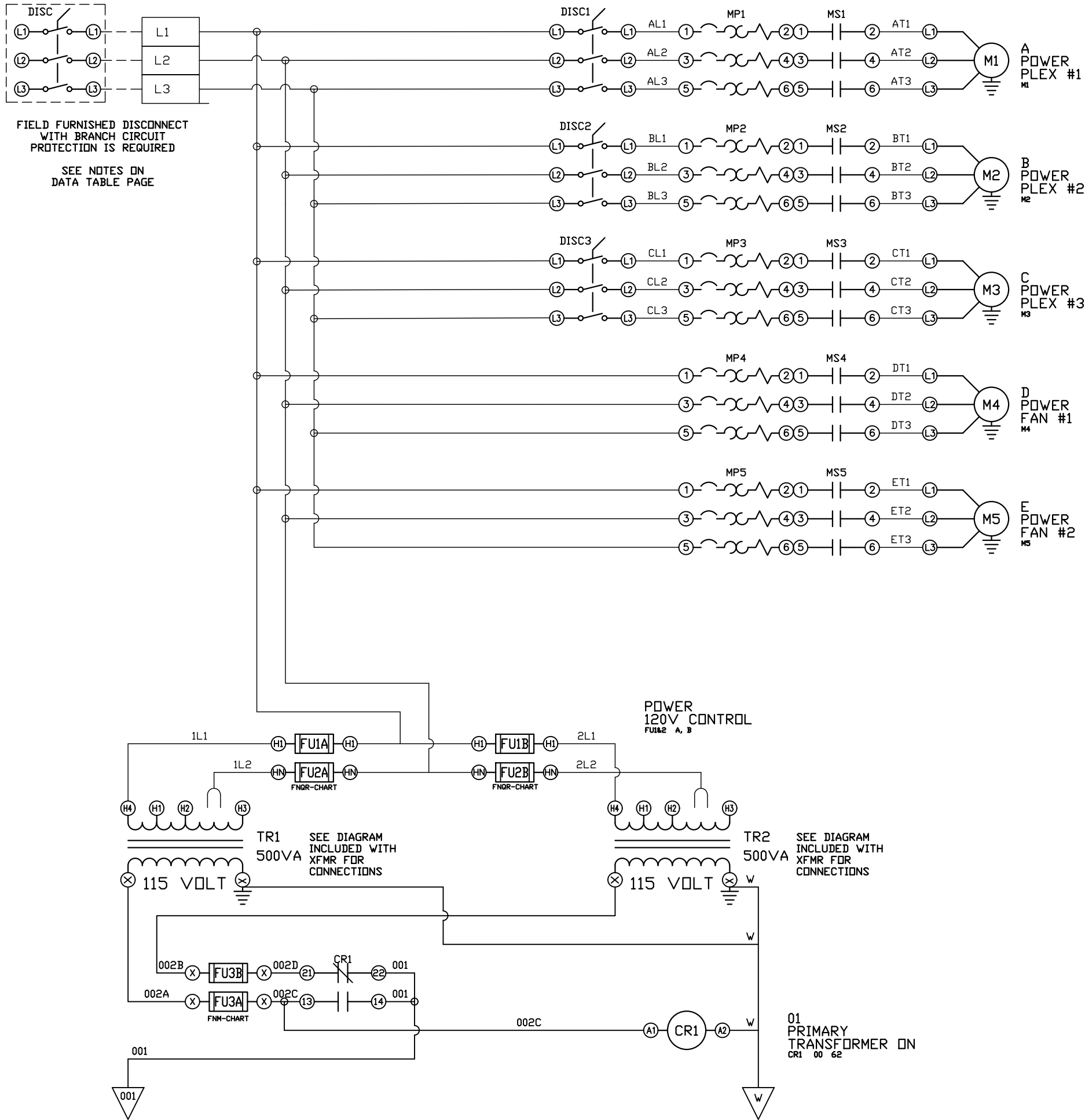




REV	REVISION	DATE	ECN	NAME	CHKD
B-1	RELEASE TO PRODUCTION	01/05/24	PXEC0481	KMD	JRD
E-1	ADD CB TO EXTERNAL DEVICES & DISCONNECT TO INPUT POWER	07/16/24	PXEC0628	SEK	JRD
F-1	PLEX ISOLATION UPDATES	06/23/25	PXEC0639	WMM	SEK

OPTIONAL:

POWEREX™

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

PANEL TYPE

VACUUM TRIPLEX ENCL. SUB
NFPA

DWG. TYPE WIRING

DWG. NO.

