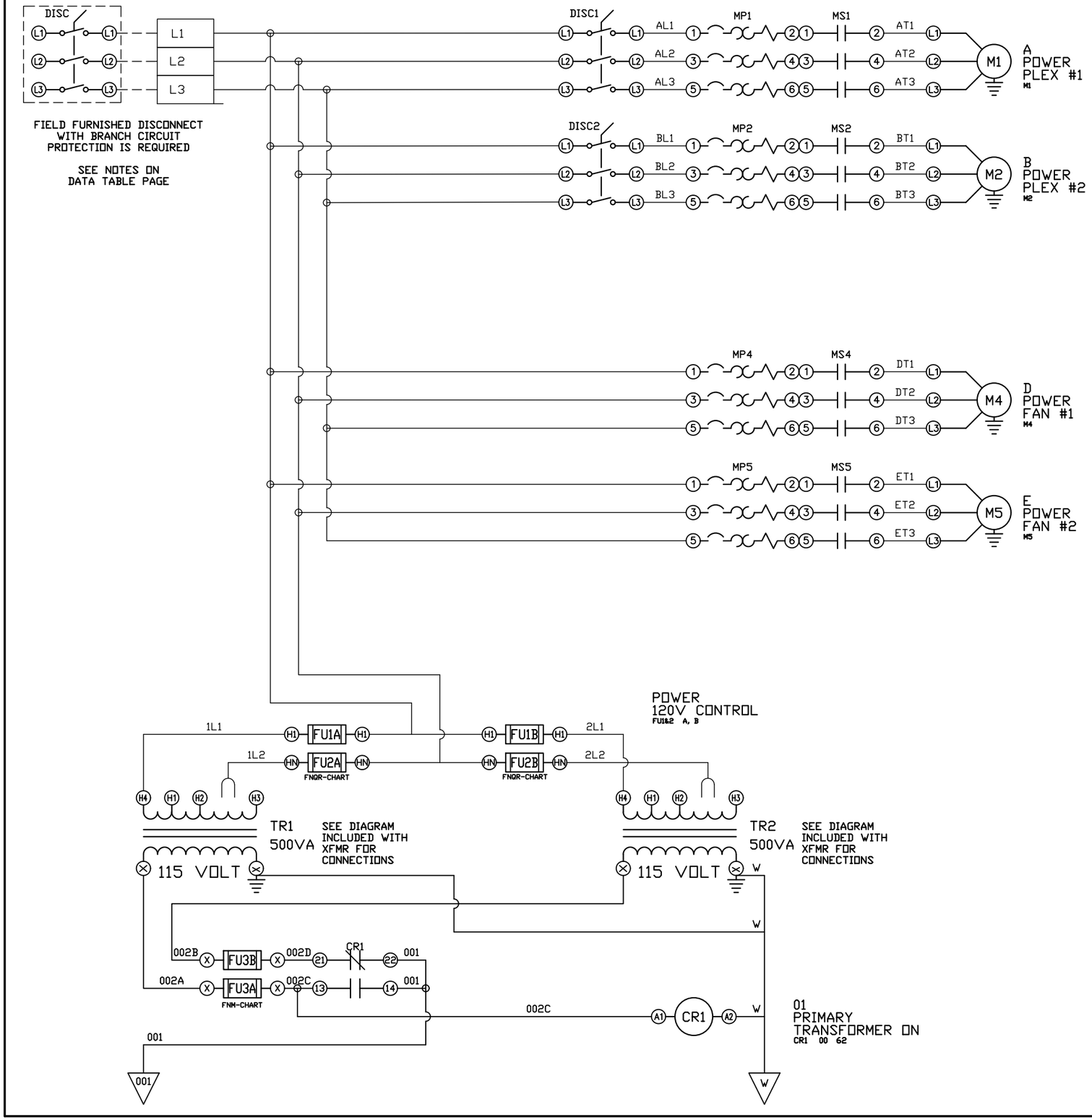
REV	REVISION	DATE	ECN	NAME	CHKD
B-1	RELEASE TO PRODUCTION	01/05/24	PXEC0481	KMD	AJL
F-1	ADDED USB DRIVE TO HMI	07/21/25	PXEC0668	JRD	STK
G-1	PLEX ISOLATION UPDATES	09/18/25	PXEC0639	WMM	SEK



OPTIONAL:

POWEREX

DRAWN BY	CHECKED BY	ENGINEERING APPROVAL
KMD	AJL	KMD
01/05/24	01/05/24	01/05/24

PANEL TYPE

VACUUM DUPLEX ENCL. MASTER HMI, NFPA

DWG. TYPE WIRING

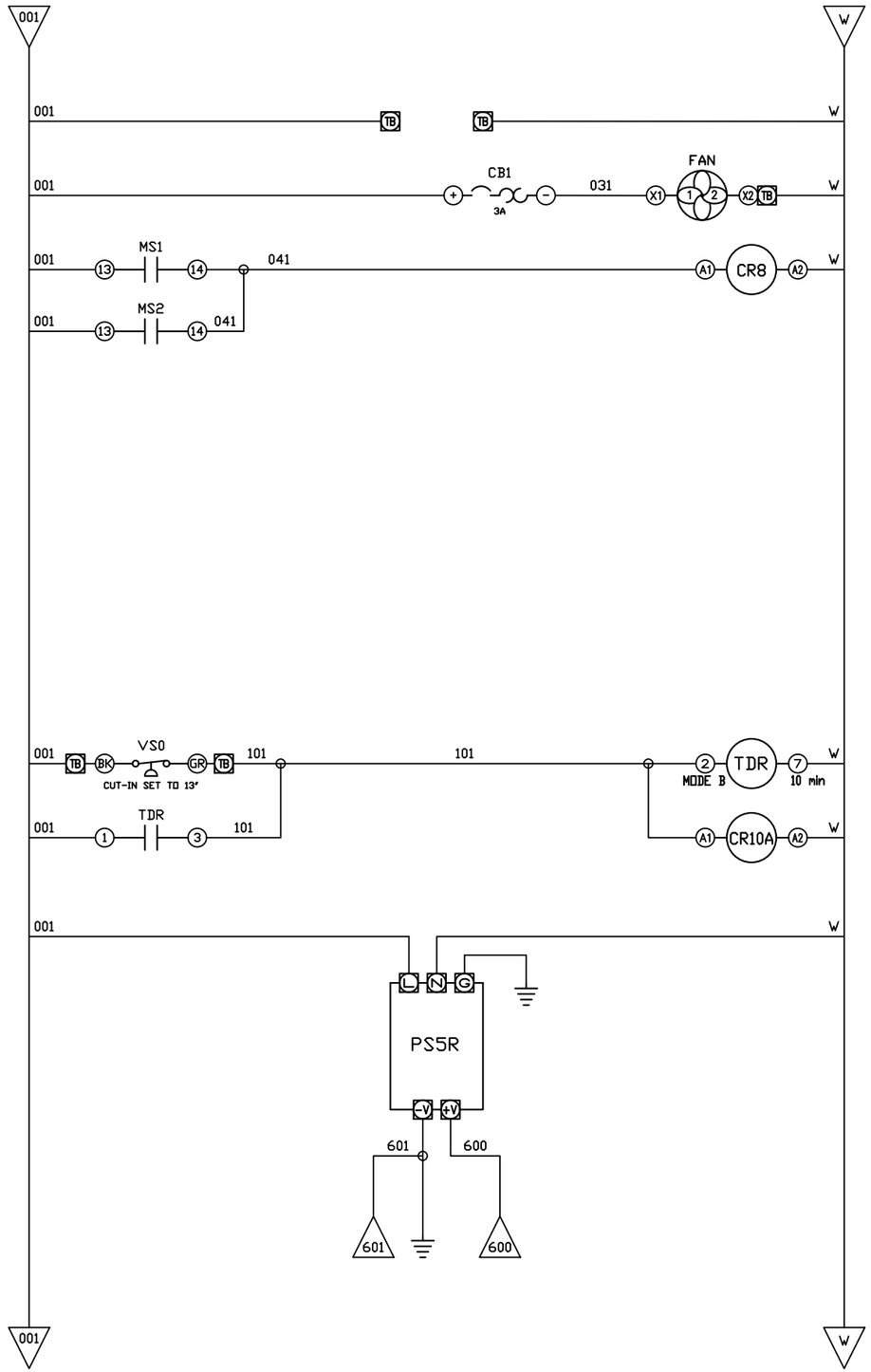
DWG. NO.

