



**PARIC CORPORATION**  
77 Westport Plaza Suite 250  
St. Louis, MO 63146  
TEL: 636-561-9500  
FAX: 636-561-9501

---

|                                |                             |                     |
|--------------------------------|-----------------------------|---------------------|
| <b>REQUEST FOR INFORMATION</b> | <b>DATE:</b> March 28, 2017 | <b>NO.:</b> RFI-498 |
|--------------------------------|-----------------------------|---------------------|

---

To: Cannon Design

Attn: Kelvin Patel

From: Paric Corporation

Requested By: Devin Gates

Project Name: 15051-Webster University Interdisciplinary Science Building      Project No.: 15051

Subject: Clarification for 120v power to BMS, VAV, and Phoenix power panels

Response Required By: April 04, 2017

Drawing / Spec Reference:

**Information Requested:**

Please provide clarification for 120V power that is needed for the BMS, VAV and Phoenix power panels in the attached Temperature Controls Submittal; Drawing 1.1 and 2.1 through 2.22. Currently there is not sufficient provisions shown to power these panels.

Provide emergency power to HEF-1 as indicated on Contract Documents including associated damper, pressure sensor, and controls. Refer to keyed notes for HEF-1 on Equipment Data Schedule sheet ME0003.

**Response:** Provide emergency power for supply and exhaust Phoenix airflow control valves and associated controls serving the Cadaver Lab areas. Connect Phoenix panel serving cadaver lab, to dedicated temperature control 120 volt, 20 amp circuit, from emergency panel 1SL1.

Connect all other Phoenix panels to nearest non-emergency 120 volt panel and document dedicated temperature control circuits on record drawings. Emergency power for supply and return Phoenix airflow control valves serving areas other than the Cadaver Lab area is not required.

**ARCHITECT'S RESPONSE:** Refer to 239500-3.9-J-2-e: " Emergency Mode Control" for additional information.

This information is provided as an interpretation of the Contract Documents for implementation. It is not an authorization for change to the Contract Sum or Contract Time. If this information results in a claim for a change to the Contract, the Contractor shall notify the [Construction Manager][Architect] of a change through the change process.

Answered By: Mark de la Fuente, WTA

Date: 4/13/17

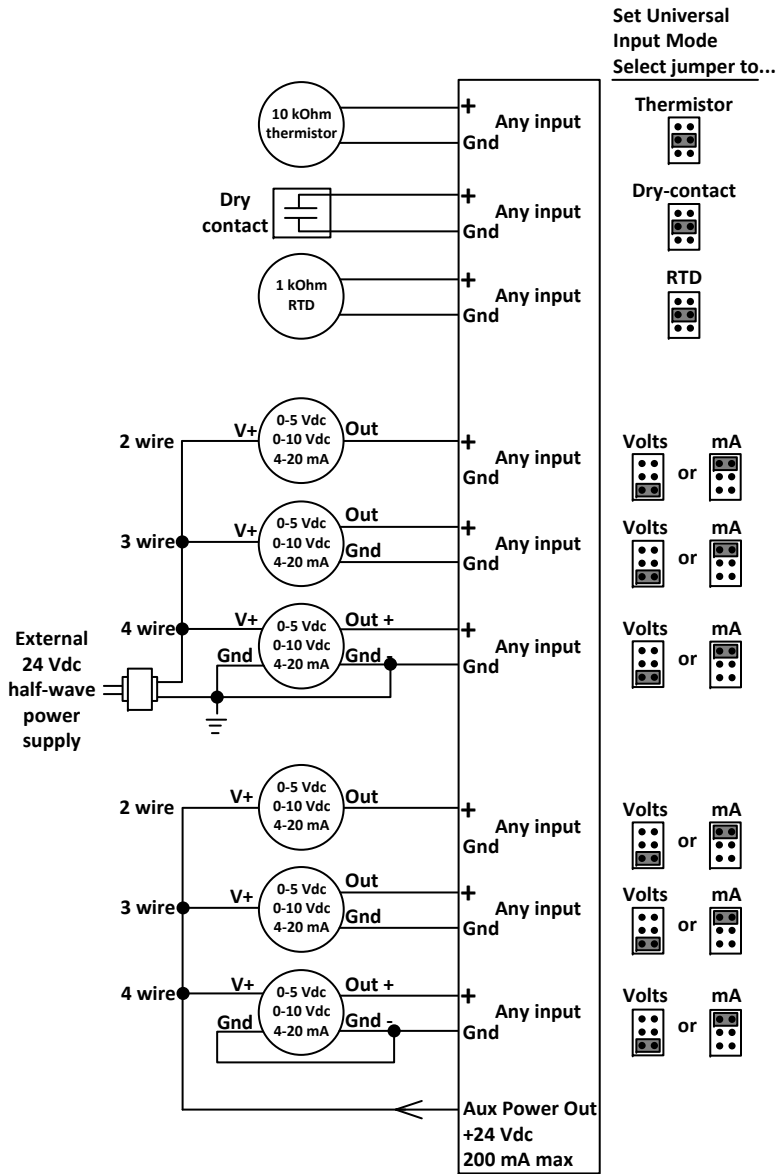


Input/Output Wiring Details & Specifications

Input Wiring Specifications

| Input Wiring                                      |                           |                               |           |
|---------------------------------------------------|---------------------------|-------------------------------|-----------|
| Input                                             | Maximum length            | Minimum gauge                 | Shielding |
| 0-5 Vdc<br>0-10 Vdc                               | 1000 feet<br>(305 meters) | See Cable Specification Chart |           |
| 0-20 mA                                           | 3000 feet<br>(914 meters) | See Cable Specification Chart |           |
| Thermistor<br>Dry contact<br>Pulse counter<br>TLO | 1000 feet<br>(305 meters) | See Cable Specification Chart |           |
| RTD                                               | 100 feet<br>(30 meters)   | See Cable Specification Chart |           |

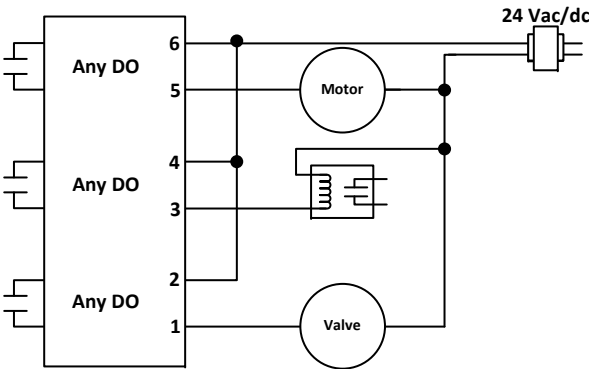
Input Wiring Details



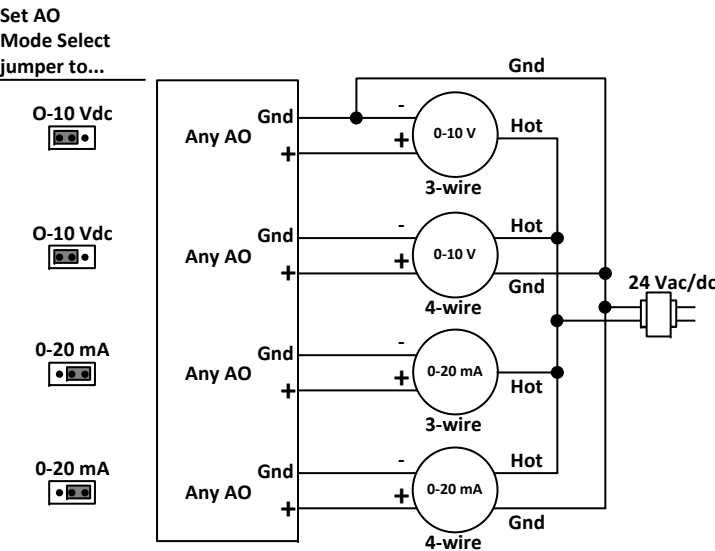
Output Wiring Specifications

- Output Wiring**
- To size output wiring, consider the following:
- Total loop distance from the power supply to the control module, and then to the controlled device
  - NOTE** Include the total distance of actual wire. For 2-conductor wires, this is twice the cable length
  - Acceptable voltage drop in the wire from the control module to the controlled device
  - Resistance (Ohms) of the chosen wire gauge
  - Maximum current (Amps) the controlled device requires to operate

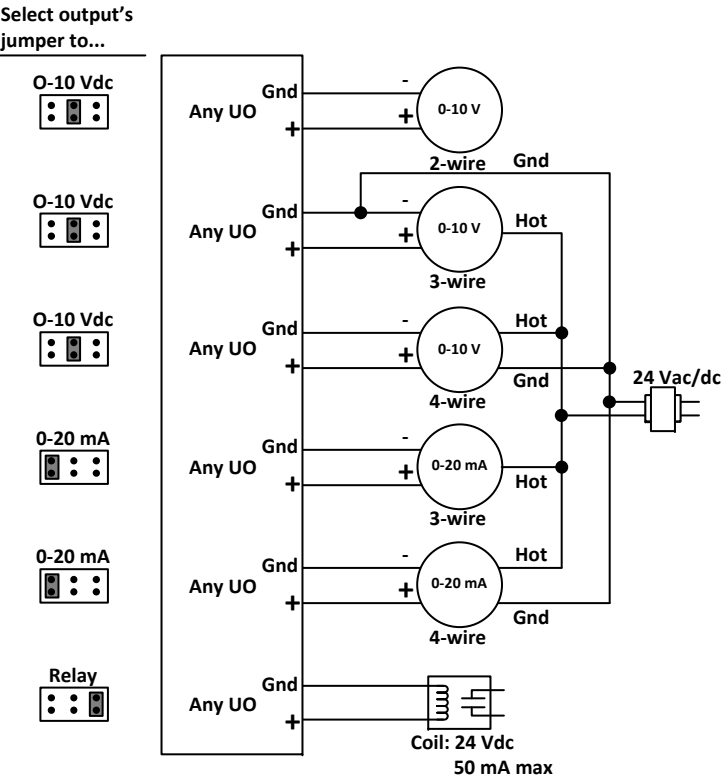
Digital Output Wiring Details



Analog Output Wiring Details

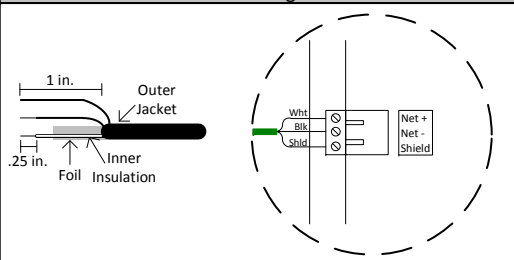


Universal Output Wiring Details

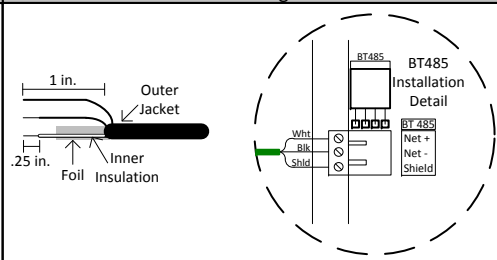


Primary ARCnet Network Riser

Interface Wiring Details



Arcnet Wiring Details



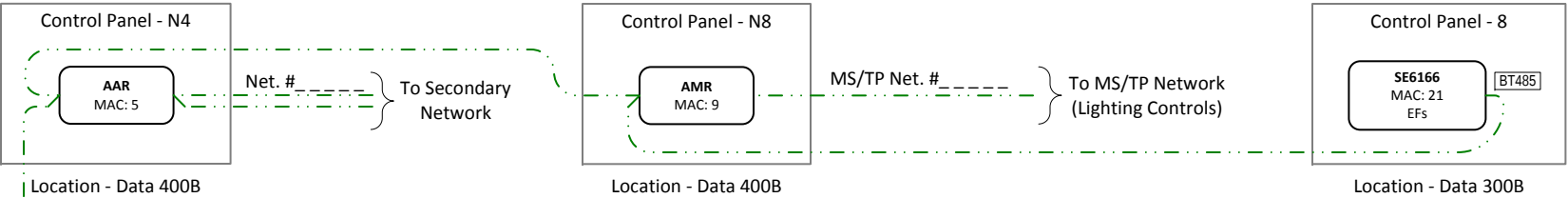
Instrument List

| Tag    | Product Description                             | Manufacturer    | Part Number | Quantity |
|--------|-------------------------------------------------|-----------------|-------------|----------|
| ALC-12 | ARCNET156 Terminating and Biasing plug in board | Automated Logic | BT485       | 2        |

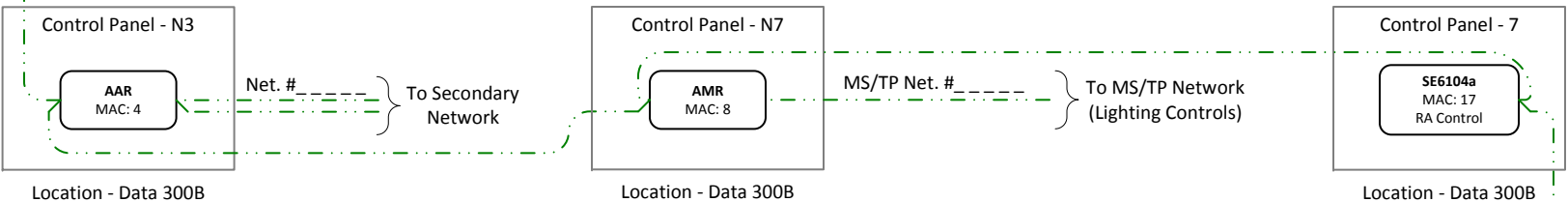
Notes:

1. The BMS Riser is intended only to provide an overview of the system architecture. DDC devices are not intended to be wired in exactly the order shown. Optimal wiring runs to be determined in field.
2. All devices are to be wired in a daisy chain configuration.

