



RDP-103  
 REMOTE DISPLAY PANEL  
 AC CONTROLS PART # 300-10003

120VAC LOOP POWERED  
 FOR USE WITH %, GAL, OR OTHER ENGINEERING UNITS  
 EXCEPT FEET AND INCHES



AC Technical Services  
 8600 Westmoreland Dr. NW  
 Concord, NC 28027

P (704) 573-7005  
 F (704) 573-7008  
[www.actecser.com](http://www.actecser.com)

CLIENT:  
 AC CONTROLS  
 8600 WESTMORELAND DR. NW  
 CONCORD, NC 28027

ENGINEER:

GENERAL CONTRACTOR:

FABRICATION DRAWINGS										DESCRIPTION

01/23/2024										DATE

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PROJECT:  
 REMOTE DISPLAY PANEL

APPROVED BY: ---	DATE: --/--/--
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DEVELOPED BY: BWR	DATE: 01/23/2024
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ELECTRICAL SYMBOLS			
	DISCONNECT SWITCH		LEVEL SWITCH OPEN ON INCREASE
	FUSED TERMINAL BLOCK		LEVEL SWITCH CLOSES ON INCREASE
	CIRCUIT BREAKER		LIMIT SWITCH - NORMALLY CLOSED
	CONTROL RELAY COIL		LIMIT SWITCH - HELD CLOSED
	TIMING RELAY COIL		LIMIT SWITCH - NORMALLY OPEN
	MOTOR COIL		LIMIT SWITCH - HELD OPEN
	INDICATING LIGHT NON-PUSH TO TEST		PUSHBUTTON - NORMALLY OPEN
	INDICATING LIGHT PUSH TO TEST		PUSHBUTTON - NORMALLY CLOSED
	SOLENOID VALVE		EMERGENCY STOP PUSHBUTTON
	IGNITION TRANSFORMER		TWO POSITION SELECTOR SWITCH POSITION 1 OPEN
			TWO POSITION SELECTOR SWITCH POSITION 1 CLOSED
	NORMALLY OPEN CONTACT		THREE POSITION SELECTOR SWITCH POSITION 1 CLOSED
	NORMALLY CLOSED CONTACT		THREE POSITION SELECTOR SWITCH POSITION 1 CLOSED
	PRESSURE SWITCH OPEN ON INCREASE		FOUR POSITION SELECTOR SWITCH POSITION 1 OPEN
	PRESSURE SWITCH CLOSE ON INCREASE		FOUR POSITION SELECTOR SWITCH POSITION 1 CLOSED

ABBREVIATIONS	
AI	- ANALOG INPUT
AO	- ANALOG OUTPUT
CB	- CIRCUIT BREAKER
CR	- CONTROL RELAY
DI	- DIGITAL INPUT
DISC	- DISCONNECT SWITCH
DO	- DIGITAL OUTPUT
ES	- ETHERNET SWITCH
ESS	- EMERGENCY STOP PUSHBUTTON
F	- 120VAC FUSE
FA	- 24VAC FUSE
FC	- CONTROLLER (HC900/PLC) I/O FUSE
FD	- 24VDC FUSE
GND	- GROUND
HC	- HC900 CONTROLLER
HMI	- HUMAN MACHINE INTERFACE TERMINAL
ISL	- ISOLATOR/SURGE SUPPRESSOR
LT	- INDICATOR LIGHT
M	- MOTOR COIL
PB	- PUSHBUTTON
PLC	- PROGRAMMABLE LOGIC CONTROLLER
PS	- POWER SUPPLY
SS	- SELECTOR SWITCH
TB	- TERMINAL BLOCK
TR	- TIMING RELAY