PBMI-VNE269

SHEET W-1

SIZE B

PBMI-VNE269



REV	REVISION	DATE	ECN	NAME	CHKD
B-1	RELEASE TO PRODUCTION	01/05/24	PXEC0481	KMD	AJL
F-1	ADDED USB DRIVE TO HMI	07/21/25	PXEC0668	JRD	STK
G-1	PLEX ISOLATION UPDATES	09/18/25	PXEC0639	WMM	SEK

OPTIONAL:

POWEREX

DRAWN BY	CHECKED BY	ENGINEERING APPROVAL
KMD	AJL	KMD
01/05/24	01/05/24	01/05/24

PANEL TYPE

VACUUM DUPLEX ENCL. MASTER HMI, NFPA

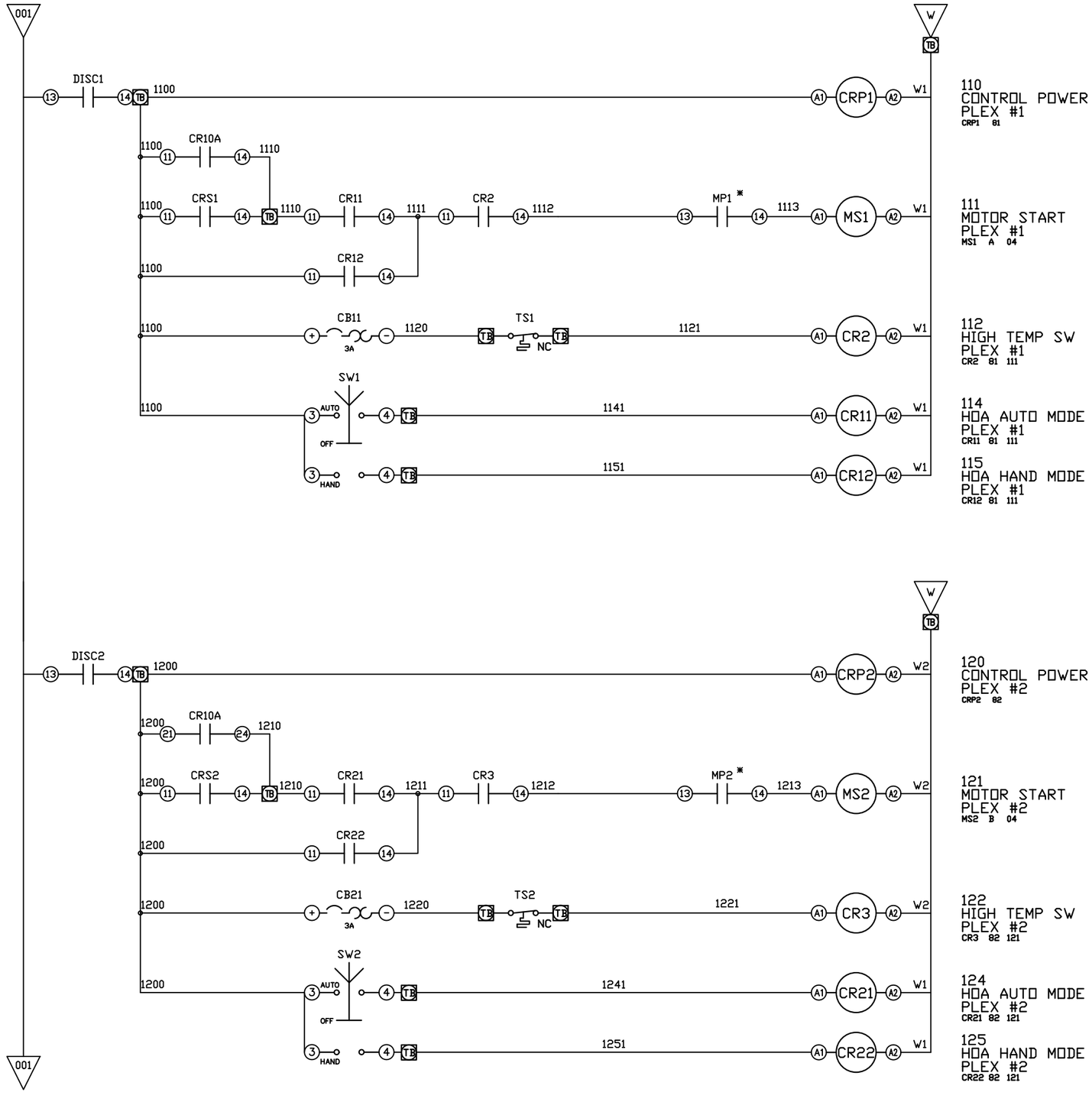
DWG. TYPE WIRING

DWG. NO.

PBMI-VNE269

SHEET	SIZE
W-2	B

REV	REVISION	DATE	ECN	NAME	CHKD
B-1	RELEASE TO PRODUCTION	01/05/24	PXEC0481	KMD	AJL
F-1	ADDED USB DRIVE TO HMI	07/21/25	PXEC0668	JRD	STK
G-1	PLEX ISOLATION UPDATES	09/18/25	PXEC0639	WMM	SEK



* FOR GV4 MOTOR PROTECTORS USE PINS #1 AND #4 ON AUX CONTACT IN 'OF1' SLOT

OPTIONAL:

POWEREX

DRAWN BY	CHECKED BY	ENGINEERING APPROVAL
KMD	AJL	KMD
01/05/24	01/05/24	01/05/24

PANEL TYPE

VACUUM DUPLEX ENCL. MASTER HMI, NFPA

DWG. TYPE WIRING

DWG. NO.

