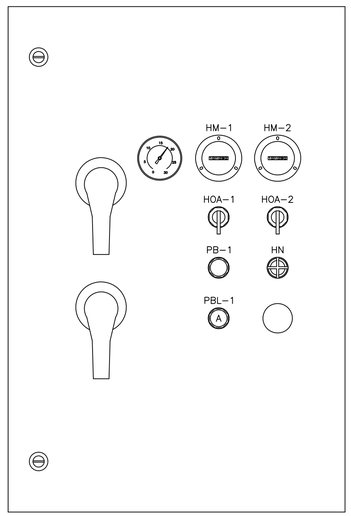
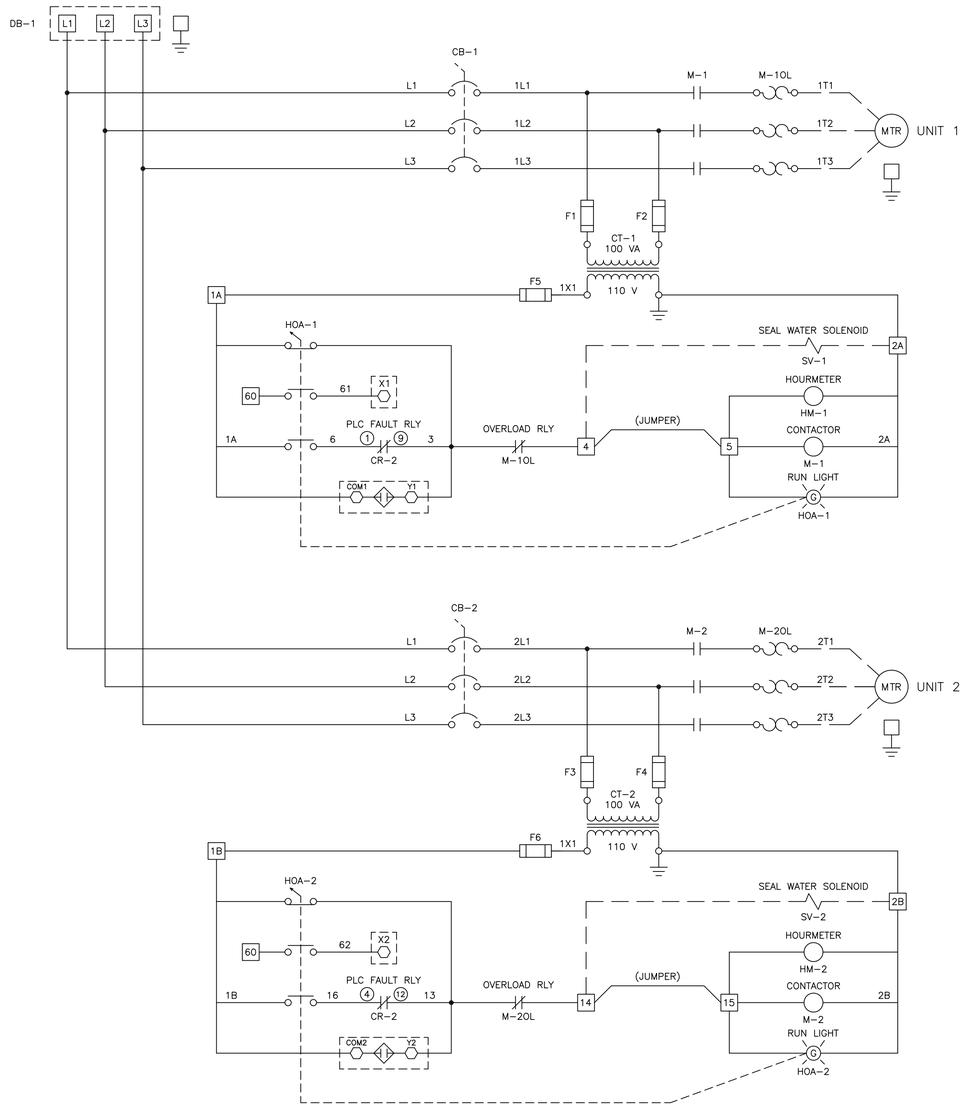
NOTES:

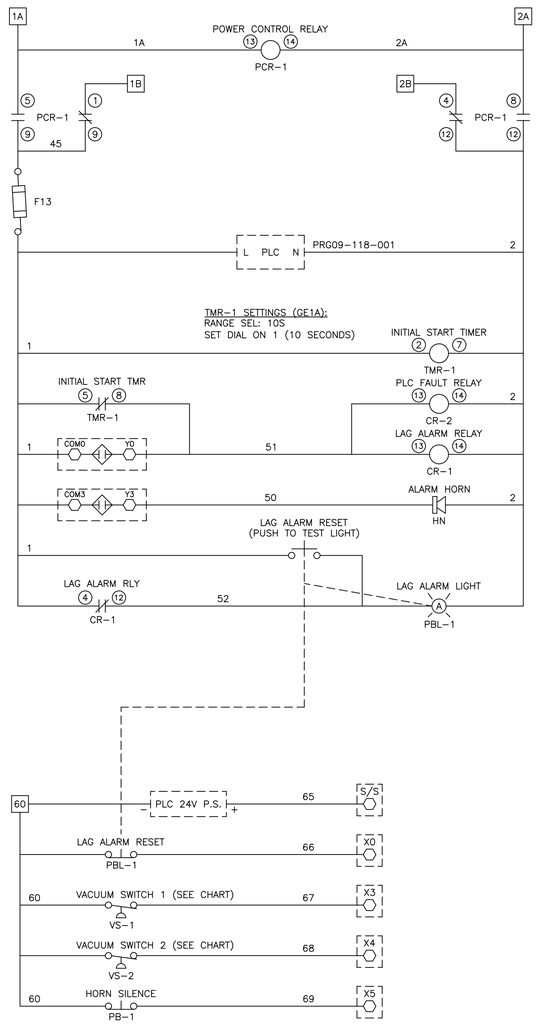
1. MAIN DISCONNECT PROVIDED BY OTHER.
2. FIELD WIRING TO BE COPPER RATED FOR 75°C MINIMUM.
3. — — — INDICATES FIELD WIRING OUTSIDE OF CABINET.
4. ADJUSTABLE MINIMUM RUN TIMER IS PROVIDED IN THE PLC PROGRAM. SEE PLC DETAIL FOR ADJUSTING POT AND CHART FOR CORRECT SETTINGS.
5. THE AMPACITY OF CONDUCTORS 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 NEXT STANDARD RATING OF THE OVERCURRENT PROTECTION DEVICE.
7. SHORT CIRCUIT CURRENT RATING (SCCR): 5 kA

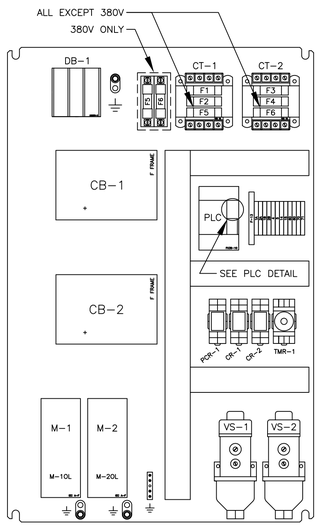
208 - 460 V
3 Ø
50 / 60 Hz

SCCR: 5 kA

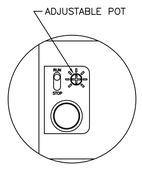


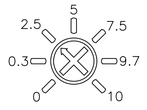






PLC DETAIL





MINIMUM RUN TIMER SETTINGS

SYSTEM HP	SETTING
1–10	2.5

FUSE SELECTION CHART (MAX FUSE SIZES SHOWN)

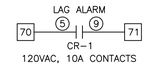
FUSE	208 V	230 V	380 V	460 V
F1/F2/F3/F4	1.6 AMPS	1.4 AMPS	0.8 AMP	0.6 AMP
F5/F6	1.25 AMPS	1.25 AMPS	1.25 AMPS	1.25 AMPS
F13	0.7 AMP	0.7 AMP	0.7 AMP	0.7 AMP

F1/F2/F3/F4 ARE LITTELFUSE KLDR 600V TYPE
F5/F6 ARE LITTELFUSE FLM 250V TYPE
F13 IS LITTELFUSE 2AG 250V TYPE

VACUUM SWITCH SETTINGS

ALTITUDE	VS–1	VS–2	RELIEF VALVE SETTING
0–3000'	20–23"Hg	17–21"Hg	25"Hg
3001'–4000'	19–22"Hg	17–20"Hg	24"Hg
4001'–5000'	18–21"Hg	16–19"Hg	23"Hg
5001'–6000'	17–20"Hg	15–18"Hg	22"Hg

AUXILIARY CONTACTS



CONTACTS CLOSED DURING NORMAL OPERATION

NOTE:
AUXILIARY CONTACTS 70–71 ARE "CLASS 1 CONTROL CIRCUITS, USE CLASS 1 CONDUCTORS"

ALL OTHERS ARE "CLASS 2 CONTROL CIRCUITS, USE CLASS 2 CONDUCTORS"

OPERATION:

DURING NORMAL OPERATION, THE HOA SWITCHES SHOULD BE IN THE AUTO POSITION. THE PLC WILL SIGNAL THE LEAD PUMP TO START WHEN VS–1 CLOSES WITH FALLING VACUUM LEVEL. AFTER VS–1 OPENS AND THE ADJUSTABLE MINIMUM RUN TIMER (SEE NOTE 4) HAS EXPIRED, THE PUMP THAT IS RUNNING WILL TURN OFF. WHEN VS–1 CLOSES AGAIN, THE PLC WILL SEQUENCE THE LEAD ROLE TO THE OTHER PUMP AND IT WILL START. IF LEAD PUMP RUNS FOR MORE THAN 17 MINUTES AND CANNOT REACH THE VS–1 CUT–OFF SETTING, THE PLC WILL TURN OFF THE PUMP THAT IS RUNNING AND SEQUENCE TO THE OTHER PUMP. IF DURING OPERATION VS–2 CLOSES, THE OTHER PUMP WILL COME ON AND THE PLC WILL TURN ON THE "LAG ALARM".