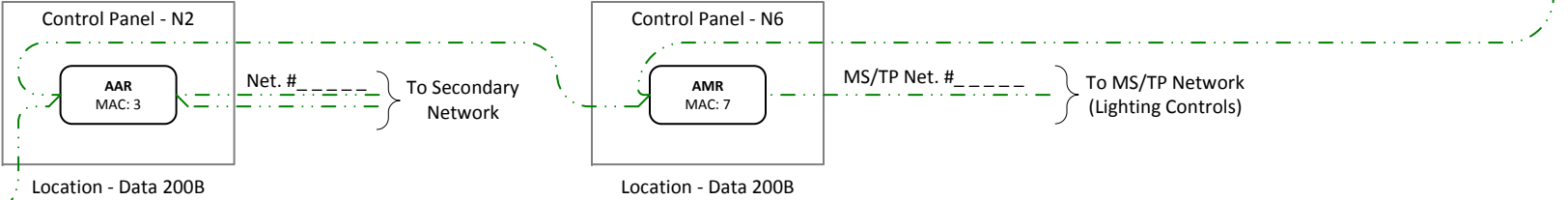
Level 04



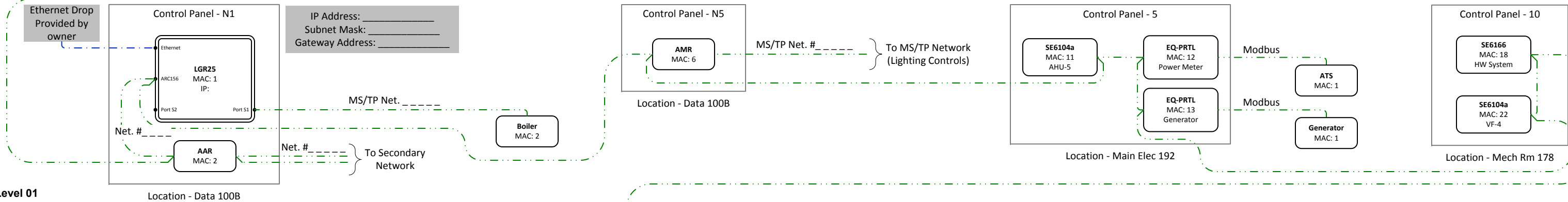
Level 03



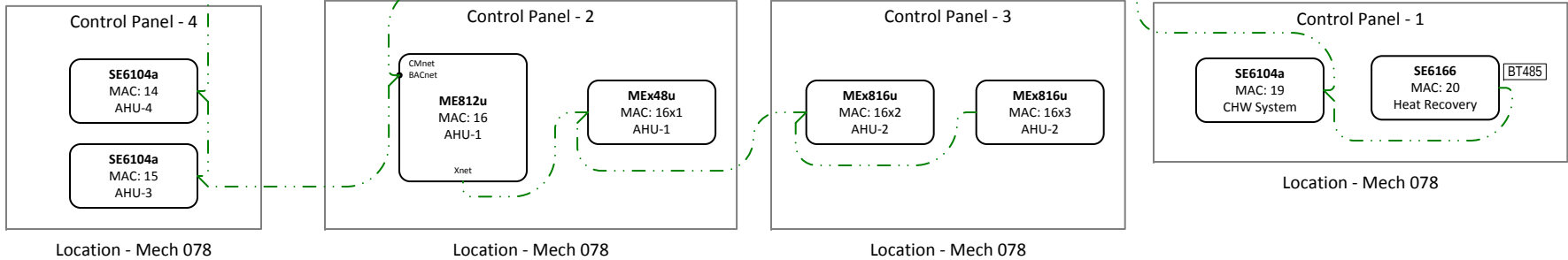
Level 02



Level 01



Level 00

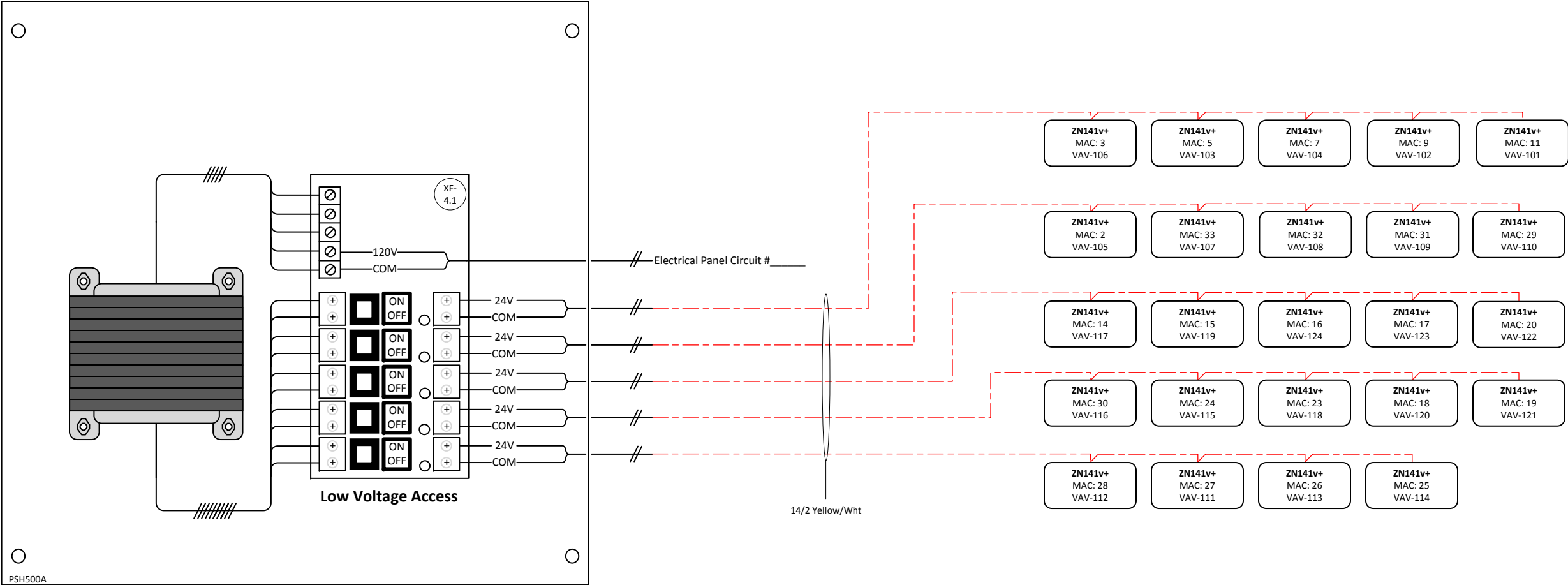


Level 01 24V Power Riser

| Instrument List |                                             |                    |             |          |
|-----------------|---------------------------------------------|--------------------|-------------|----------|
| Tag             | Product Description                         | Manufacturer       | Part Number | Quantity |
| XF-4.#          | Enclosed 500VA Pwr Supply, 5x100VA Circuits | Functional Devices | PSH500A     | 1        |

**Notes:**  
1. This power riser shows the wiring in a daisy chained configuration. It is best to run the power wiring the shortest distance possible to the transformer. You can star the power cable. Keep the maximum length from the transformer to VAV at 200' or less. The maximum number of VAV's per circuit is 5. The wiring runs will need to be documented for As-Built documentation.

Power Distribution Panel - Wiring Detail  
Location: TBD



## 5

5

1. This power riser shows the wiring in a daisy chained configuration. It is best to run the power wiring the shortest distance possible to the transformer. You can star the power cable. Keep the maximum length from the transformer to VAV at 200' or less. The maximum number of VAV's per circuit is 5. The wiring runs will need to be documented for As-Built documentation.

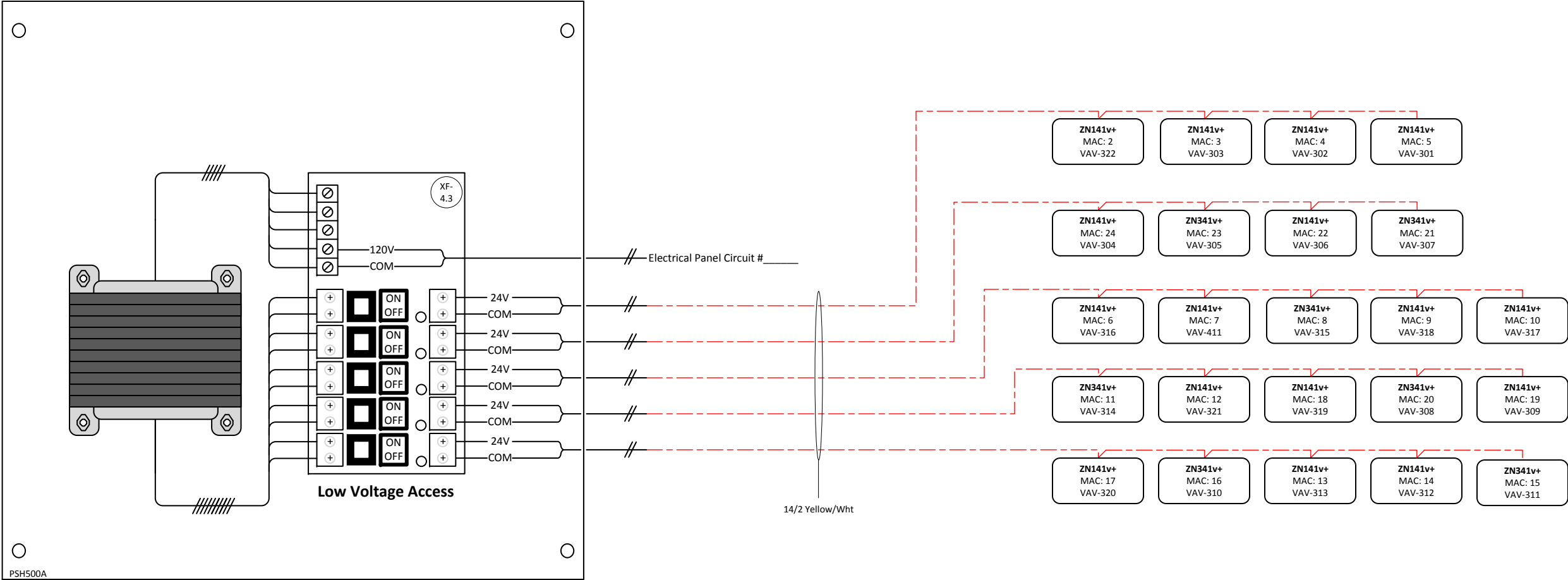
PSH500A

Level 03 24V Power Riser

| Instrument List |                                             |                    |             |          |
|-----------------|---------------------------------------------|--------------------|-------------|----------|
| Tag             | Product Description                         | Manufacturer       | Part Number | Quantity |
| XF-4.#          | Enclosed 500VA Pwr Supply, 5x100VA Circuits | Functional Devices | PSH500A     | 1        |

**Notes:**  
1. This power riser shows the wiring in a daisy chained configuration. It is best to run the power wiring the shortest distance possible to the transformer. You can star the power cable. Keep the maximum length from the transformer to VAV at 200' or less. The maximum number of VAV's per circuit is 5. The wiring runs will need to be documented for As-Built documentation.