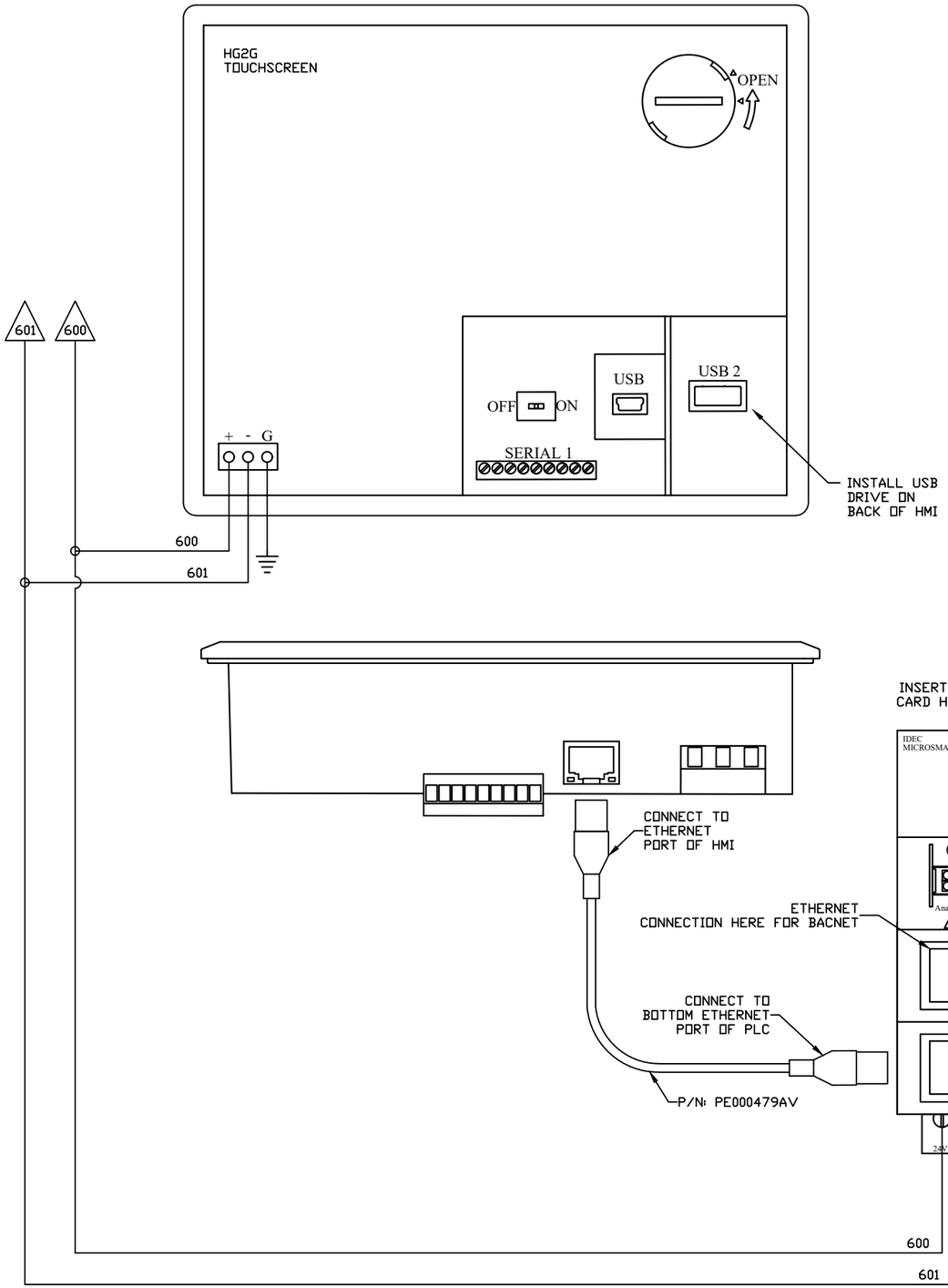
PBMI-VNE269

SHEET W-3

SIZE B

PBMI-VNE269

REV	REVISION	DATE	ECN	NAME	CHKD
B-1	RELEASE TO PRODUCTION	01/05/24	PXEC0481	KMD	AJL
F-1	ADDED USB DRIVE TO HMI	07/21/25	PXEC0668	JRD	STK
G-1	PLEX ISOLATION UPDATES	09/18/25	PXEC0639	WMM	SEK



OPTIONAL:

POWEREX

DRAWN BY	CHECKED BY	ENGINEERING APPROVAL
KMD	AJL	KMD
01/05/24	01/05/24	01/05/24

PANEL TYPE

VACUUM DUPLEX ENCL. MASTER HMI, NFPA

DWG. TYPE WIRING

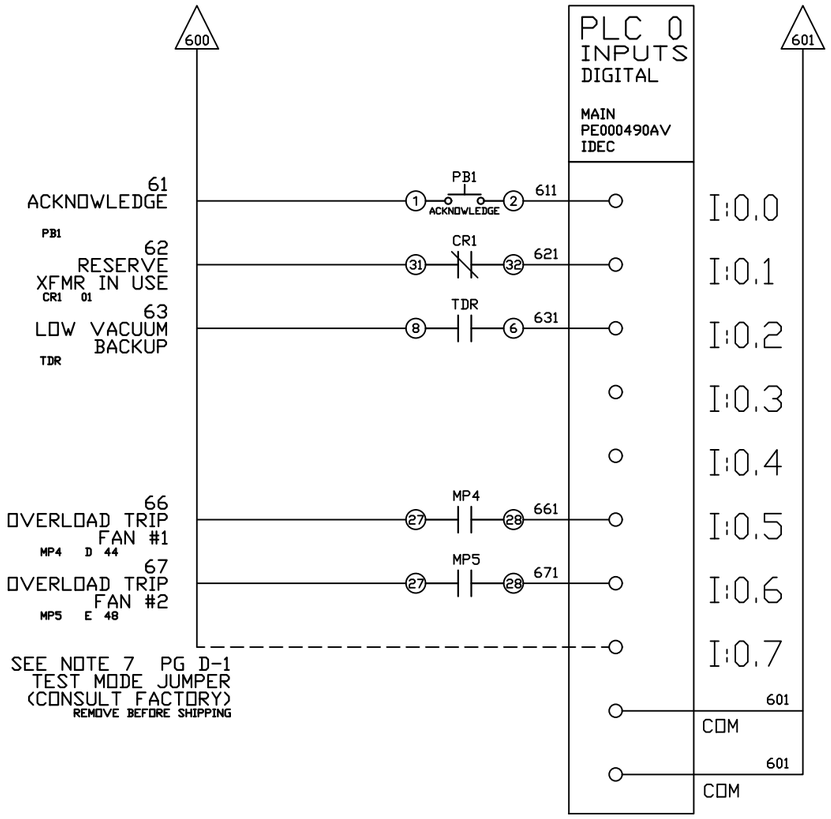
DWG. NO.

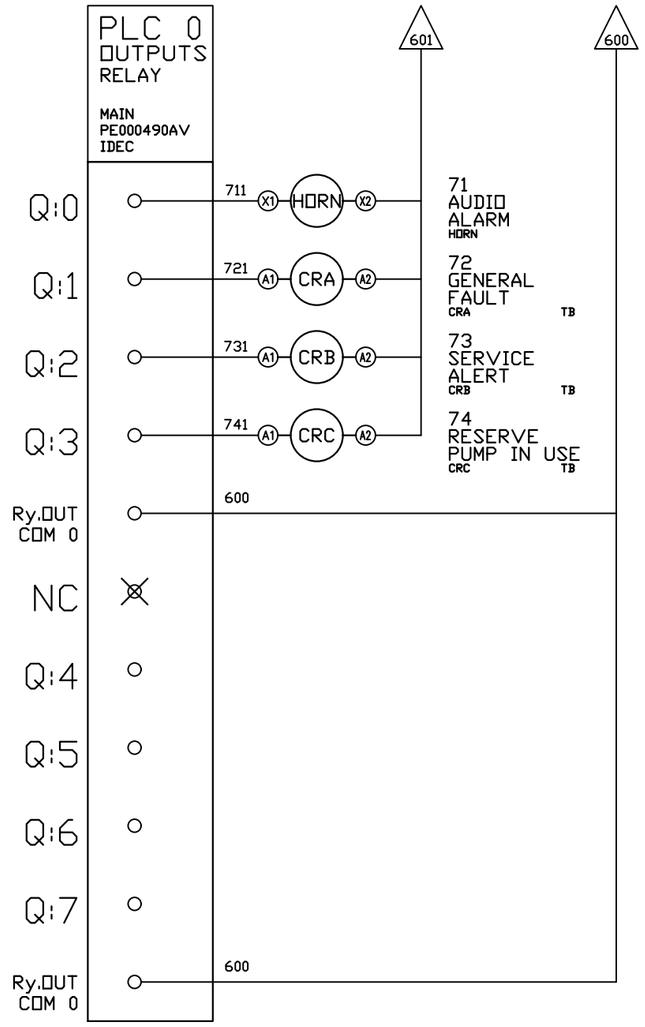
PBMI-VNE269

SHEET W-4

SIZE B

REV	REVISION	DATE	ECN	NAME	CHKD
B-1	RELEASE TO PRODUCTION	01/05/24	PXEC0481	KMD	AJL
F-1	ADDED USB DRIVE TO HMI	07/21/25	PXEC0668	JRD	STK
G-1	PLEX ISOLATION UPDATES	09/18/25	PXEC0639	WMM	SEK





OPTIONAL:

POWEREX

DRAWN BY	CHECKED BY	ENGINEERING APPROVAL
KMD	AJL	KMD
01/05/24	01/05/24	01/05/24

PANEL TYPE

VACUUM DUPLEX ENCL. MASTER HMI, NFPA

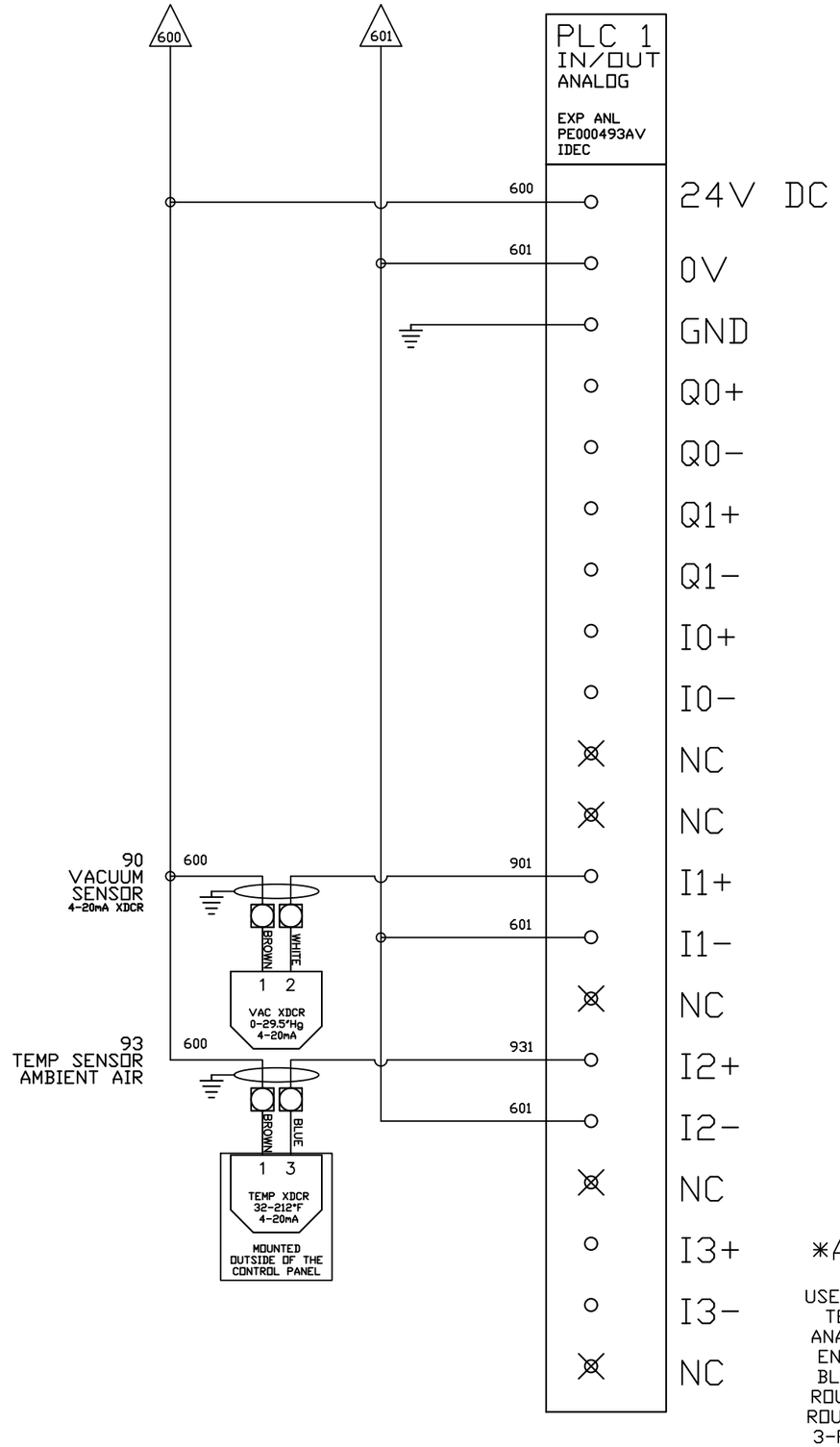
DWG. TYPE WIRING

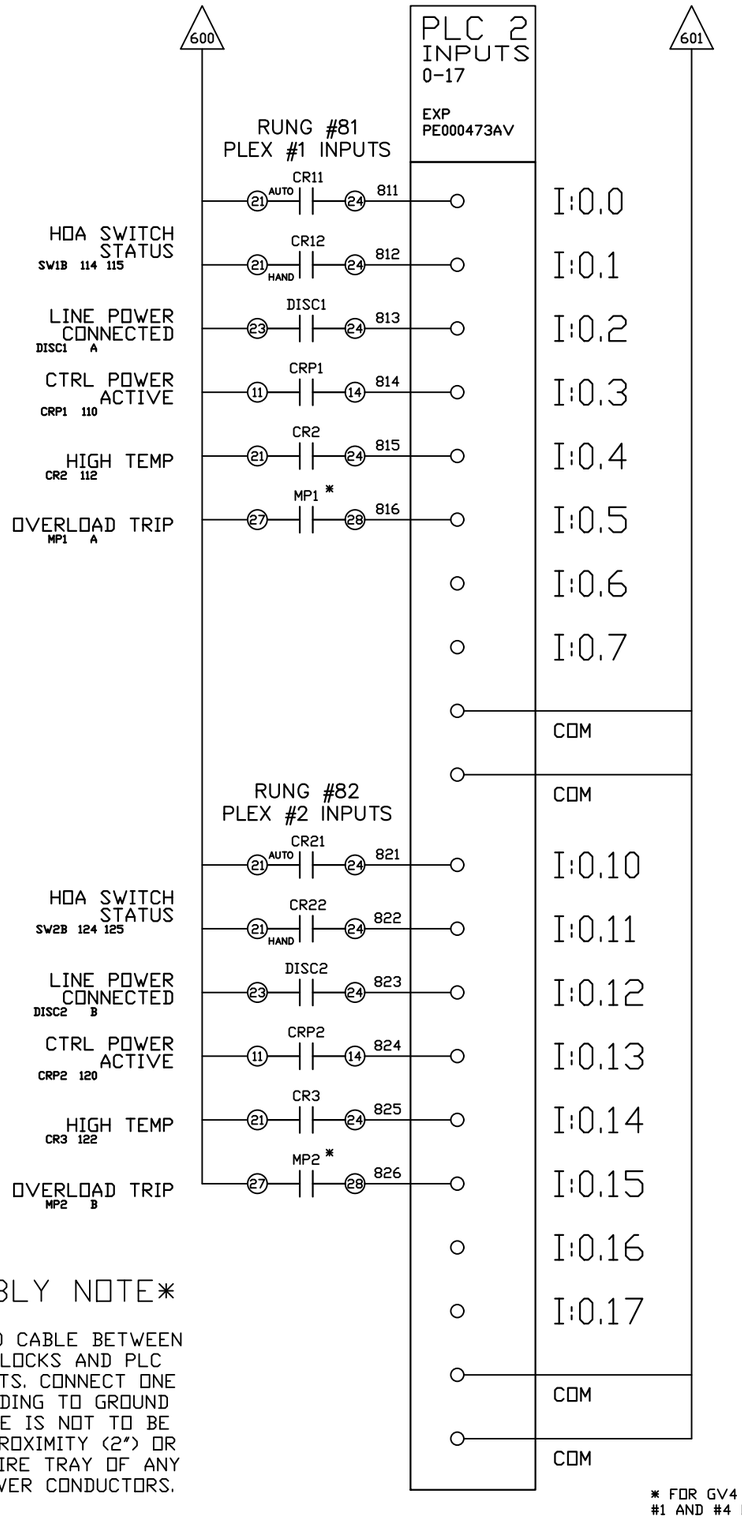
DWG. NO.

PBMI-VNE269

SHEET	SIZE
W-5	B

REV	REVISION	DATE	ECN	NAME	CHKD
B-1	RELEASE TO PRODUCTION	01/05/24	PXEC0481	KMD	AJL
F-1	ADDED USB DRIVE TO HMI	07/21/25	PXEC0668	JRD	STK
G-1	PLEX ISOLATION UPDATES	09/18/25	PXEC0639	WMM	SEK





ASSEMBLY NOTE

USE SHIELDED CABLE BETWEEN TERMINAL BLOCKS AND PLC ANALOG INPUTS. CONNECT ONE END'S SHIELDING TO GROUND BLOCK. CABLE IS NOT TO BE ROUTED IN PROXIMITY (2") OR ROUTED IN WIRE TRAY OF ANY 3-PHASE POWER CONDUCTORS.