WIRE COLOR AND GAUGE	
WIRE COLOR AND GAUGE IS TO BE AS LISTED BELOW, UNLESS OTHERWISE SPECIFIED IN THE ELECTRICAL DRAWINGS.	
120VAC UNGROUNDED CONDUCTOR POWER CIRCUIT WIRING	14AWG BLACK MTW WIRE
120VAC UNGROUNDED CONDUCTOR CONTROL CIRCUIT WIRING	16AWG RED MTW WIRE
120VAC GROUNDED CONDUCTOR	16AWG WHITE MTW WIRE
120VAC UNGROUNDED CONDUCTOR WHICH REMAINS ENERGIZED WHEN MAIN DISCONNECT IS IN OFF POSITION	16AWG YELLOW MTW WIRE
120VAC GROUNDED CONDUCTOR WHICH REMAINS ENERGIZED WHEN MAIN DISCONNECT IS IN OFF POSITION	16AWG WHITE W/ YELLOW STRIPE MTW WIRE
24VDC+	16AWG BLUE MTW WIRE
24VDC-	16AWG BLUE W/ WHITE STRIPE MTW WIRE
24VAC UNGROUNDED CONDUCTOR POWER OR CONTROL CIRCUIT WIRING	16AWG BROWN MTW WIRE
24VAC GROUNDED CONDUCTOR	16AWG BROWN W/ WHITE STRIPE MTW WIRE
GROUND CONDUCTOR	16AWG GREEN MTW WIRE
ANALOG CABLE	18 AWG 2 WIRE (BLACK AND RED CONDUCTORS) FOIL WRAPPED CABLE W/ DRAIN SHIELD

LINE SYMBOLS	
	WIRE CONNECTOR, INTERNAL
	WIRE CONNECTOR, EXTERNAL
	EXTERNAL DEVICE
	SHIELDED CABLE

INSTRUMENTATION IDENTIFICATION LETTERS (ISA STANDARD)				
FIRST LETTER		SUCCEEDING LETTERS		
	MEASURED OR PROCESS VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION
A	ANALYSIS		ALARM	
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE
C	USER'S CHOICE			CONTROL
D	DENSITY	DIFFERENTIAL		
E	VOLTAGE		SENSOR (ELEMENT)	
F	FLOW RATE	RATIO (FRACTION)		
G	USER'S CHOICE		GLASS, VIEWING DEVICE	
H	HAND			HIGH
I	CURRENT		INDICATE	
J	POWER	SCAN		
K	KTIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION
L	LEVEL		LIGHT	LOW
M	MOISTURE	MOMENTARY		MIDDLE, INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE, RESTRICTION	
P	PRESSURE, VACUUM		POINT, CONNECTION	
Q	QUANTITY	INTEGRATE, TOTALIZE		
R	RADIATION		RECORD	
S	SPEED, FREQUENCY	SAFETY		SWITCH
T	TEMPERATURE			TRANSMIT
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION			VALVE, DAMPER, LOUVER
W	WEIGHT, FORCE		WELL	
X	UNCLASSIFIED	X AXIS	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE	Y AXIS		RELAY, COMPUTE
Z	POSITION, DIMENSION	Z AXIS		DRIVER, ACTUATOR

WIRE NUMBERING	
DESTINATION WIRE NUMBER SCHEME IS TO BE USED FOR IDENTIFICATION OF ALL WIRES AND CABLES.	
THE WIRE NUMBER APPLIED AT THE TERMINATION SHALL IDENTIFY THE LOCATION OF TERMINATION AT THE OPPOSITE END OF THE WIRE OR CABLE.	
THE WIRE NUMBER SHALL IDENTIFY THE DEVICE, USING THE DEVICE TAG NAME, AND IF APPLICABLE, THE DEVICE TERMINATION POINT, USING APPLICABLE DEVICE FACTORY MARKINGS.	
THIS GIVES A WIRE NUMBER FORMAT OF:	
"DEVICE TAG NAME"TERMINATION POINT"	
EXAMPLE SHOWN BELOW:	
AS SEEN IN THE EXAMPLE, A WIRE CONNECTING CONTROL RELAY 3, TERMINAL 34 TO TERMINAL BLOCK 29 WILL HAVE A LABEL ON CONTROL RELAY 3 IDENTIFIED AS "TB29" AND WILL HAVE A LABEL ON TERMINAL BLOCK 29 IDENTIFIED AS "CR3.34".	
IN SYSTEMS WITH MULTIPLE CONTROL PANELS, THE WIRE NUMBER SHALL BE PRECEDED BY A "PANEL TAG NAME" FOR ALL EXTERNAL/FIELD WIRING.	

WIRING NOTE: ALL WIRE TO BE TERMINATED USING CRIMP ON WIRE FERRULES.

