

The **NORCHEM POWDERCAT MODEL NP-250** automatic dry polymer system is designed to process 200 to 960 lbs/day of dry polymer at 0.1 to 0.5 % solution concentrations. The NP-250 system is modular in design consisting of polymer wetting module, control panel, volumetric feeder and booster assembly.

**POWDERCAT MODEL NP-250 DRY POLYMER SYSTEM SPECIFICATIONS**

<b>FRAME:</b>	<b>BASE:</b>	<b>28" W x 40" L x 28" H</b>
	<b>CONSTRUCTION:</b>	<b>304SS BASE</b>
<b>DRY FEEDER:</b>	<b>TYPE:</b>	<b>VOLUMETRIC w/FLEXLINER AGITATION, 0.0 TO 8.0 CU/FT HR</b>
	<b>DRIVE / MOTOR:</b>	<b>1/2 HP SCR DRIVE, 90 VDC, 1/4 HP, 0-160 RPM TENV MOTOR</b>
<b>PROCESS MODULE:</b>	<b>PPM:</b>	<b>STAINLESS STEEL UPPER / LOWER HOUSING, ROTOR AND DRIVE</b>
	<b>MOTOR RATING:</b>	<b>STAINLESS STEEL HERMETICALLY SEALED CHEMICAL SERVICE 1/3 HP, 3450 RPM, STAINLESS STEEL ROTOR AND HOUSING</b>
<b>SYSTEM CAPACITY:</b>	<b>WETTING RATE:</b>	<b>0 TO 8.0 LBS/MIN</b>
	<b>DRY LBS/DAY:</b>	<b>200 LBS @ 0.1% / 960 LBS @ 0.5% SOLUTION CONCENTRATION</b>
	<b>PRIMARY FILL:</b>	<b>50 GPM</b>
	<b>SECONDARY FILL:</b>	<b>NONE</b>
	<b>TOTAL FILL RATE:</b>	<b>50 GPM</b>
<b>PANEL/CONTROLS:</b>	<b>NEMA 12:</b>	<b>ALLEN-BRADLEY 1500 PLC, CONTACTORS, SWITCHES, RELAYS; CONDUCTIVITY LEVEL CONTROL, WATER PRESSURE SWITCH</b>
<b>UTILITIES:</b>	<b>ELECTRICAL:</b>	<b>480/3/60 30 AMP, 120/1/60 15 AMPS</b>
	<b>WATER:</b>	<b>50 – 100 PSI, 75 GPM CLEAN SOURCE</b>
<b>OPTIONS:</b>	<b>PANEL:</b>	<b>NEMA 4X, PANELVIEW INTERFACE, LOCAL/REMOTE STATIONS</b>
	<b>LEVEL:</b>	<b>ANALOG 4-20 mA, NON-CONTACT LEVEL CONTROLLERS</b>
	<b>STORAGE:</b>	<b>1.0 THRU 10.0 CU/FT EXTENTION HOPPERS, DUSTLESS BAG LOADERS, FBIC INTERFACE HOPPER W/ IRIS VALVE, BAG FRAME CAPACITANCE SENSOR WITH SS HOPPER PROBE</b>
	<b>LOW POLYMER:</b>	

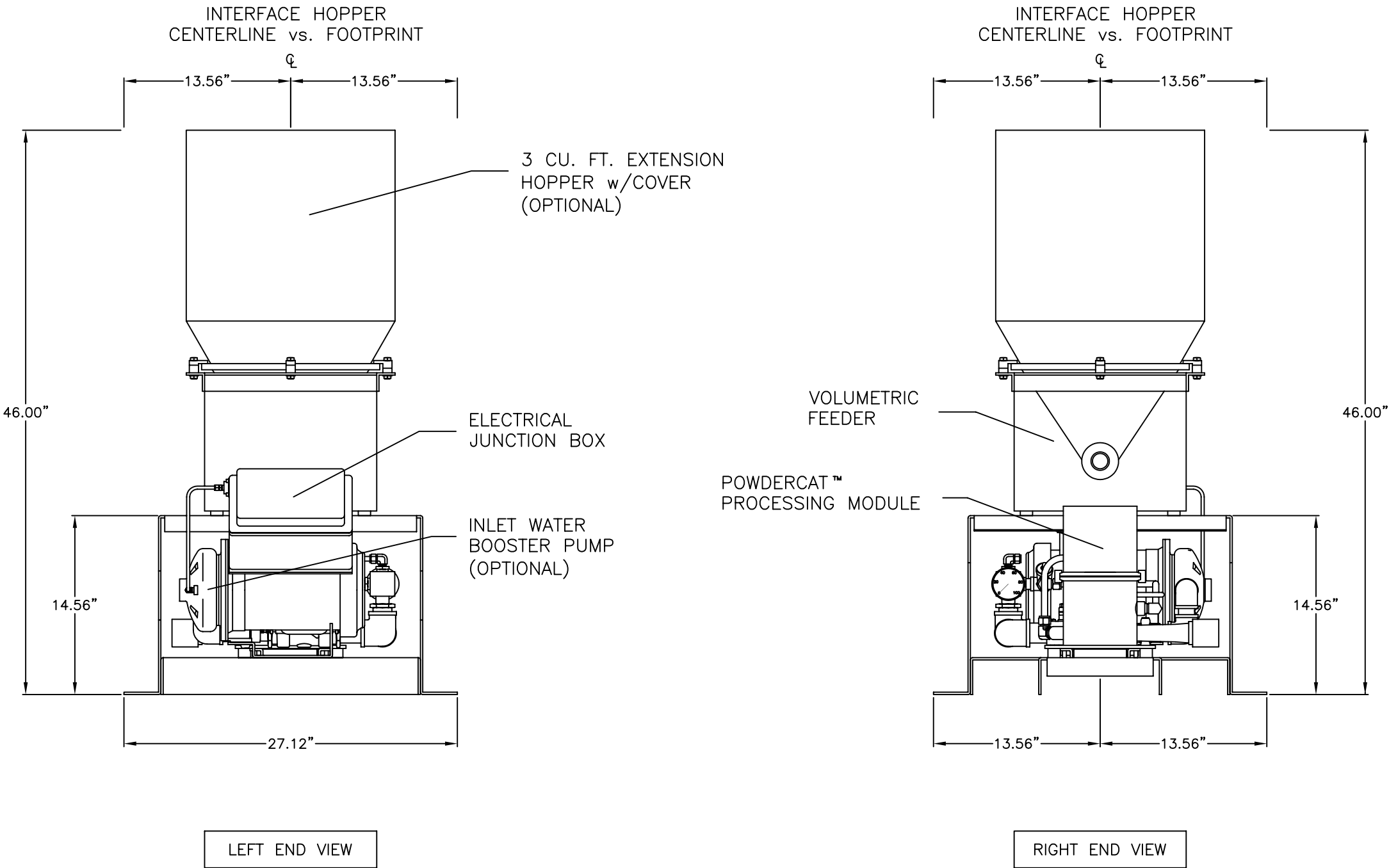
Dry capacities are based on a polymer hydration time of 50 minutes. This processing model achieves 24 cycles within a 24-hour period. Increased mix times will decrease daily capacities. Factors affecting polymer solubility (mix time) are water temperature, molecular weight/charge and particle rheology.

