

Installation Instructions and Operator Manual for the Appleton™ PlexPower™ Fiber Panelboard

FOR PROPER AND SAFE INSTALLATION OF THIS PRODUCT, PLEASE READ AND RETAIN THE FOLLOWING INSTRUCTIONS.

Applications

The PlexPower™ Fiber Panelboard provides control of electrical circuits and communications patch panels in hazardous environments such as:

- Petroleum plants
- Chemical plants
- Refineries
- Wastewater treatment plants
- Paper and pulp industries
- Other process facilities



Product Safety

PlexPower Fiber Panelboard with Belden Fiber Patch Panel having 1,2,3 or 4 Single Module in place.

Signal Words Defined

DANGER: Indicates a hazardous situation which, if not avoided, will result in death or serious injury. **WARNING:** Indicates a hazardous situation which, if not avoided, could result in death or serious injury. **CAUTION:** Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury. **NOTICE:** Is used to address practices not related to physical injury.

Safety Instructions

▲ WARNING: Before replacing any part or accessory of the panel, ensure that the power to panel Mains is Switched OFF.

▲ CAUTION: Live parts behind the cover; only authorized person to open.

▲ NOTICE: For Internally Actuated Panel, a Dead Front Plate is supplied to ensure safe operation which will protect operators from electrocution.

Installation

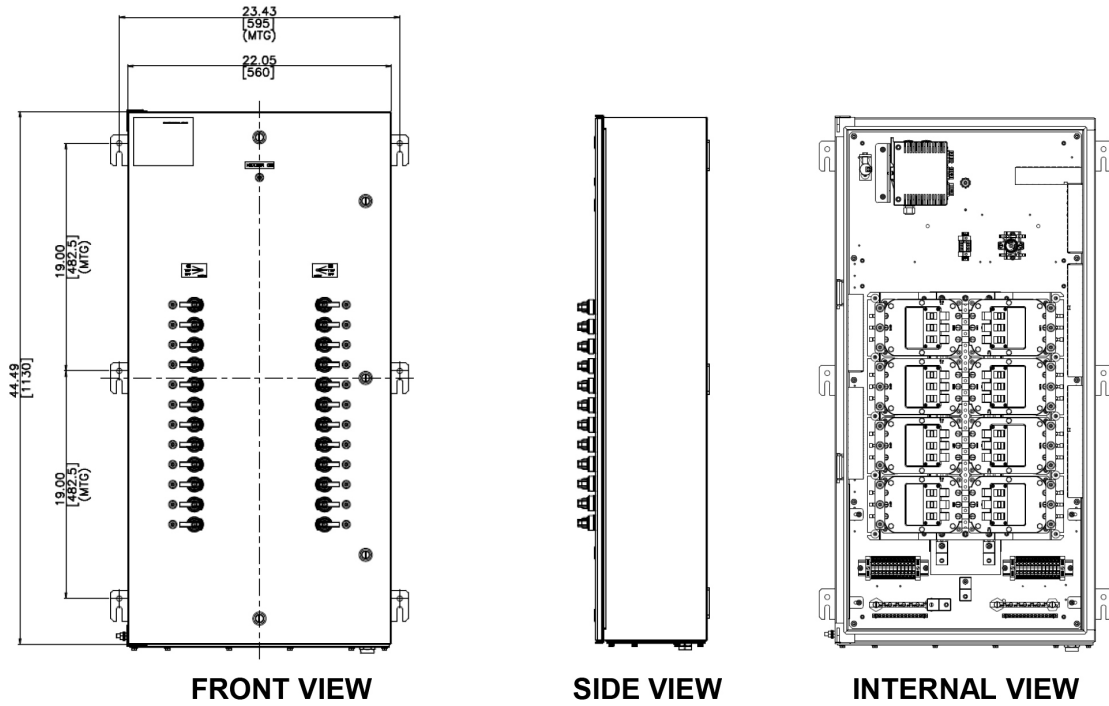


FIGURE 1 - PlexPower Fiber Panel Assembly (QC) External Actuation - Approx. Weight: 90 kg

