

| REV | REVISION                     | DATE     | ECN      | NAME | CHKD |
|-----|------------------------------|----------|----------|------|------|
| B-1 | RELEASE TO PRODUCTION        | 07/28/11 | 22545    | CHR  | DMS  |
| J-1 | ADDED GROUND TERMINAL BLOCKS | 04/11/25 | PXEC0688 | JNW  | JRD  |
| K-1 | PLEX ISOLATION UPDATES       | 06/03/25 | PXEC0639 | WMM  | SEK  |

OPTIONAL:

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|             |               |                         |
|-------------|---------------|-------------------------|
| DRAWN<br>BY | CHECKED<br>BY | ENGINEERING<br>APPROVAL |
| CHR         | DMS           | DMS                     |
| 07/28/11    | 08/01/11      | 08/01/11                |

PANEL TYPE

MED VACUUM TRIPLEX  
HMI, NFPA

DWG. TYPE      WIRING

DWG. NO.

PXM I-V369

SHEET

W-1

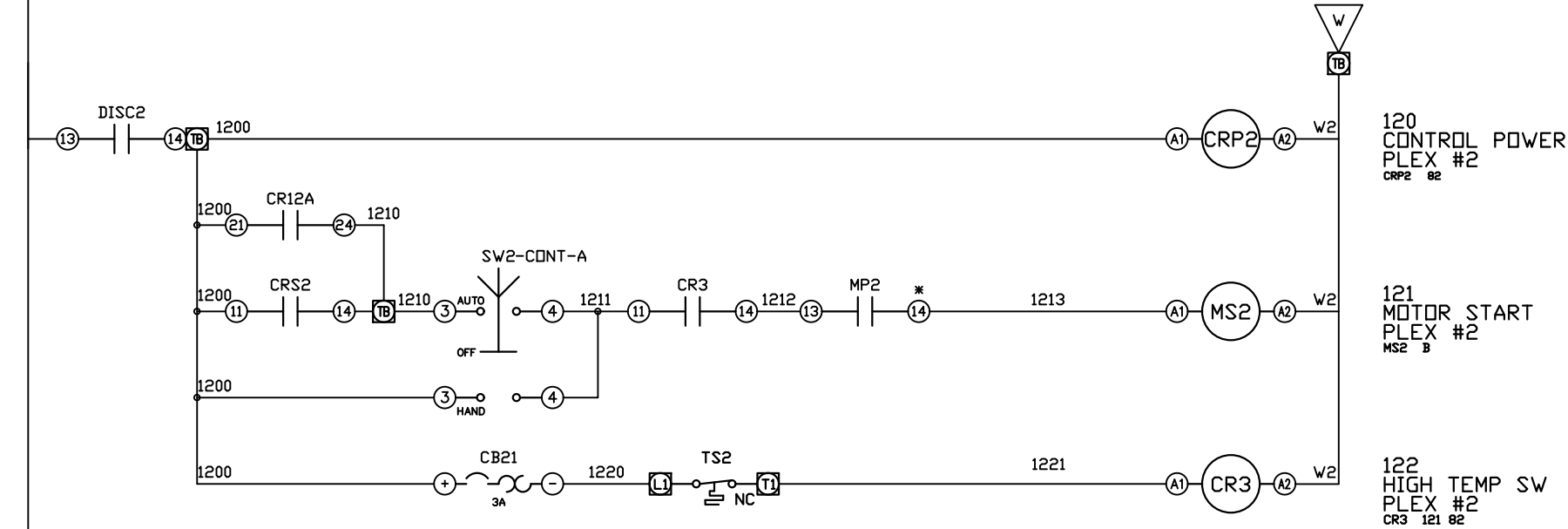
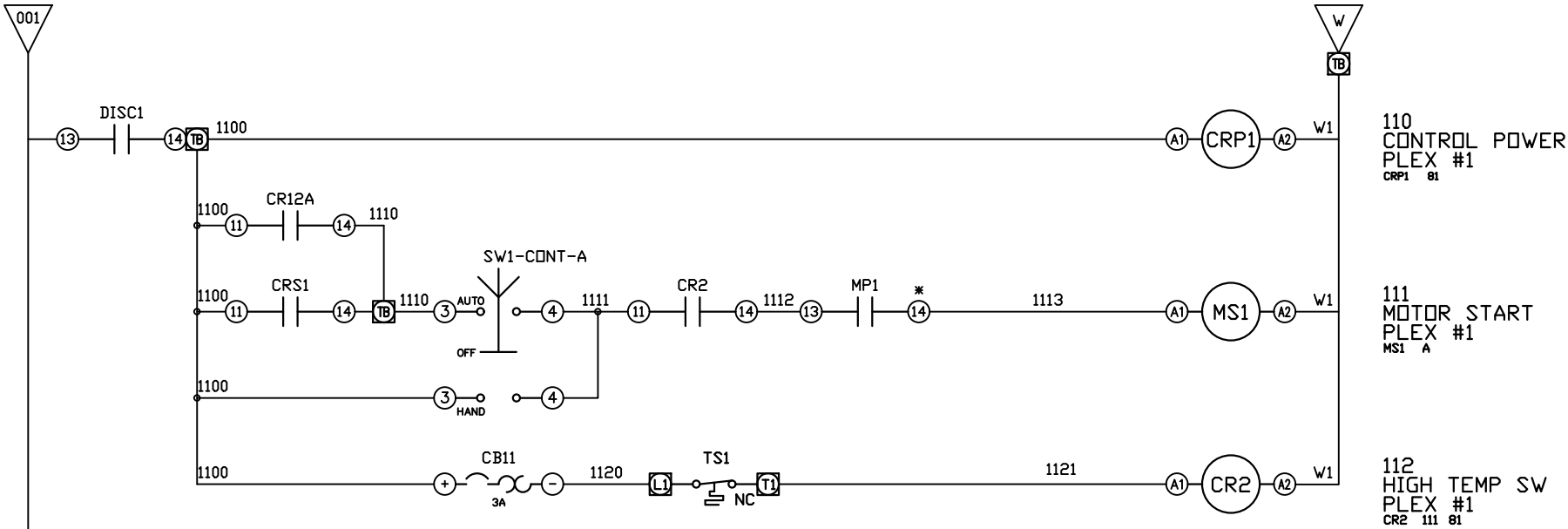
SIZE

B

PXTI-V369



| REV | REVISION                     | DATE     | ECN      | NAME | CHKD |
|-----|------------------------------|----------|----------|------|------|
| B-1 | RELEASE TO PRODUCTION        | 07/28/11 | 22545    | CHR  | DMS  |
| J-1 | ADDED GROUND TERMINAL BLOCKS | 04/11/25 | PXEC0688 | JNW  | JRD  |
| K-1 | PLEX ISOLATION UPDATES       | 06/03/25 | PXEC0639 | WMM  | SEK  |



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

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|----------|------------|----------------------|
| DRAWN BY | CHECKED BY | ENGINEERING APPROVAL |
| CHR      | DMS        | DMS                  |
| 07/28/11 | 08/01/11   | 08/01/11             |

PANEL TYPE

MED VACUUM TRIPLEX  
HMI, NFPA

DWG. TYPE    WIRING

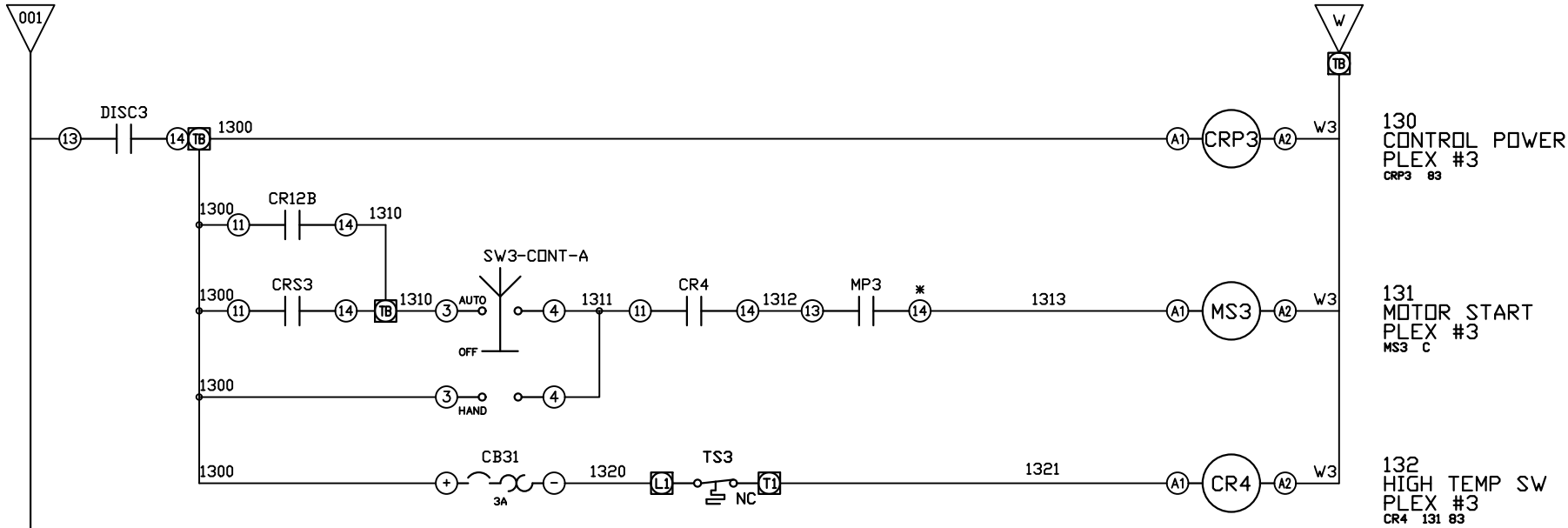
DWG. NO.