**ENGINEERING SPECIFICATIONS:**

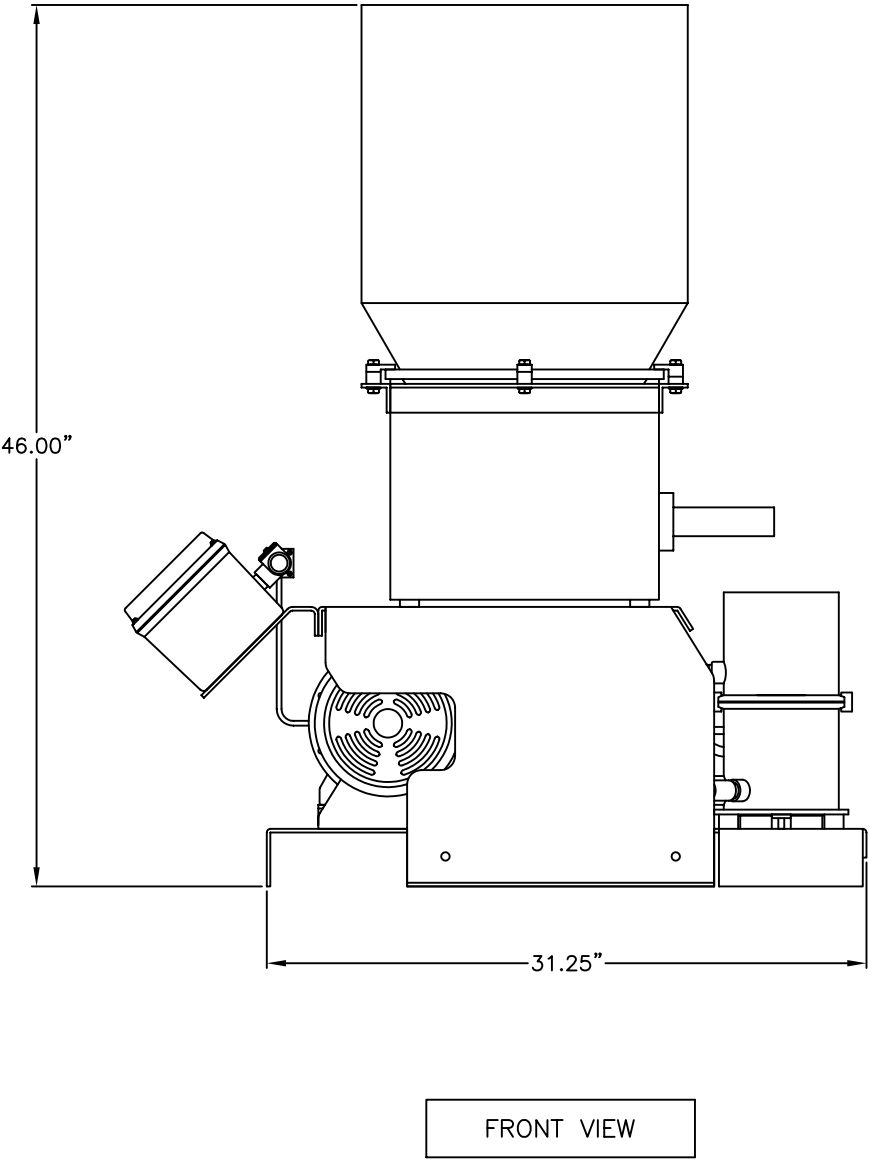
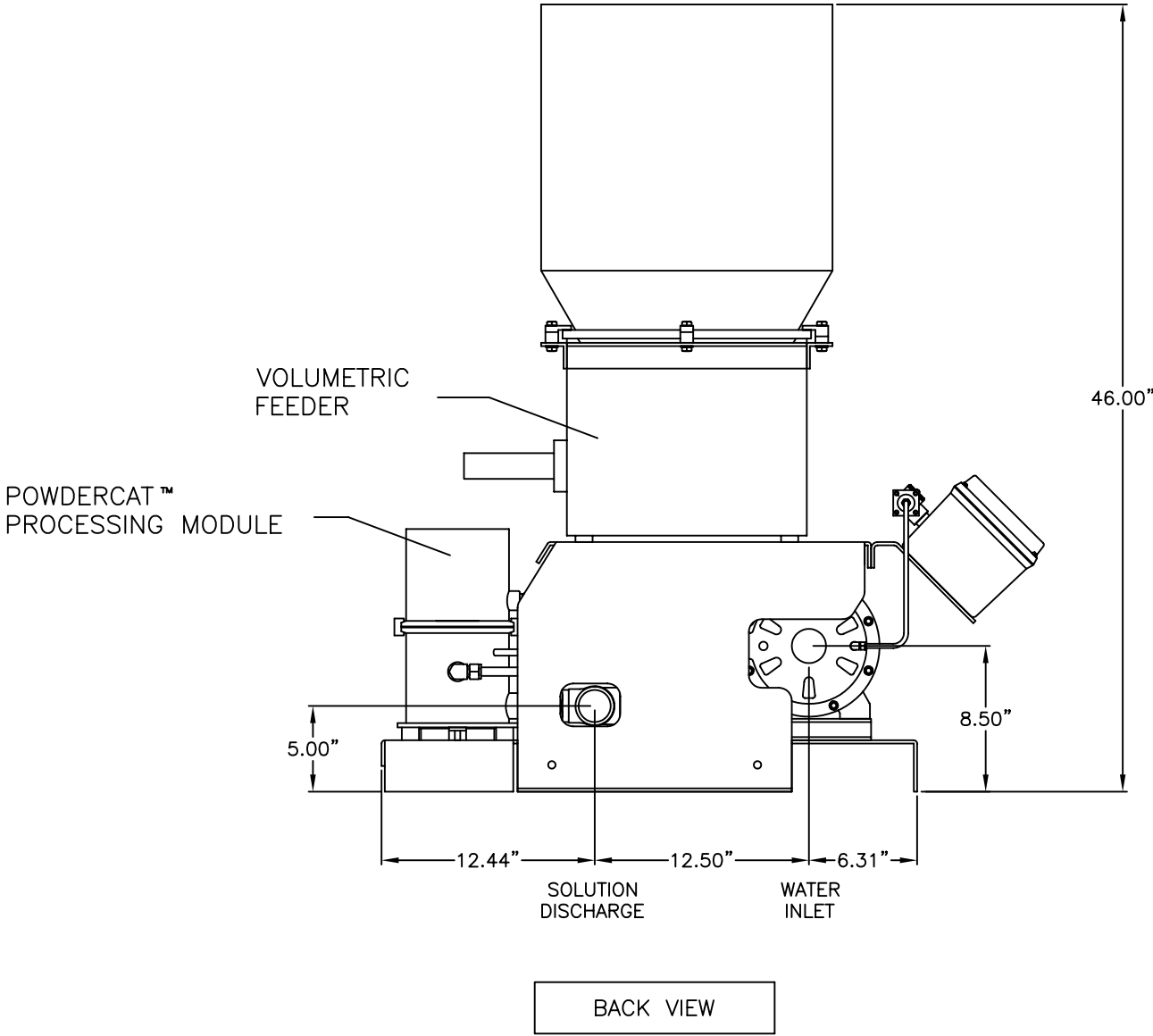
**POWDERCAT** Model NP-250 shall be provided to meter, dynamically wet and transfer dry form polymer using a motorized disperser capable of processing 0-8 lbs/min of dry polymer and transferring the mixture at 50 gpm to an agitated mix tank. The NP-250 shall be modular in design consisting of a volumetric feeder, motorized polymer processing module, secondary motive dilution header, inlet water valve and pressure sensor all of which is integrally mounted to a stainless steel frame. The volumetric polymer feeder shall be modular in design with a stainless steel exterior frame and a mechanically agitated flex liner. The system shall be designed to feed and transfer polymer/polymer mixture without the use of reserve pumps or pneumatic blowers. The polymer-processing module shall consist of an all stainless steel housing with an upper and lower flow chamber. The lower chamber shall contain a hermetically sealed stainless steel motor and housing assembly designed for chemical duty service. The upper chamber shall contain a flow divider, weir and induced air scrubber to contain small polymer dust particles. The polymer shall fall directly into the center of the rotor for rapid dispersion and wetting. No pre-wetting of the polymer is permitted. At no time shall the rotor become hydraulically enveloped. The control panel shall include a programmable logic controller, contactors for all motors, agitators and transfer devices, circuit breakers, phase loss monitors, motor drives, relays, timers and level control circuits necessary for the proper operation of the system.