Power Distribution Panel - Wiring Detail  
Location: TBD

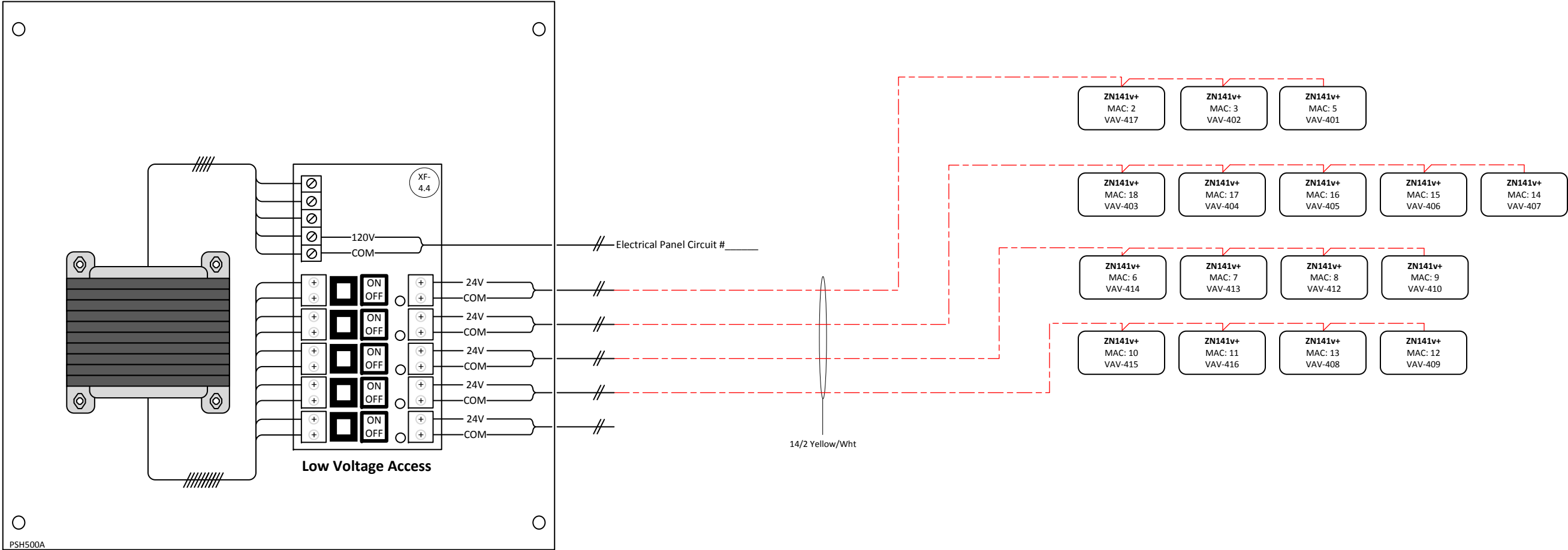


Level 04 24V Power Riser

| Instrument List |                                             |                    |             |          |
|-----------------|---------------------------------------------|--------------------|-------------|----------|
| Tag             | Product Description                         | Manufacturer       | Part Number | Quantity |
| XF-4.#          | Enclosed 500VA Pwr Supply, 5x100VA Circuits | Functional Devices | PSH500A     | 1        |

**Notes:**  
1. This power riser shows the wiring in a daisy chained configuration. It is best to run the power wiring the shortest distance possible to the transformer. You can star the power cable. Keep the maximum length from the transformer to VAV at 200' or less. The maximum number of VAV's per circuit is 5. The wiring runs will need to be documented for As-Built documentation.

Power Distribution Panel - Wiring Detail  
Location: TBD

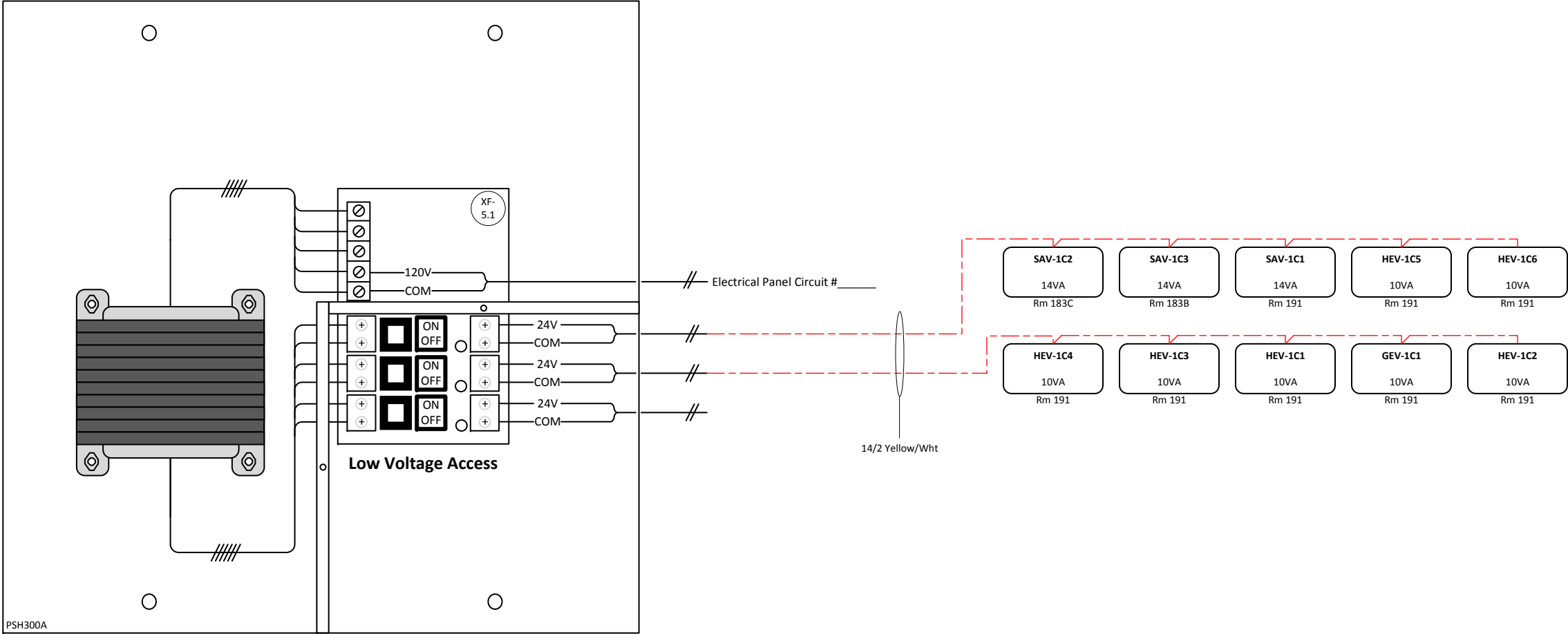


Phoenix Controls Level 01 24V Power Riser

| Instrument List |                                             |                    |             |          |
|-----------------|---------------------------------------------|--------------------|-------------|----------|
| Tag             | Product Description                         | Manufacturer       | Part Number | Quantity |
| XF-5.#          | Enclosed 300VA Pwr Supply, 3x100VA Circuits | Functional Devices | PSH300A     | 1        |

**Notes:**  
1. This power riser shows the wiring in a daisy chained configuration. It is best to run the power wiring the shortest distance possible to the transformer. The maximum VA per circuit is 90VA. wiring runs will need to be documented for As-Built documentation.

Power Distribution Panel - Wiring Detail  
Location - TBD

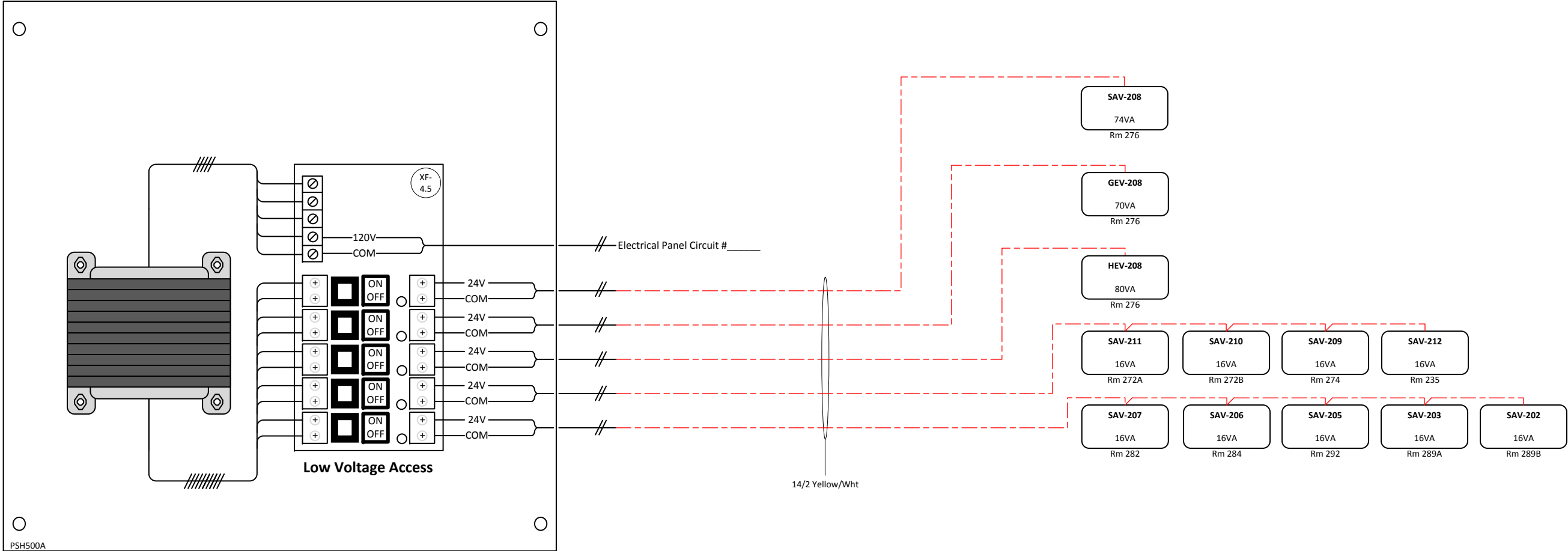


Phoenix Controls Level 02 24V Power Riser (1)

| Instrument List |                                             |                    |             |          |
|-----------------|---------------------------------------------|--------------------|-------------|----------|
| Tag             | Product Description                         | Manufacturer       | Part Number | Quantity |
| XF-4 #          | Enclosed 500VA Pwr Supply, 5x100VA Circuits | Functional Devices | PSH500A     | 1        |

Notes:  
1. This power riser shows the wiring in a daisy chained configuration. It is best to run the power wiring the shortest distance possible to the transformer. The maximum VA per circuit is 90VA. wiring runs will need to be documented for As-Built documentation.