PXMI-V369

|       |      |
|-------|------|
| SHEET | SIZE |
| W-3   | B    |

PXMI-V369

| REV | REVISION                     | DATE     | ECN      | NAME | CHKD |
|-----|------------------------------|----------|----------|------|------|
| B-1 | RELEASE TO PRODUCTION        | 07/28/11 | 22545    | CHR  | DMS  |
| J-1 | ADDED GROUND TERMINAL BLOCKS | 04/11/25 | PXEC0688 | JNW  | JRD  |
| K-1 | PLEX ISOLATION UPDATES       | 06/03/25 | PXEC0639 | WMM  | SEK  |



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| DRAWN<br>BY | CHECKED<br>BY | ENGINEERING<br>APPROVAL |
|-------------|---------------|-------------------------|
| CHR         | DMS           | DMS                     |
| 07/28/11    | 08/01/11      | 08/01/11                |

PANEL TYPE

MED VACUUM TRIPLEX  
HMI, NFPA

DWG. TYPE      WIRING

DWG. NO.

PXMI-V369

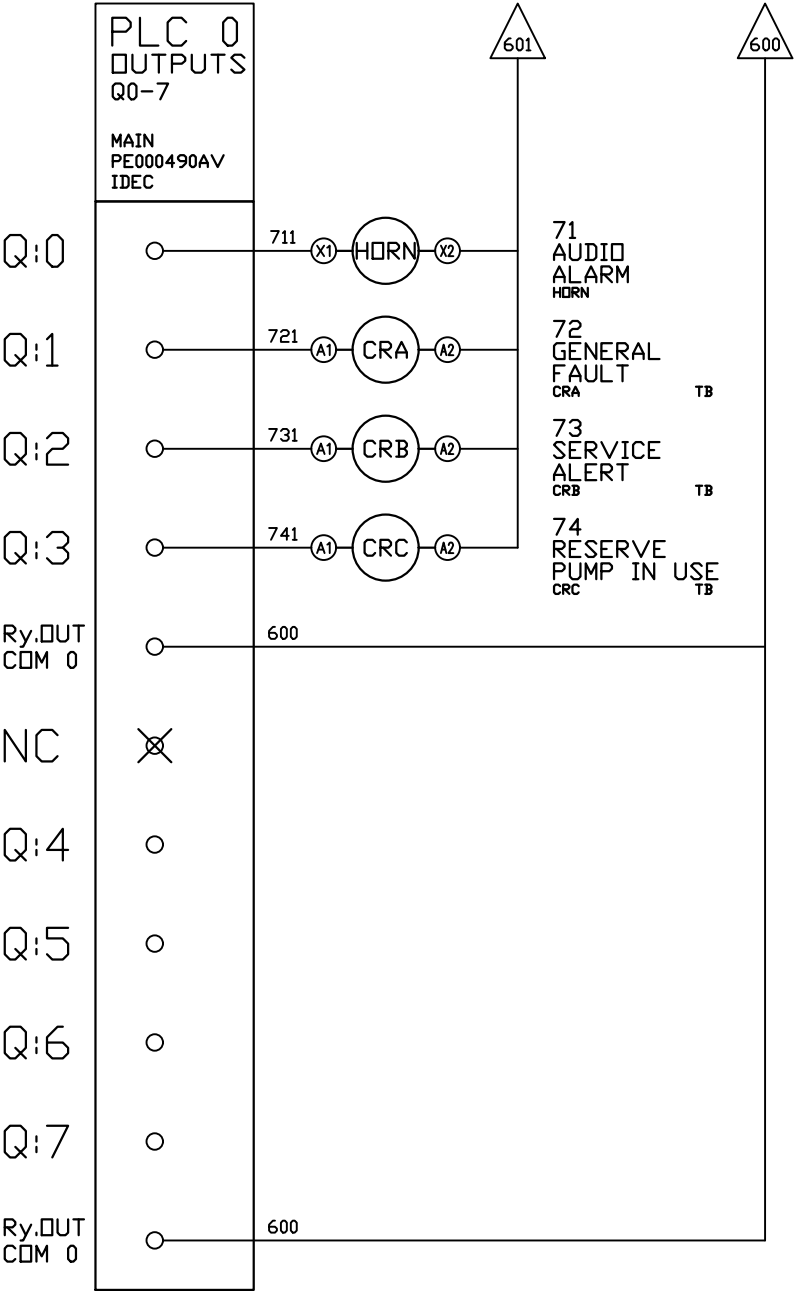
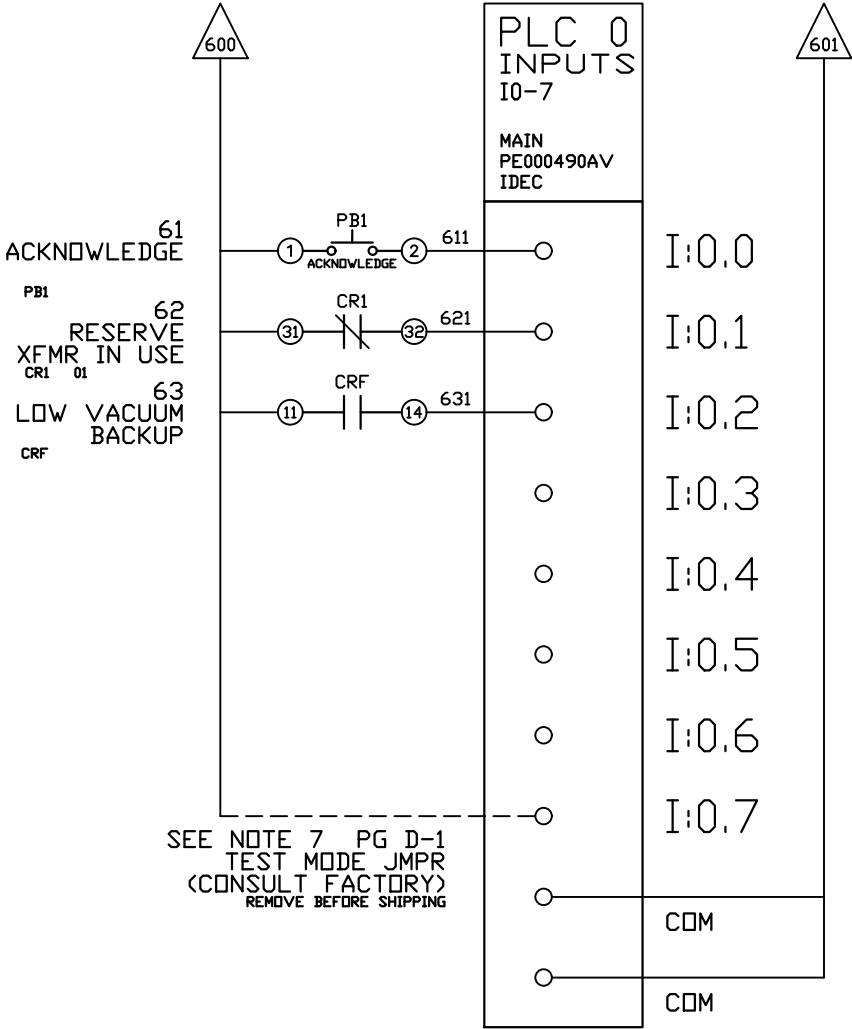
| SHEET | SIZE |
|-------|------|
| W-4   | B    |

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

PXMI-V369



| REV | REVISION                     | DATE     | ECN      | NAME | CHKD |
|-----|------------------------------|----------|----------|------|------|
| B-1 | RELEASE TO PRODUCTION        | 07/28/11 | 22545    | CHR  | DMS  |
| J-1 | ADDED GROUND TERMINAL BLOCKS | 04/11/25 | PXEC0688 | JNW  | JRD  |
| K-1 | PLEX ISOLATION UPDATES       | 06/03/25 | PXEC0639 | WMM  | SEK  |



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|             |               |                         |
|-------------|---------------|-------------------------|
| DRAWN<br>BY | CHECKED<br>BY | ENGINEERING<br>APPROVAL |
| CHR         | DMS           | DMS                     |
| 07/28/11    | 08/01/11      | 08/01/11                |

PANEL TYPE

MED VACUUM TRIPLEX  
HMI, NFPA

DWG. TYPE    WIRING

DWG. NO.