**NORCHEM****INC.**

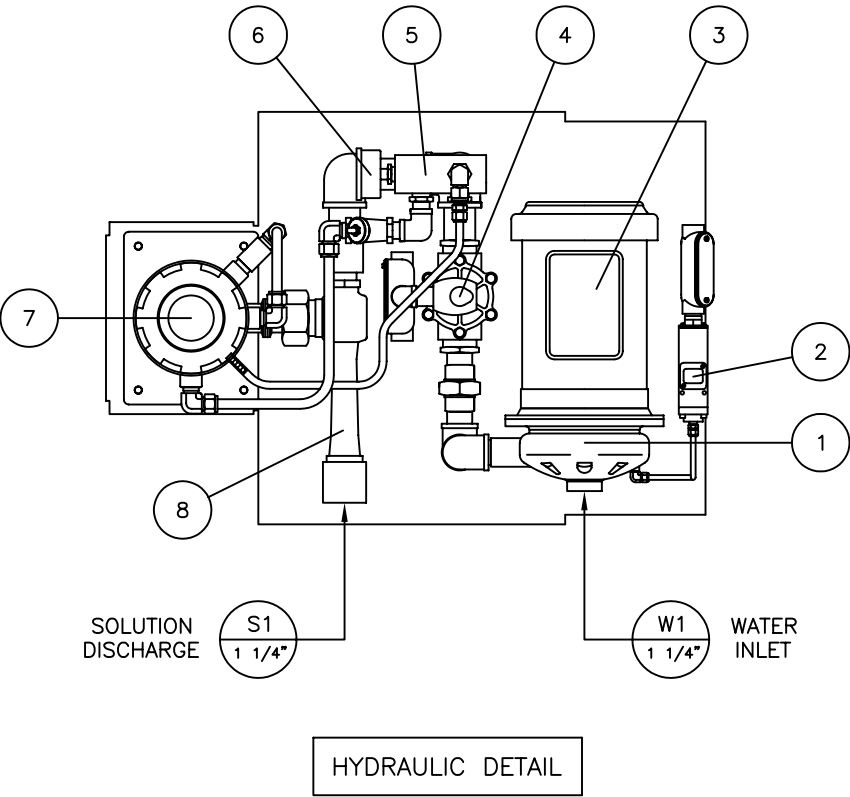
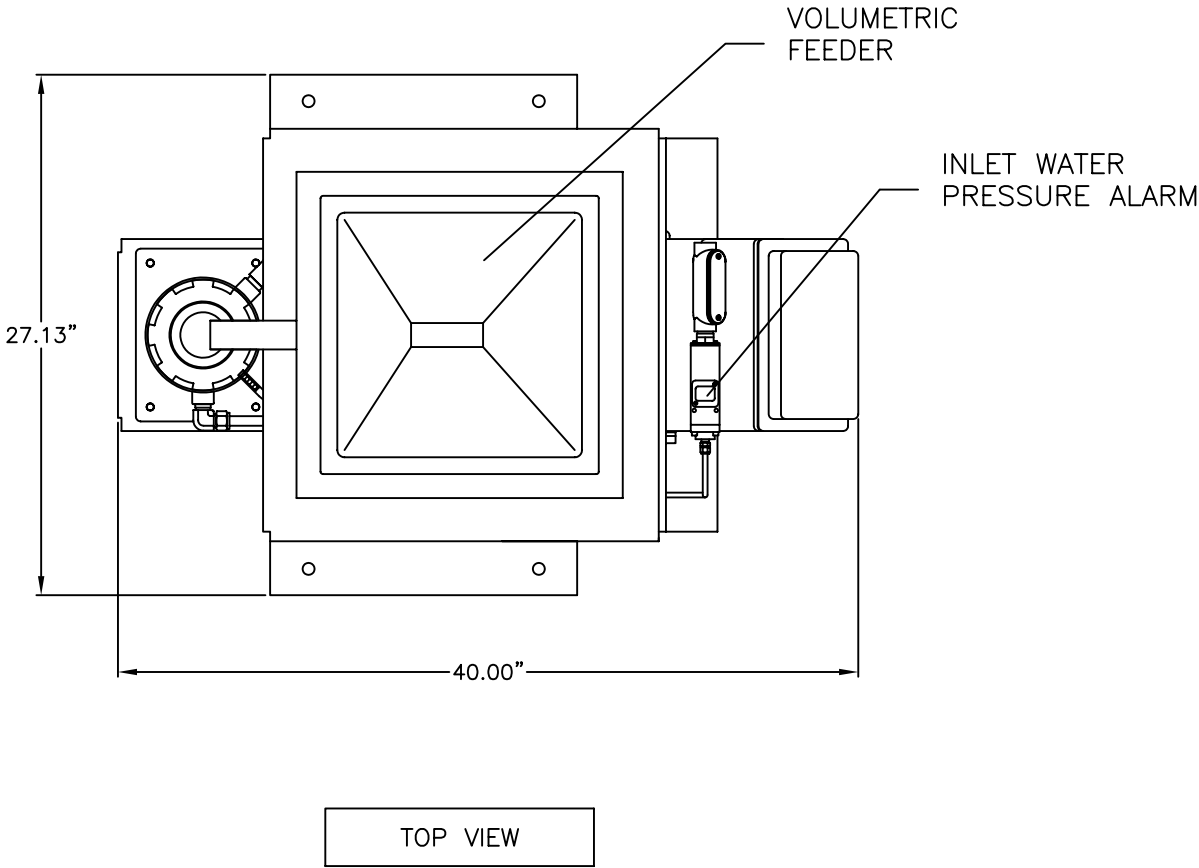
POWDERCAT  
NP-200 SERIES