Power Distribution Panel - Wiring Detail  
Location: TBD

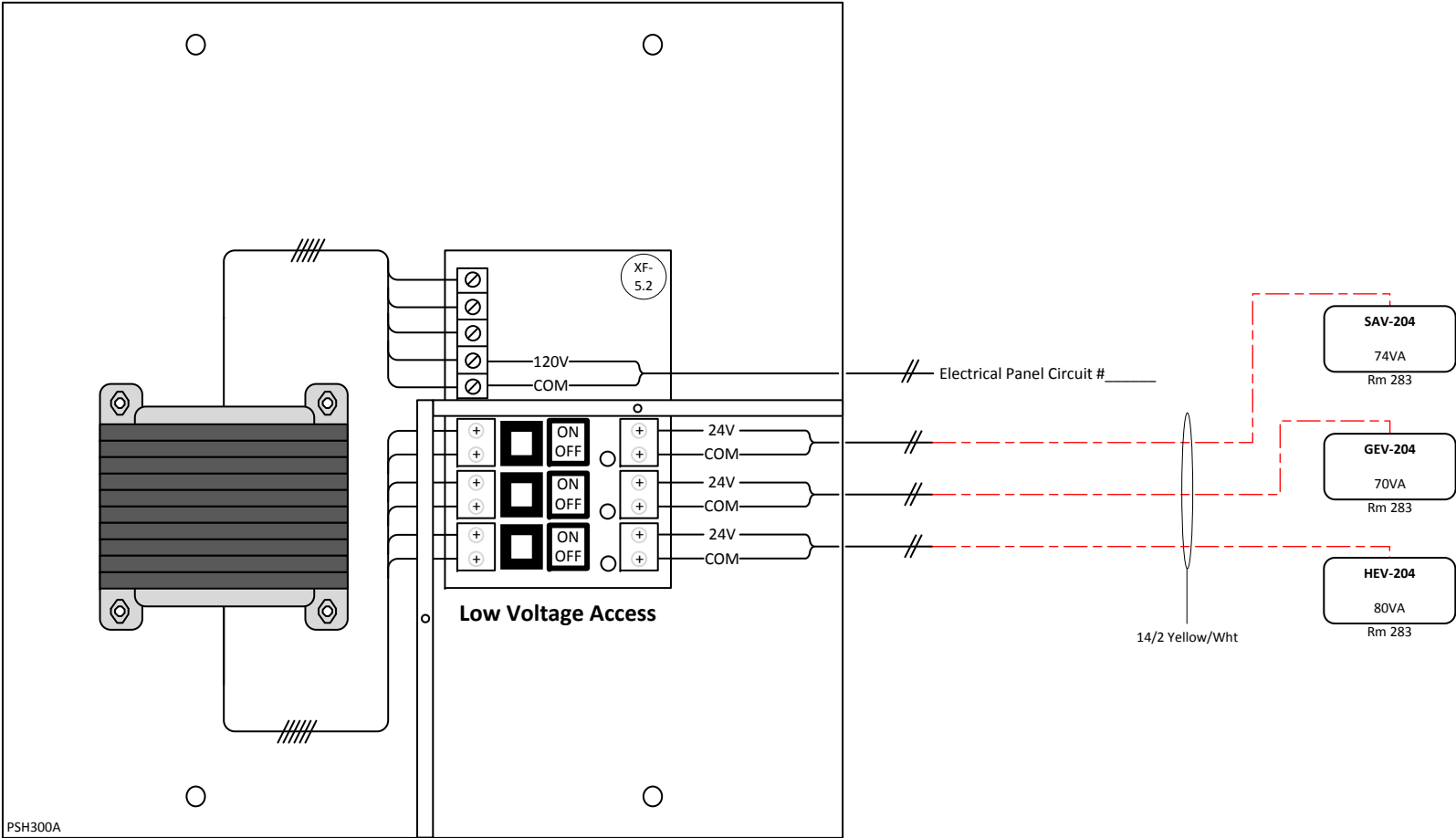


Phoenix Controls Level 02 24V Power Riser (2)

| Instrument List |                                             |                    |             |          |
|-----------------|---------------------------------------------|--------------------|-------------|----------|
| Tag             | Product Description                         | Manufacturer       | Part Number | Quantity |
| XF-5.#          | Enclosed 300VA Pwr Supply, 3x100VA Circuits | Functional Devices | PSH300A     | 1        |

**Notes:**  
1. This power riser shows the wiring in a daisy chained configuration. It is best to run the power wiring the shortest distance possible to the transformer. The maximum VA per circuit is 90VA. wiring runs will need to be documented for As-Built documentation.

Power Distribution Panel - Wiring Detail  
Location - TBD

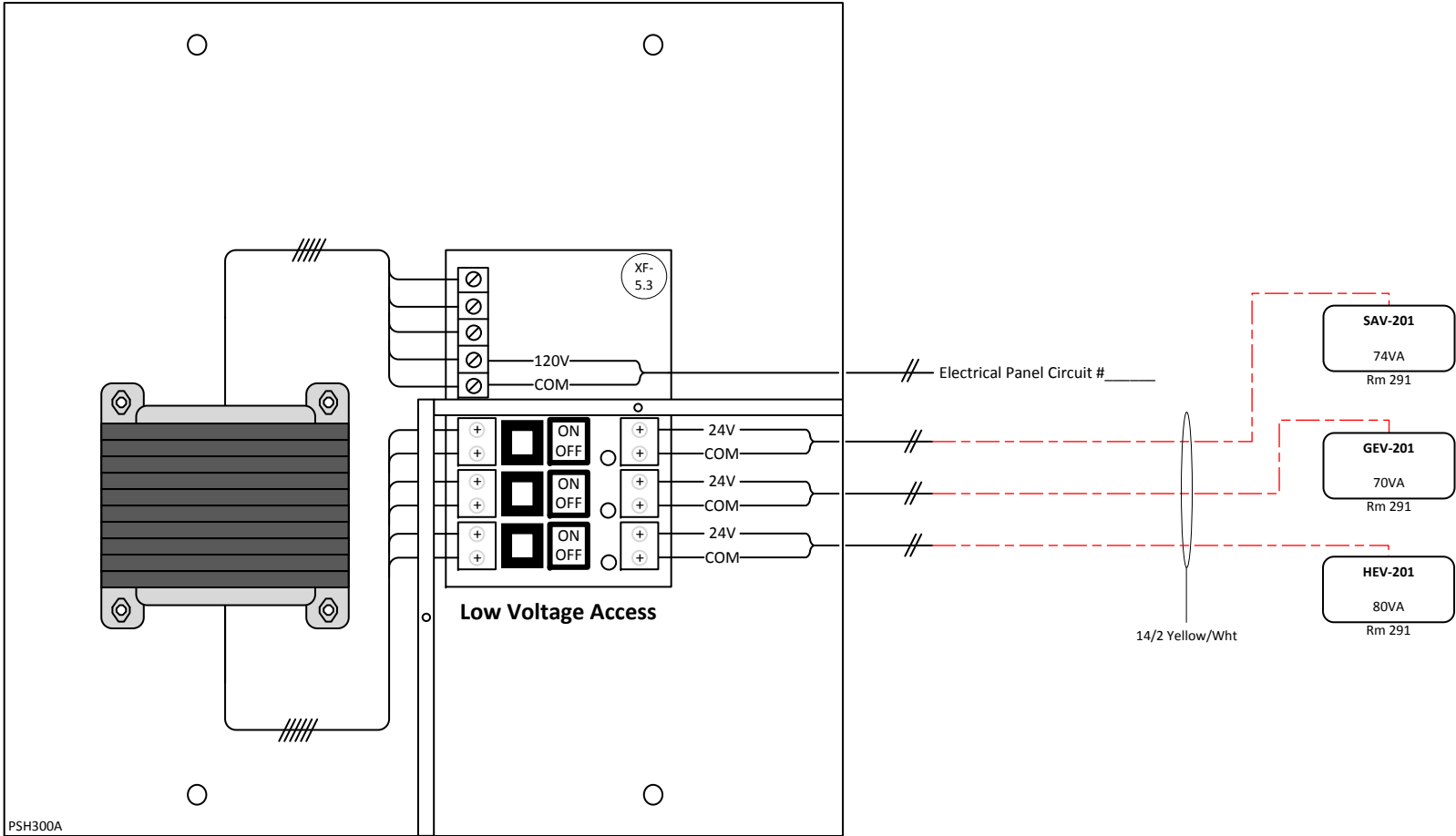


Phoenix Controls Level 02 24V Power Riser (3)

| Instrument List |                                             |                    |             |          |
|-----------------|---------------------------------------------|--------------------|-------------|----------|
| Tag             | Product Description                         | Manufacturer       | Part Number | Quantity |
| XF-5.#          | Enclosed 300VA Pwr Supply, 3x100VA Circuits | Functional Devices | PSH300A     | 1        |

**Notes:**  
1. This power riser shows the wiring in a daisy chained configuration. It is best to run the power wiring the shortest distance possible to the transformer. The maximum VA per circuit is 90VA. wiring runs will need to be documented for As-Built documentation.

Power Distribution Panel - Wiring Detail  
Location - TBD

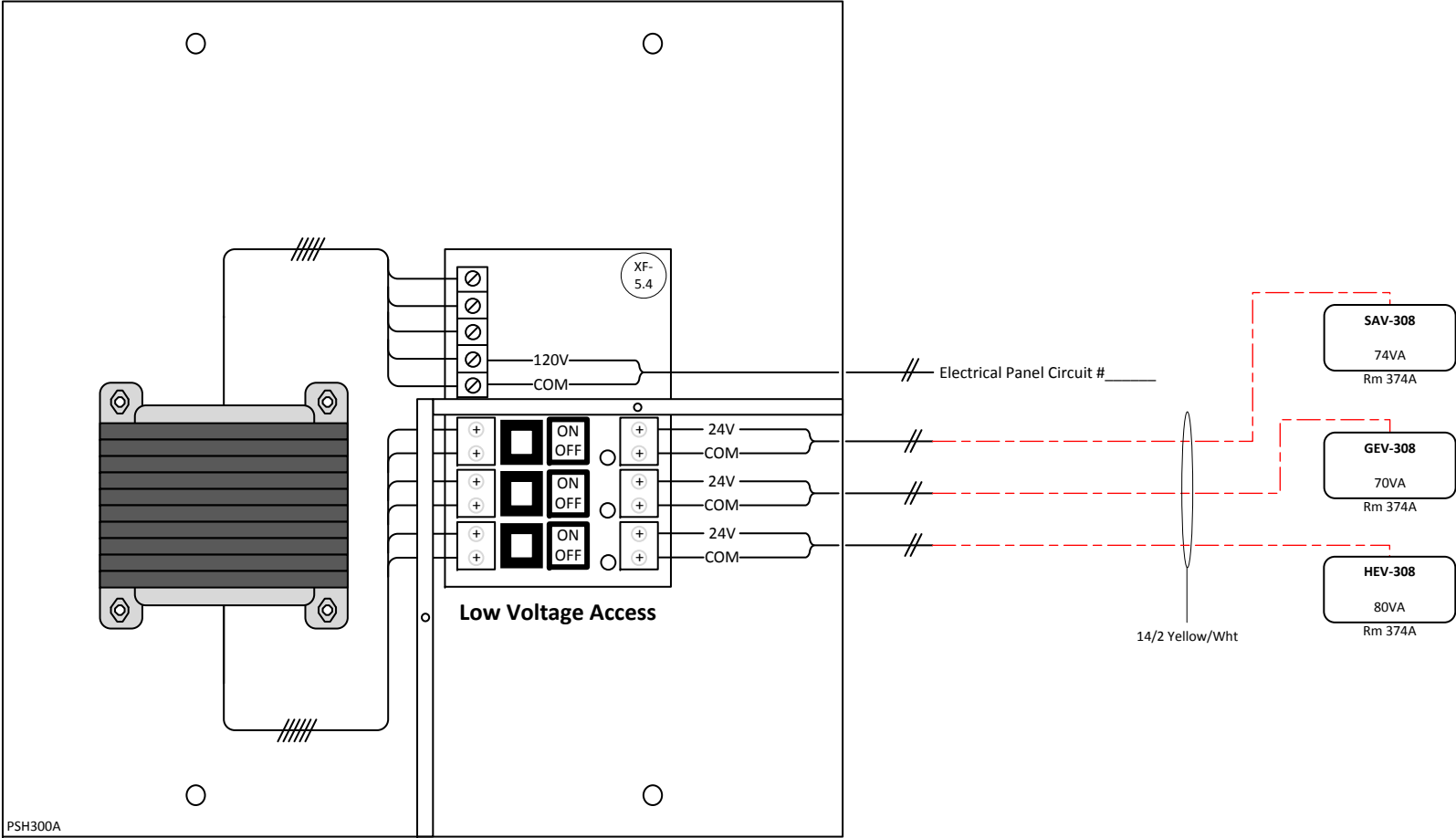


Phoenix Controls Level 03 24V Power Riser (1)

| Instrument List |                                             |                    |             |          |
|-----------------|---------------------------------------------|--------------------|-------------|----------|
| Tag             | Product Description                         | Manufacturer       | Part Number | Quantity |
| XF-5.#          | Enclosed 300VA Pwr Supply, 3x100VA Circuits | Functional Devices | PSH300A     | 1        |

**Notes:**  
1. This power riser shows the wiring in a daisy chained configuration. It is best to run the power wiring the shortest distance possible to the transformer. The maximum VA per circuit is 90VA. wiring runs will need to be documented for As-Built documentation.