* FOR GV4 MOTOR PROTECTORS USE PINS #1 AND #4 ON AUX CONTACT IN 'OF1' SLOT

OPTIONAL:

POWEREX

DRAWN BY	CHECKED BY	ENGINEERING APPROVAL
KMD	AJL	KMD
01/05/24	01/05/24	01/05/24

PANEL TYPE

VACUUM DUPLEX ENCL. MASTER HMI, NFPA

DWG. TYPE WIRING

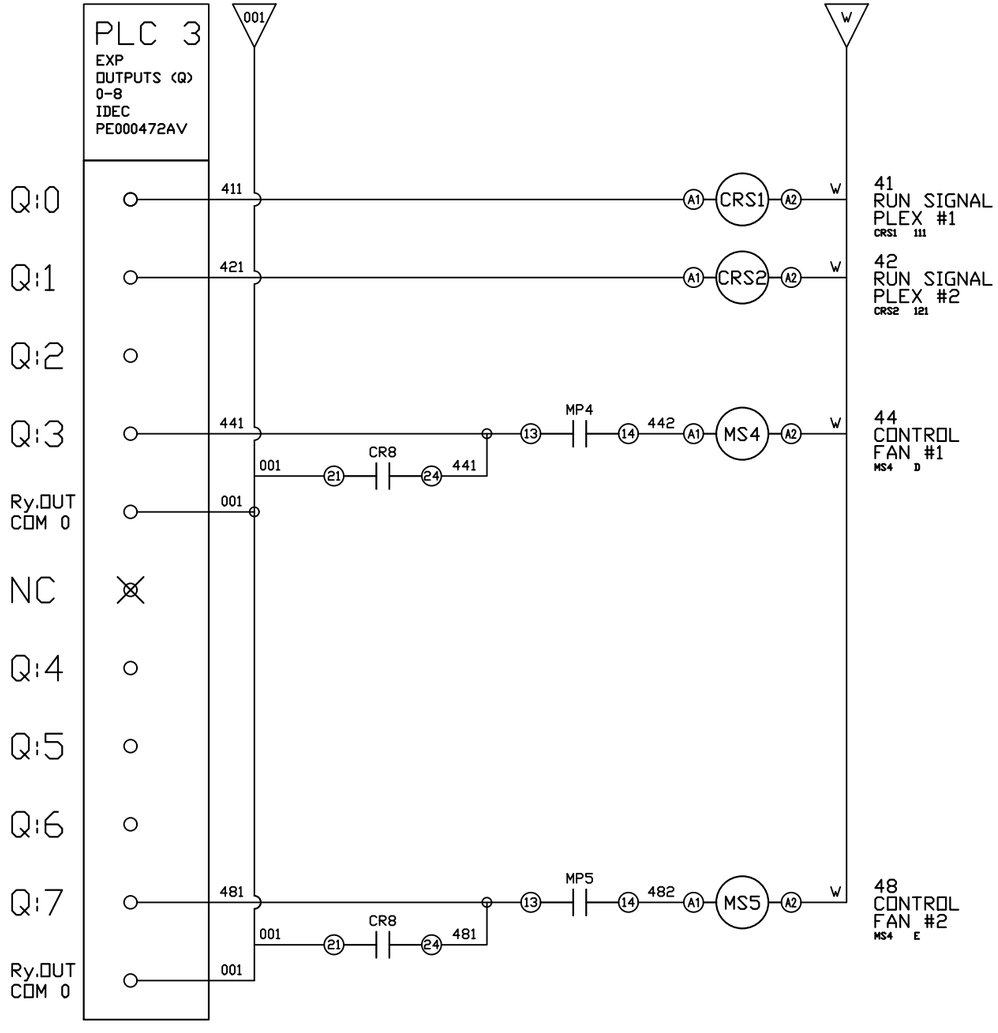
DWG. NO.

PBMI-VNE269

SHEET W-6

SIZE B

REV	REVISION	DATE	ECN	NAME	CHKD
B-1	RELEASE TO PRODUCTION	01/05/24	PXEC0481	KMD	AJL
F-1	ADDED USB DRIVE TO HMI	07/21/25	PXEC0668	JRD	STK
G-1	PLEX ISOLATION UPDATES	09/18/25	PXEC0639	WMM	SEK



OPTIONAL:

POWEREX

DRAWN BY	CHECKED BY	ENGINEERING APPROVAL
KMD	AJL	KMD
01/05/24	01/05/24	01/05/24

PANEL TYPE

VACUUM DUPLEX ENCL. MASTER HMI, NFPA

DWG. TYPE WIRING

DWG. NO.

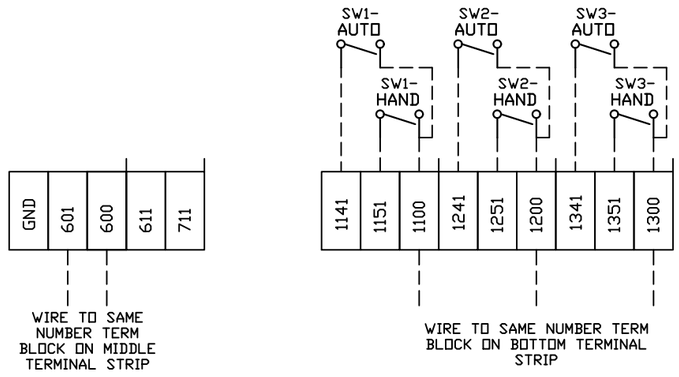
PBMI-VNE269

SHEET	SIZE
W-7	B

PBMI-VNE269

REV	REVISION	DATE	ECN	NAME	CHKD
B-1	RELEASE TO PRODUCTION	01/05/24	PXEC0481	KMD	AJL
F-1	ADDED USB DRIVE TO HMI	07/21/25	PXEC0668	JRD	STK
G-1	PLEX ISOLATION UPDATES	09/18/25	PXEC0639	WMM	SEK

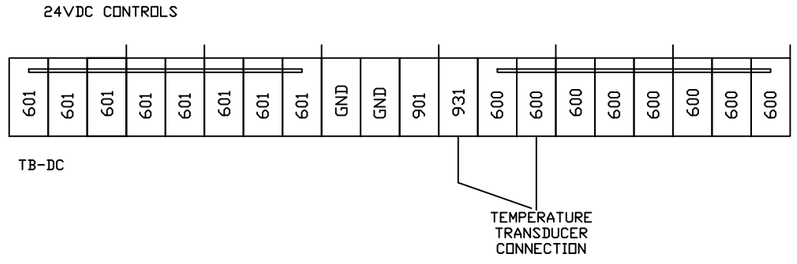
UPPER TERMINAL BLOCKS

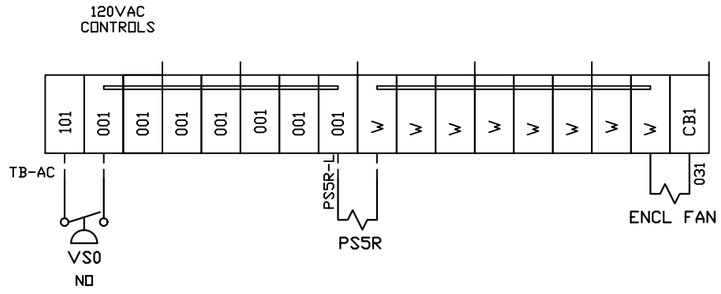


FIELD WIRING NOTES:

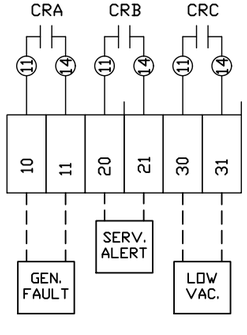
- PANEL GROUND MUST BE CONNECTED TO EARTH GROUND
- TRANSFORMER IS SIZED FOR LOADS SHOWN ON DRAWING ONLY.
- FIELD WIRING INDICATED BY ----------. WIRE TO BE COPPER RATED AT 75° C.
- ALL ALARM DRY CONTACTS ARE CLOSED FOR NORMAL OPERATION AND OPEN IN ALARM.
- DRY CONTACT RATING: 30V DC/2A (resistive load, inductive load L/R = 7 ms)
- USE CAT-5 CABLE W/RJ45 CONNECTOR FOR ETHERNET CONNECTION TO COMMUNICATION NETWORK OR BAS SYSTEM