POWDERCAT  
NP-200 SERIES



POWDERCAT  
NP-200 SERIES

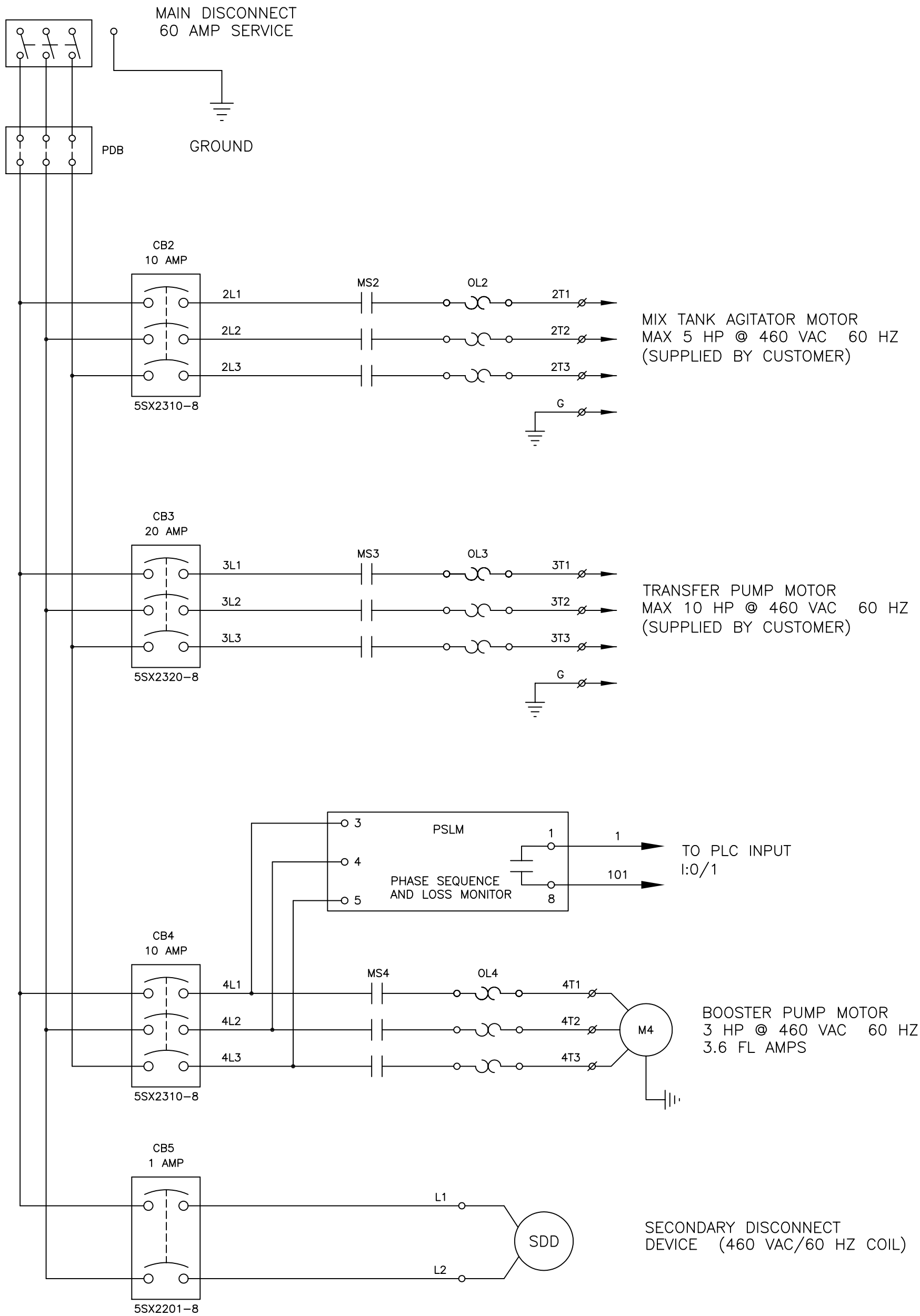


- 1 INLET WATER BOOSTER PUMP (OPTIONAL)
- 2 LOW WATER PRESSURE ALARM
- 3 INLET WATER PUMP MOTOR
- 4 INLET WATER SOLENOID VALVE
- 5 PPM WATER DISTRIBUTION MANIFOLD
- 6 PPM WATER PRESSURE GAUGE
- 7 POWDERCAT™ PROCESSING MODULE
- 8 SECONDARY WATER MOTIVE HEADER

INCOMING POWER (A)

460 VAC/3 PH/60 HZ

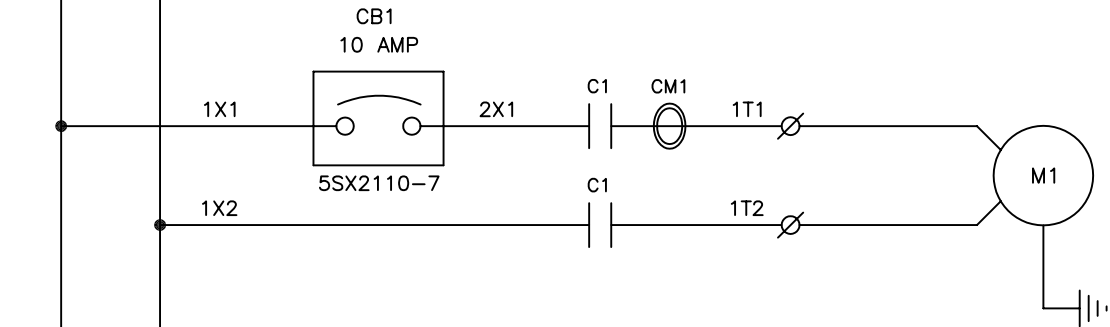
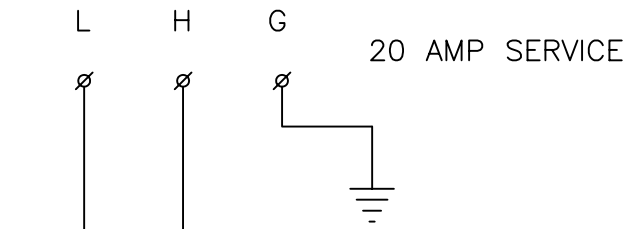
L1 L2 L3 G



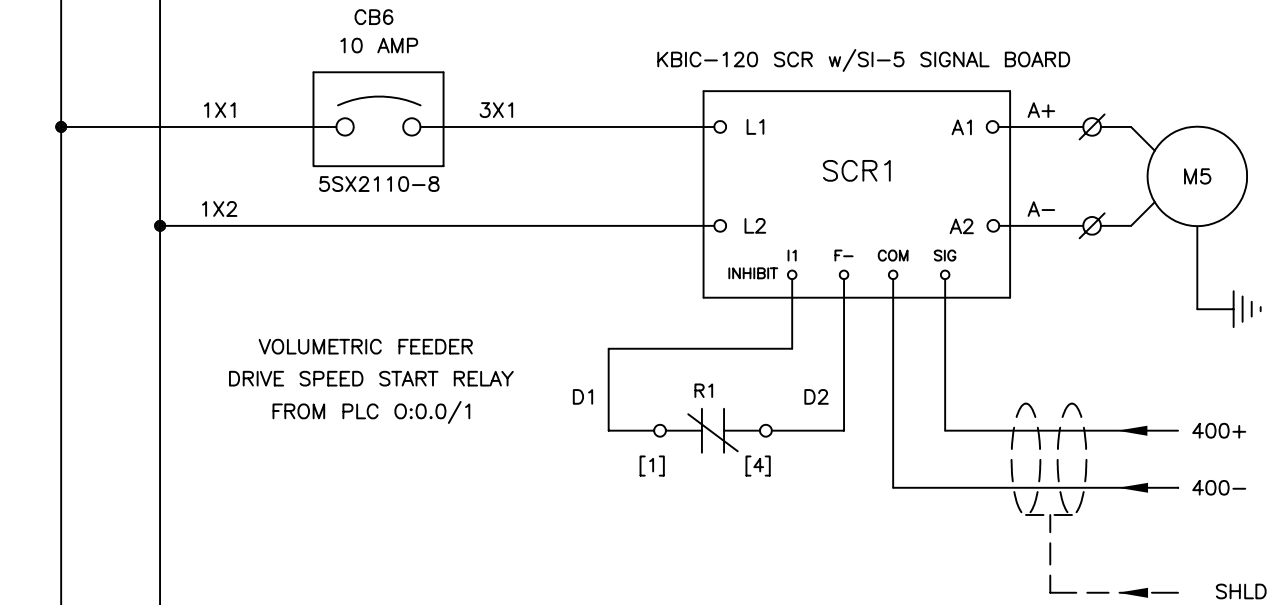
MODEL: POWDERCAT NP250  
CUSTOMER: NORCHEM INDUSTRIES  
CUSTOMER P.O. NO.: xxxxx  
NCI PROJECT: xxxxx  
SCHEMATIC NO.: NCI-101403-1A REV. A  
SHEET 1 OF 8

INCOMING POWER (B)