Power Distribution Panel - Wiring Detail  
Location - TBD

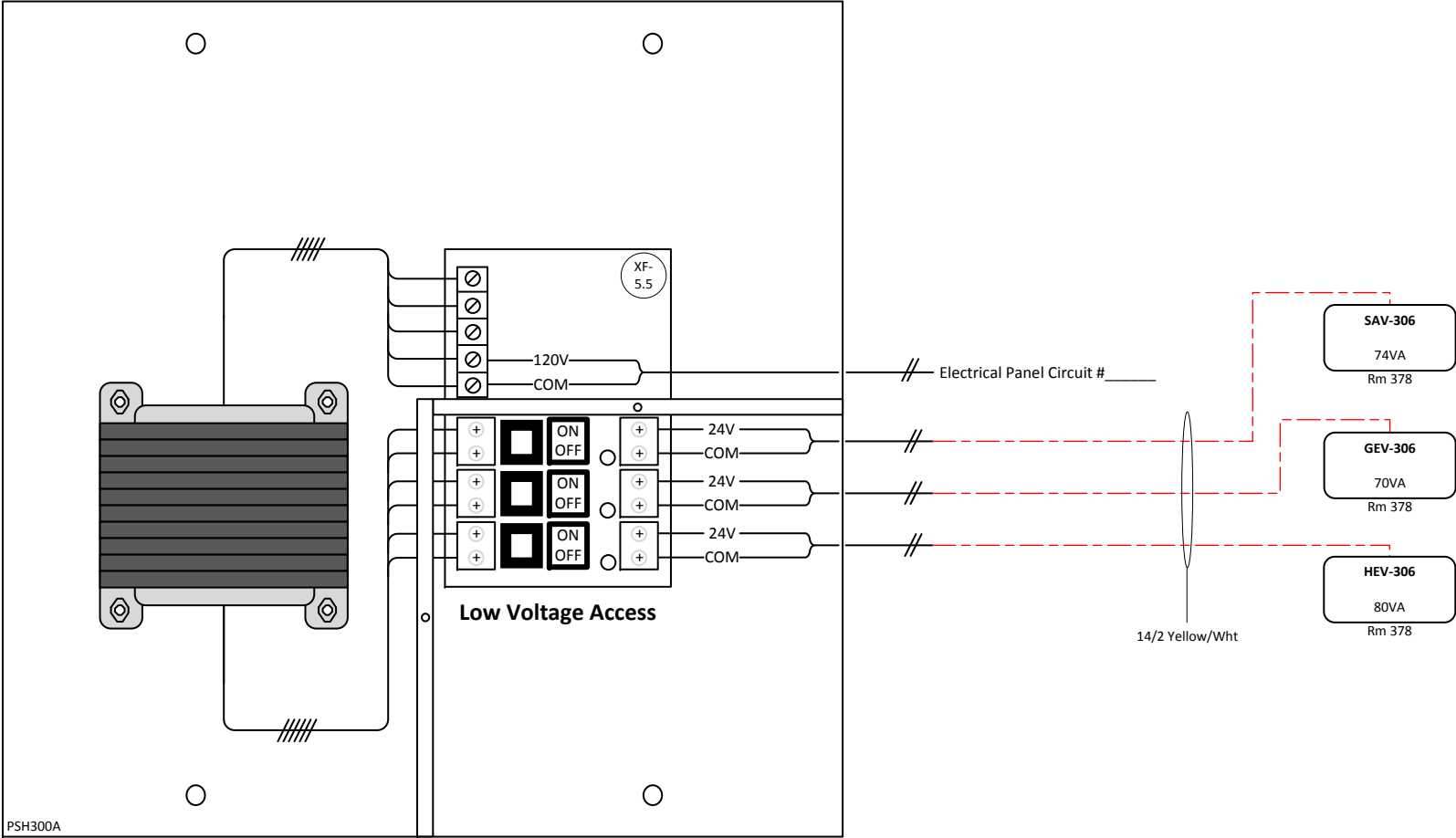


Phoenix Controls Level 03 24V Power Riser (2)

| Instrument List |                                             |                    |             |          |
|-----------------|---------------------------------------------|--------------------|-------------|----------|
| Tag             | Product Description                         | Manufacturer       | Part Number | Quantity |
| XF-5.#          | Enclosed 300VA Pwr Supply, 3x100VA Circuits | Functional Devices | PSH300A     | 1        |

**Notes:**  
1. This power riser shows the wiring in a daisy chained configuration. It is best to run the power wiring the shortest distance possible to the transformer. The maximum VA per circuit is 90VA. wiring runs will need to be documented for As-Built documentation.

Power Distribution Panel - Wiring Detail  
Location - TBD

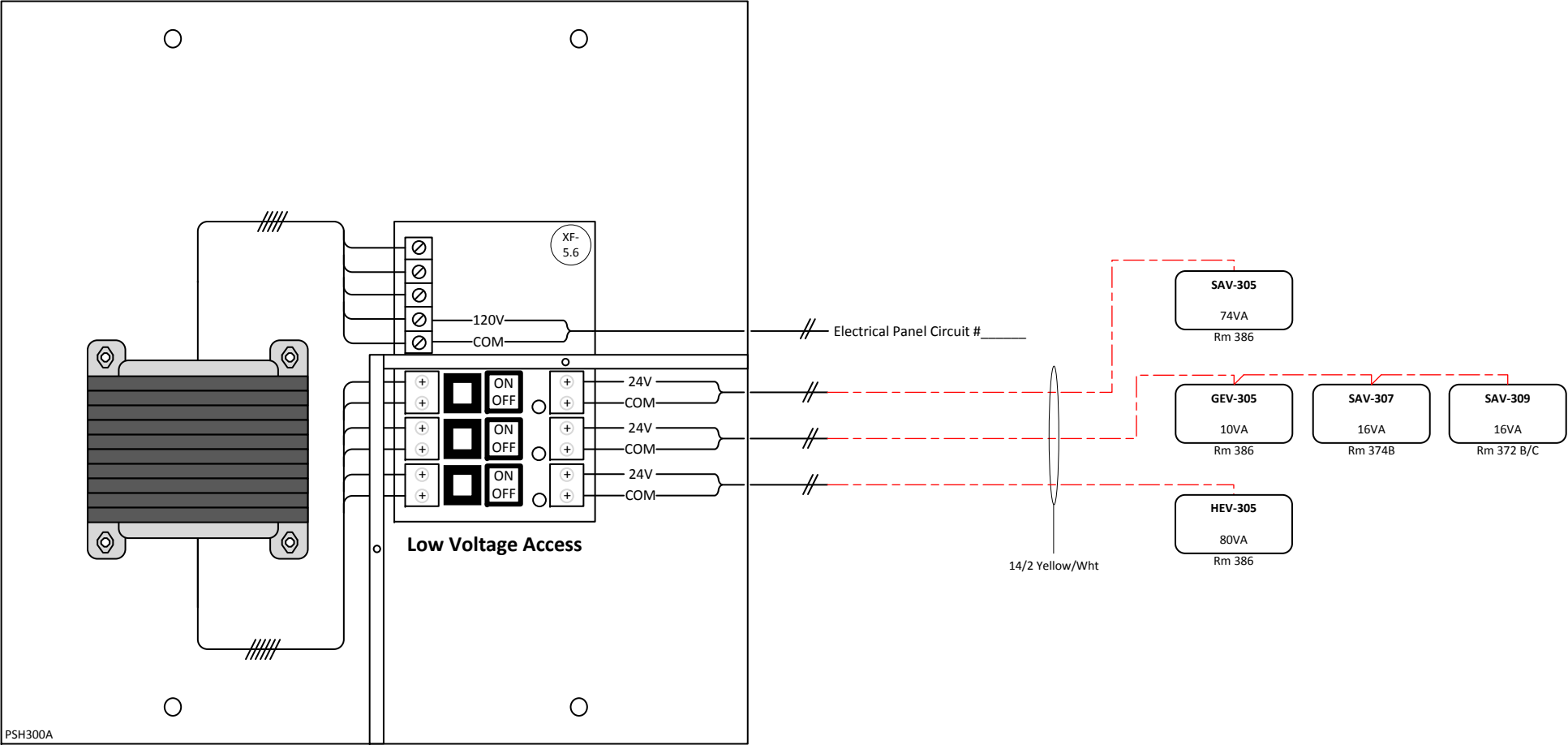


Phoenix Controls Level 03 24V Power Riser (3)

| Instrument List |                                             |                    |             |          |
|-----------------|---------------------------------------------|--------------------|-------------|----------|
| Tag             | Product Description                         | Manufacturer       | Part Number | Quantity |
| XF-5.#          | Enclosed 300VA Pwr Supply, 3x100VA Circuits | Functional Devices | PSH300A     | 1        |

**Notes:**  
1. This power riser shows the wiring in a daisy chained configuration. It is best to run the power wiring the shortest distance possible to the transformer. The maximum VA per circuit is 90VA. wiring runs will need to be documented for As-Built documentation.

Power Distribution Panel - Wiring Detail  
Location - TBD

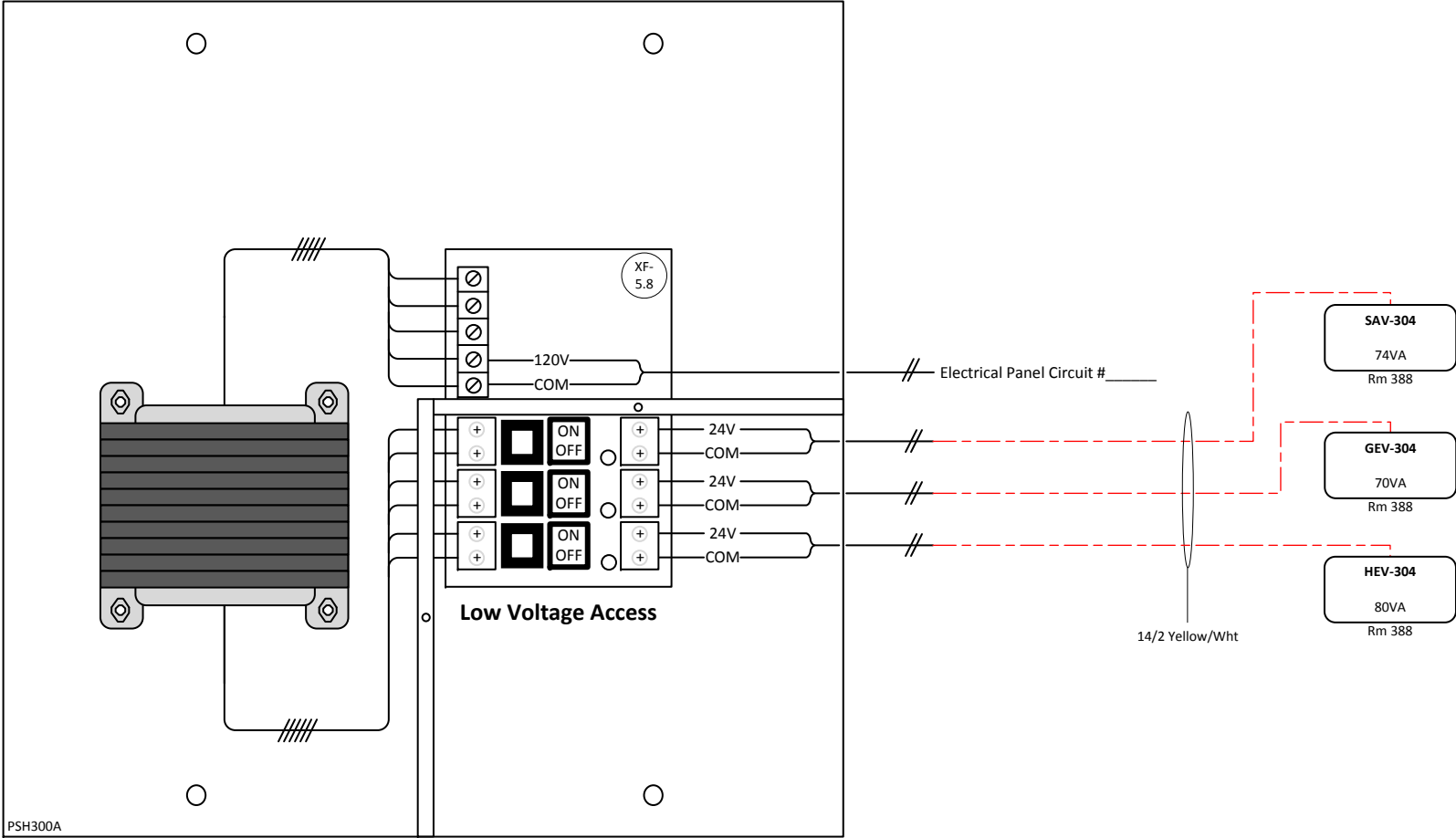


Phoenix Controls Level 03 24V Power Riser (4)

| Instrument List |                                             |                    |             |          |
|-----------------|---------------------------------------------|--------------------|-------------|----------|
| Tag             | Product Description                         | Manufacturer       | Part Number | Quantity |
| XF-5.#          | Enclosed 300VA Pwr Supply, 3x100VA Circuits | Functional Devices | PSH300A     | 1        |

**Notes:**  
1. This power riser shows the wiring in a daisy chained configuration. It is best to run the power wiring the shortest distance possible to the transformer. The maximum VA per circuit is 90VA. wiring runs will need to be documented for As-Built documentation.