GROUNDING	
MINIMUM SIZE OF GROUNDING CONDUCTORS AND BONDING JUMPERS SHALL ADHERE TO NFPA79.	
RATING OF OVERCURRENT DEVICE IN CIRCUIT AHEAD OF THE EQUIPMENT	CONDUCTOR SIZE (AWG)
10 AMPS	16 AWG
15 AMPS	14 AWG
20 AMPS	12 AWG
30 AMPS	10 AWG

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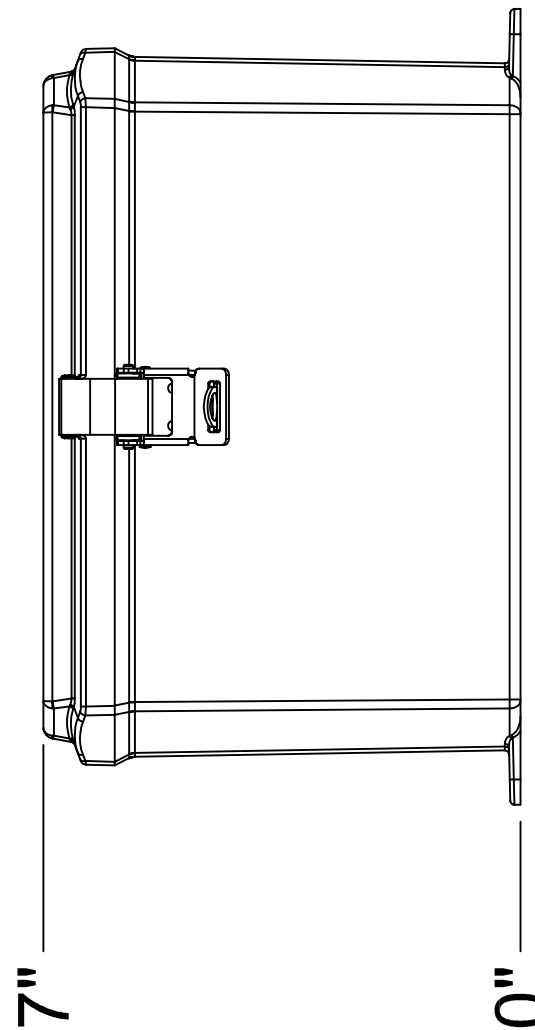
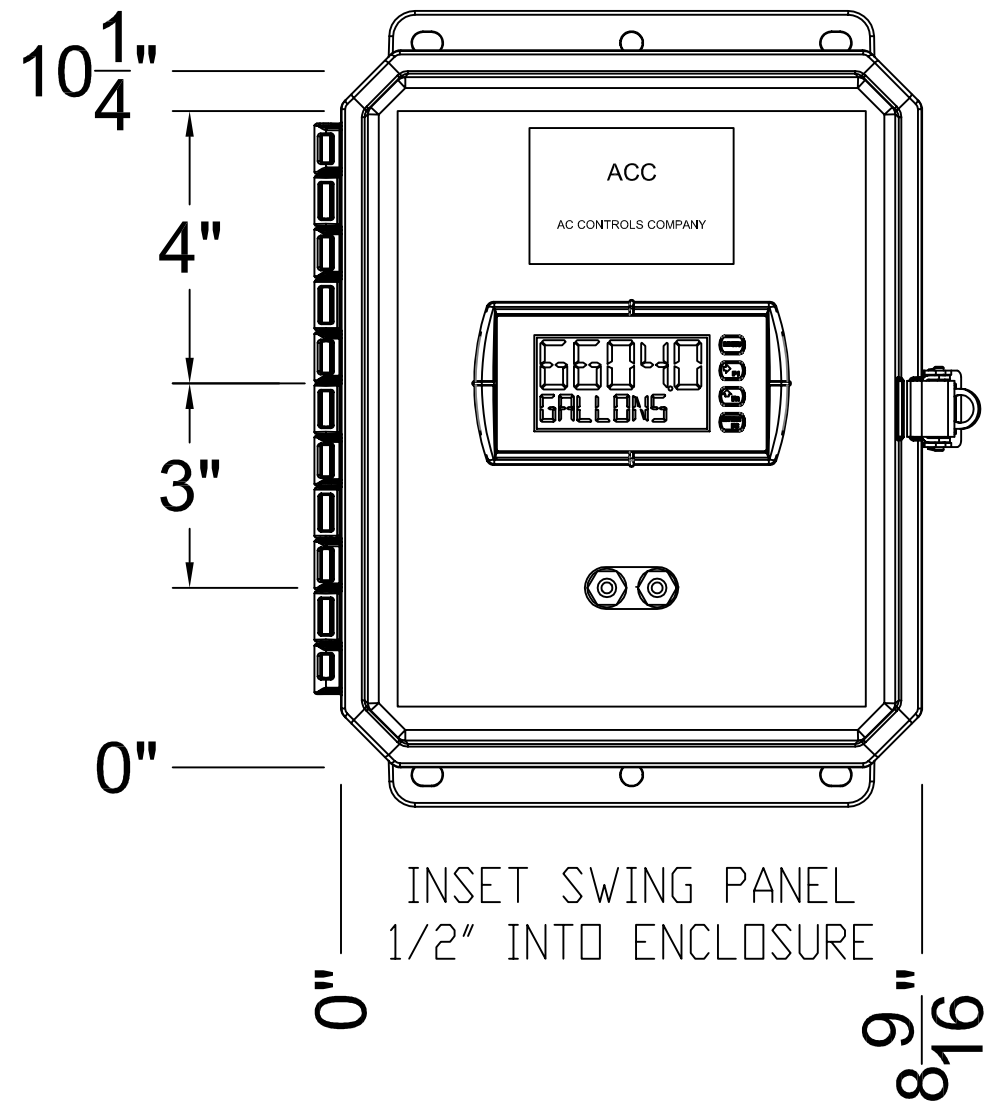
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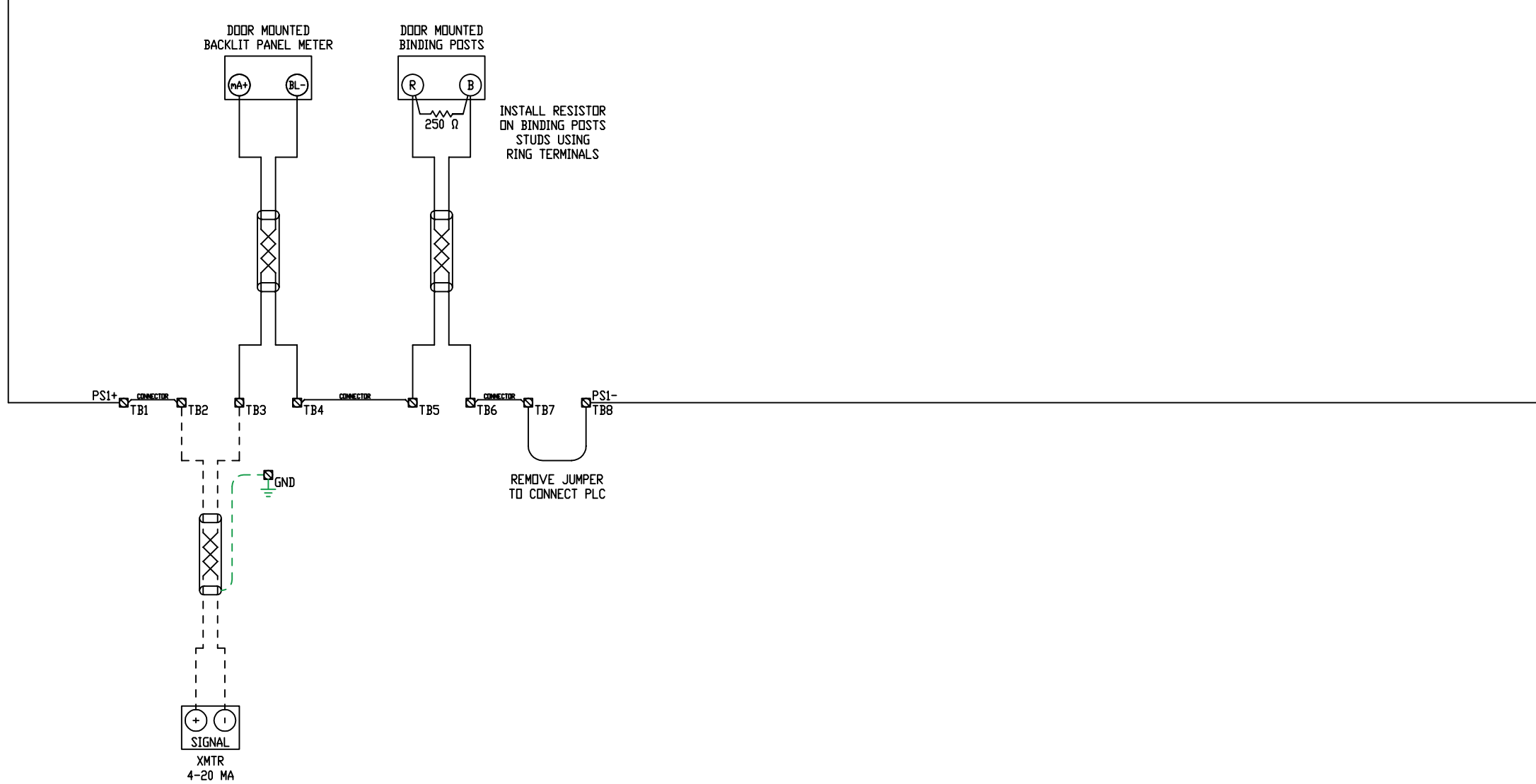