115 VAC/1 PH/60 HZ

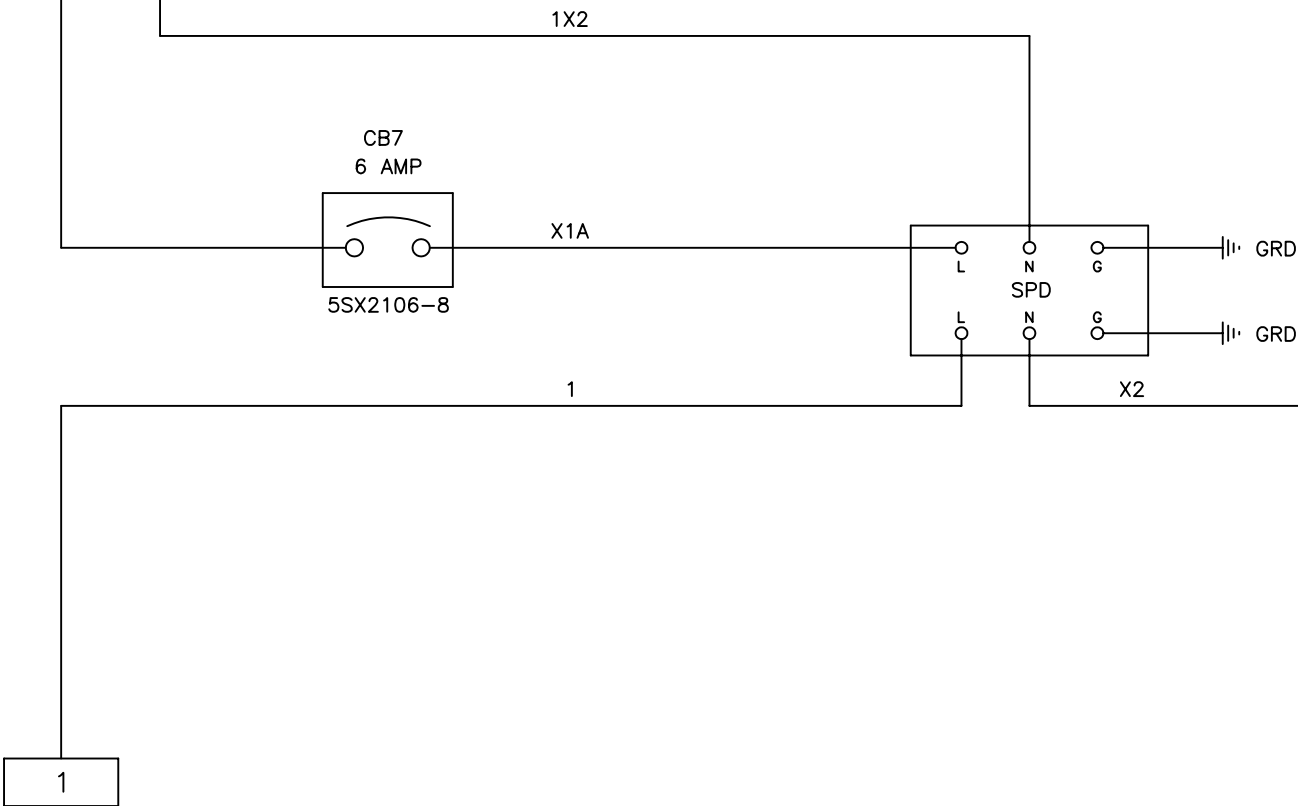


PPM PROCESSING MOTOR  
1/3 HP @ 115 VAC 60 HZ  
4.5 FL AMPS



VOLUMETRIC FEEDER MOTOR  
1/4 HP @ 90 VDC 60 HZ  
2.5 FL AMPS 15:1 RATIO

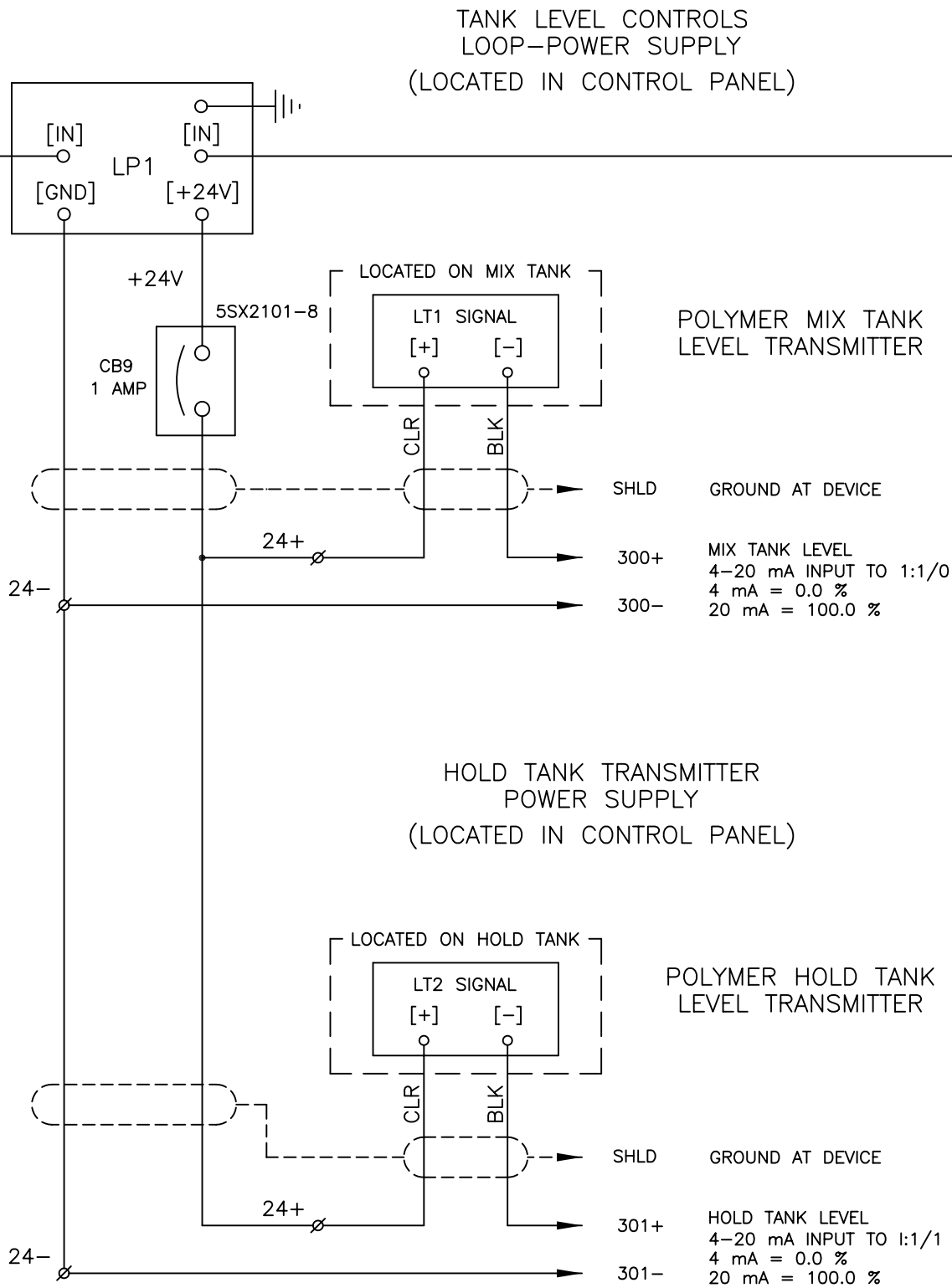
VOLUMETRIC FEEDER SPEED REFERENCE  
0-10 VDC OUTPUT FROM 0:4.0/0  
0 VDC = 0.0 %  
10 VDC = 100.0 %





1

X2



NOTES: ANALOG LEVEL PROBE WIRING

FOR LOOP-POWERED LEVEL TRANSMITTERS  
CONNECT AS SHOWN ON SCHEMATIC

- + TERMINAL OF TRANSMITTER TO PANEL TERMINAL 24+
- TERMINAL OF TRANSMITTER TO PANEL TERMINAL 300+ (OR 300-)