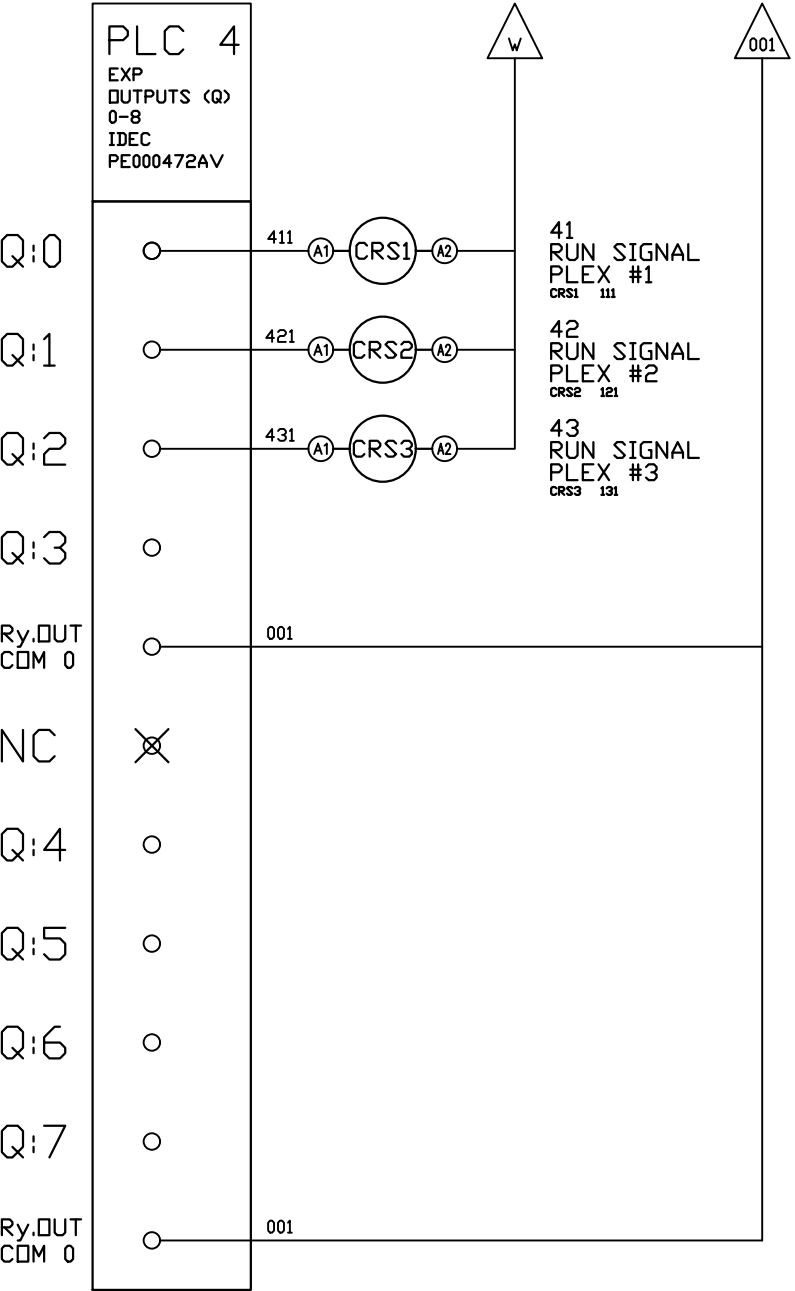
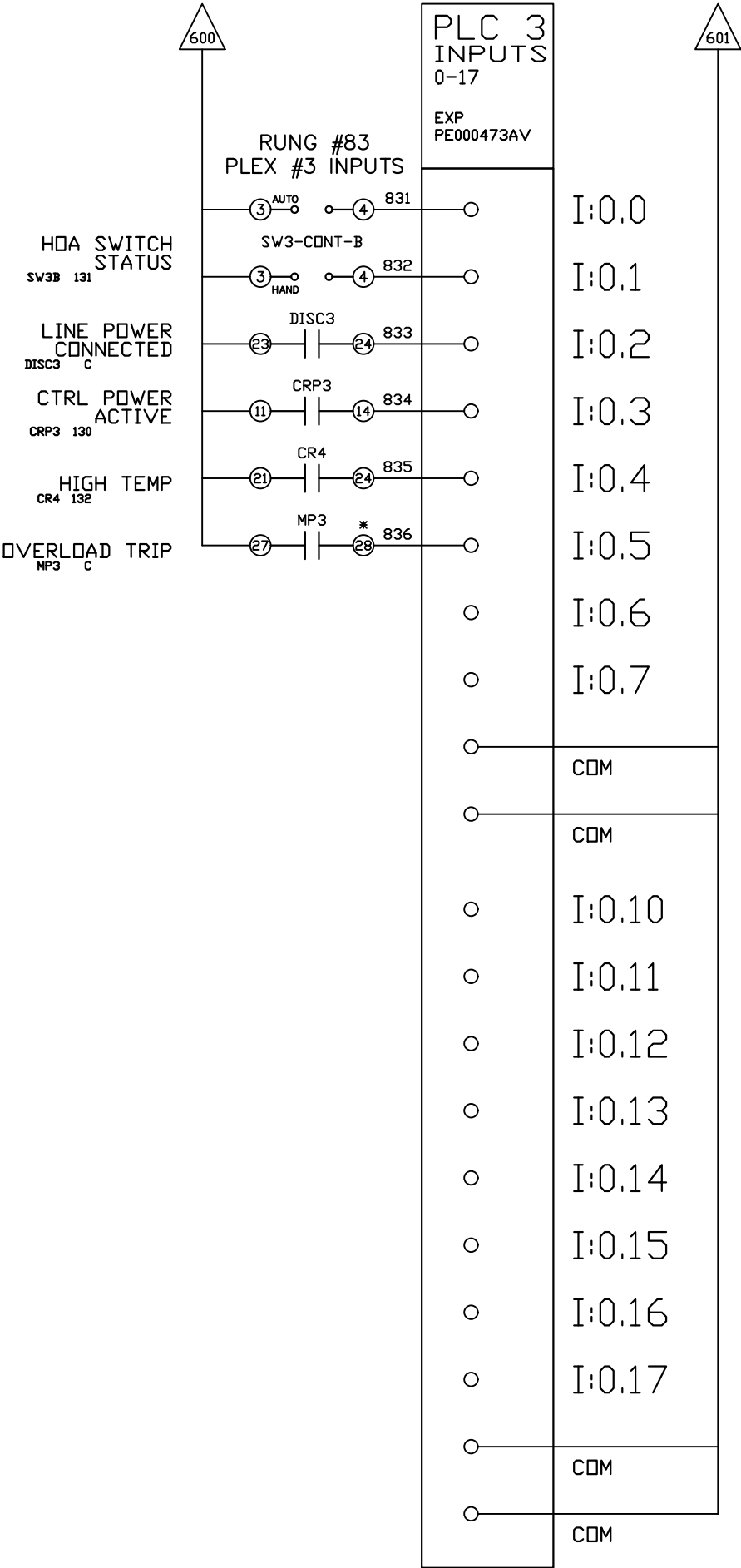
PXMI-V369

|       |      |
|-------|------|
| SHEET | SIZE |
| W-6   | B    |

PXMI-V369



| REV | REVISION                     | DATE     | ECN      | NAME | CHKD |
|-----|------------------------------|----------|----------|------|------|
| B-1 | RELEASE TO PRODUCTION        | 05/01/18 | PXEC0228 | AJL  | KMD  |
| J-1 | ADDED GROUND TERMINAL BLOCKS | 04/11/25 | PXEC0688 | JNW  | JRD  |
| K-1 | PLEX ISOLATION UPDATES       | 06/03/25 | PXEC0639 | WMM  | SEK  |



OPTIONAL:

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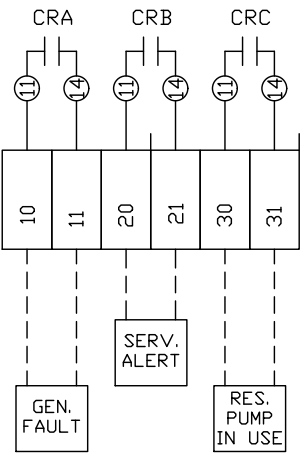
| DRAWN<br>BY | CHECKED<br>BY | ENGINEERING<br>APPROVAL |
|-------------|---------------|-------------------------|
| CHR         | DMS           | DMS                     |
| 07/28/11    | 08/01/11      | 08/01/11                |

|                                  |  |  |
|----------------------------------|--|--|
| PANEL TYPE                       |  |  |
| TRIPLEX MEDICAL VAC<br>HMI, NFPA |  |  |
| DWG. TYPE      WIRING            |  |  |
| DWG. NO.<br><br>PXMI-V369        |  |  |