Power Distribution Panel - Wiring Detail  
Location - TBD

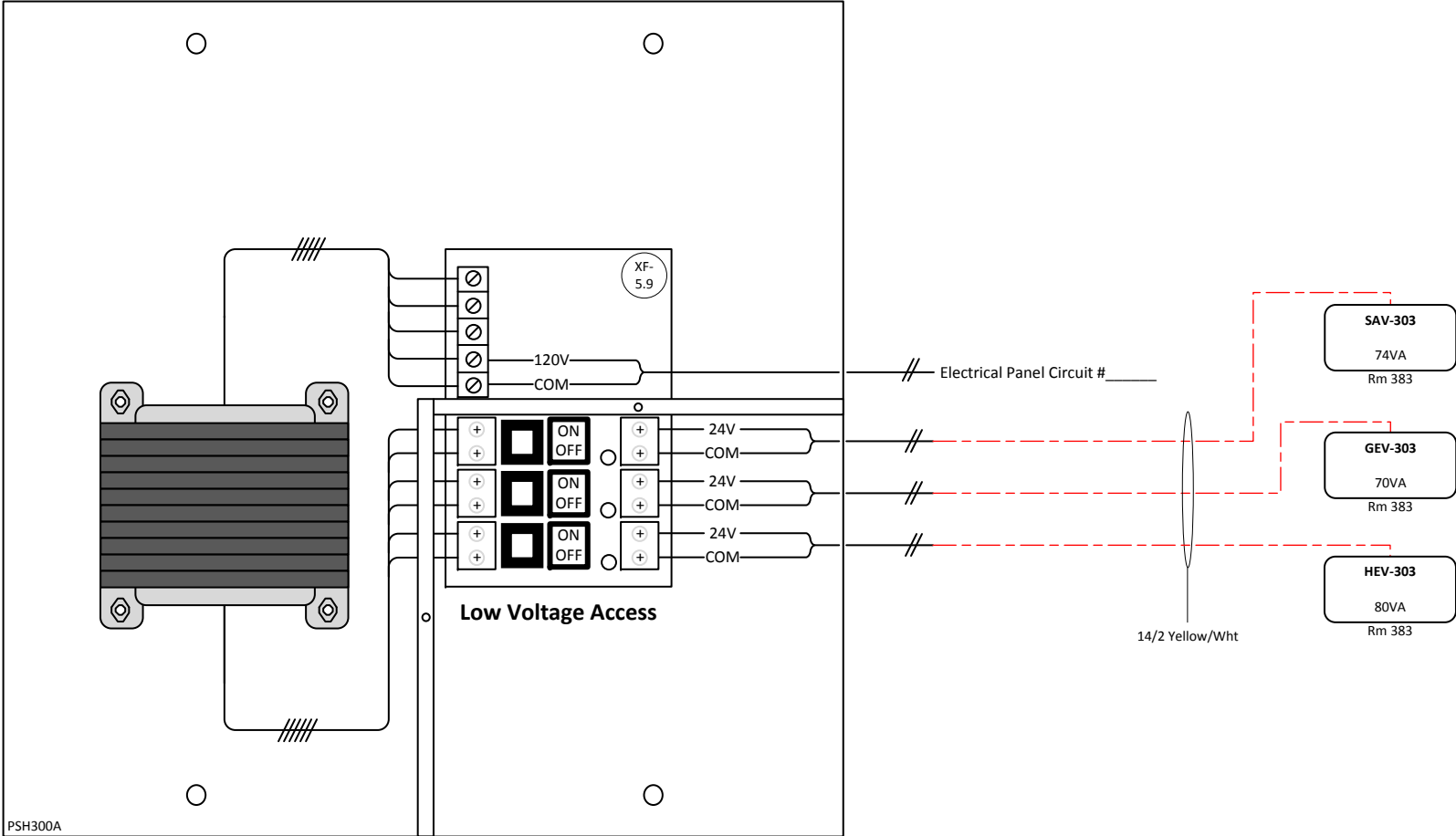


Phoenix Controls Level 03 24V Power Riser (5)

| Instrument List |                                             |                    |             |          |
|-----------------|---------------------------------------------|--------------------|-------------|----------|
| Tag             | Product Description                         | Manufacturer       | Part Number | Quantity |
| XF-5.#          | Enclosed 300VA Pwr Supply, 3x100VA Circuits | Functional Devices | PSH300A     | 1        |

**Notes:**  
1. This power riser shows the wiring in a daisy chained configuration. It is best to run the power wiring the shortest distance possible to the transformer. The maximum VA per circuit is 90VA. wiring runs will need to be documented for As-Built documentation.

Power Distribution Panel - Wiring Detail  
Location - TBD

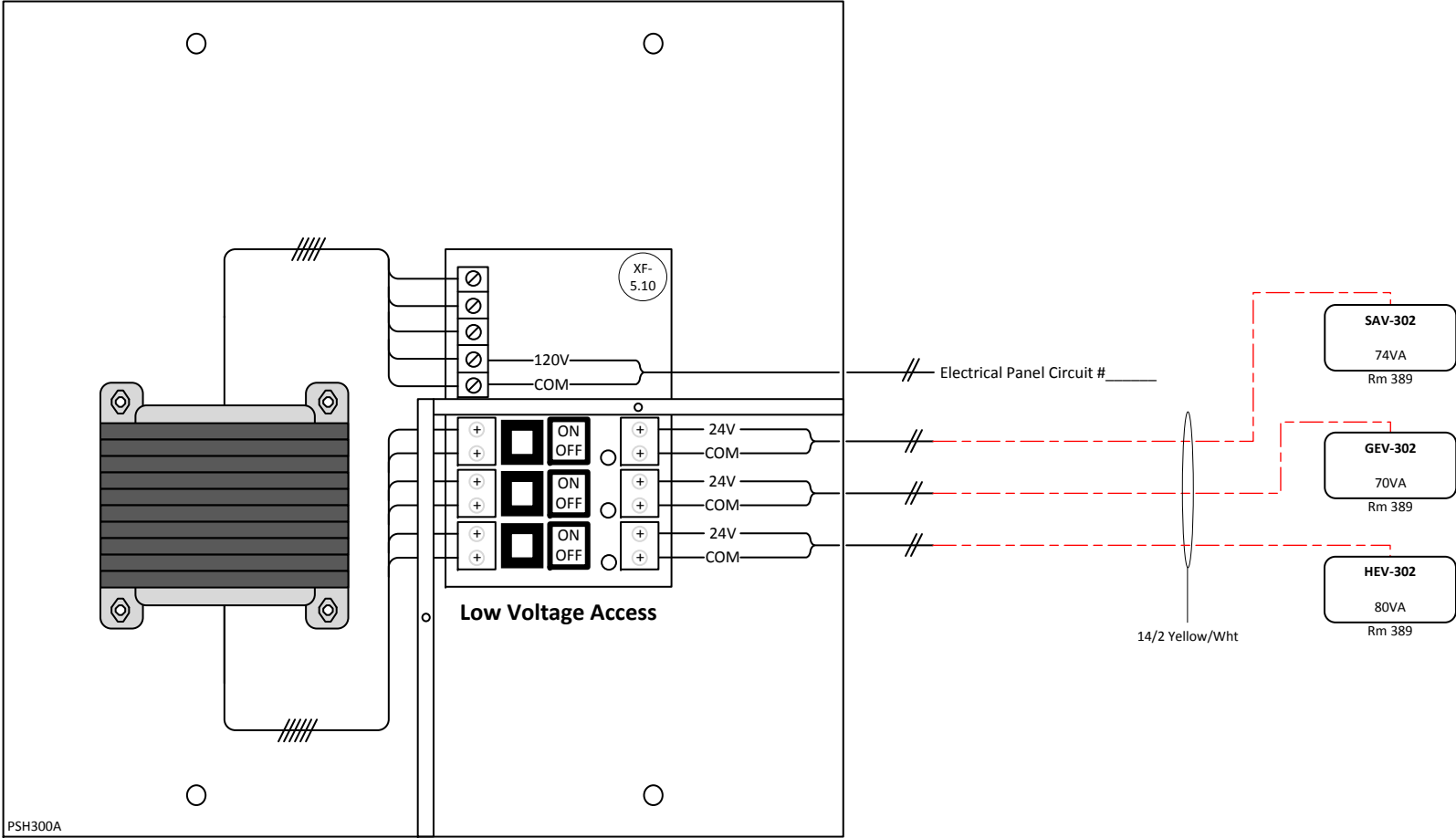


Phoenix Controls Level 03 24V Power Riser (6)

| Instrument List |                                             |                    |             |          |
|-----------------|---------------------------------------------|--------------------|-------------|----------|
| Tag             | Product Description                         | Manufacturer       | Part Number | Quantity |
| XF-5.#          | Enclosed 300VA Pwr Supply, 3x100VA Circuits | Functional Devices | PSH300A     | 1        |

Notes:  
1. This power riser shows the wiring in a daisy chained configuration. It is best to run the power wiring the shortest distance possible to the transformer. The maximum VA per circuit is 90VA. wiring runs will need to be documented for As-Built documentation.

Power Distribution Panel - Wiring Detail  
Location - TBD

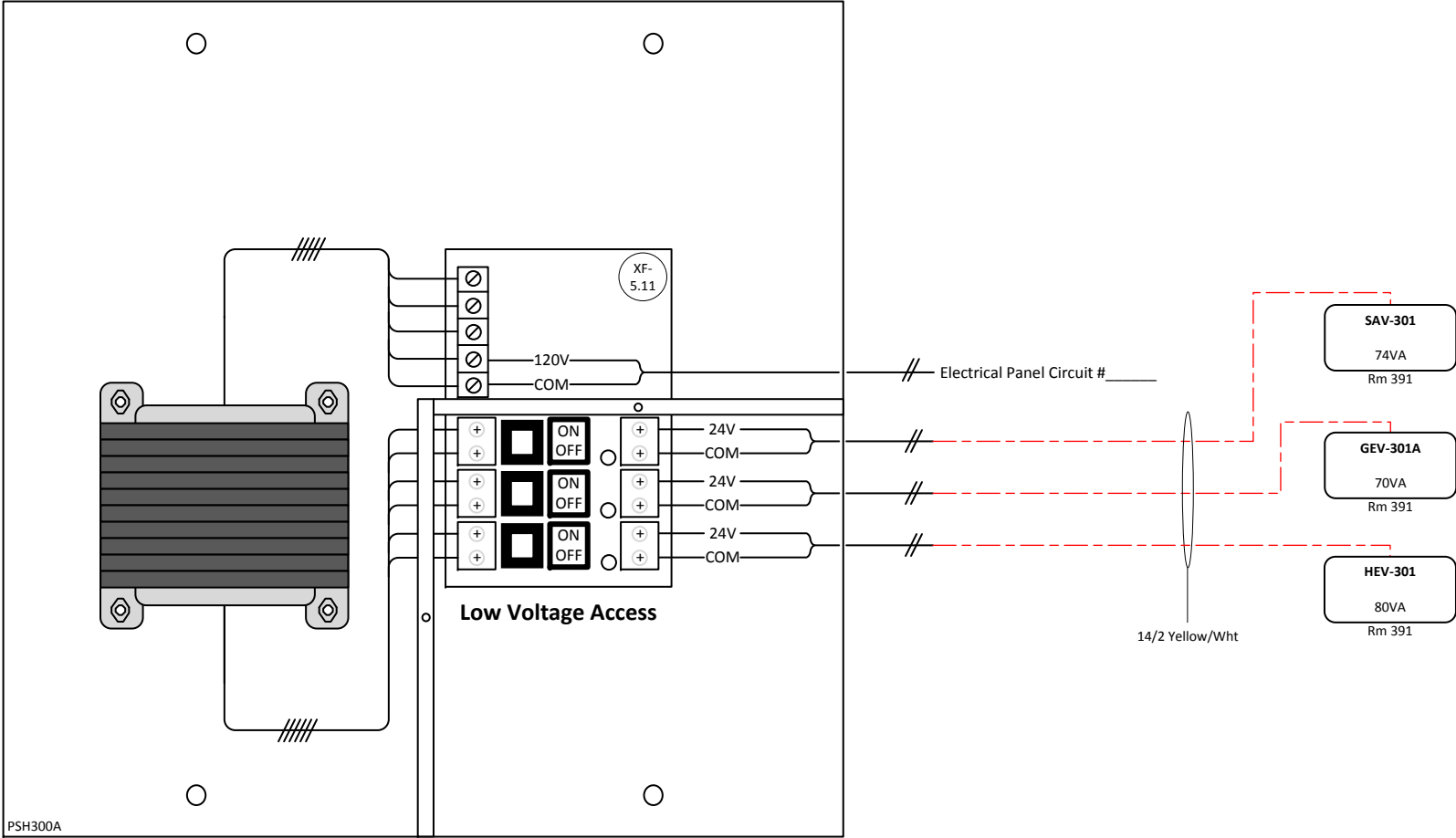


Phoenix Controls Level 03 24V Power Riser (7)

| Instrument List |                                             |                    |             |          |
|-----------------|---------------------------------------------|--------------------|-------------|----------|
| Tag             | Product Description                         | Manufacturer       | Part Number | Quantity |
| XF-5.#          | Enclosed 300VA Pwr Supply, 3x100VA Circuits | Functional Devices | PSH300A     | 1        |