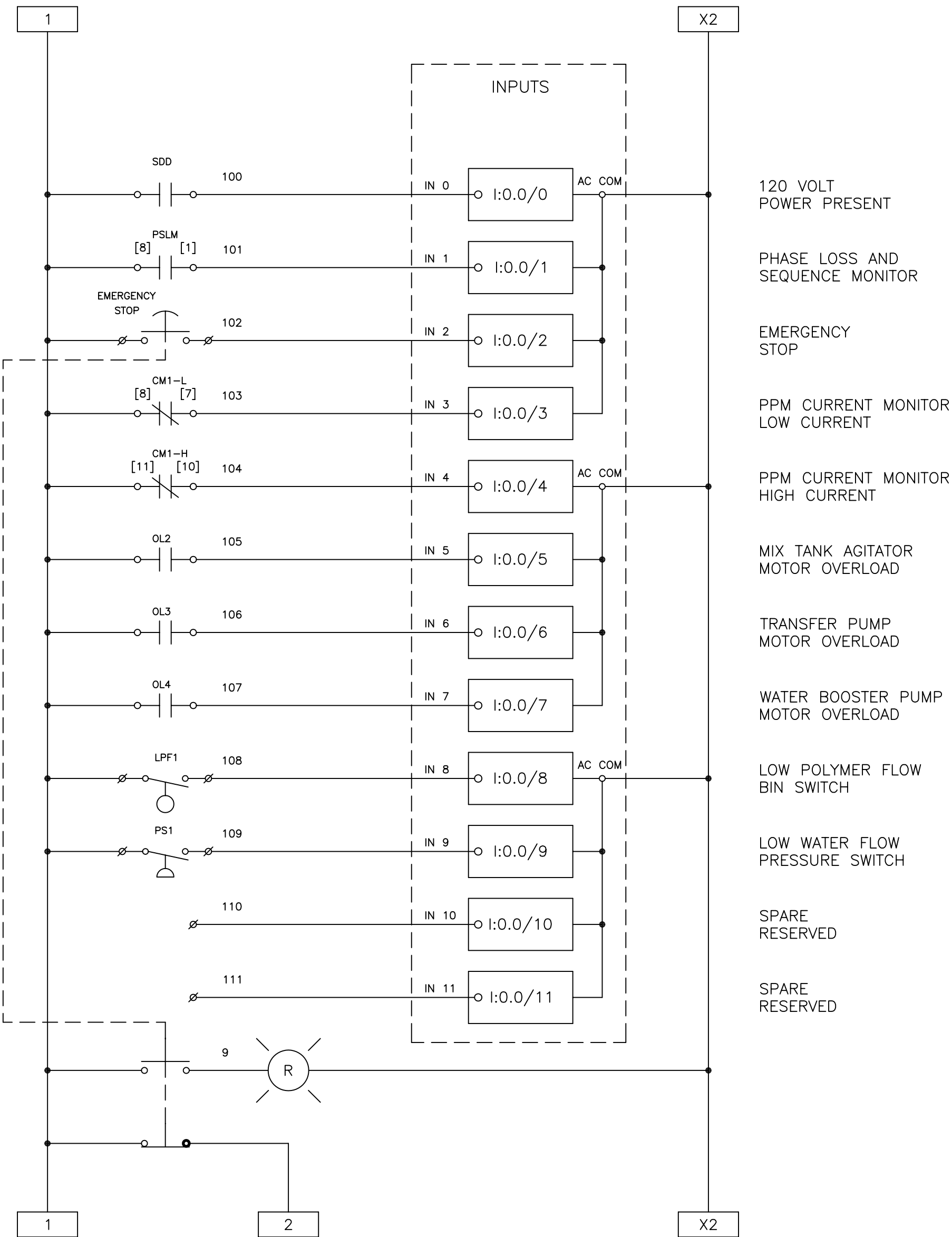
FOR TRANSMITTERS GENERATING 4-20 mA  
SWITCH CIRCUIT BREAKER CB9 OFF

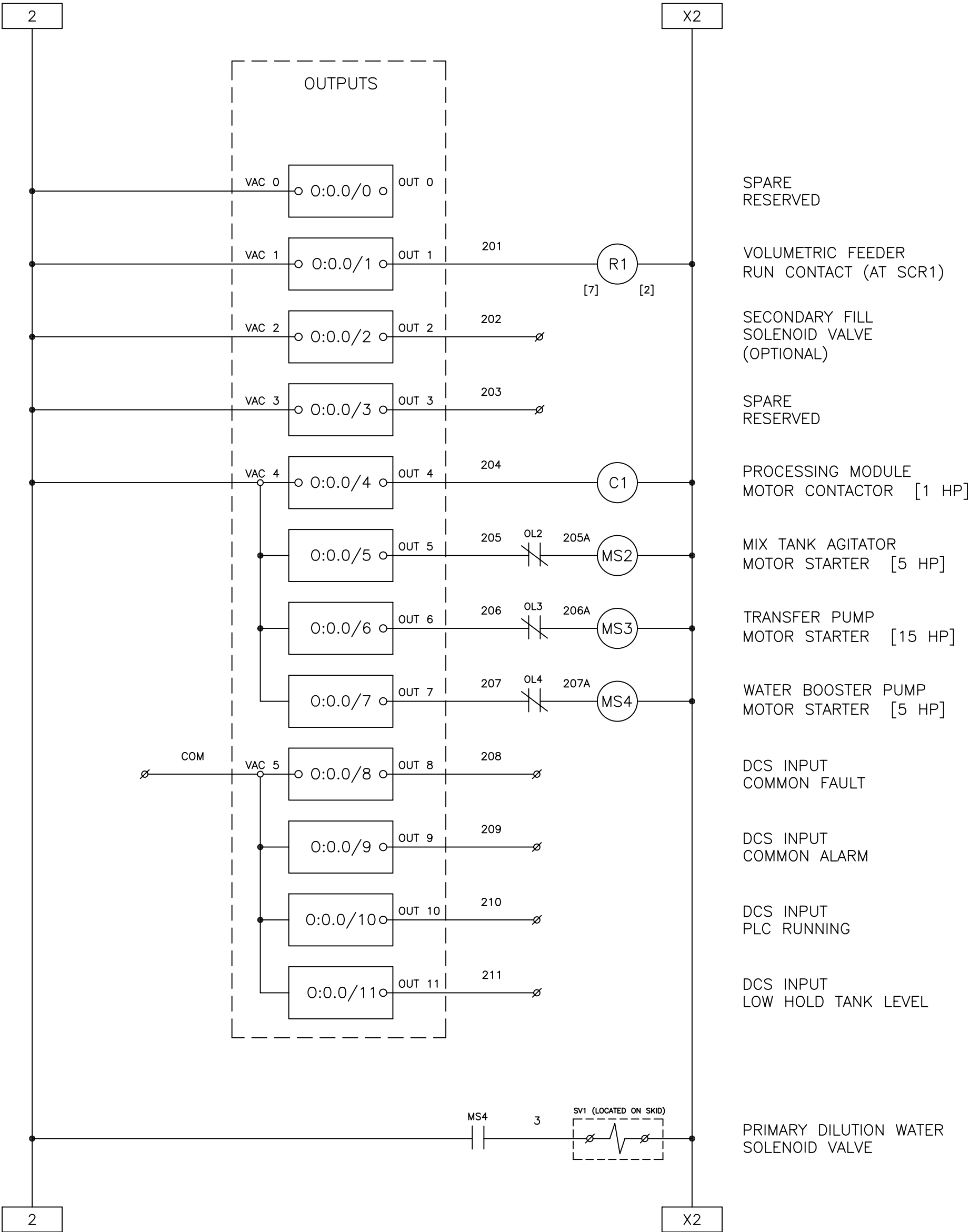
- + TERMINAL OF TRANSMITTER TO PANEL TERMINAL 300+ (OR 301+)
- TERMINAL OF TRANSMITTER TO PANEL TERMINAL 300- (OR 301-)

