER PCB DETERMINES THE MINIMUM RUN TIME OF A PUMP ONCE IT HAS STOPPED. IF THE VACUUM SYSTEM IS STOPPED FOR A LONG PERIOD OF TIME, THE MINIMUM RUN TIME AFTER A RESTART WILL BE SHORT. IF THE VACUUM SYSTEM IS STOPPED FOR A SHORT PERIOD OF TIME, THE MINIMUM RUN TIME WILL BE LONGER. SEE O&M MANUAL FOR SPECIFIC VARIATIONS. IF DURING OPERATION THE THIRD VACUUM PUMP IS REQUIRED TO TURN ON, THE MASTER CONTROLLER WILL SET A LAG ALARM CONDITION.

**PUMP PCB S1 POSITION:**

**POSITION (A) – AUTO (DEFAULT):**

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

**POSITION (X) – OFF:**

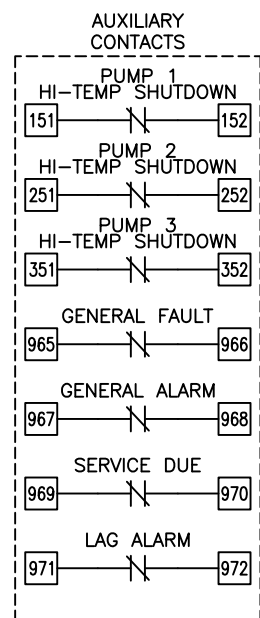
THE PUMP IS DISABLED FROM RUNNING.

**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, & 965-972 ARE "CLASS 1 CONTROL CIRCUITS. USE CLASS 1 CONDUCTORS."

AUX CONTACTS ARE RATED 0.7Adc/0.7Arms @ 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	56.9 AMPS	51.8 AMPS	33.4 AMPS	26.2 AMPS
6.4 & 7.5 HP	81.3 AMPS	73.9 AMPS	47.4 AMPS	37.3 AMPS
8.7 & 10 HP	102.7 AMPS	93.4 AMPS	60.4 AMPS	47.0 AMPS
15 HP	152.8 AMPS	138.9 AMPS	89.6 AMPS	69.8 AMPS

**MAXIMUM OVERCURRENT PROTECTION (MOP)**

SYSTEM HP	208 V	230 V	380 V	460 V
5.4	71.0 AMPS	64.6 AMPS	41.2 AMPS	32.3 AMPS
6.4 & 7.5 HP	102.9 AMPS	93.5 AMPS	59.5 AMPS	46.8 AMPS
8.7 & 10 HP	130.9 AMPS	119.0 AMPS	76.5 AMPS	59.5 AMPS
15 HP	196.4 AMPS	178.5 AMPS	114.8 AMPS	89.3 AMPS

**INDIVIDUAL MOTOR NAMEPLATE FULL LOAD AMPERES**

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

**TRIPLEX SYSTEM FULL LOAD AMPERES**

SYSTEM HP	208 V	230 V	380V/50Hz	460 V
5.4 HP	43.2 AMPS	39.7 AMPS	18.3 AMPS	20.1 AMPS
6.4 HP	54.3 AMPS	53.5 AMPS	29.7 AMPS	27.0 AMPS
7.5 HP	74.7 AMPS	60.7 AMPS	32.1 AMPS	30.6 AMPS
8.7 HP	77.4 AMPS	73.9 AMPS	39.9 AMPS	37.2 AMPS
10 HP	83.7 AMPS	72.7 AMPS	43.5 AMPS	36.6 AMPS
15 HP	123.6 AMPS	106.9 AMPS	45.0 AMPS	53.7 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	50 AMPS	25 AMPS	25 AMPS
6.4 HP		---	---	35 AMPS	35 AMPS
7.5 HP		---	---	40 AMPS	40 AMPS
8.7 HP		---	---	50 AMPS	45 AMPS
10 HP		---	---	60 AMPS	45 AMPS
15 HP		---	---	---	---
ALL	F1/F2/F4/F5/F7/F8	6.0 AMPS	6.0 AMPS	6.0 AMPS	6.0 AMPS
	F3/F6/F9	---	---	6.0 AMPS	6.0 AMPS
	F21/F22/F23	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
	F35	0.5 AMP	0.5 AMP	0.5 AMP	0.5 AMP

FL1/FL2/FL3 ARE LITTELFUSE JTD 600V TYPE  
F1-F9 ARE LITTELFUSE KLDK 600V TYPE  
F21/F22/F23/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 SETTINGS ("HgV)**