HAND OPERATION:
(EMERGENCY/TROUBLE SHOOTING MODE ONLY)

PUMPS WITH THE HOA SWITCH IN THE HAND POSITION WILL START AND RUN CONTINUOUSLY.

PLC FAULT:

IF A PLC FAULT OCCURS AND HOA SWITCHES ARE IN THE AUTO POSITION, PUMPS WILL START AND RUN CONTINUOUSLY; A LAG ALARM WILL ALSO OCCUR. PUMPS CAN OPERATE IN THIS CONDITION UNTIL PLC FAULT IS REPAIRED.

OFF DELAY:

THE PLC WILL RUN EACH PUMP AN ADDITIONAL 10 SECONDS AFTER IT MEETS THE REQUIREMENTS TO BE TURNED OFF. THIS ALLOWS TIME, SHOULD THE OTHER PUMP BE COMING ONLINE, TO BUILD VACUUM; HELPING LIMIT ANY MOMENTARILY SHARP FALLS IN VACUUM LEVEL AND NUISANCE TRIGGERING OF THE LAG ALARM. BOTH PUMPS RUNNING BRIEFLY AT THE SAME TIME WILL NOT RESULT IN A LAG ALARM; ONLY CLOSING OF VS–2 WILL TRIGGER THE ALARM.

MINIMUM CIRCUIT AMPACITY (MCA)

SYSTEM HP	208 V	230 V	380/400 V	460 V
1 HP	11.7 AMPS	10.6 AMPS	5.9 AMPS	5.4 AMPS
1.5 HP	16.2 AMPS	14.6 AMPS	8.2 AMPS	7.4 AMPS
2 HP	18.2 AMPS	16.4 AMPS	10.4 AMPS	8.3 AMPS
3 HP	25.2 AMPS	22.7 AMPS	14.5 AMPS	11.4 AMPS
5 HP	38.9 AMPS	35.3 AMPS	22.6 AMPS	17.7 AMPS
7.5 HP	55.8 AMPS	50.6 AMPS	32.2 AMPS	25.4 AMPS
10 HP	70.6 AMPS	64.1 AMPS	41.2 AMPS	32.1 AMPS

MAXIMUM OVERCURRENT PROTECTION (MOP)

SYSTEM HP	208 V	230 V	380/400 V	460 V
1 HP	14.9 AMPS	13.6 AMPS	7.4 AMPS	6.8 AMPS
1.5 HP	21.4 AMPS	19.5 AMPS	10.7 AMPS	9.7 AMPS
2 HP	24.3 AMPS	22.1 AMPS	13.9 AMPS	11.0 AMPS
3 HP	34.4 AMPS	31.2 AMPS	19.8 AMPS	15.6 AMPS
5 HP	54.2 AMPS	49.4 AMPS	31.5 AMPS	24.7 AMPS
7.5 HP	78.6 AMPS	71.5 AMPS	45.5 AMPS	35.7 AMPS
10 HP	100.1 AMPS	91.0 AMPS	58.5 AMPS	45.5 AMPS

DUPLEX SYSTEM FULL LOAD AMPERES

SYSTEM HP	208 V	230 V	380V/50Hz	460 V
1 HP	7.4 AMPS	6.5 AMPS	4.8 AMPS	3.3 AMPS
1.5 HP	11.2 AMPS	9.7 AMPS	6.4 AMPS	4.9 AMPS
2 HP	13.8 AMPS	12.1 AMPS	8.4 AMPS	6.1 AMPS
3 HP	22.6 AMPS	19.7 AMPS	12.0 AMPS	9.9 AMPS
5 HP	34.2 AMPS	29.7 AMPS	18.0 AMPS	14.9 AMPS
7.5 HP	50.4 AMPS	43.9 AMPS	26.6 AMPS	21.9 AMPS
10 HP	62.6 AMPS	54.5 AMPS	33.2 AMPS	27.3 AMPS

INDIVIDUAL MOTOR FULL LOAD AMPERES

SYSTEM HP	208 V	230 V	380V/50Hz	460 V
1 HP	3.2 AMPS	2.8 AMPS	2.1 AMPS	1.4 AMPS
1.5 HP	5.1 AMPS	4.4 AMPS	2.9 AMPS	2.2 AMPS
2 HP	6.4 AMPS	5.6 AMPS	3.9 AMPS	2.8 AMPS
3 HP	10.8 AMPS	9.4 AMPS	5.7 AMPS	4.7 AMPS
5 HP	16.6 AMPS	14.4 AMPS	8.7 AMPS	7.2 AMPS
7.5 HP	24.7 AMPS	21.5 AMPS	13.0 AMPS	10.7 AMPS
10 HP	30.8 AMPS	26.8 AMPS	16.3 AMPS	13.4 AMPS

BEACONMEDÆS

TITLE
DUPLEX LIQUID RING VACUUM
1–10 HP 208–460V/3ø/50–60Hz

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