PBMI-VNES369

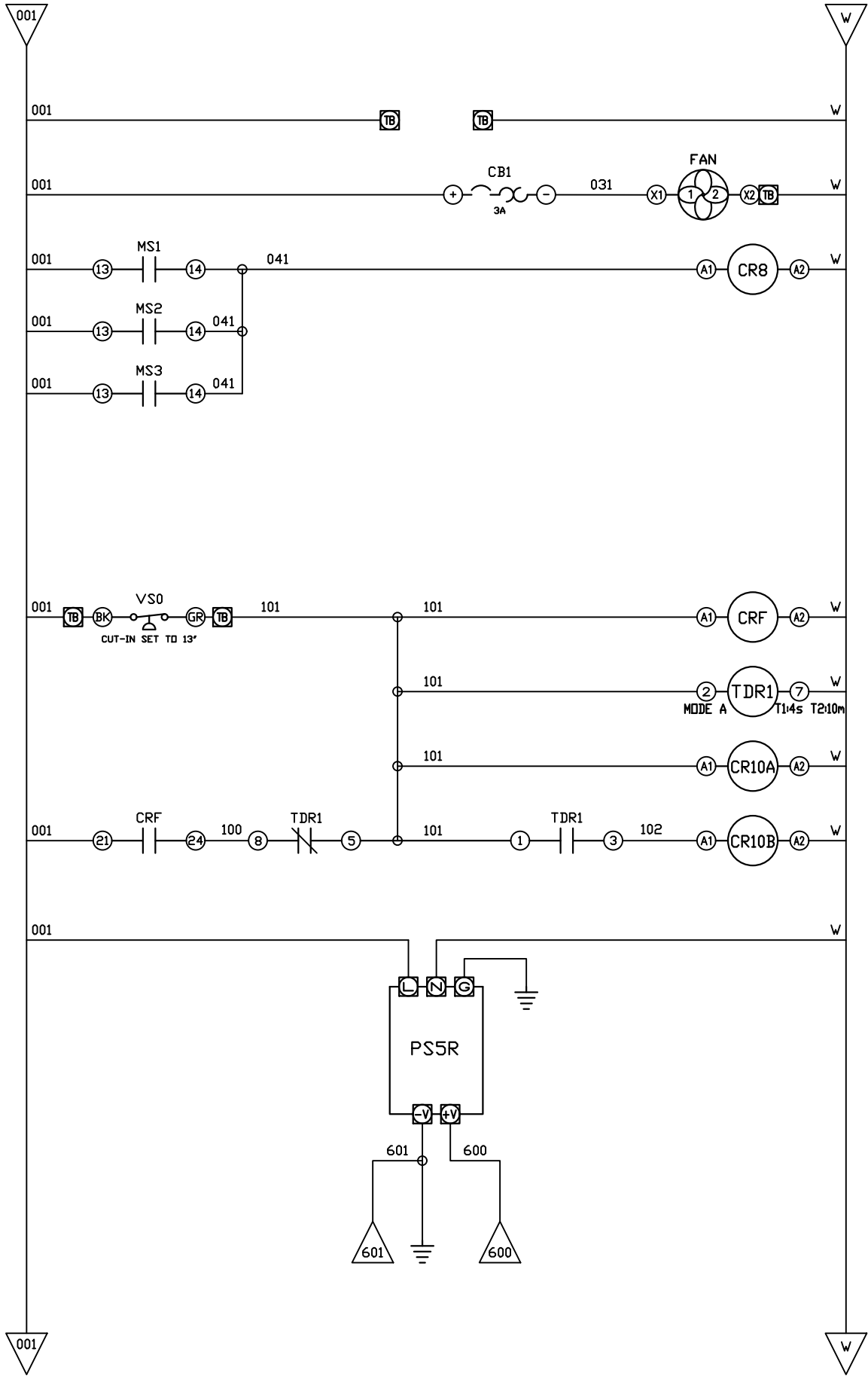
SHEET

W-1

SIZE

B

REV	REVISION	DATE	ECN	NAME	CHKD
B-1	RELEASE TO PRODUCTION	01/05/24	PXEC0481	KMD	JRD
E-1	ADD CB TO EXTERNAL DEVICES & DISCONNECT TO INPUT POWER	07/16/24	PXEC0628	SEK	JRD
F-1	PLEX ISOLATION UPDATES	06/23/25	PXEC0639	WMM	SEK



02
120VAC
DEVICE POWER

03
ENCL FAN
POWER

04
3-PHASE FAN
POWER
CR8 44 48

10
LOW VACUUM BACKUP
HARD WIRE BACKUP
CRF 10 63

BACKUP DELAY START
& MINIMUM RUN TIMER
TDR1 10 10

PLEX ON
AFTER 0-SEC
CR10A 111 121

PLEX ON
AFTER 4-SEC
CR10B 131

60
24 VOLT DC
POWER SUPPLY
30W PS5R

OPTIONAL:

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

PANEL TYPE

VACUUM TRIPLEX ENCL. SUB
NFPA

DWG. TYPE
WIRING

DWG. NO.
PBMI-VNES369

SHEET	SIZE
W-2	B

REV	REVISION	DATE	ECN	NAME	CHKD
B-1	RELEASE TO PRODUCTION	01/05/24	PXEC0481	KMD	JRD
E-1	ADD CB TO EXTERNAL DEVICES & DISCONNECT TO INPUT POWER	07/16/24	PXEC0628	SEK	JRD
F-1	PLEX ISOLATION UPDATES	06/23/25	PXEC0639	WMM	SEK

OPTIONAL:



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

PANEL TYPE

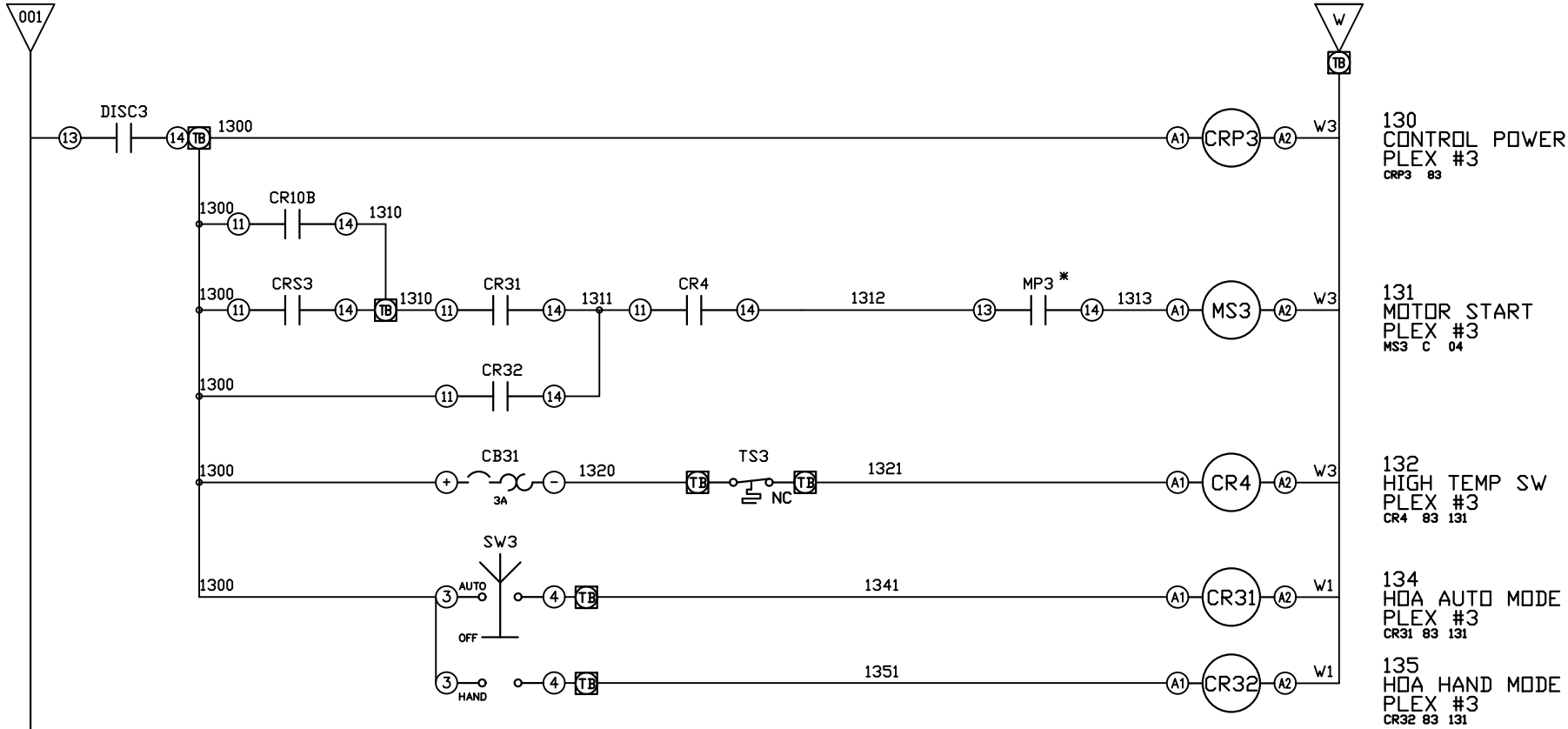
VACUUM TRIPLEX ENCL. SUB
NFPA

DWG. TYPE WIRING

DWG. NO.
PBMI-VNES369

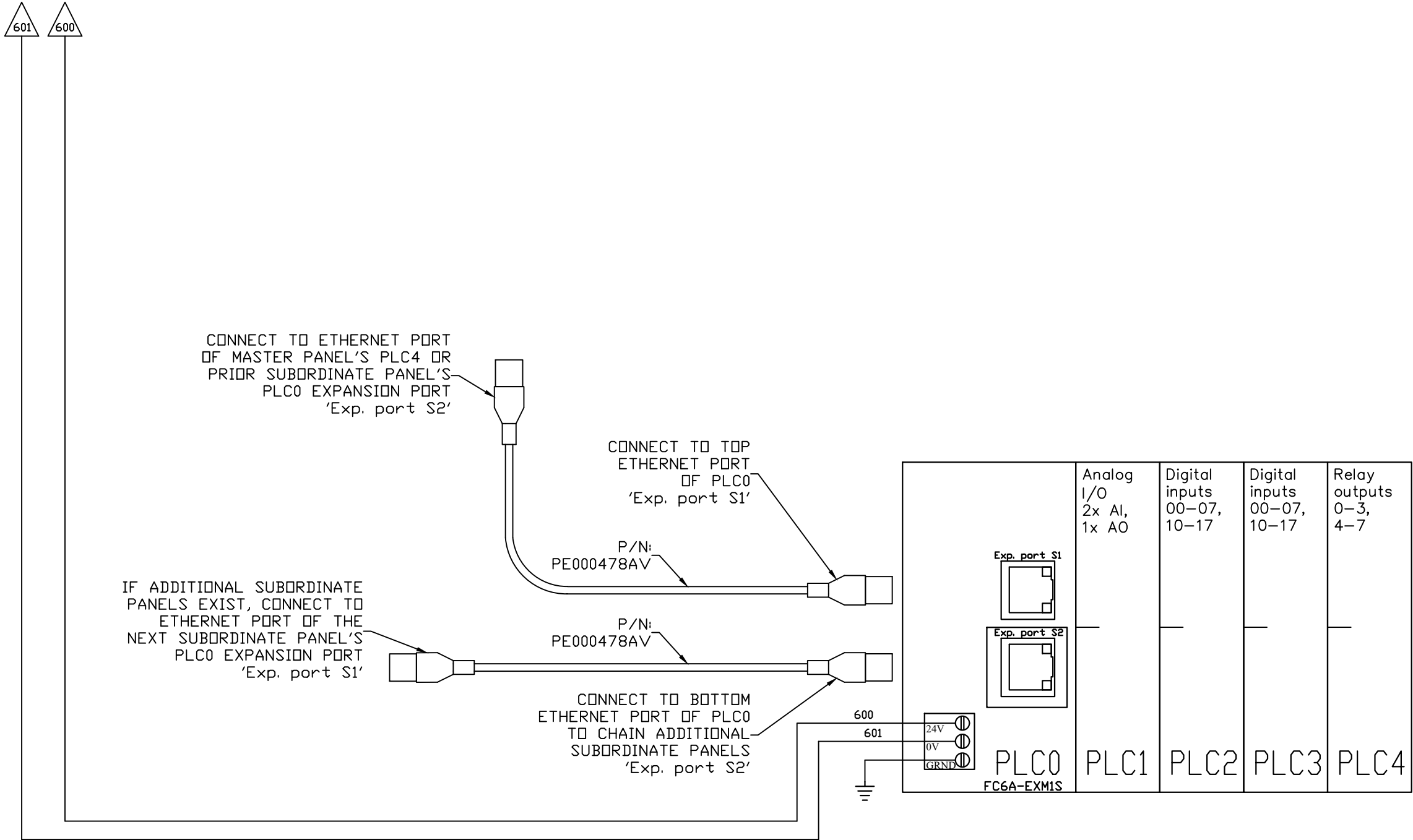
SHEET	SIZE
W-4	B

PBMI-VNES369



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

REV	REVISION	DATE	ECN	NAME	CHKD
B-1	RELEASE TO PRODUCTION	01/05/24	PXEC0481	KMD	JRD
E-1	ADD CB TO EXTERNAL DEVICES & DISCONNECT TO INPUT POWER	07/16/24	PXEC0628	SEK	JRD
F-1	PLEX ISOLATION UPDATES	06/23/25	PXEC0639	WMM	SEK



OPTIONAL:

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parties for use or examination.