ALTITUDE	LEAD CUT-OFF		LAG CUT-ON		MAXIMUM LIMITS			MINIMUM LIMITS				
	15HP	O2A	15HP	O2A	15HP	O2A	15HP	O2A	15HP	O2A		
0-1000'	21	19	16	15	24	18	24	17	17	15	16	15
1001-2000'	20	18	16	15	23	18	23	17	17	15	16	15
2001-3000'	19	17	16	15	22	18	22	17	17	15	16	15
3001-4000'	18	17	16	15	21	18	21	17	17	15	16	15
>4000'	CONSULT FACTORY											

**RELIEF VALVE SETTINGS ("HgV)**

ALTITUDE	O2 ASSURED PUMPS			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						

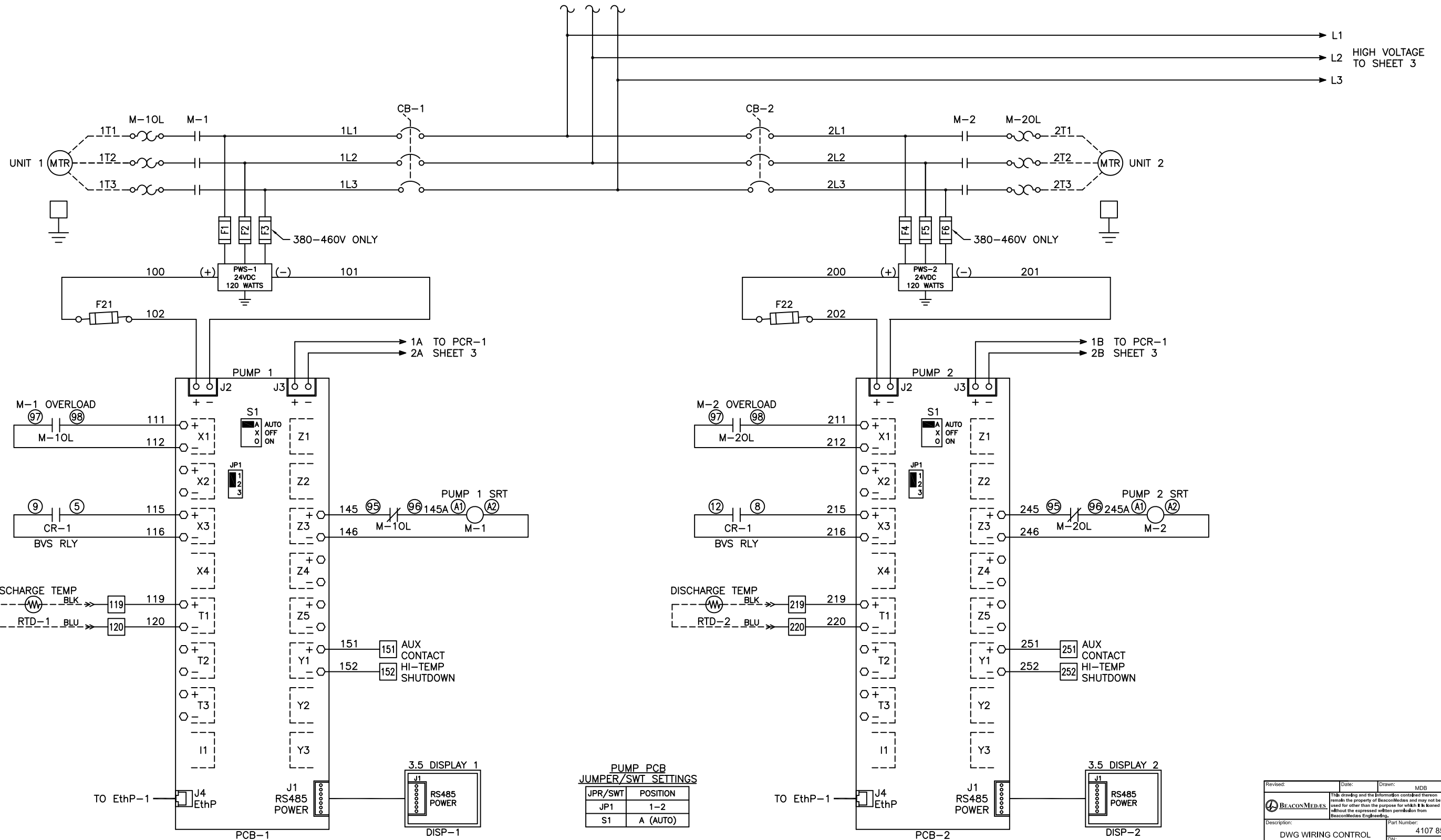
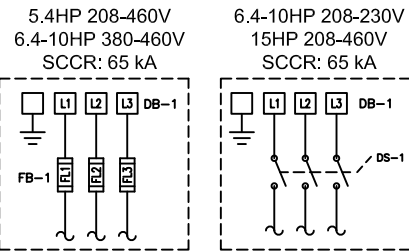
**BACKUP VACUUM SWITCH ("HgV)**

BVS-1	CUT-ON	15	14

Revised:	Date:	Drawn: MDB	Date: 10/30/18
		Scale: NTS <b>D</b>	
Description: DWG WIRING CONTROL TX CLAW 5-15HP 208-460/3/50-60, 65kA		Part Number: 4107 8568 44	
DN: HOP 180863		Rev: 00	
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.