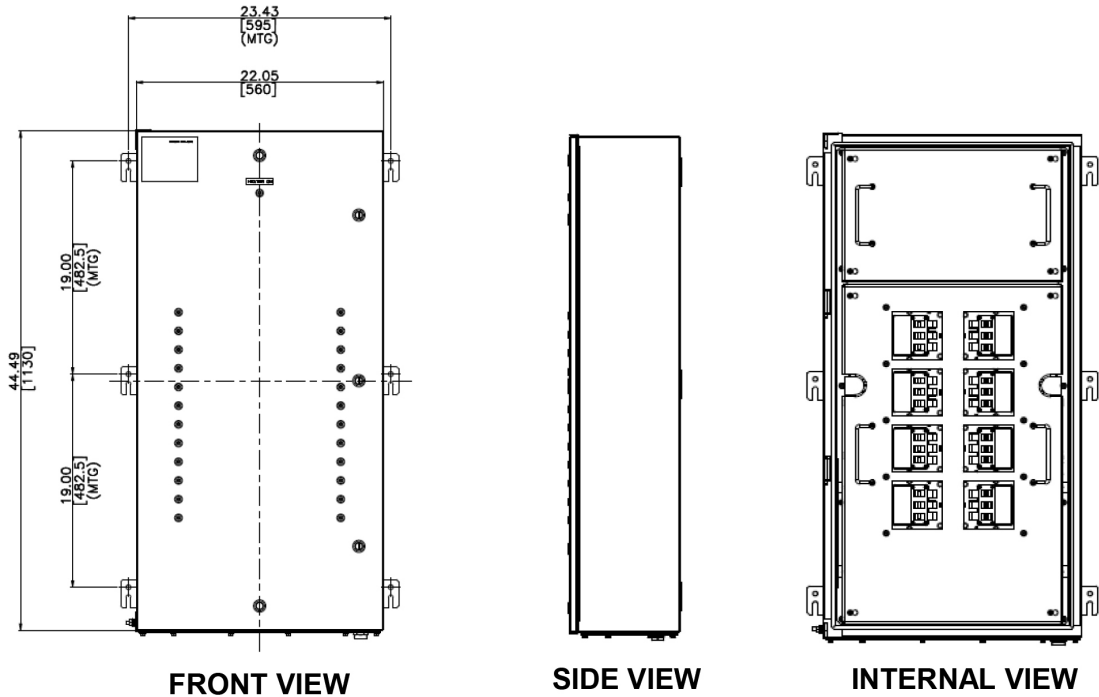


FIGURE 2 - FIGURE 1 - PlexPower Fiber Panel Assembly (QC) Internal Actuation - Approx. Weight: 85 kg

Owner's Responsibility:

- All installation instructions need to be followed.
- Users need to follow latest edition of the National Electrical Code® or the Canadian Electrical Code for installation guidelines.
- Inspect the panelboard thoroughly before operating.
- Understand how to operate all standard and accessory equipment.
- Ensure that anyone operating or maintaining the panelboard is qualified.
- Retain these instructions for reference during future inspections and maintenance.

Lifting & Moving Panel by Using an Eye Bolt

To lift the the panelboard, use M10 Eye Bolt and fix it into both top mounting foot of panelboard enclosure and fasten it with nut. Lift panelboard vertically with the help of a crane, wire rope, chain, sling belt etc. to enable movement/transfer of panel to mounting location.