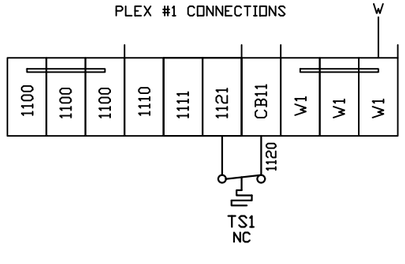
MIDDLE TERMINAL BLOCKS

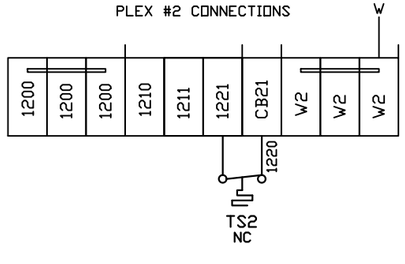




LOWER TERMINAL BLOCKS







OPTIONAL:

POWEREX™

DRAWN BY	CHECKED BY	ENGINEERING APPROVAL
KMD	AJL	KMD
01/05/24	01/05/24	01/05/24

PANEL TYPE

VACUUM DUPLEX ENCL. MASTER HMI, NFPA

DWG. TYPE WIRING

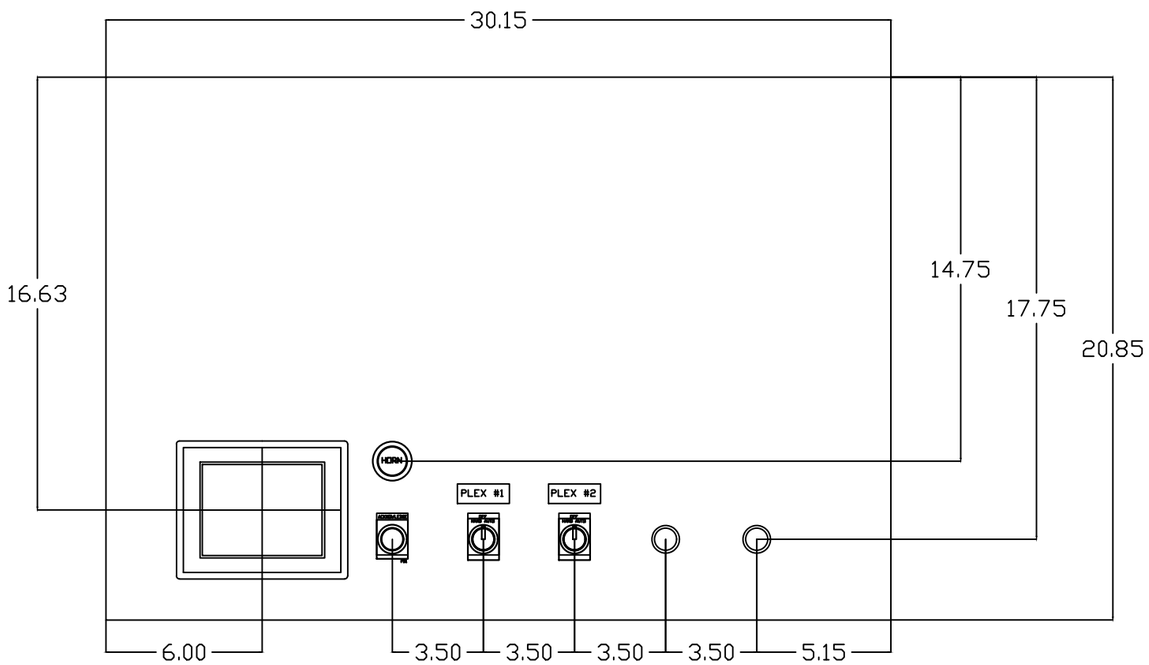
DWG. NO.

PBMI-VNE269

SHEET	SIZE
W-8	B

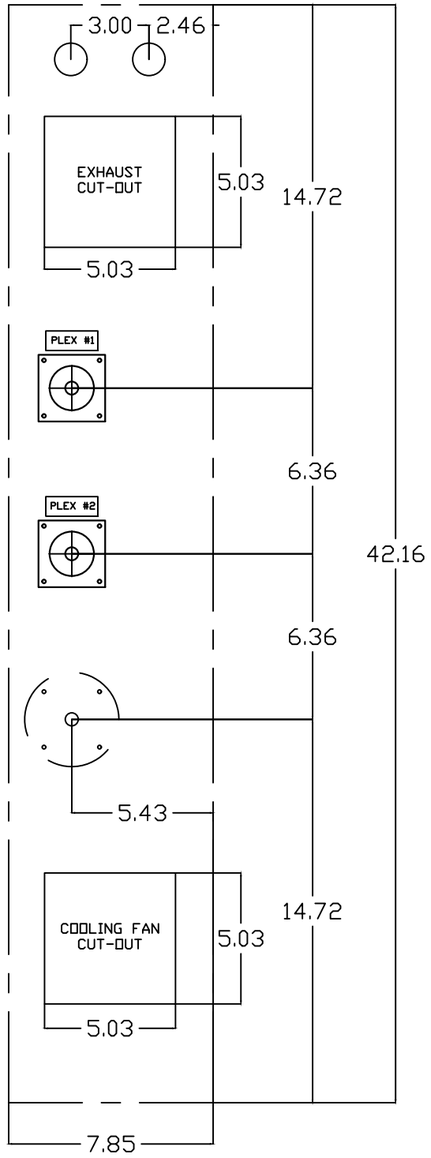
PBMI-VNE269

REV	REVISION	DATE	ECN	NAME	CHKD
B-1	RELEASE TO PRODUCTION	01/05/24	PXEC0481	KMD	AJL
F-1	ADDED USB DRIVE TO HMI	07/21/25	PXEC0668	JRD	STK
G-1	PLEX ISOLATION UPDATES	09/18/25	PXEC0639	WMM	SEK



INSTRUMENT PANEL ON FRONT OF ENCLOSURE

RIGHT SIDE OF ENCLOSURE



OPTIONAL:

POWEREX

DRAWN BY	CHECKED BY	ENGINEERING APPROVAL
KMD	AJL	KMD
01/05/24	01/05/24	01/05/24

PANEL TYPE

VACUUM DUPLEX ENCL. MASTER HMI, NFPA

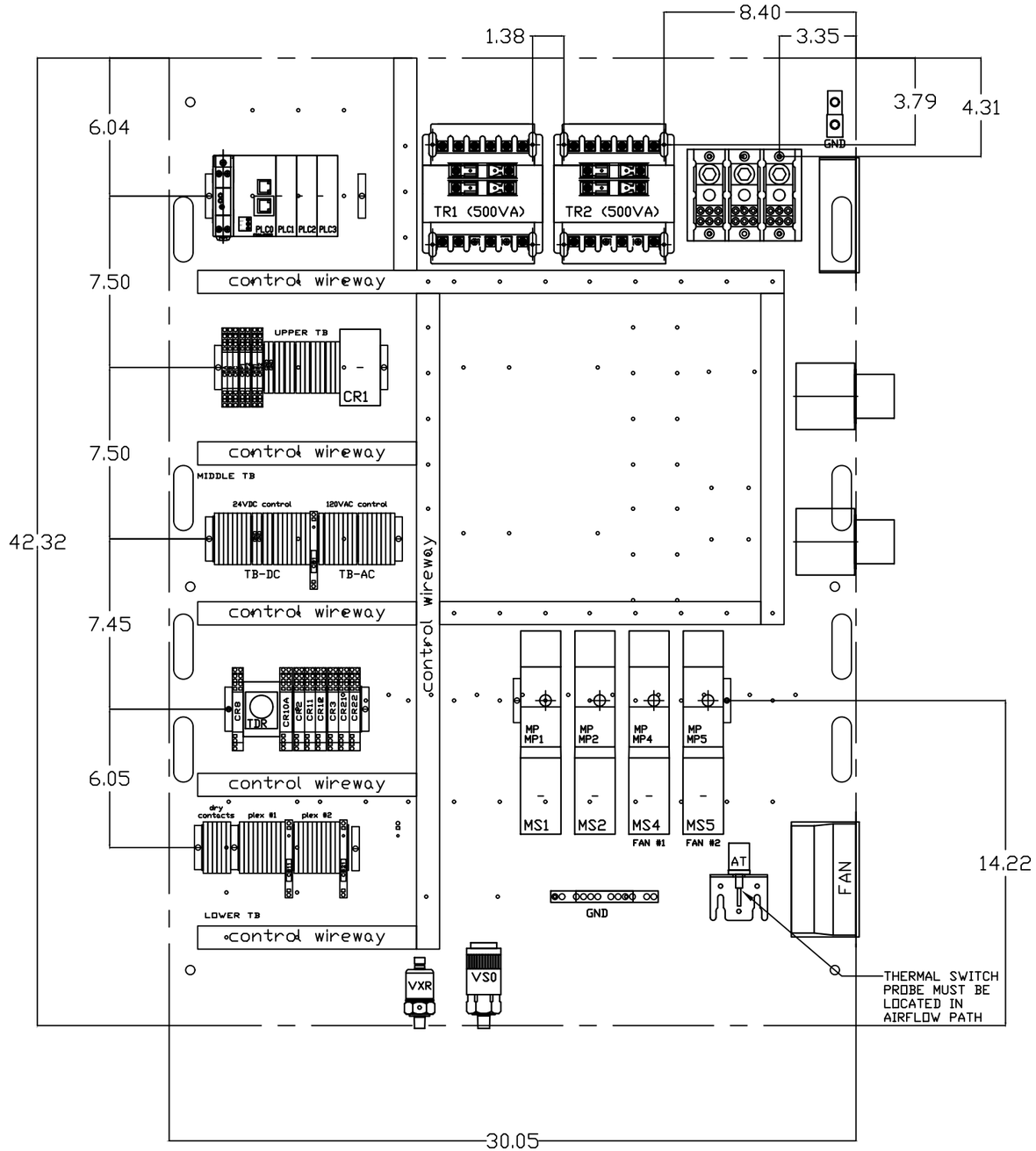
DWG. TYPE LAYOUT

DWG. NO.

PBMI-VNE269

SHEET	SIZE
L-1	B

REV	REVISION	DATE	ECN	NAME	CHKD
B-1	RELEASE TO PRODUCTION	01/05/24	PXEC0481	KMD	AJL
F-1	ADDED USB DRIVE TO HMI	07/21/25	PXEC0668	JRD	STK
G-1	PLEX ISOLATION UPDATES	09/18/25	PXEC0639	WMM	SEK



OPTIONAL:

POWEREX

DRAWN BY	CHECKED BY	ENGINEERING APPROVAL
KMD	AJL	KMD
01/05/24	01/05/24	01/05/24

PANEL TYPE

VACUUM DUPLEX ENCL. MASTER HMI, NFPA

DWG. TYPE LAYOUT

DWG. NO.

PBMI-VNE269

SHEET	SIZE
L-2	B

PBMI-VNE269

TABLE 1 – OIL–LUBRICATED

PANEL DATA 3ø – 50/60 Hz 500VA CONTROL CIRCUIT								
LOAD SPECIFICATIONS						(B) BRANCH CIRCUIT PROTECTION – PROVIDED BY INSTALLER		
PANEL PART NUMBER	MOTOR SIZE EACH	POWER (V/PH)	PUMP MOTOR LOAD EACH (FLA)	FAN MOTOR LOAD EACH (FLA)	PANEL LOAD TOTAL (FLA)	NONTIME DELAY FUSE	TIME–DELAY FUSE	INVERSE–TIME CIRCUIT BREAKER
PBMIVNE26922AB	2	208V/3ø	6.0	0.6	15.2	30A	20A	25A
PBMIVNE26942AB	5	208V/3ø	15.0	0.6	33.7	70A	45A	60A
PBMIVNE26952AB	5	208V/3ø	14.8	0.6	33.3	70A	45A	60A
PBMIVNE26972AB	7.5	208V/3ø	26.2	0.6	56.1	110A	80A	100A
PBMIVNE26923AB	2	208V/3ø	5.4	0.6	13.9	25A	20A	25A
PBMIVNE26943AB	5	230V/3ø	13.2	0.54	30.0	60A	40A	50A
PBMIVNE26953AB	5	230V/3ø	12.9	0.54	29.4	60A	40A	50A
PBMIVNE26973AB	7.5	230V/3ø	20.9	0.54	45.4	90A	70A	80A
PBMIVNE26924AB	2	208V/3ø	2.7	0.6	8.1	15A	15A	15A
PBMIVNE26944AB	5	460V/3ø	6.6	0.33	15.9	30A	25A	30A
PBMIVNE26954AB	5	460V/3ø	6.45	0.33	15.6	30A	25A	30A
PBMIVNE26974AB	7.5	460V/3ø	10.5	0.33	23.7	45A	35A	40A

NOTE– ADJUST OVERCURRENT PROTECTION DEVICE NOT TO EXCEED 115% OF MOTOR NAMEPLATE FLA VALUE

NOTES:

1. RECOMMENDED TIGHTENING TORQUES FOR WIRE TERMINALS:
   208–575 VOLT POWER 35 POUND INCHES
   120 VOLT POWER AND CONTROL VOLTAGE 15 POUND INCHES
2. PANEL GROUND MUST BE CONNECTED TO EARTH GROUND
3. INSTALLER TO PROVIDE MAIN DISCONNECTING DEVICE FOR THIS ELECTRICAL ASSEMBLY. SHORT CIRCUIT PROTECTION IS RECOMMENDED, SEE TABLE 1. IF PROVIDING PANEL SHORT CIRCUIT PROTECTION USING CLASS J TIME DELAY FUSES, PANEL SCCR IS 65kA. OTHERWISE, PANEL SCCR IS 5kA.
4. ALL WIRES MUST BE LABELED ON BOTH ENDS
5. TRANSFORMER IS SIZED FOR LOADS SHOWN ON DRAWING ONLY. DO NOT CONNECT ANY OTHER DEVICES
6. △ –INDICATES A DRAWING WIRE CONNECTION TO ANOTHER PAGE.
7. SERVICE DISCONNECT USAGE – turn HOA switch to OFF position. Turn disconnect OF SAME UNIT to OFF position. Associated PLEX will be isolated for maintenance purposes. After completing maintenance, turn disconnect to ON position and return HOA switch to AUTO. This will return PLEX to normal operation.

CONTROL TRANSFORMERS – 500VA					
REPLACEMENT FUSE TYPE		208 VOLT	230 VOLT	460 380 VOLT	575 VOLT
FU1,2A FU1,2B	FNQR	6A	5A	5A	4A
FU3A,B	FNM	7A	7A	7A	7A
SEE XFRMR FOR CONNECTIONS					

WIRE TYPE TABLE			
VOLTAGE	WIRE NUMBERS	GAUGE	COLOR
120VAC	001–599,1100+	16–18AWG	RED/BLK
0VAC	W	16–18AWG	WHT/BLK
24VDC	600–1099	16–18AWG	PURPLE
0VDC	601	16–18AWG	PURPLE
GND	–	VARIES	GREEN
CUSTOMER SUPPLY	01–99	16–18AWG	YELLOW

SEQUENCE OF OPERATIONS

During normal operation the PBMI controller will signal the Lead pump to run when vacuum drops to lead cut-in set-point and run for a 10-minute minimum period before stopping when the vacuum reaches the lead cut-out set-point. Lead alternation to the next pump, will occur every 30-minutes. If demand cannot be satisfied by the lead pump, the lag pump(s) will start and stop based upon the lag cut-in and cut-out set-points. The HOA switch's place the pump in the following modes: Hand-turns pump on to run continuous. Off-disables pump from running. Auto-places pump in the "ready mode" and will start and stop based on sequence described above.

Expandable systems include all control devices, operators, and programming for the maximum number of pumps (or plex) required. To expand the system: navigate to the "service screen" and enter the number of pumps.