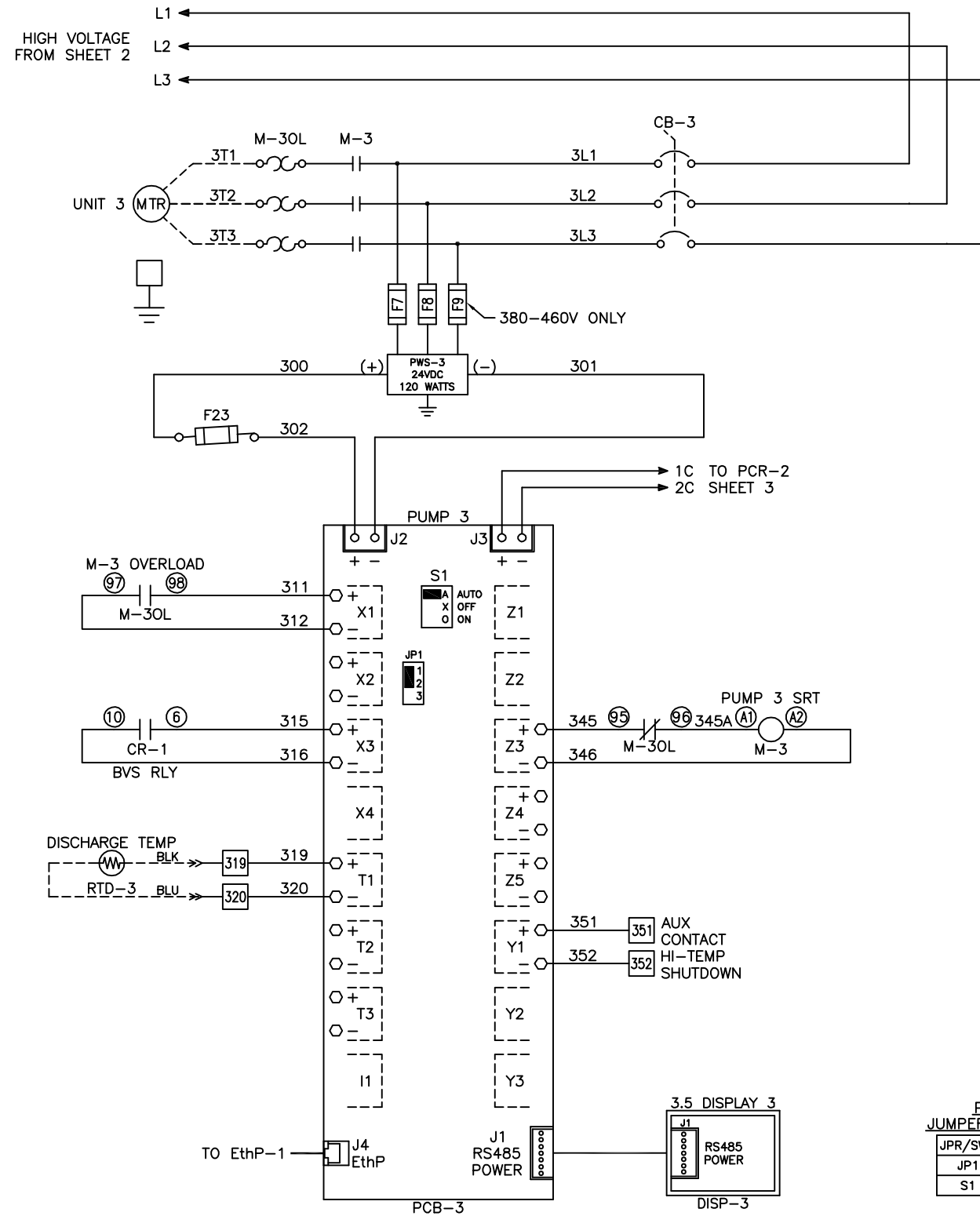
PUMP PCB JUMPER/SWT SETTINGS

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

Revised:	Date:	Drawn: MDB	Date: 10/30/18
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Description: DWG WIRING CONTROL TX CLAW 5-15HP 208-460/3/50-60, 65kA		Part Number: 4107 8568 44 Rev: HOP 180863 00 Sheet 2 of 4 DO NOT SCALE THIS DOCUMENT	

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PUMP PCB  
JUMPER/SWT SETTINGS

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

Revised:	Date:	Drawn:	MDB	Date:	10/30/18
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