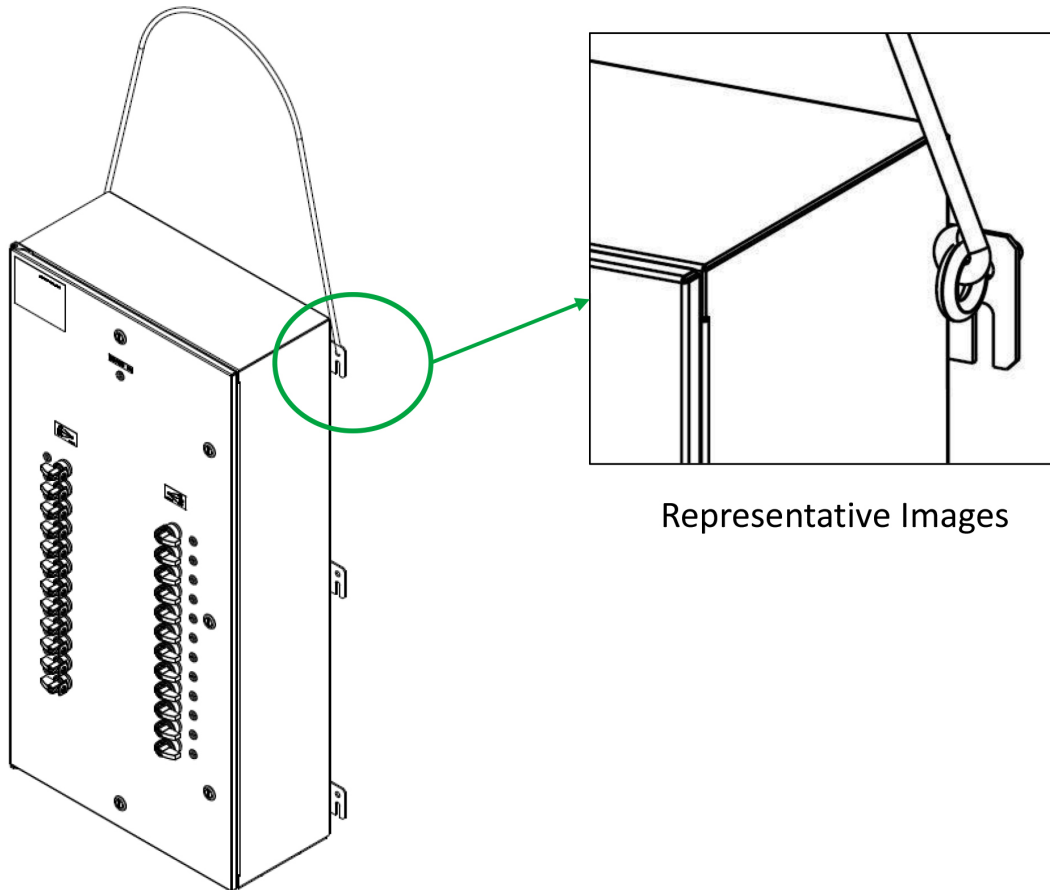


FIGURE 3 - PlexPower Fiber Panelboard

Lifting & Moving Panel by Using Forklift Truck

Follow the instructions/procedure below to transfer the panel from one location to another by using forklift.

- Keep the panelboard vertical on a stand/pallet from which we can lift it and transfer to desired location. Transfer of panel with forklift without using any pallet or stand could damage Gland plate provided on panel bottom.
- Ensure that Panelboard mounting location is at front of forklift truck.
- For additional safety during transfer, it is necessary to secure Panelboard to forklift truck with belt/wire rope/chain.
- Actuation components should not get damaged during transfer.