1

X2

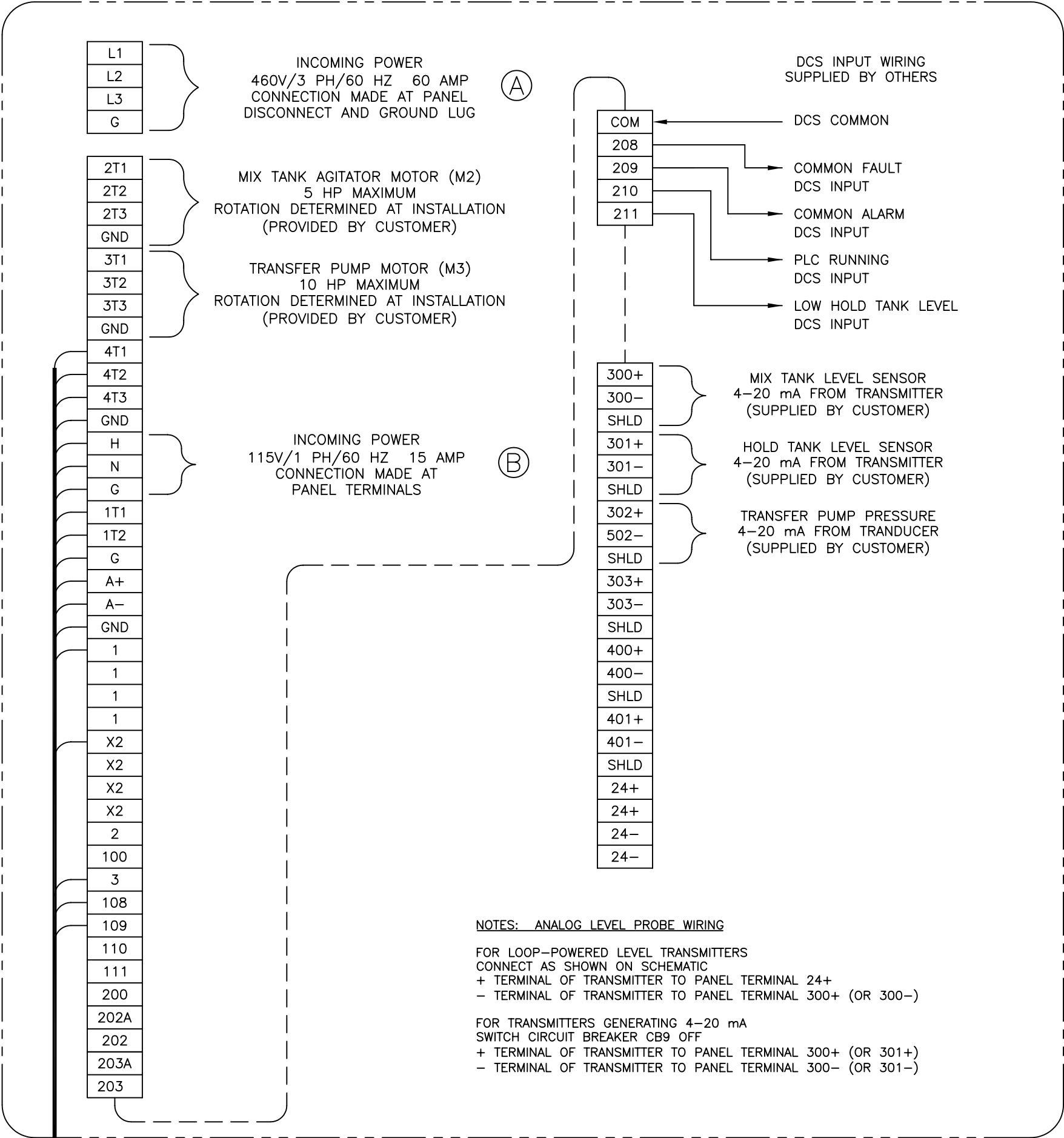




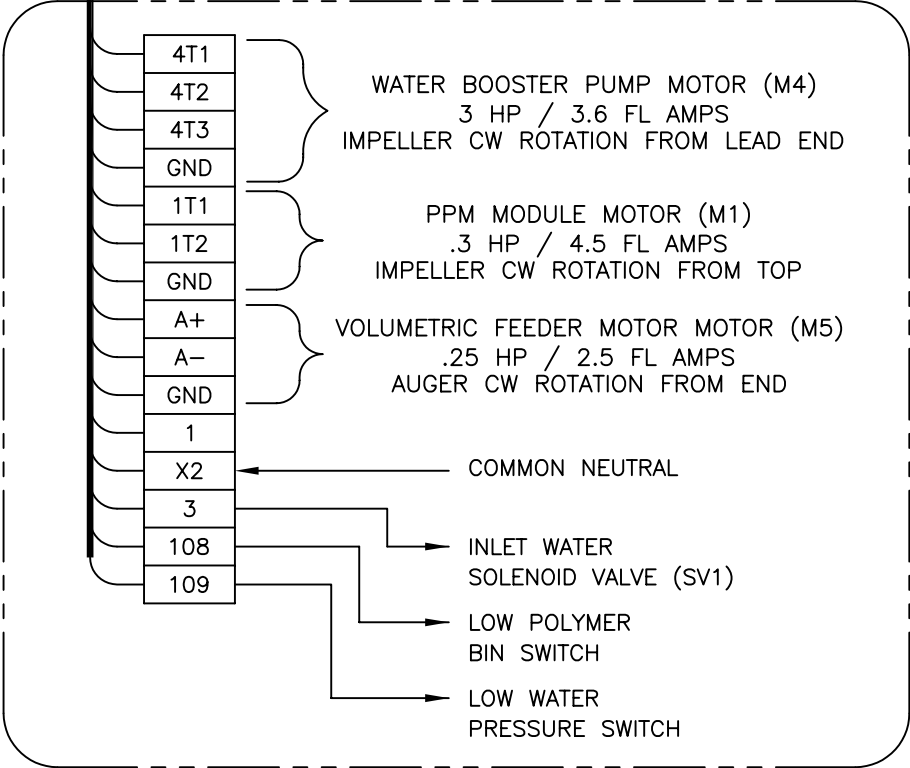




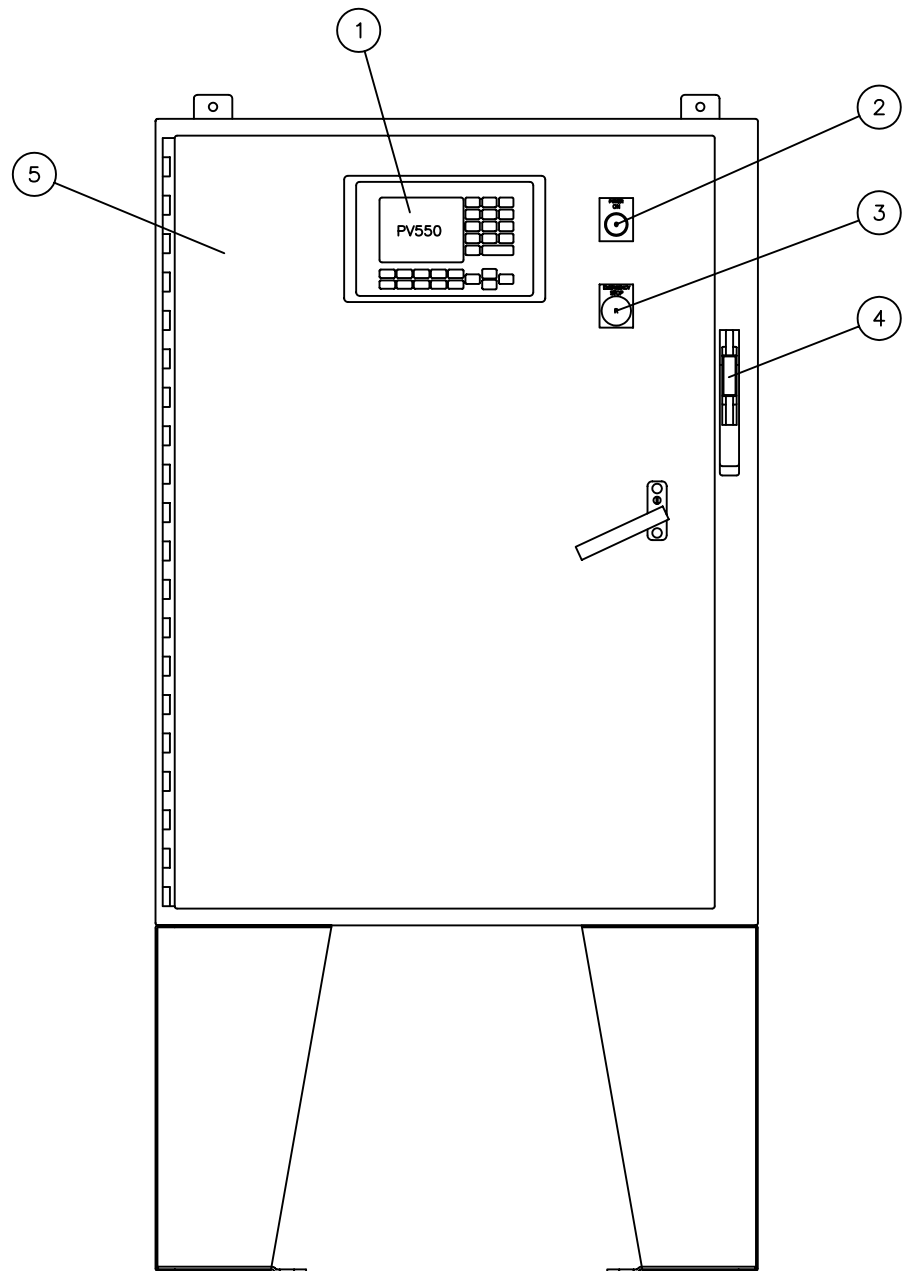
TERMINAL LAYOUT FOR NP-200 SERIES MAIN CONTROL PANEL