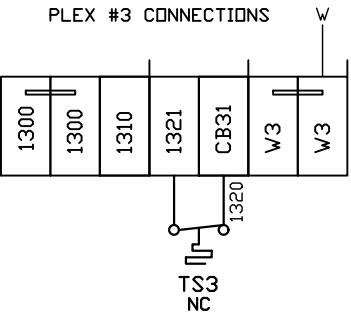
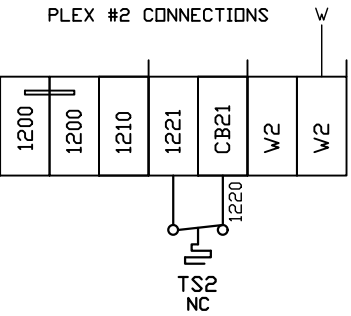
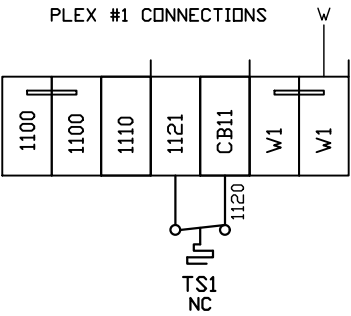
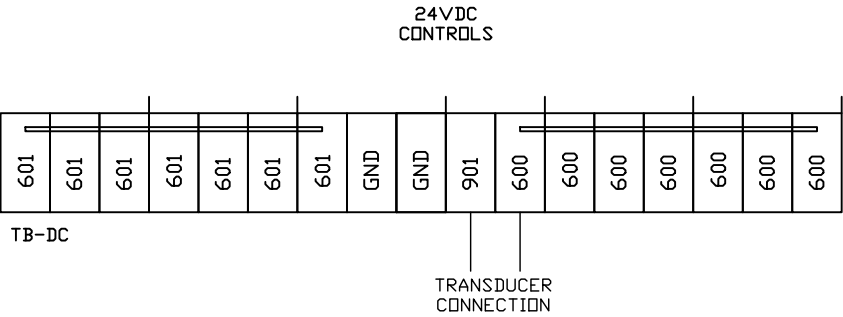
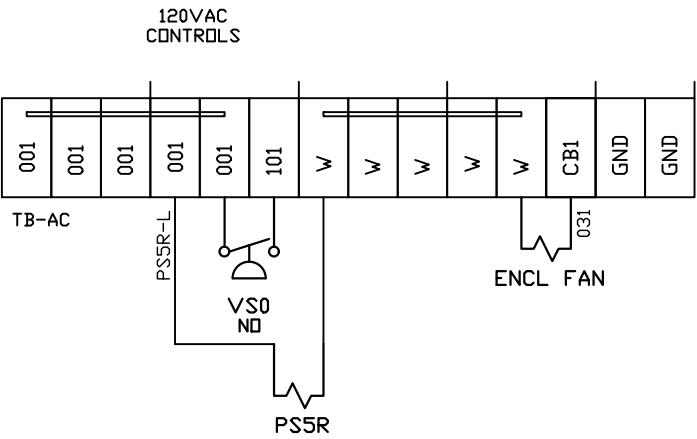
|       |      |
|-------|------|
| SHEET | SIZE |
| W-8   | B    |

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

| REV | REVISION                     | DATE     | ECN      | NAME | CHKD |
|-----|------------------------------|----------|----------|------|------|
| B-1 | RELEASE TO PRODUCTION        | 05/01/18 | PXEC0228 | AJL  | KMD  |
| J-1 | ADDED GROUND TERMINAL BLOCKS | 04/11/25 | PXEC0688 | JNW  | JRD  |
| K-1 | PLEX ISOLATION UPDATES       | 06/03/25 | PXEC0639 | WMM  | SEK  |



DRY CONTACTS FOR CUSTOMER  
REMOTE ALARM CONNECTION



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

OPTIONAL:

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| DRAWN<br>BY | CHECKED<br>BY | ENGINEERING<br>APPROVAL |
|-------------|---------------|-------------------------|
| CHR         | DMS           | DMS                     |
| 07/28/11    | 08/01/11      | 08/01/11                |

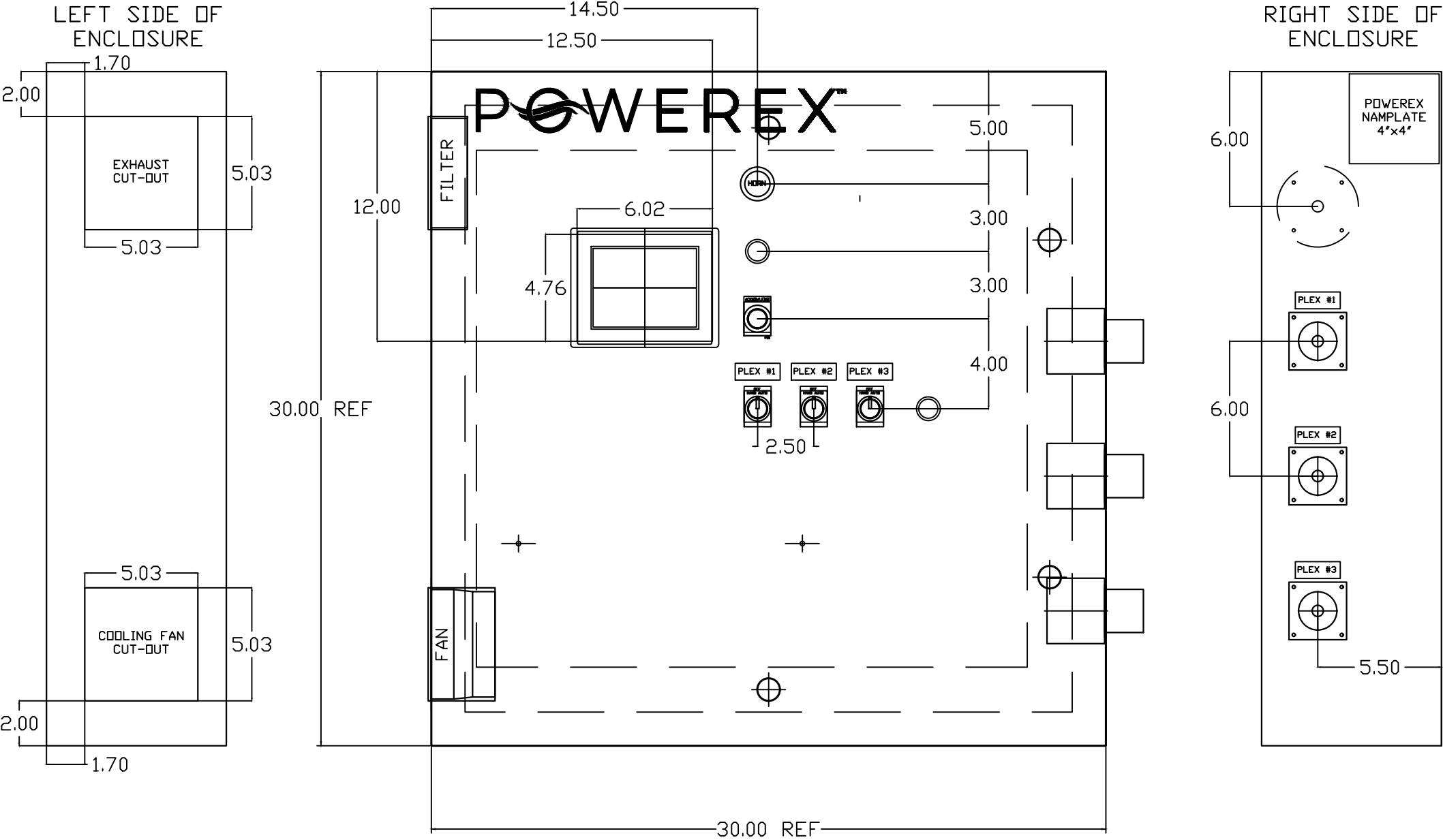
PANEL TYPE  
TRIPLEX MEDICAL VAC  
HMI, NFPA

DWG. TYPE  
WIRING

DWG. NO.  
PXMI-V369

| SHEET | SIZE |
|-------|------|
| W-9   | B    |

| REV | REVISION                     | DATE     | ECN      | NAME | CHKD |
|-----|------------------------------|----------|----------|------|------|
| B-1 | RELEASE TO PRODUCTION        | 07/28/11 | 22545    | CHR  | DMS  |
| J-1 | ADDED GROUND TERMINAL BLOCKS | 04/11/25 | PXEC0688 | JNW  | JRD  |
| K-1 | PLEX ISOLATION UPDATES       | 06/03/25 | PXEC0639 | WMM  | SEK  |



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|          |            |                      |
|----------|------------|----------------------|
| DRAWN BY | CHECKED BY | ENGINEERING APPROVAL |
| CHR      | DMS        | DMS                  |
| 07/28/11 | 08/01/11   | 08/01/11             |