Additional information and descriptions can be accessed through the HMI "service info" screen by pressing Sequence of Operations button.

REV	REVISION	DATE	ECN	NAME	CHKD
B-1	RELEASE TO PRODUCTION	01/05/24	PXEC0481	KMD	AJL
F-1	ADDED USB DRIVE TO HMI	07/21/25	PXEC0668	JRD	STK
G-1	PLEX ISOLATION UPDATES	09/18/25	PXEC0639	WMM	SEK

OPTIONAL:

POWEREX™

DRAWN BY	CHECKED BY	ENGINEERING APPROVAL
KMD	AJL	KMD
01/05/24	01/05/24	01/05/24

PANEL TYPE: VACUUM DUPLEX ENCL. MASTER HMI, NFPA

DWG. TYPE: DATA

DWG. NO.: PBMI-VNE269

SHEET: D-1

SIZE: B

PBMI-VNE269

TABLE 1 – CLAW

PANEL DATA 3ø – 50/60 Hz 500VA CONTROL CIRCUIT								
LOAD SPECIFICATIONS						(B) BRANCH CIRCUIT PROTECTION – PROVIDED BY INSTALLER		
PANEL PART NUMBER	MOTOR SIZE EACH (Hp)	LINE VOLTAGE (V/PH)	PUMP MOTOR LOAD EACH (FLA)	FAN MOTOR LOAD EACH (FLA)	PANEL LOAD TOTAL (FLA)	NONTIME DELAY FUSE	TIME-DELAY FUSE	INVERSE-TIME CIRCUIT BREAKER
PBMIVNE26922CB	2	208V/3ø	5.6	0.6	14.9	30A	20A	25A
PBMIVNE26932CB	3	208V/3ø	8.6	0.6	20.9	40A	30A	35A
PBMIVNE26942CB	4	208V/3ø	10.4	0.6	24.5	50A	35A	45A
PBMIVNE26952CB	5	208V/3ø	13.0	0.6	29.7	60A	40A	50A
PBMIVNE26962CB	6.4	208V/3ø	16.4	0.6	36.5	70A	50A	70A
PBMIVNE26972CB	7.5	208V/3ø	21.4	0.6	46.5	90A	70A	80A
PBMIVNE269A2CB	10	208V/3ø	27.2	0.6	58.1	125A	80A	100A
PBMIVNE269F2CB	15	208V/3ø	40.5	0.6	84.7	175A	125A	150A
PBMIVNE26923CB	2	230V/3ø	5.6	0.54	14.8	30A	20A	25A
PBMIVNE26933CB	3	230V/3ø	8.4	0.54	20.4	40A	30A	35A
PBMIVNE26943CB	4	230V/3ø	9.2	0.54	22.0	45A	30A	40A
PBMIVNE26953CB	5	230V/3ø	11.4	0.54	26.4	50A	35A	45A
PBMIVNE26963CB	6.4	230V/3ø	15.2	0.54	34.0	70A	50A	60A
PBMIVNE26973CB	7.5	230V/3ø	17.2	0.54	38.0	80A	60A	70A
PBMIVNE269A3CB	10	230V/3ø	23.6	0.54	50.8	100A	70A	90A
PBMIVNE269F3CB	15	230V/3ø	35.0	0.54	73.6	150A	100A	150A
PBMIVNE26924CB	2	460V/3ø	2.8	0.33	8.8	15A	15A	15A
PBMIVNE26934CB	3	460V/3ø	4.2	0.33	11.6	25A	15A	20A
PBMIVNE26944CB	4	460V/3ø	4.6	0.33	11.9	25A	20A	20A
PBMIVNE26954CB	5	460V/3ø	5.7	0.33	14.1	30A	20A	25A
PBMIVNE26964CB	6.4	460V/3ø	7.6	0.33	17.9	35A	25A	30A
PBMIVNE26974CB	7.5	460V/3ø	8.6	0.33	19.9	40A	30A	35A
PBMIVNE269A4CB	10	460V/3ø	11.8	0.33	26.3	50A	40A	45A
PBMIVNE269F4CB	15	460V/3ø	17.5	0.33	37.7	80A	60A	70A

NOTE– ADJUST OVERCURRENT PROTECTION DEVICE NOT TO EXCEED 115% OF MOTOR NAMEPLATE FLA VALUE
– PANEL FLA INCLUDES VFD POWER

NOTES:

1. RECOMMENDED TIGHTENING TORQUES FOR WIRE TERMINALS:
   208-575 VOLT POWER 35 POUND INCHES
   120 VOLT POWER AND CONTROL VOLTAGE 15 POUND INCHES
2. PANEL GROUND MUST BE CONNECTED TO EARTH GROUND
3. INSTALLER TO PROVIDE MAIN DISCONNECTING DEVICE FOR THIS ELECTRICAL ASSEMBLY. SHORT CIRCUIT PROTECTION IS RECOMMENDED, SEE TABLE 1. IF PROVIDING PANEL SHORT CIRCUIT PROTECTION USING CLASS J TIME DELAY FUSES, PANEL SCCR IS 65kA. OTHERWISE, PANEL SCCR IS 5kA.
4. ALL WIRES MUST BE LABELED ON BOTH ENDS
5. TRANSFORMER IS SIZED FOR LOADS SHOWN ON DRAWING ONLY. DO NOT CONNECT ANY OTHER DEVICES
6. △ -INDICATES A DRAWING WIRE CONNECTION TO ANOTHER PAGE.
7. SERVICE DISCONNECT USAGE - turn HOA switch to OFF position. Turn disconnect OF SAME UNIT to OFF position. Associated PLEX will be isolated for maintenance purposes. After completing maintenance, turn disconnect to ON position and return HOA switch to AUTO. This will return PLEX to normal operation.

CONTROL TRANSFORMERS - 500VA					
REPLACEMENT FUSE TYPE		208 VOLT	230 VOLT	460 380 VOLT	575 VOLT
FU1,2A FU1,2B	FNQR	6A	5A	5A	4A
FU3A,B	FNM	7A	7A	7A	7A
SEE XFRMR FOR CONNECTIONS					

WIRE TYPE TABLE			
VOLTAGE	WIRE NUMBERS	GAUGE	COLOR
120VAC	001-599,1100+	16-18AWG	RED/BLK
0VAC	W	16-18AWG	WHT/BLK
24VDC	600-1099	16-18AWG	PURPLE
0VDC	601	16-18AWG	PURPLE
GND	-	VARIES	GREEN
CUSTOMER SUPPLY	01-99	16-18AWG	YELLOW

SEQUENCE OF OPERATIONS

During normal operation the PBMI controller will signal the Lead pump to run when vacuum drops to lead cut-in set-point and run for a 10-minute minimum period before stopping when the vacuum reaches the lead cut-out set-point. Lead alternation to the next pump, will occur every 30-minutes. If demand cannot be satisfied by the lead pump, the lag pump(s) will start and stop based upon the lag cut-in and cut-out set-points. The HOA switch's place the pump in the following modes: Hand-turns pump on to run continuous. Off-disables pump from running. Auto-places pump in the "ready mode" and will start and stop based on sequence described above.

Expandable systems include all control devices, operators, and programming for the maximum number of pumps (or plex) required. To expand the system: navigate to the "service screen" and enter the number of pumps.

Additional information and descriptions can be accessed through the HMI "service info" screen by pressing Sequence of Operations button.

REV	REVISION	DATE	ECN	NAME	CHKD
B-1	RELEASE TO PRODUCTION	01/05/24	PXEC0481	KMD	AJL
F-1	ADDED USB DRIVE TO HMI	07/21/25	PXEC0668	JRD	STK
G-1	PLEX ISOLATION UPDATES	09/18/25	PXEC0639	WMM	SEK

OPTIONAL:

POWEREX™

DRAWN BY	CHECKED BY	ENGINEERING APPROVAL
KMD	AJL	KMD
01/05/24	01/05/24	01/05/24

PANEL TYPE
VACUUM DUPLEX ENCL. MASTER HMI, NFPA

DWG. TYPE DATA

DWG. NO.
PBMI-VNE269

SHEET D-1

SIZE B