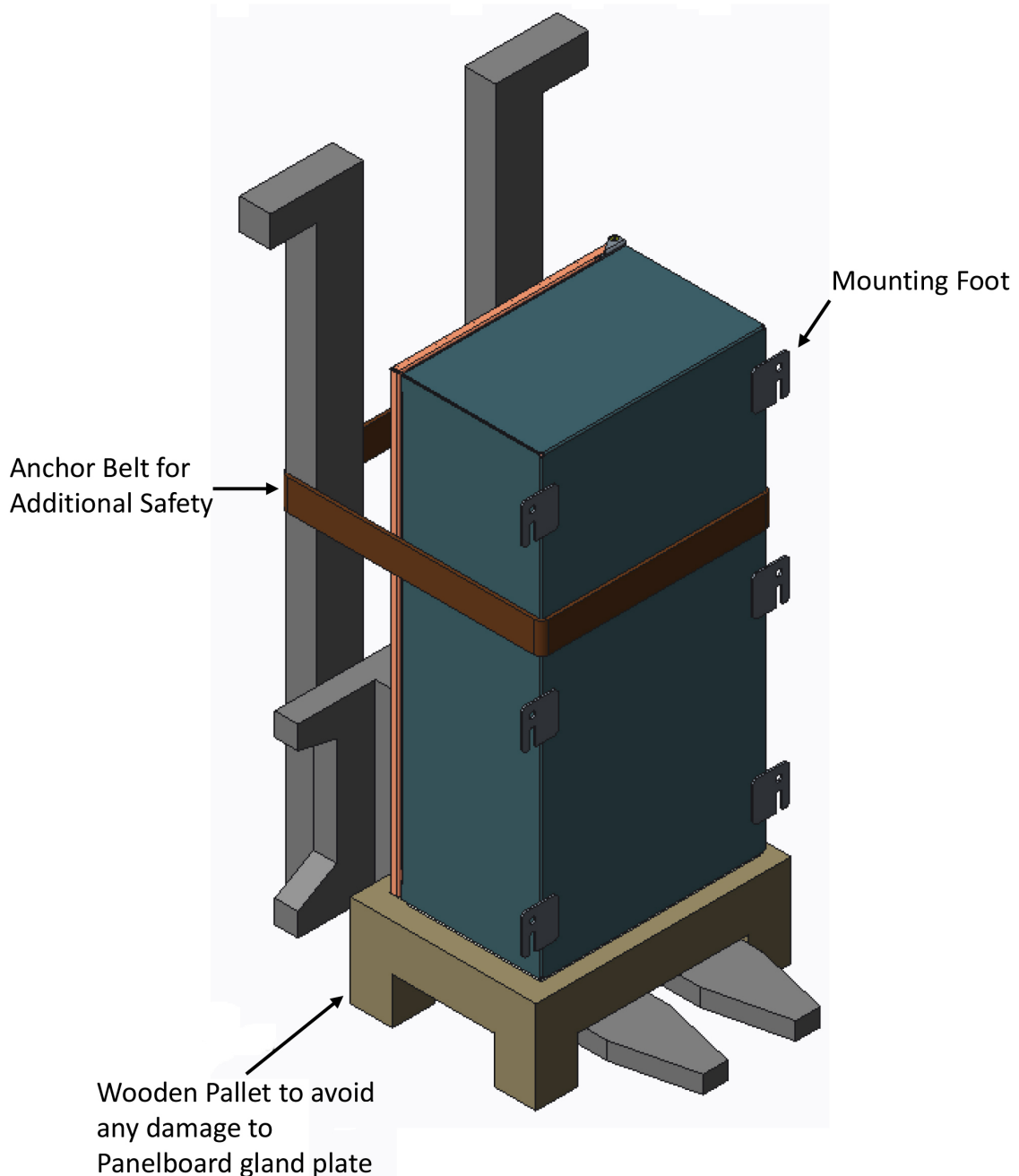


FIGURE 4

Mounting:

- Ensure mounting studs/bolts are in place on mounting frame, mounting strut, wall etc. according to dimensions specified on the drawings included in [Figures 1 and 2](#).
- The panelboard is intended to be mounted vertically. Use mounting feet U-Slot for positioning and fastening panelboard.
- Since upper mounting locations are tied with panel lifting accessories, use bottom mounting feet first for securing panelboard using M10 Bolt.
- Once the bottom mounting locations are fastened, release lifting accessories and fasten upper mounting locations with wall or frame.
- All mounting locations must be secured properly to avoid any damage.
- If you find any damaged mounting feet, consult [factory](#).