PANEL TYPE

MED VACUUM TRIPLEX  
HMI, NFPA

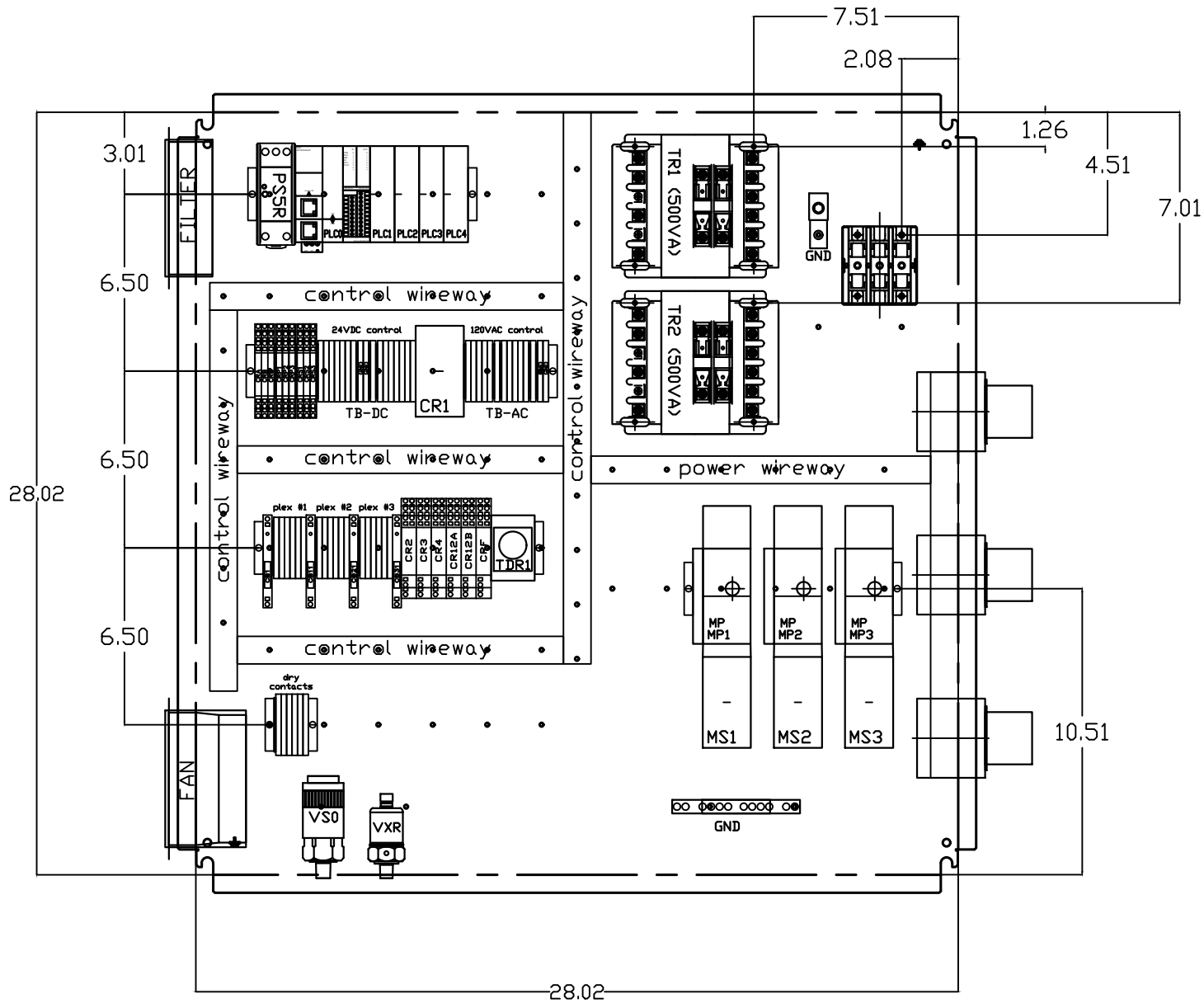
DWG. TYPE LAYOUT

DWG. NO. PXMI-V369

|       |      |
|-------|------|
| SHEET | SIZE |
| L-A1  | B    |

PXMI-V369

| REV | REVISION                     | DATE     | ECN      | NAME | CHKD |
|-----|------------------------------|----------|----------|------|------|
| B-1 | RELEASE TO PRODUCTION        | 07/28/11 | 22545    | CHR  | DMS  |
| J-1 | ADDED GROUND TERMINAL BLOCKS | 04/11/25 | PXEC0688 | JNW  | JRD  |
| K-1 | PLEX ISOLATION UPDATES       | 06/03/25 | PXEC0639 | WMM  | SEK  |



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|             |               |                         |
|-------------|---------------|-------------------------|
| DRAWN<br>BY | CHECKED<br>BY | ENGINEERING<br>APPROVAL |
| CHR         | DMS           | DMS                     |
| 07/28/11    | 08/01/11      | 08/01/11                |

PANEL TYPE

MED VACUUM TRIPLEX  
HMI, NFPA

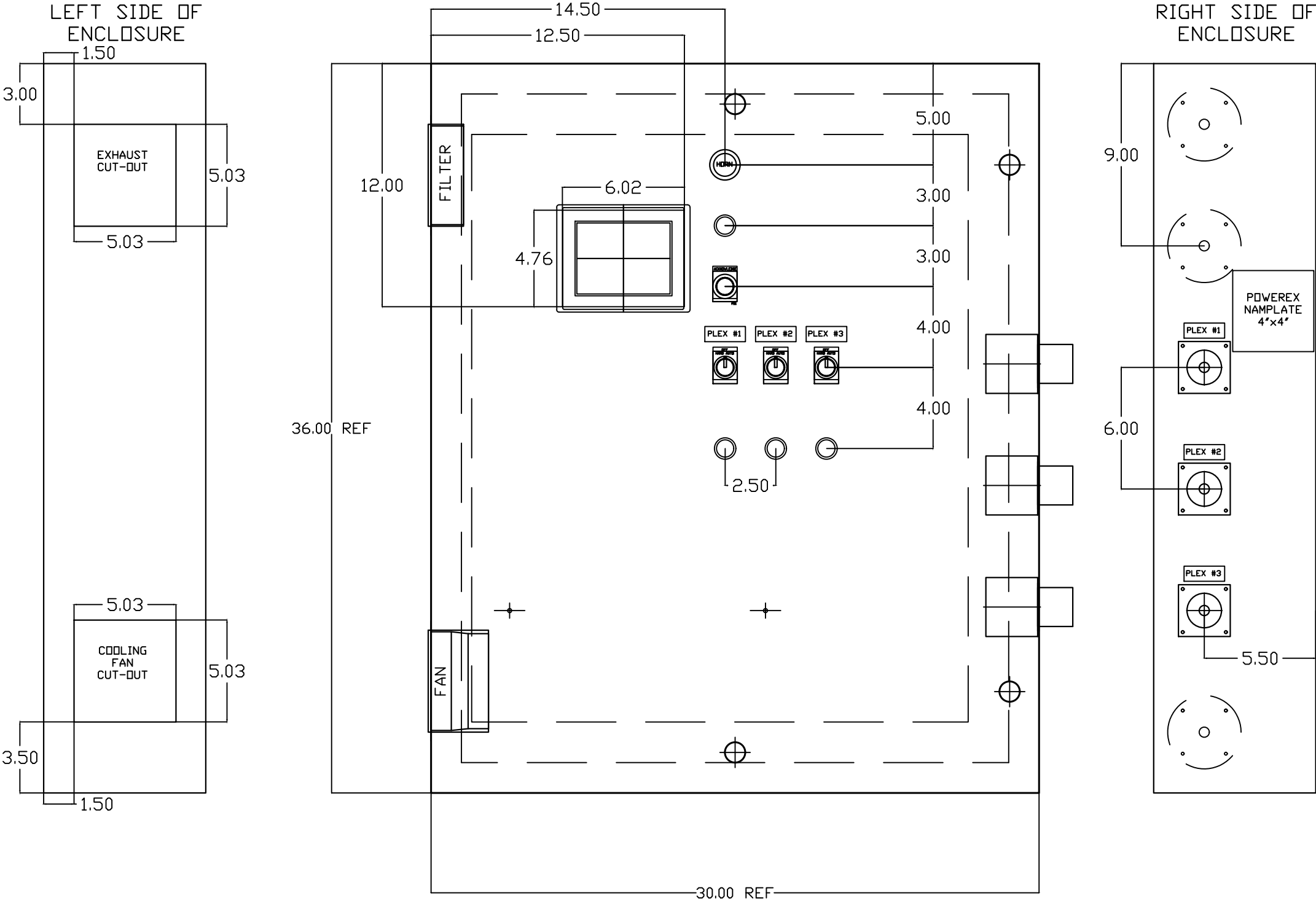
DWG. TYPE LAYOUT

DWG. NO. PXMI-V369

|       |      |
|-------|------|
| SHEET | SIZE |
| L-A2  | B    |

PXMI-V369

| REV | REVISION                     | DATE     | ECN      | NAME | CHKD |
|-----|------------------------------|----------|----------|------|------|
| B-1 | RELEASE TO PRODUCTION        | 07/28/11 | 22545    | CHR  | DMS  |
| J-1 | ADDED GROUND TERMINAL BLOCKS | 04/11/25 | PXEC0688 | JNW  | JRD  |
| K-1 | PLEX ISOLATION UPDATES       | 06/03/25 | PXEC0639 | WMM  | SEK  |



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|          |            |                      |
|----------|------------|----------------------|
| DRAWN BY | CHECKED BY | ENGINEERING APPROVAL |
| CHR      | DMS        | DMS                  |
| 07/28/11 | 08/01/11   | 08/01/11             |