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

PANEL TYPE

VACUUM TRIPLEX ENCL. SUB
NFPA

DWG. TYPE WIRING

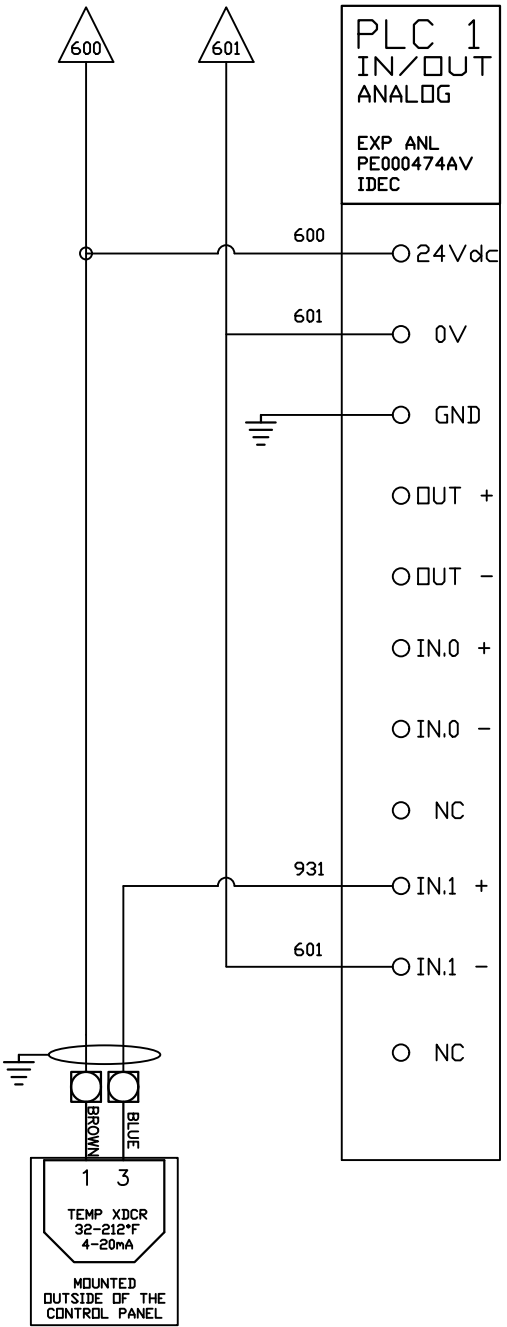
DWG. NO.

PBMI-VNES369

SHEET	SIZE
W-5	B

PBMI-VNES369

REV	REVISION	DATE	ECN	NAME	CHKD
B-1	RELEASE TO PRODUCTION	01/05/24	PXEC0481	KMD	JRD
E-1	ADD CB TO EXTERNAL DEVICES & DISCONNECT TO INPUT POWER	07/16/24	PXEC0628	SEK	JRD
F-1	PLEX ISOLATION UPDATES	06/23/25	PXEC0639	WMM	SEK



HQA SWITCH
STATUS
SW1B 114 115

LINE POWER
CONNECTED
DISC1 A

CTRL POWER
ACTIVE
CRP1 110

HIGH TEMP
CR2 112

OVERLOAD TRIP
MP1 A

HQA SWITCH
STATUS
SW2B 124 125

LINE POWER
CONNECTED
DISC2 B

CTRL POWER
ACTIVE
CRP2 120

HIGH TEMP
CR3 122

OVERLOAD TRIP
MP2 B

RUNG #81
PLEX #1 INPUTS

RUNG #82
PLEX #2 INPUTS

PLC 2
INPUTS
0-17
EXP
PE000473AV

I:0.0
I:0.1
I:0.2
I:0.3
I:0.4
I:0.5
I:0.6
I:0.7

COM

COM

I:0.10
I:0.11
I:0.12
I:0.13
I:0.14
I:0.15
I:0.16
I:0.17

COM

COM

601

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 "SD9" SLOT

OPTIONAL:

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

PANEL TYPE
VACUUM TRIPLEX ENCL. SUB
NFPA

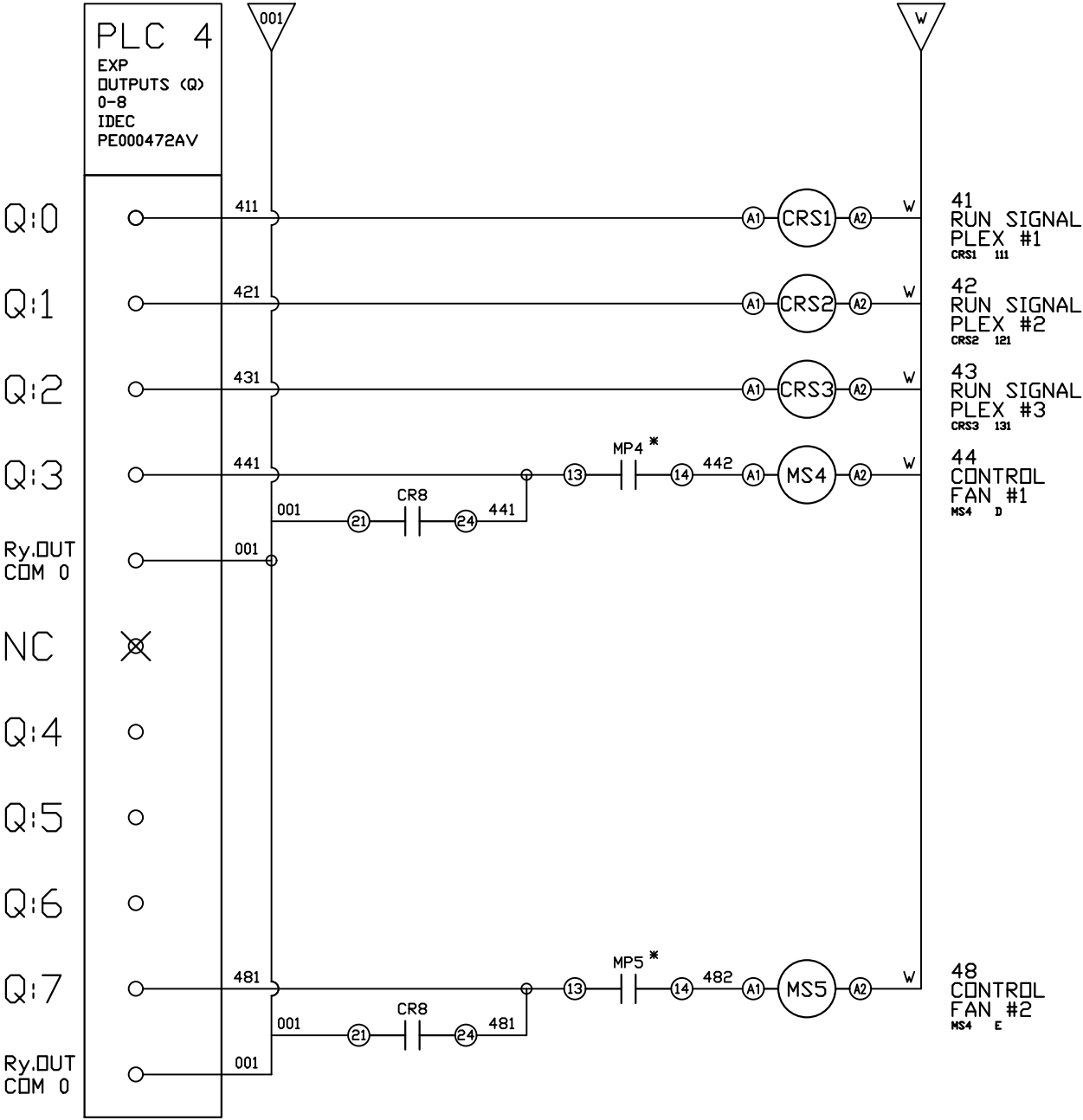
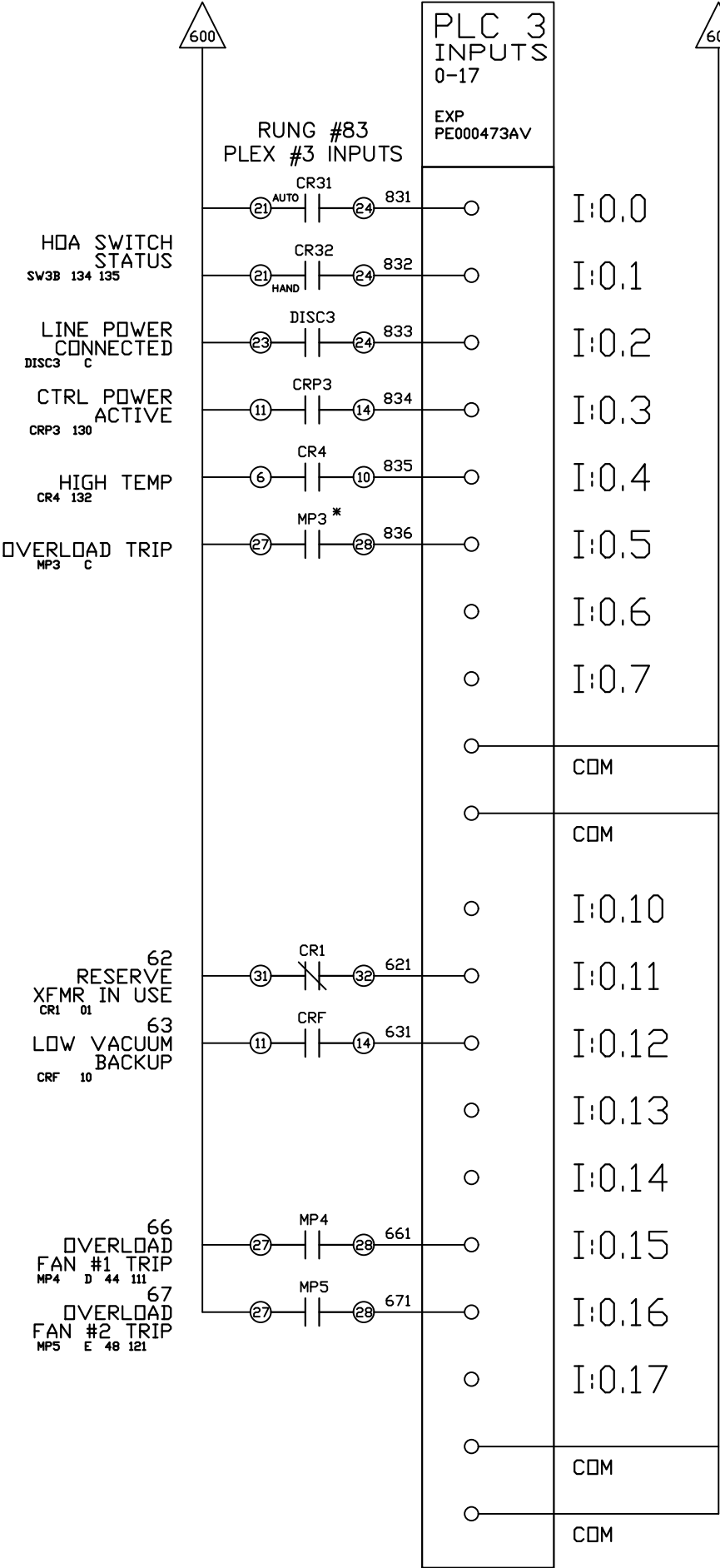
DWG. TYPE WIRING