TERMINAL LAYOUT FOR NP-200 SERIES  
PROCESSING MODULE

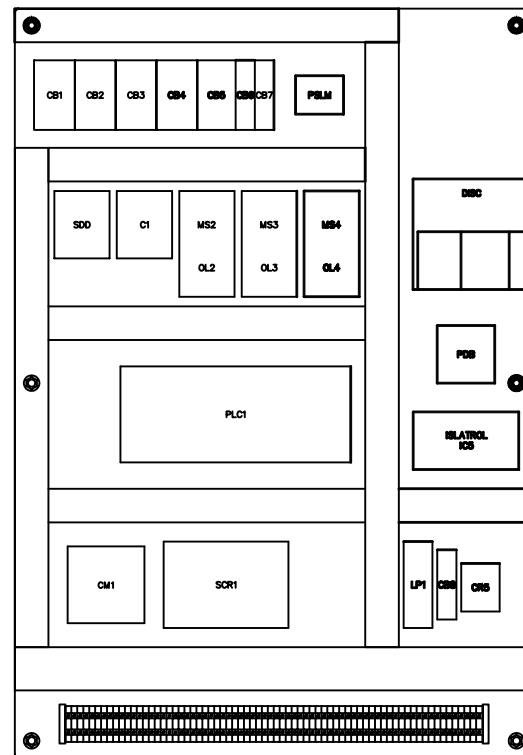


MODEL: POWDERCAT NP250  
CUSTOMER: NORCHEM INDUSTRIES  
CUSTOMER P.O. NO.: xxxxx  
NCI PROJECT: xxxxx  
SCHEMATIC NO.: NCI-101403-1A REV. A  
SHEET 8 OF 8




DOOR LAYOUT  
(NORCHEM CUSTOM 42" x 31" x 12" ENCLOSURE)  
NEMA 4X  
OPERATOR AND DISPLAY LISTING

- |   |                                |   |  |
|---|--------------------------------|---|--|
| ① | OPERATOR INTERFACE             | ④ | SYSTEM PANEL DISCONNECT<br>600 VOLTS/60 AMPS   |
| ② | "POWER ON"<br>INDICATOR        | ⑤ | CONTROL PANEL ENCLOSURE<br>RATED NEMA 4X 304SS |
| ③ | "EMERGENCY STOP"<br>PUSHBUTTON |   |  |



SUBPANEL LAYOUT

NORCHEM NP-200 SERIES DRY POLYMER SYSTEM CONTROL PANEL FACE & SUBPANEL LAYOUT		
ITEM	DESCRIPTION	DESCRIPTION
C1	PROCESSING MODULE CONTACTOR	100-C09D10
MS2	MIX TANK AGITATOR MOTOR STARTER	100-C09D10
MS3	TRANSFER PUMP MOTOR STARTER	100-C12D10
MS4	WATER BOOSTER PUMP MOTOR STARTER	100-C09D10
SDD	SECONDARY DISCONNECT DEVICE	100-C23B10
CR5	VOLUMETRIC FEED RUN RELAY	P&B KRPA-11AN-120
OL2	MIX TANK AGITATOR MOTOR OVERLOAD	193-EA2EB
OL3	TRANSFER PUMP MOTOR OVERLOAD	193-EA2FB
OL4	WATER BOOSTER PUMP MOTOR OVERLOAD	193-EA2EB
CB1	CIRCUIT BREAKER - PROCESSING MODULE	SIEMENS 5SX2110-8
CB2	CIRCUIT BREAKER - MIX TANK AGITATOR	SIEMENS 5SX2310-8
CB3	CIRCUIT BREAKER - TRANSFER PUMP	SIEMENS 5SX2320-8
CB4	CIRCUIT BREAKER - BOOSTER PUMP	SIEMENS 5SX2310-8
CB5	CIRCUIT BREAKER - SECONDARY DISCONNECT	SIEMENS 5SX2201-8
CB6	CIRCUIT BREAKER - VOLUMETRIC FEEDER	SIEMENS 5SX2110-8
CB7	CIRCUIT BREAKER - CONTROL LOGIC	SIEMENS 5SX2106-7
CB8	CIRCUIT BREAKER - MIX TANK LEVEL 24 VDC	SIEMENS 5SX2101-7
SPD	SURGE PROTECTION DEVICE	ISOLATROL IC+105
PSLM	PHASE SEQUENCE & LOSS MONITOR	DIV SLA-440-ASA
PDB	POWER DISTRIBUTION BLOCK	A-B 1492-PD3141
CM1	PROCESSING MODULE CURRENT MONITOR	CBA-120-ALE-5
SCR1	VOLUMETRIC FEED SCR DRIVE	MMXL10-D240AC
LP1	MIX TANK LEVEL CONTROLLER POWER SUPPLY	SCP30S24B-DN
PLC1	PROGRAMMABLE LOGIC CONTROLLER	MICROLOGIX 1500
PV550	PANELVIEW 550 OPERATOR TERMINAL	A-B 2711-K5A5
CABLE	PLC TO PANELVIEW CABLE	A-B 1761-CBL-PM02
DISC	SYSTEM DISCONNECT 60 AMP	A-B 1494V-DS60
TB1	INTERFACE TERMINAL BLOCKS	A-B 1492-W10 SERIES
LT1	GREEN LIGHT LENS	A-B 800EP-PL3
LT1	LIGHT ASSEMBLY WITH NAME TAG	A-B 800E-3DL5
LT1	LIGHT BULB	A-B 800E-N130
PB1	AUXILIARY CONTACT BLOCK	A-B 800T-XD1
PB1	EMERGENCY STOP PUSHBUTTON WITH NAME TAG	A-B 800H-FRXTQ10RA

		NORCHEM INC.	
		8910 W. 192nd STREET MOKENA, ILLINOIS 60448	
A	FOR INFORMATION	10-09-02	
SYM.	REVISIONS	DATE	
CUSTOMER NORCHEM INDUSTRIES MOKENA, IL 60448			
DESCRIPTION NP-200 SERIES DRY POLYMER PROCESSING SYSTEM CONTROL PANEL AND SUBPAN DETAILS			
CONTRACT NUMBER .			
PROJECT NUMBER .		DRAWING NUMBER NCI-101602-2A	REV A

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DWN.	RWD
CHK'D	RWD
APP'D	RWD
CADFILE:	NP200_CTL_TYP1
SHT. 1	SCALE
OF 1	NONE