PANEL TYPE
 

MED VACUUM TRIPLEX  
HMI, NFPA

DWG. TYPE
 

LAYOUT

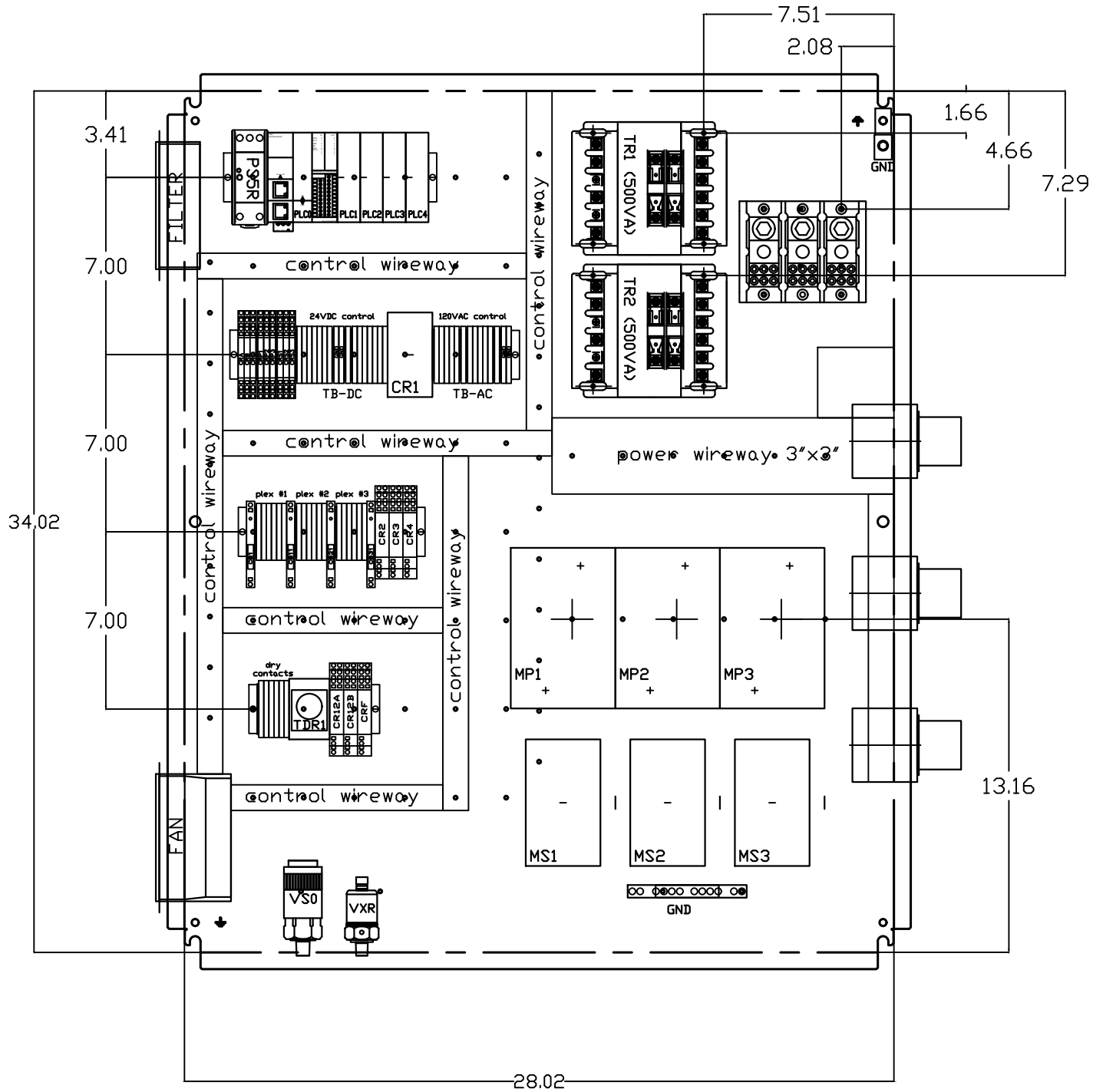
DWG. NO.
 

PXMI-V369

|       |      |
|-------|------|
| SHEET | SIZE |
| L-B1  | B    |

PXMI-V369

| REV | REVISION                     | DATE     | ECN      | NAME | CHKD |
|-----|------------------------------|----------|----------|------|------|
| B-1 | RELEASE TO PRODUCTION        | 07/28/11 | 22545    | CHR  | DMS  |
| J-1 | ADDED GROUND TERMINAL BLOCKS | 04/11/25 | PXEC0688 | JNW  | JRD  |
| K-1 | PLEX ISOLATION UPDATES       | 06/03/25 | PXEC0639 | WMM  | SEK  |



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|----------|------------|----------------------|
| DRAWN BY | CHECKED BY | ENGINEERING APPROVAL |
| CHR      | DMS        | DMS                  |
| 07/28/11 | 08/01/11   | 08/01/11             |

PANEL TYPE  
MED VACUUM TRIPLEX  
HMI, NFPA

DWG. TYPE  
LAYOUT

DWG. NO.  
PXMI-V369

|               |           |
|---------------|-----------|
| SHEET<br>L-B2 | SIZE<br>B |
|---------------|-----------|

PXMI-V369

| TABLE 1      | P/N    | MOTOR<br>FULL<br>LOAD<br>AMPS | TOTAL<br>FULL<br>LOAD<br>AMPS | NON-TIME<br>DELAY<br>FUSE | TIME<br>DELAY<br>FUSE | INVERSE-<br>TIME<br>CIRCUIT<br>BREAKER |
|--------------|--------|-------------------------------|-------------------------------|---------------------------|-----------------------|----------------------------------------|
| 208V<br>(3Ø) | 02AB   | 3.4                           | 12.2                          | 20                        | 15                    | 20                                     |
|              | 12AB   | 5                             | 17                            | 30                        | 25                    | 25                                     |
|              | 22AB   | 6                             | 20                            | 35                        | 25                    | 30                                     |
|              | 32AB   | 9                             | 29                            | 50                        | 40                    | 45                                     |
|              | 42AB   | 15                            | 47                            | 80                        | 60                    | 70                                     |
|              | 52AB   | 14.8                          | 46.4                          | 80                        | 60                    | 70                                     |
|              | 72AB   | 26.2                          | 80.6                          | 150                       | 100                   | 125                                    |
|              | A2AB   | 33.4                          | 102.2                         | 175                       | 150                   | 175                                    |
|              | F2AB * | 40.4                          | 123.2                         | 225                       | 175                   | 200                                    |
|              | G2AB * | 62                            | 188                           | 350                       | 250                   | 300                                    |
|              | H2AB * | 68                            | 206                           | 350                       | 300                   | 350                                    |
| 230V<br>(3Ø) | 03AB   | 3.4                           | 12.2                          | 20                        | 15                    | 20                                     |
|              | 13AB   | 4.4                           | 15.2                          | 25                        | 20                    | 25                                     |
|              | 23AB   | 5.4                           | 18.2                          | 30                        | 25                    | 30                                     |
|              | 33AB   | 7.8                           | 25.4                          | 45                        | 35                    | 40                                     |
|              | 43AB   | 13.2                          | 41.6                          | 70                        | 60                    | 70                                     |
|              | 53AB   | 12.9                          | 40.7                          | 70                        | 60                    | 70                                     |
|              | 73AB   | 20.9                          | 64.7                          | 110                       | 90                    | 100                                    |
|              | A3AB   | 26.2                          | 80.6                          | 150                       | 100                   | 125                                    |
|              | F3AB * | 38.8                          | 118.4                         | 200                       | 150                   | 200                                    |
|              | G3AB * | 52                            | 158                           | 300                       | 200                   | 250                                    |
|              | H3AB * | 62                            | 188                           | 350                       | 250                   | 300                                    |
| 460V<br>(3Ø) | 04AB   | 2                             | 8                             | 15                        | 10                    | 15                                     |
|              | 14AB   | 2.2                           | 8.6                           | 15                        | 10                    | 15                                     |
|              | 24AB   | 2.7                           | 10.1                          | 20                        | 15                    | 15                                     |
|              | 34AB   | 3.9                           | 13.7                          | 25                        | 20                    | 25                                     |
|              | 44AB   | 6.6                           | 21.8                          | 35                        | 30                    | 35                                     |
|              | 54AB   | 6.5                           | 21.5                          | 35                        | 30                    | 35                                     |
|              | 74AB   | 10.5                          | 33.5                          | 60                        | 45                    | 50                                     |
|              | A4AB   | 13.1                          | 41.3                          | 70                        | 60                    | 70                                     |
|              | F4AB   | 19.4                          | 60.2                          | 100                       | 80                    | 90                                     |
|              | G4AB   | 26                            | 80                            | 150                       | 100                   | 125                                    |
|              | H4AB * | 31                            | 95                            | 175                       | 125                   | 150                                    |
| 380V<br>(3Ø) | 08AB   | N/A                           |                               |                           |                       |                                        |
|              | 18AB   | 2.5                           | 9.5                           | 15                        | 15                    | 15                                     |
|              | 28AB   | 3.1                           | 11.3                          | 20                        | 15                    | 20                                     |
|              | 38AB   | 4.6                           | 15.8                          | 25                        | 20                    | 25                                     |
|              | 48AB   | 7.3                           | 23.9                          | 40                        | 30                    | 40                                     |
|              | 58AB   | 7.7                           | 25.1                          | 45                        | 35                    | 40                                     |
|              | 78AB   | 11.9                          | 37.7                          | 70                        | 50                    | 60                                     |
|              | A8AB   | 13.3                          | 41.9                          | 70                        | 60                    | 70                                     |
|              | F8AB   | 22.3                          | 68.9                          | 125                       | 90                    | 110                                    |
|              | G8AB * | 28                            | 86                            | 150                       | 110                   | 150                                    |
|              | H8AB * | 37                            | 113                           | 200                       | 150                   | 175                                    |