DWG. NO.
PBMI-VNES369

SHEET
W-6

SIZE
B

REV	REVISION	DATE	ECN	NAME	CHKD
B-1	RELEASE TO PRODUCTION	01/05/24	PXEC0481	KMD	JRD
E-1	ADD CB TO EXTERNAL DEVICES & DISCONNECT TO INPUT POWER	07/16/24	PXEC0628	SEK	JRD
F-1	PLEX ISOLATION UPDATES	06/23/25	PXEC0639	WMM	SEK



* FOR GV4 MOTOR PROTECTORS USE PINS
#1 AND #4 ON AUX CONTACT IN "SD9" SLOT

OPTIONAL:

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

PANEL TYPE

VACUUM TRIPLEX ENCL. SUB
NFPA

DWG. TYPE WIRING

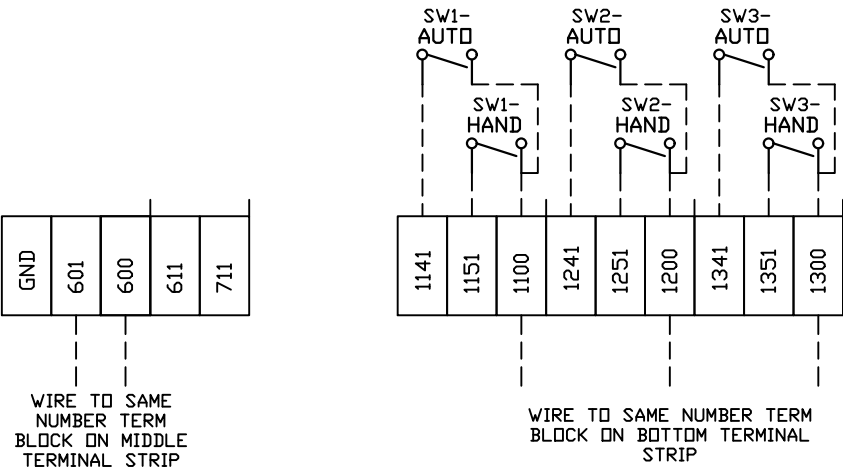
DWG. NO.

PBMI-VNES369

SHEET	SIZE
W-7	B

PBMI-VNES369

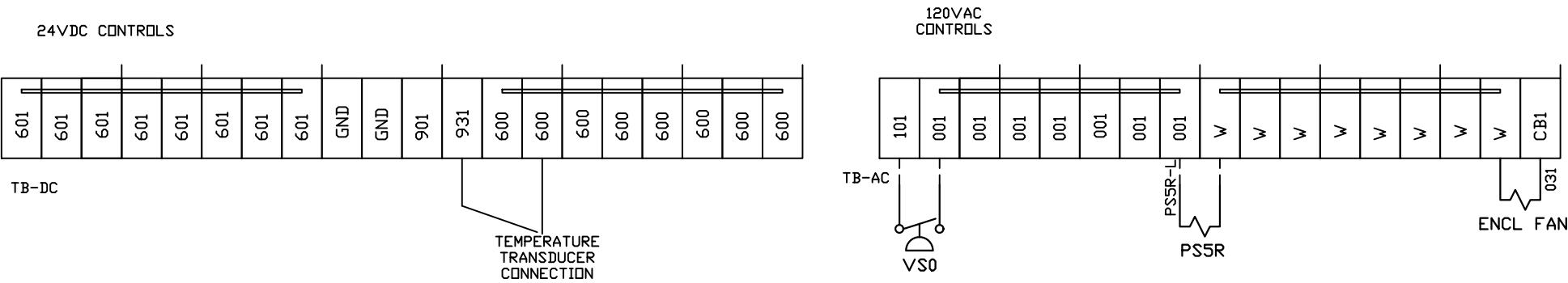
UPPER TERMINAL BLOCKS



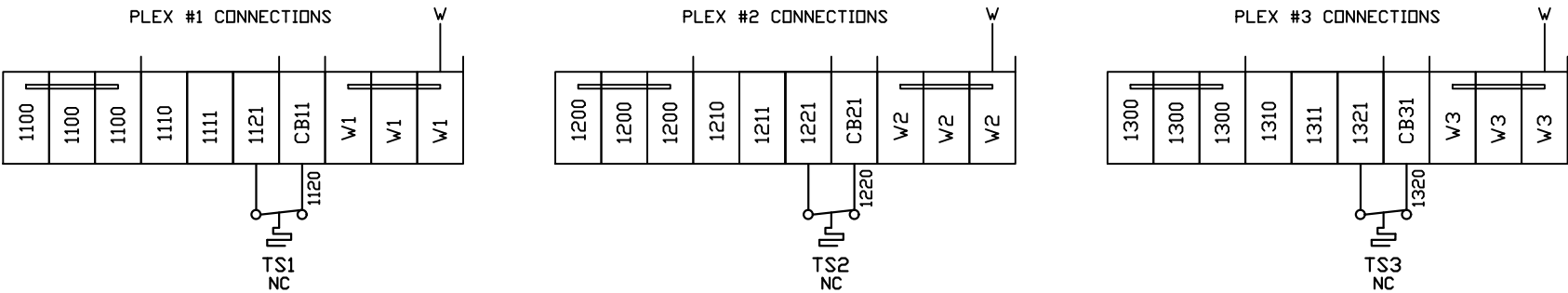
FIELD WIRING NOTES:

- 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:

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

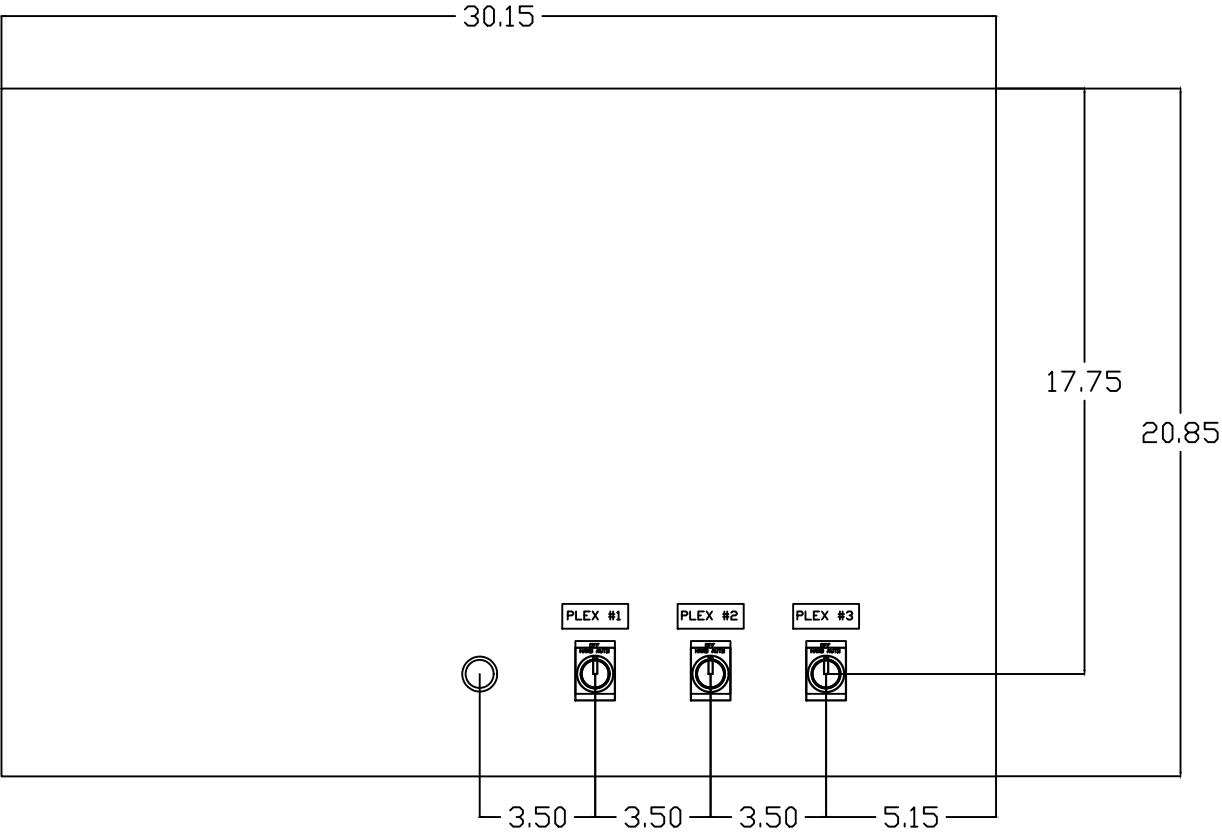
PANEL TYPE
VACUUM TRIPLEX ENCL. SUB
NFPA

DWG. TYPE WIRING

DWG. NO. PBMI-VNES369

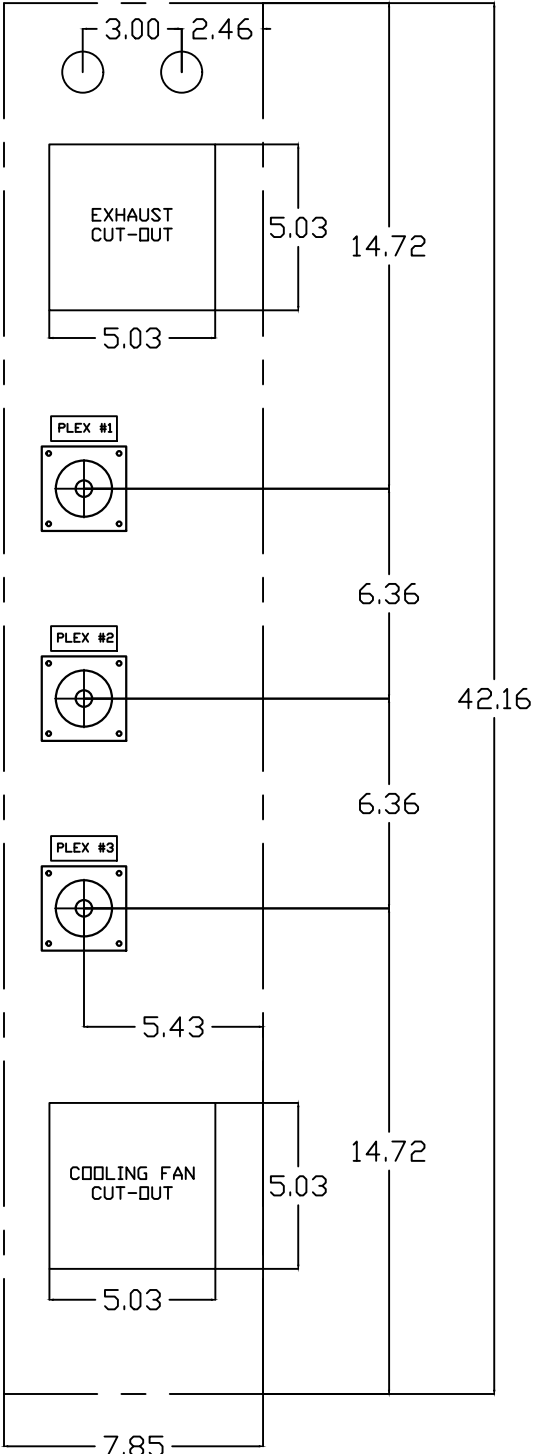
SHEET W-8
SIZE B

REV	REVISION	DATE	ECN	NAME	CHKD
B-1	RELEASE TO PRODUCTION	01/05/24	PXEC0481	KMD	JRD
E-1	ADD CB TO EXTERNAL DEVICES & DISCONNECT TO INPUT POWER	07/16/24	PXEC0628	SEK	JRD
F-1	PLEX ISOLATION UPDATES	06/23/25	PXEC0639	WMM	SEK