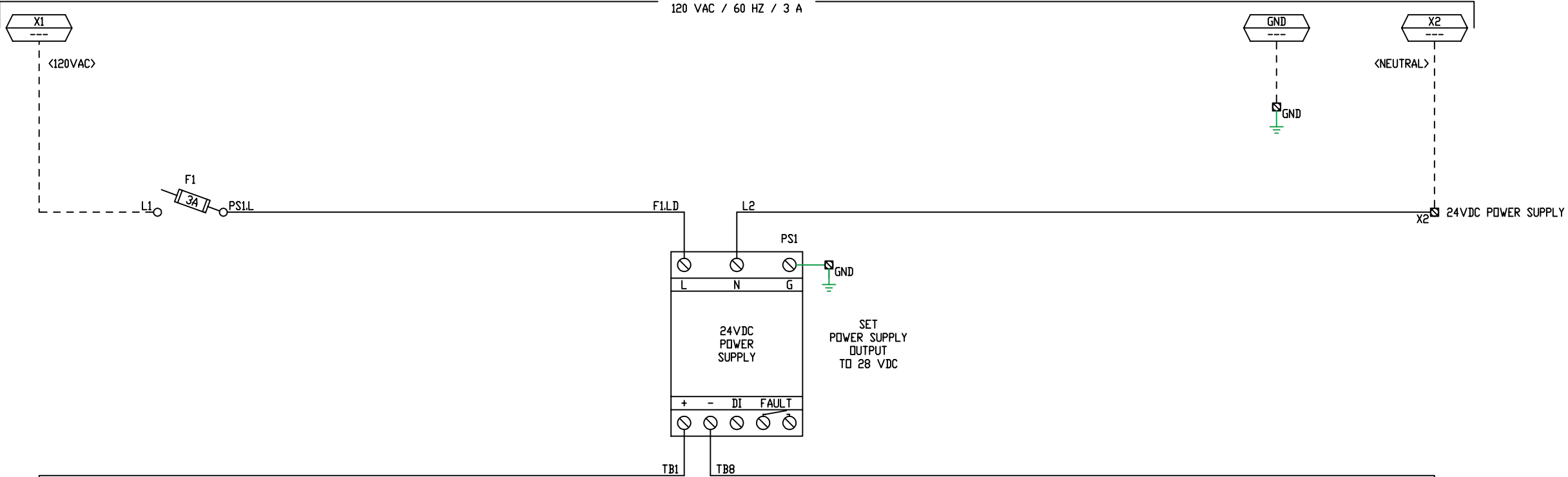
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ENCLOSURE LAYOUT

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CUSTOMER SUPPLIED  
120 VAC / 60 HZ / 3 A



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