NOTE: P/N MAY INCLUDE SUFFIX AV

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 |      |      |      |          |      | WIRE TYPE TABLE |               |          |         |
|------------------------------|------|------|------|----------|------|-----------------|---------------|----------|---------|
| REPLACEMENT                  |      | 208  | 230  | 460      | 575  |                 |               |          |         |
| FUSE TYPE                    |      | VOLT | VOLT | 380 VOLT | VOLT | VOLTAGE         | WIRE NUMBERS  | GAUGE    | COLOR   |
| FU1,2A                       | FNQR | 6A   | 5A   | 5A       | 4A   | 120VAC          | 001-599,1100+ | 16-18AWG | RED/BLK |
| FU1,2B                       |      |      |      |          |      | 0VAC            | W             | 16-18AWG | WHT/BLK |
|                              |      |      |      |          |      | 24VDC           | 600-1099      | 16-18AWG | PURPLE  |
| FU3A,B                       | FNM  | 7A   | 7A   | 7A       | 7A   | 0VDC            | 601           | 16-18AWG | PURPLE  |
|                              |      |      |      |          |      | GND             | -             | VARIES   | GREEN   |
|                              |      |      |      |          |      | CUSTOMER SUPPLY | 01-99         | 16-18AWG | YELLOW  |
| 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 | 09/01/11 | 22545    | BFH  | CHR  |
| C-1 | ADD 380V DATA         | 02/28/13 | PXEC0030 | BFH  | CHR  |
| C-2 | FORMAT UPDATE         | 03/01/13 | PXEC0038 | BFH  | CHR  |

OPTIONAL:  
  
208V/230V/380/460V



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|          |            |                      |
|----------|------------|----------------------|
| DRAWN BY | CHECKED BY | ENGINEERING APPROVAL |
| BFH      | CHR        | CHR                  |
| 09/01/11 | 09/20/11   | 09/20/11             |

PANEL TYPE  
  
BUSCH LUBRICATED VANE  
3PH TRIPLEX PANEL DATA

DWG. TYPE  
MISC

DWG. NO.  
  
DATA TABLE

|                    |      |
|--------------------|------|
| SHEET              | SIZE |
| D-1                | B    |
| TRIPLEX PANEL DATA |      |

| TABLE 1           | P/N    | MOTOR<br>FULL LOAD<br>AMPS | TOTAL FULL<br>LOAD AMPS | NON-TIME<br>DELAY FUSE | TIME DELAY<br>FUSE | INVERSE-TIME<br>CIRCUIT<br>BREAKER |
|-------------------|--------|----------------------------|-------------------------|------------------------|--------------------|------------------------------------|
| 208V (3Ø)         | 22CB   | 6.6                        | 21.8                    | 40                     | 30                 | 35                                 |
|                   | 32CB   | 9.4                        | 30.2                    | 50                     | 40                 | 45                                 |
|                   | 42CB   | 10.4                       | 33.2                    | 60                     | 45                 | 50                                 |
|                   | 52CB   | 12.4                       | 39.2                    | 70                     | 50                 | 60                                 |
|                   | 62CB   | 16.4                       | 51.2                    | 90                     | 70                 | 80                                 |
|                   | 72CB   | 21.4                       | 66.2                    | 110                    | 90                 | 100                                |
|                   | A2CB   | 27.2                       | 83.6                    | 150                    | 110                | 125                                |
|                   | F2CB * | 40.5                       | 123.5                   | 225                    | 175                | 200                                |
| 230V (3Ø)         | 23CB   | 5.6                        | 18.8                    | 35                     | 25                 | 30                                 |
|                   | 33CB   | 8.4                        | 27.2                    | 45                     | 35                 | 45                                 |
|                   | 43CB   | 9.2                        | 29.6                    | 50                     | 40                 | 45                                 |
|                   | 53CB   | 11.4                       | 36.2                    | 60                     | 50                 | 60                                 |
|                   | 63CB   | 15.2                       | 47.6                    | 80                     | 60                 | 80                                 |
|                   | 73CB   | 17.2                       | 53.6                    | 90                     | 70                 | 80                                 |
|                   | A3CB   | 23.6                       | 72.8                    | 125                    | 100                | 110                                |
|                   | F3CB * | 35.0                       | 107.0                   | 200                    | 150                | 175                                |
| 460V (3Ø)         | 24CB   | 2.8                        | 10.4                    | 20                     | 15                 | 15                                 |
|                   | 34CB   | 4.2                        | 14.6                    | 25                     | 20                 | 25                                 |
|                   | 44CB   | 4.6                        | 15.8                    | 25                     | 20                 | 25                                 |
|                   | 54CB   | 5.7                        | 19.1                    | 30                     | 25                 | 30                                 |
|                   | 64CB   | 7.6                        | 24.8                    | 40                     | 30                 | 40                                 |
|                   | 74CB   | 8.6                        | 27.8                    | 45                     | 35                 | 45                                 |
|                   | A4CB   | 11.3                       | 35.9                    | 60                     | 45                 | 60                                 |
|                   | F4CB   | 17.5                       | 54.5                    | 90                     | 70                 | 90                                 |
| 380V (3Ø)<br>50HZ | 28CB   | 2.6                        | 9.8                     | 15                     | 15                 | 15                                 |
|                   | 38CB   | 3.8                        | 13.4                    | 25                     | 20                 | 20                                 |
|                   | 48CB   | 5.0                        | 17.0                    | 30                     | 25                 | 25                                 |
|                   | 58CB   | 5.1                        | 17.3                    | 30                     | 25                 | 25                                 |
|                   | 68CB   | 8.6                        | 27.8                    | 45                     | 35                 | 45                                 |
|                   | 78CB   | 9.3                        | 29.9                    | 50                     | 40                 | 45                                 |
|                   | A8CB   | 10.5                       | 33.5                    | 60                     | 45                 | 50                                 |
|                   | F8CB   | 14.5                       | 45.5                    | 80                     | 60                 | 70                                 |

NOTE: P/N MAY INCLUDE SUFFIX AV

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 |      |      |      |      |    | WIRE TYPE TABLE                                              |                                                     |                                                                    |                                                           |
|------------------------------|------|------|------|------|----|--------------------------------------------------------------|-----------------------------------------------------|--------------------------------------------------------------------|-----------------------------------------------------------|
| REPLACEMENT                  | 208  | 230  | 460  | 575  |    |                                                              |                                                     |                                                                    |                                                           |
| FUSE TYPE                    | VOLT | VOLT | VOLT | VOLT |    | VOLTAGE                                                      | WIRE NUMBERS                                        | GAUGE                                                              | COLOR                                                     |
| FU1,2A<br>FU1,2B             | FNQR | 6A   | 5A   | 5A   | 4A | 120VAC<br>0VAC<br>24VDC<br>0VDC<br>GND<br>CUSTOMER<br>SUPPLY | 001-599,1100+<br>W<br>600-1099<br>601<br>-<br>01-99 | 16-18AWG<br>16-18AWG<br>16-18AWG<br>16-18AWG<br>VARIES<br>16-18AWG | RED/BLK<br>WHT/BLK<br>PURPLE<br>PURPLE<br>GREEN<br>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          | 09/01/11 | 22545    | BFH  | CHR  |
| C-1 | CHANGED 10HP FLA VALUES        | 09/14/12 | PXEC0013 | BFH  | CHR  |
| D-1 | FORMAT UPDATE                  | 03/01/13 | PXEC0038 | BFH  | CHR  |
| E-1 | UPDATED 52CB FLA DATA          | 01/22/14 | PXEC0067 | DMS  | KMD  |
| E-2 | UPDATED 32CB FLA DATA          | 04/11/14 | PXEC0067 | DMS  | KMD  |
| F-1 | UPDATED DATA - NEW NEMA MOTORS | 06/14/16 | PXEC0149 | KMD  | DMS  |

OPTIONAL:  
  
200V/230V/380V/460V



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BFH

CHECKED BY  
CHR

ENGINEERING APPROVAL  
CHR

09/01/11

09/20/11

09/20/11

PANEL TYPE  
  
BUSCH CLAW VACUUM  
3PH TRIPLEX PANEL DATA

DWG. TYPE  
MISC

DWG. NO.  
  