**Notes:**  
1. This power riser shows the wiring in a daisy chained configuration. It is best to run the power wiring the shortest distance possible to the transformer. The maximum VA per circuit is 90VA. wiring runs will need to be documented for As-Built documentation.

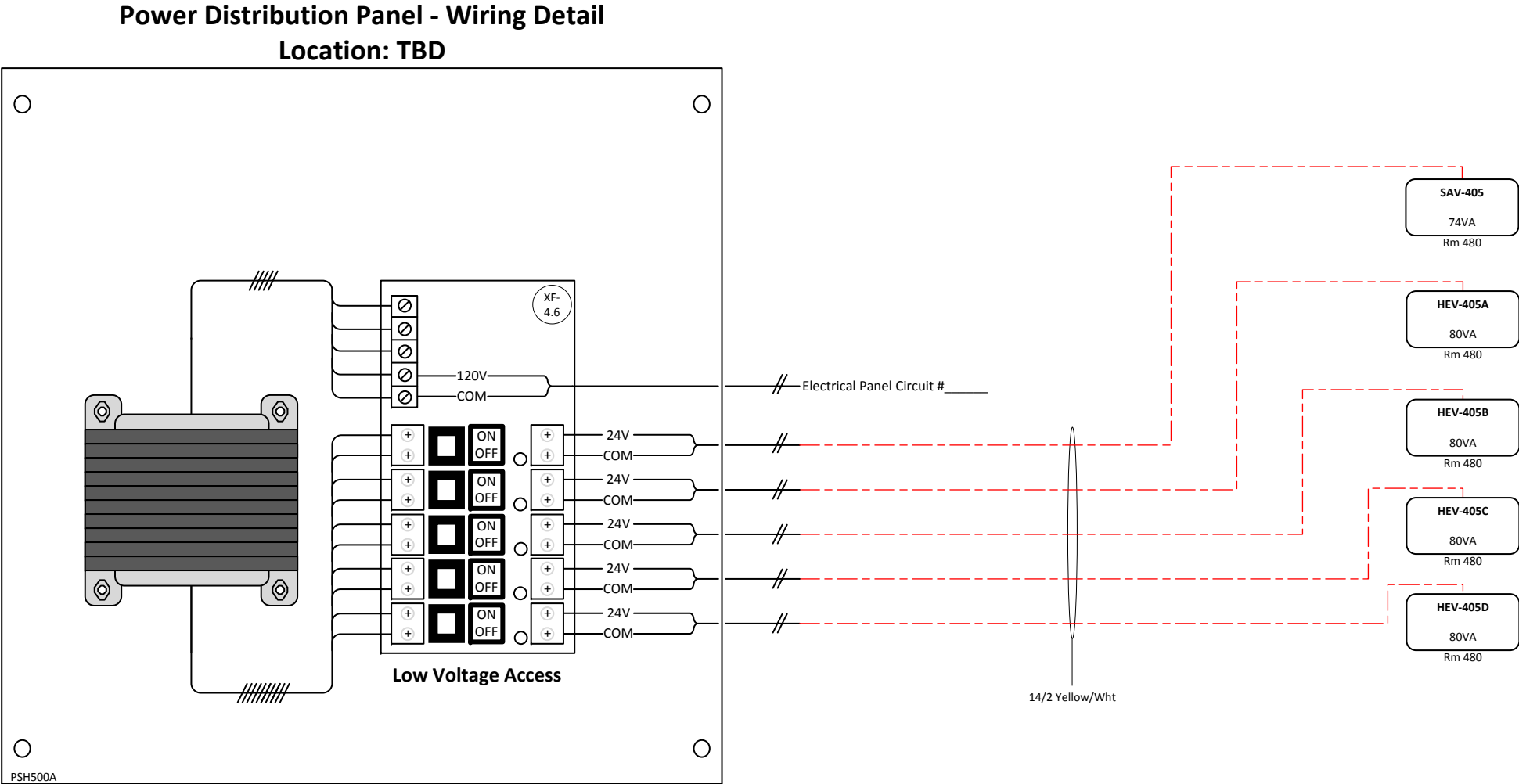
Power Distribution Panel - Wiring Detail  
Location - TBD



Phoenix Controls Level 04 24V Power Riser (1)

| Instrument List |                                             |                    |             |          |
|-----------------|---------------------------------------------|--------------------|-------------|----------|
| Tag             | Product Description                         | Manufacturer       | Part Number | Quantity |
| XF-4.#          | Enclosed 500VA Pwr Supply, 5x100VA Circuits | Functional Devices | PSH500A     | 1        |

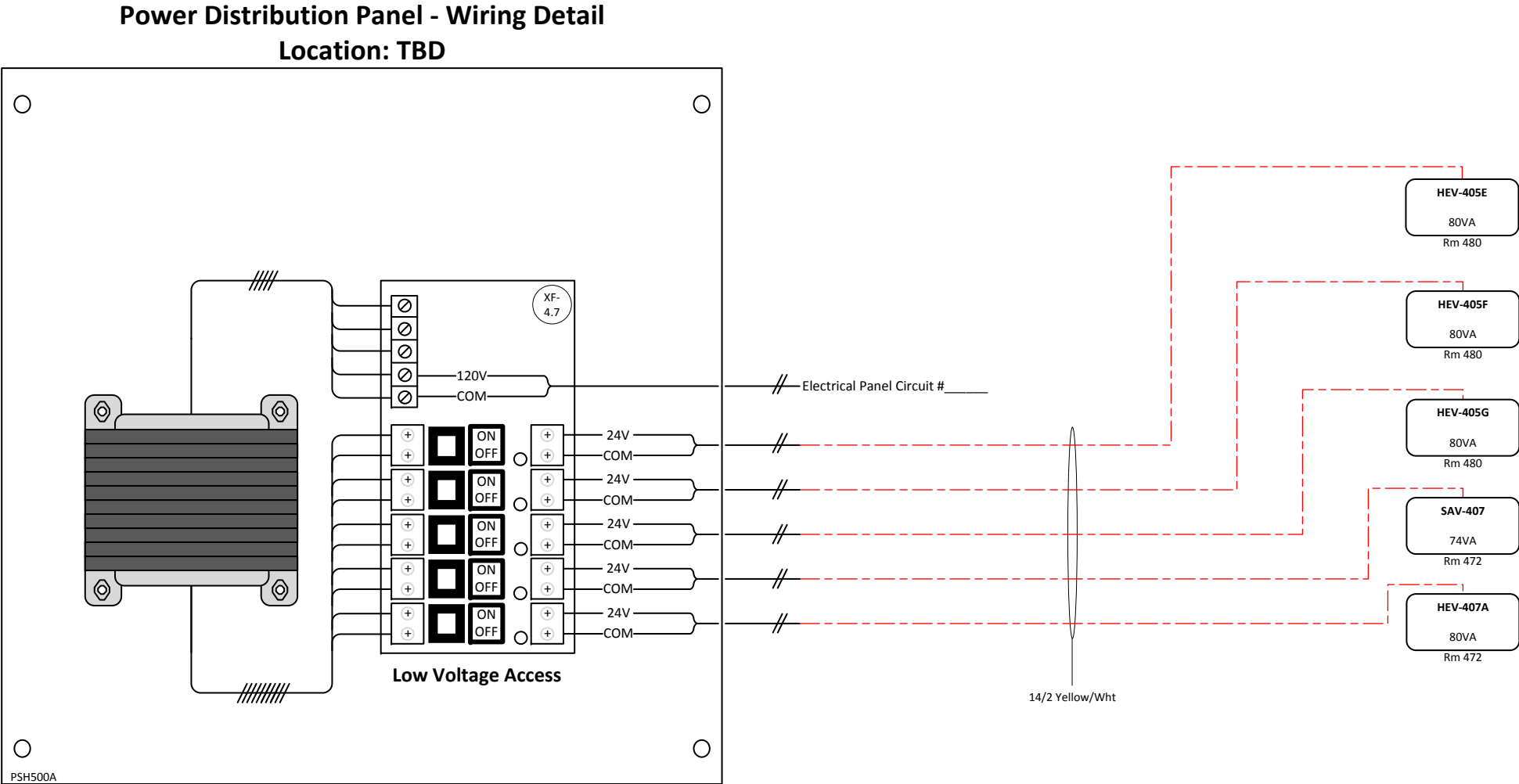
**Notes:**  
1. This power riser shows the wiring in a daisy chained configuration. It is best to run the power wiring the shortest distance possible to the transformer. The maximum VA per circuit is 90VA. wiring runs will need to be documented for As-Built documentation.



Phoenix Controls Level 04 24V Power Riser (2)

| Instrument List |                                             |                    |             |          |
|-----------------|---------------------------------------------|--------------------|-------------|----------|
| Tag             | Product Description                         | Manufacturer       | Part Number | Quantity |
| XF-4.#          | Enclosed 500VA Pwr Supply, 5x100VA Circuits | Functional Devices | PSH500A     | 1        |