INSTRUMENT PANEL ON FRONT OF ENCLOSURE

RIGHT SIDE OF ENCLOSURE



OPTIONAL:

POWEREX™

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

PANEL TYPE
VACUUM TRIPLEX ENCL. SUB
NFPA

DWG. TYPE LAYOUT

DWG. NO.
PBMI-VNES369

SHEET	SIZE
L-1	B

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
PBMIVNES36942AB	5	208V/3ø	15.0	0.6	48.7	80A	60A	80A
PBMIVNES36952AB	5	208V/3ø	14.8	0.6	48.1	80A	60A	80A
PBMIVNES36972AB	7.5	208V/3ø	26.2	0.6	82.3	150A	110A	125A
PBMIVNES36943AB	5	230V/3ø	13.2	0.54	43.2	70A	60A	70A
PBMIVNES36953AB	5	230V/3ø	12.9	0.54	42.3	70A	60A	70A
PBMIVNES36973AB	7.5	230V/3ø	20.9	0.54	66.3	110A	90A	100A
PBMIVNES36944AB	5	460V/3ø	6.6	0.33	22.5	40A	30A	35A
PBMIVNES36954AB	5	460V/3ø	6.45	0.33	22.0	35A	30A	35A
PBMIVNES36974AB	7.5	460V/3ø	10.5	0.33	34.2	60A	45A	50A
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 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						WIRE TYPE TABLE			
REPLACEMENT		208	230	460 380	575				
FUSE TYPE		VOLT	VOLT	VOLT	VOLT	VOLTAGE	WIRE NUMBERS	GAUGE	COLOR
FU1,2A FU1,2B	FNQR	6A	5A	5A	4A	120VAC 0VAC 24VDC 0VDC GND CUSTOMER SUPPLY	001-599,1100+ W 600-1099 601 - 01-99	16-18AWG 16-18AWG 16-18AWG 16-18AWG VARIES 16-18AWG	RED/BLK WHT/BLK PURPLE PURPLE GREEN YELLOW
SEE XFMR FOR CONNECTIONS									

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	JRD
E-1	ADD CB TO EXTERNAL DEVICES & DISCONNECT TO INPUT POWER	07/16/24	PXEC0628	SEK	JRD
F-1	PLEX ISOLATION UPDATES	06/23/25	PXEC0639	WMM	SEK

OPTIONAL:



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

PANEL TYPE

VACUUM TRIPLEX ENCL. SUB
NFPA

DWG. TYPE DATA

DWG. NO.

PBMI–VNES369

SHEET	SIZE
D–1	B

PBMI–VNES369

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	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
PBMIVNES36922CB 2	208V/3ø	5.6	0.6	20.5	35A	25A	30A	
PBMIVNES36932CB 3	208V/3ø	8.6	0.6	29.5	50A	40A	45A	
PBMIVNES36942CB 4	208V/3ø	10.4	0.6	34.9	60A	45A	60A	
PBMIVNES36952CB 5	208V/3ø	13.0	0.6	42.7	70A	60A	70A	
PBMIVNES36962CB 6.4	208V/3ø	16.4	0.6	52.9	90A	70A	80A	
PBMIVNES36972CB 7.5	208V/3ø	21.4	0.6	67.9	125A	90A	100A	
PBMIVNES36923CB 2	230V/3ø	5.6	0.54	20.4	35A	25A	30A	
PBMIVNES36933CB 3	230V/3ø	8.4	0.54	29.4	50A	40A	45A	
PBMIVNES36943CB 4	230V/3ø	9.2	0.54	31.2	50A	40A	45A	
PBMIVNES36953CB 5	230V/3ø	11.4	0.54	37.8	70A	50A	60A	
PBMIVNES36963CB 6.4	230V/3ø	15.2	0.54	49.2	80A	70A	80A	
PBMIVNES36973CB 7.5	230V/3ø	17.2	0.54	55.2	90A	70A	90A	
PBMIVNES36924CB 2	460V/3ø	2.8	0.33	11.6	20A	15A	20A	
PBMIVNES36934CB 3	460V/3ø	4.2	0.33	16.1	25A	20A	25A	
PBMIVNES36944CB 4	460V/3ø	4.6	0.33	16.5	30A	20A	25A	
PBMIVNES36954CB 5	460V/3ø	5.7	0.33	19.8	35A	25A	30A	
PBMIVNES36964CB 6.4	460V/3ø	7.6	0.33	25.5	45A	35A	40A	
PBMIVNES36974CB 7.5	460V/3ø	8.6	0.33	28.5	50A	35A	45A	
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 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						WIRE TYPE TABLE			
REPLACEMENT	208	230	460	575					
FUSE TYPE	VOLT	VOLT	VOLT	VOLT		VOLTAGE	WIRE NUMBERS	GAUGE	COLOR
FU1,2A FU1,2B	FNQR	6A	5A	5A	4A	120VAC 0VAC 24VDC 0VDC GND CUSTOMER SUPPLY	001-599,1100+ W 600-1099 601 - 01-99	16-18AWG 16-18AWG 16-18AWG 16-18AWG VARIES 16-18AWG	RED/BLK WHT/BLK PURPLE PURPLE GREEN YELLOW
FU3A,B	FNM	7A	7A	7A	7A				
SEE XFRMR FOR CONNECTIONS									

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	PXECO481	KMD	JRD
E-1	ADD CB TO EXTERNAL DEVICES & DISCONNECT TO INPUT POWER	07/16/24	PXECO628	SEK	JRD
F-1	PLEX ISOLATION UPDATES	06/23/25	PXECO639	WMM	SEK

OPTIONAL:



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

PANEL TYPE

VACUUM TRIPLEX ENCL. SUB
NFPA

DWG. TYPE DATA

DWG. NO.

PBMI-VNES369

SHEET	SIZE
D-1	B

PBMI-VNES369