DATA TABLE

SHEET  
  
D-1

SIZE  
  
B

TRIPLEX PANEL DATA

| TABLE 1      | P/N    | MOTOR FULL<br>LOAD AMPS | TOTAL FULL<br>LOAD AMPS | NON-TIME<br>DELAY FUSE | TIME DELAY<br>FUSE | INVERSE-TIME<br>CIRCUIT<br>BREAKER |
|--------------|--------|-------------------------|-------------------------|------------------------|--------------------|------------------------------------|
| 208V<br>(3Ø) | 12AJ   | 3.7                     | 13.1                    | 25                     | 20                 | 20                                 |
|              | 22AJ   | 6.5                     | 21.5                    | 35                     | 30                 | 35                                 |
|              | 32AJ   | 8.6                     | 27.8                    | 45                     | 35                 | 45                                 |
|              | 52AJ   | 14.2                    | 44.6                    | 80                     | 60                 | 70                                 |
|              | 72AJ   | 20.9                    | 64.7                    | 110                    | 90                 | 100                                |
|              | 62AJ   | 21                      | 65                      | 110                    | 90                 | 100                                |
|              | A2AJ * | 30                      | 92                      | 175                    | 125                | 150                                |
|              | C2AJ * | 37.1                    | 113.3                   | 200                    | 150                | 175                                |
| 230V<br>(3Ø) | 13AJ   | 3.6                     | 12.8                    | 20                     | 20                 | 20                                 |
|              | 23AJ   | 6.1                     | 20.3                    | 35                     | 25                 | 30                                 |
|              | 33AJ   | 8                       | 26                      | 45                     | 35                 | 40                                 |
|              | 53AJ   | 12.8                    | 40.4                    | 70                     | 50                 | 70                                 |
|              | 73AJ   | 18.9                    | 58.7                    | 100                    | 80                 | 90                                 |
|              | 63AJ   | 20                      | 62                      | 110                    | 80                 | 100                                |
|              | A3AJ * | 29.4                    | 90.2                    | 150                    | 125                | 150                                |
|              | C3AJ * | 32.8                    | 100.4                   | 175                    | 125                | 175                                |
| 460V<br>(3Ø) | 14AJ   | 1.8                     | 7.4                     | 15                     | 10                 | 15                                 |
|              | 24AJ   | 2.9                     | 10.7                    | 20                     | 15                 | 20                                 |
|              | 34AJ   | 5.1                     | 17.3                    | 30                     | 25                 | 30                                 |
|              | 54AJ   | 6.4                     | 21.2                    | 35                     | 30                 | 35                                 |
|              | 74AJ   | 9.5                     | 30.5                    | 50                     | 40                 | 50                                 |
|              | 64AJ   | 11.6                    | 36.8                    | 60                     | 50                 | 60                                 |
|              | A4AJ   | 15.3                    | 47.9                    | 80                     | 60                 | 80                                 |
|              | C4AJ   | 16.4                    | 51.2                    | 90                     | 70                 | 80                                 |
| 380V<br>(3Ø) | 18AJ   |                         | 2                       | 10                     | 10                 | 10                                 |
|              | 28AJ   | 4                       | 14                      | 25                     | 20                 | 25                                 |
|              | 38AJ   | 4.7                     | 16.1                    | 30                     | 20                 | 25                                 |
|              | 58AJ   | 6.9                     | 22.7                    | 40                     | 30                 | 35                                 |
|              | 78AJ   | 13                      | 41                      | 70                     | 60                 | 70                                 |
|              | 68AJ   | 10.5                    | 33.5                    | 60                     | 45                 | 50                                 |
|              | A8AJ   | 15.9                    | 49.7                    | 90                     | 70                 | 80                                 |
|              | C8AJ   |                         |                         |                        |                    |                                    |

NOTE: P/N MAY INCLUDE SUFFIX AV

- 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 |      |      |      |      |    | WIRE TYPE TABLE                        |                                            |                                                        |                                                 |
|------------------------------|------|------|------|------|----|----------------------------------------|--------------------------------------------|--------------------------------------------------------|-------------------------------------------------|
| REPLACEMENT                  | 208  | 230  | 460  | 575  |    |                                        |                                            |                                                        |                                                 |
| FUSE TYPE                    | VOLT | VOLT | VOLT | VOLT |    | VOLTAGE                                | WIRE NUMBERS                               | GAUGE                                                  | COLOR                                           |
| FU1,2A<br>FU1,2B             | FNQR | 6A   | 5A   | 5A   | 4A | 120VAC<br>0VAC<br>24VDC<br>0VDC<br>GND | 001-599,1100+<br>W<br>600-1099<br>601<br>- | 16-18AWG<br>16-18AWG<br>16-18AWG<br>16-18AWG<br>VARIES | RED/BLK<br>WHT/BLK<br>PURPLE<br>PURPLE<br>GREEN |
| FU3A,B                       | FNM  | 7A   | 7A   | 7A   | 7A | CUSTOMER<br>SUPPLY                     | 01-99                                      | 16-18AWG                                               | 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 | 09/01/11 | 22545    | BFH  | CHR  |
| C-1 | FORMAT UPDATE         | 03/01/13 | PXEC0038 | BFH  | CHR  |

OPTIONAL:  
  
208V/230V/380V/460V



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CHR

ENGINEERING APPROVAL  
CHR

09/01/11

09/20/11

09/20/11

PANEL TYPE  
  
BECKER DILLESS  
3PH TRIPLEX PANEL DATA

DWG. TYPE  
MISC

DWG. NO.  
  
DATA TABLE

SHEET  
  
D-1

SIZE  
  
B

TRIPLEX PANEL DATA

| TABLE 1   | P/N    | MOTOR FULL LOAD AMPS | TOTAL FULL LOAD AMPS | NON-TIME DELAY FUSE | TIME DELAY FUSE | INVERSE-TIME CIRCUIT BREAKER |
|-----------|--------|----------------------|----------------------|---------------------|-----------------|------------------------------|
| 208V (3Ø) | 22AJ   | 6                    | 20                   | 35                  | 25              | 30                           |
|           | 32AJ   | 8                    | 26                   | 45                  | 35              | 40                           |
|           | 52AJ   | 13                   | 41                   | 70                  | 60              | 70                           |
|           | 72AJ   | 19                   | 59                   | 100                 | 80              | 90                           |
|           | A2AJ   | 25                   | 77                   | 150                 | 100             | 125                          |
|           | F2AJ * | 37.5                 | 114.5                | 200                 | 150             | 175                          |
| 230V (3Ø) | 23AJ   | 5.2                  | 17.6                 | 30                  | 25              | 30                           |
|           | 33AJ   | 7.4                  | 24.2                 | 40                  | 30              | 40                           |
|           | 53AJ   | 12                   | 38                   | 70                  | 50              | 60                           |
|           | 73AJ   | 18                   | 56                   | 100                 | 70              | 90                           |
|           | A3AJ   | 23                   | 71                   | 125                 | 90              | 110                          |
|           | F3AJ * | 35                   | 107                  | 200                 | 150             | 175                          |
| 460V (3Ø) | 24AJ   | 2.6                  | 9.8                  | 15                  | 15              | 15                           |
|           | 34AJ   | 3.7                  | 13.1                 | 25                  | 20              | 20                           |
|           | 54AJ   | 6                    | 20                   | 35                  | 25              | 30                           |
|           | 74AJ   | 9                    | 29                   | 50                  | 40              | 45                           |
|           | A4AJ   | 11.5                 | 36.5                 | 60                  | 45              | 60                           |
|           | F4AJ   | 17                   | 53                   | 90                  | 70              | 80                           |

NOTE: P/N MAY INCLUDE SUFFIX AV

NOTES:

- RECOMMENDED TIGHTENING TORQUES FOR WIRE TERMINALS:  
208-575 VOLT POWER 35 POUND INCHES  
120 VOLT POWER AND CONTROL VOLTAGE 15 POUND INCHES
- PANEL GROUND MUST BE CONNECTED TO EARTH GROUND
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| CONTROL TRANSFORMERS - 500VA |      |      |      |         |      |
|------------------------------|------|------|------|---------|------|
| REPLACEMENT                  |      | 208  | 230  | 460 380 | 575  |
| FUSE TYPE                    |      | VOLT | VOLT | VOLT    | VOLT |
| FU1,2A                       | FNQR | 6A   | 5A   | 5A      | 4A   |
| FU1,2B                       |      |      |      |         |      |
| FU3A,B                       | FNM  | 7A   | 7A   | 7A      | 7A   |
| SEE XFMR 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 | 09/01/11 | 22545    | BFH  | CHR  |
| C-1 | FORMAT UPDATE         | 03/04/13 | PXEC0038 | BFH  | CHR  |

OPTIONAL:

208V/230V/460V



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| DRAWN BY | CHECKED BY | ENGINEERING APPROVAL |
|----------|------------|----------------------|
| BFH      | CHR        | CHR                  |

|          |          |          |
|----------|----------|----------|
| 09/01/11 | 09/20/11 | 09/20/11 |
|----------|----------|----------|

PANEL TYPE

RIETSCHLE CLAW  
3PH TRIPLEX PANEL DATA

DWG. TYPE MISC

DWG. NO.

DATA TABLE

| SHEET | SIZE |
|-------|------|
| D-1   | B    |

TRIPLEX PANEL DATA