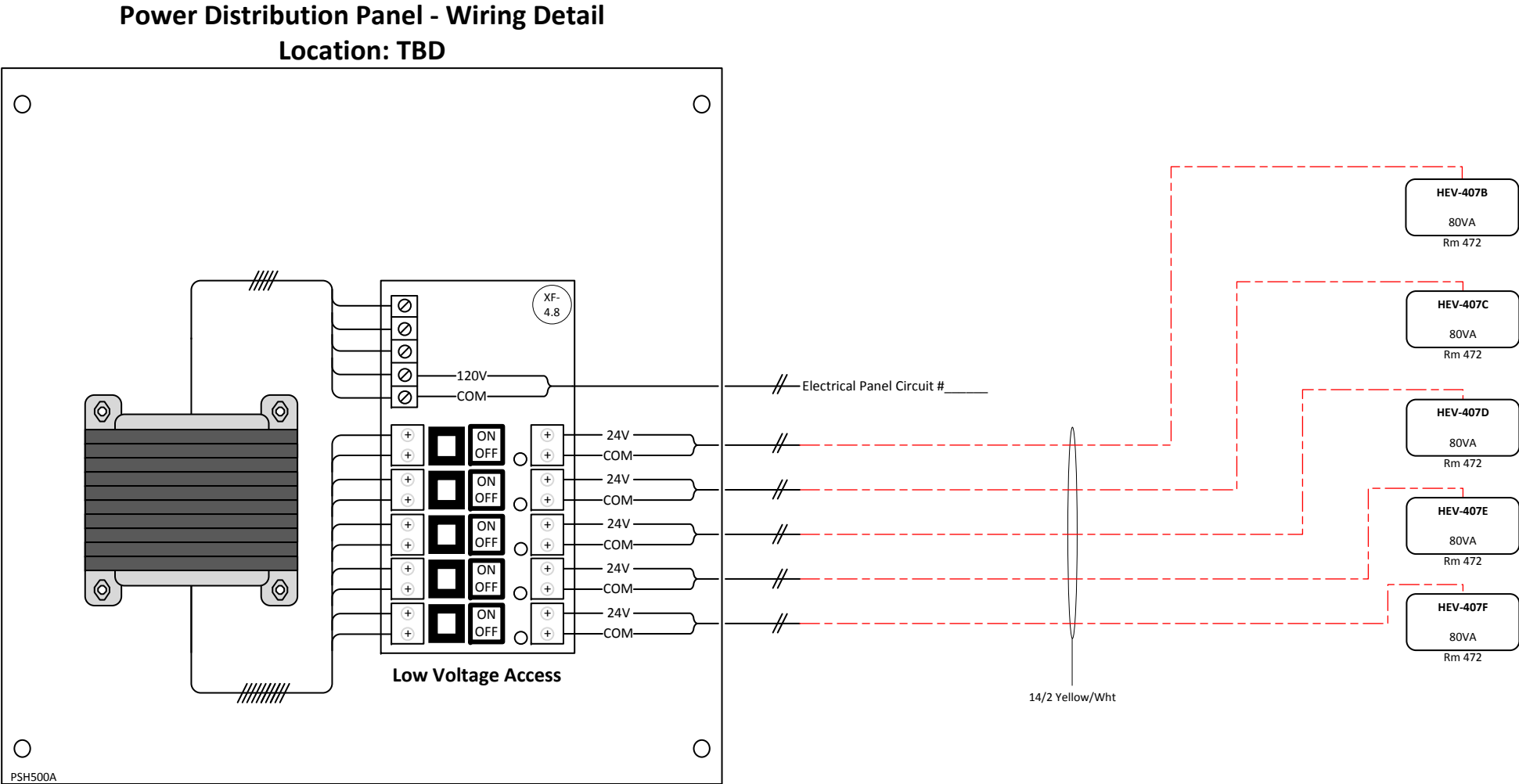
Notes:  
1. This power riser shows the wiring in a daisy chained configuration. It is best to run the power wiring the shortest distance possible to the transformer. The maximum VA per circuit is 90VA. wiring runs will need to be documented for As-Built documentation.



Phoenix Controls Level 04 24V Power Riser (3)

| Instrument List |                                             |                    |             |          |
|-----------------|---------------------------------------------|--------------------|-------------|----------|
| Tag             | Product Description                         | Manufacturer       | Part Number | Quantity |
| XF-4.#          | Enclosed 500VA Pwr Supply, 5x100VA Circuits | Functional Devices | PSH500A     | 1        |

Notes:  
1. This power riser shows the wiring in a daisy chained configuration. It is best to run the power wiring the shortest distance possible to the transformer. The maximum VA per circuit is 90VA. wiring runs will need to be documented for As-Built documentation.

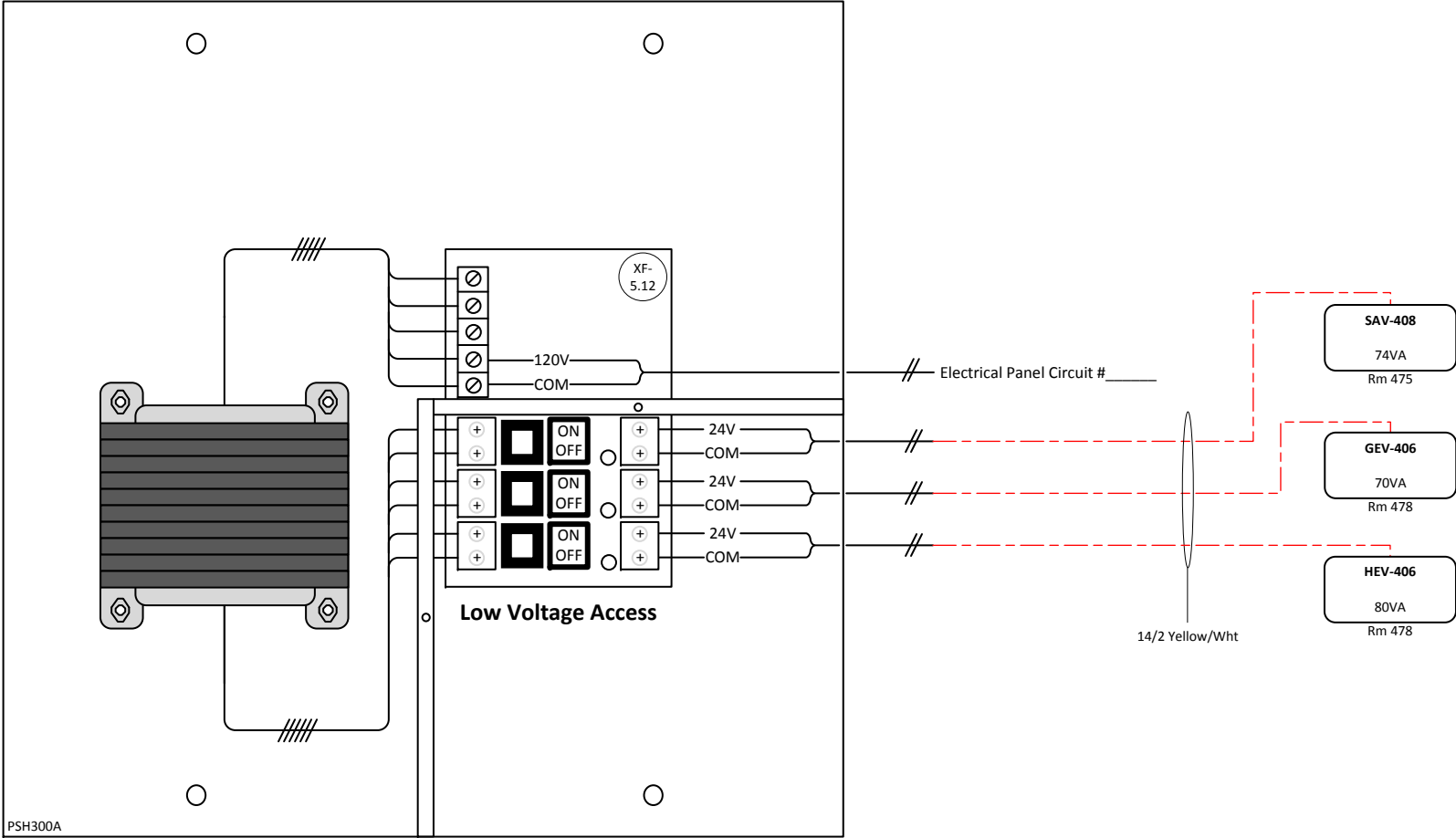


Phoenix Controls Level 04 24V Power Riser (4)

| Instrument List |                                             |                    |             |          |
|-----------------|---------------------------------------------|--------------------|-------------|----------|
| Tag             | Product Description                         | Manufacturer       | Part Number | Quantity |
| XF-5.#          | Enclosed 300VA Pwr Supply, 3x100VA Circuits | Functional Devices | PSH300A     | 1        |

**Notes:**  
1. This power riser shows the wiring in a daisy chained configuration. It is best to run the power wiring the shortest distance possible to the transformer. The maximum VA per circuit is 90VA. wiring runs will need to be documented for As-Built documentation.

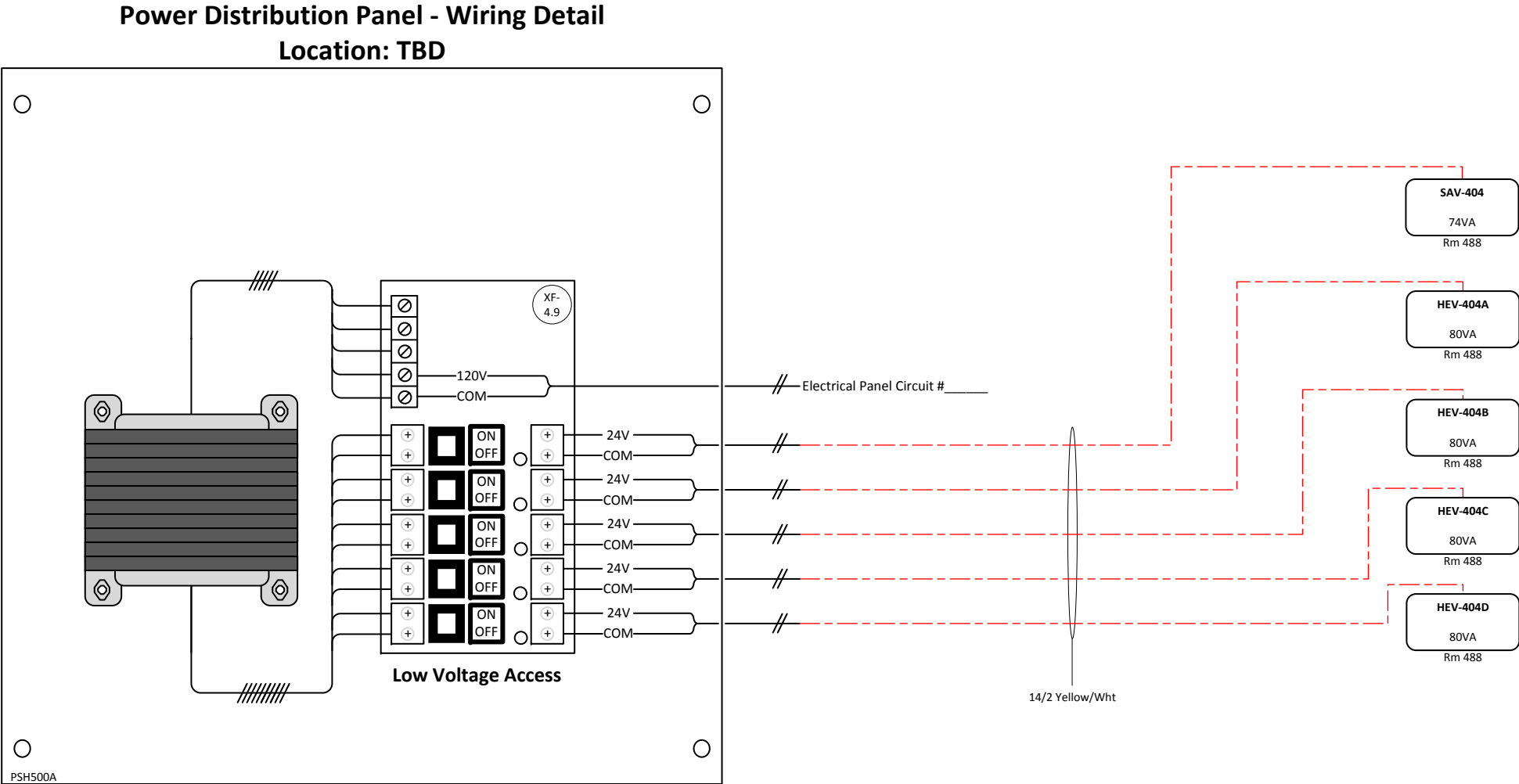
Power Distribution Panel - Wiring Detail  
Location - TBD



Phoenix Controls Level 04 24V Power Riser (5)

| Instrument List |                                             |                    |             |          |
|-----------------|---------------------------------------------|--------------------|-------------|----------|
| Tag             | Product Description                         | Manufacturer       | Part Number | Quantity |
| XF-4.#          | Enclosed 500VA Pwr Supply, 5x100VA Circuits | Functional Devices | PSH500A     | 1        |

Notes:  
1. This power riser shows the wiring in a daisy chained configuration. It is best to run the power wiring the shortest distance possible to the transformer. The maximum VA per circuit is 90VA. wiring runs will need to be documented for As-Built documentation.



Phoenix Controls Level 04 24V Power Riser (6)

| Instrument List |                                             |                    |             |          |
|-----------------|---------------------------------------------|--------------------|-------------|----------|
| Tag             | Product Description                         | Manufacturer       | Part Number | Quantity |
| XF-4.#          | Enclosed 500VA Pwr Supply, 5x100VA Circuits | Functional Devices | PSH500A     | 1        |

Notes:  
1. This power riser shows the wiring in a daisy chained configuration. It is best to run the power wiring the shortest distance possible to the transformer. The maximum VA per circuit is 90VA. wiring runs will need to be documented for As-Built documentation.