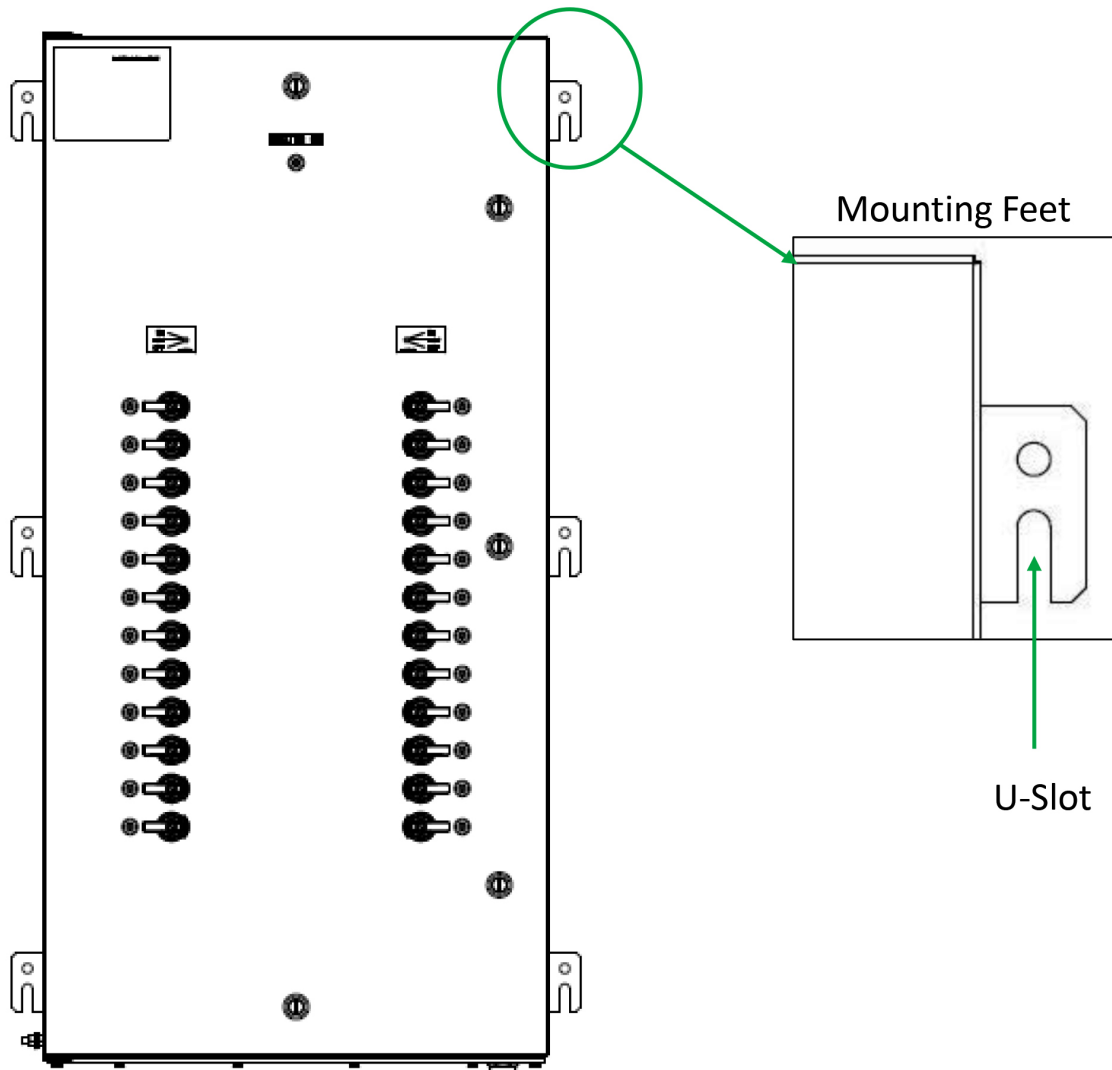


FIGURE 5 - PlexPower Fiber Panelboard

Mounting Procedure:

- After both bottom and middle mounting feet are fixed, remove the eye bolt from top mounting foot and fix it with M10 bolt.
- Make sure that all the bolts are fully tight.
- The number of bolts required to mount the panel should be equal to the number of mounting feet of panel.
- Keep a 20" clearance to the left of the panel to facilitate the 120° door swing.
- Clearance between the floor and panelboard bottom is to be at least 1 foot.

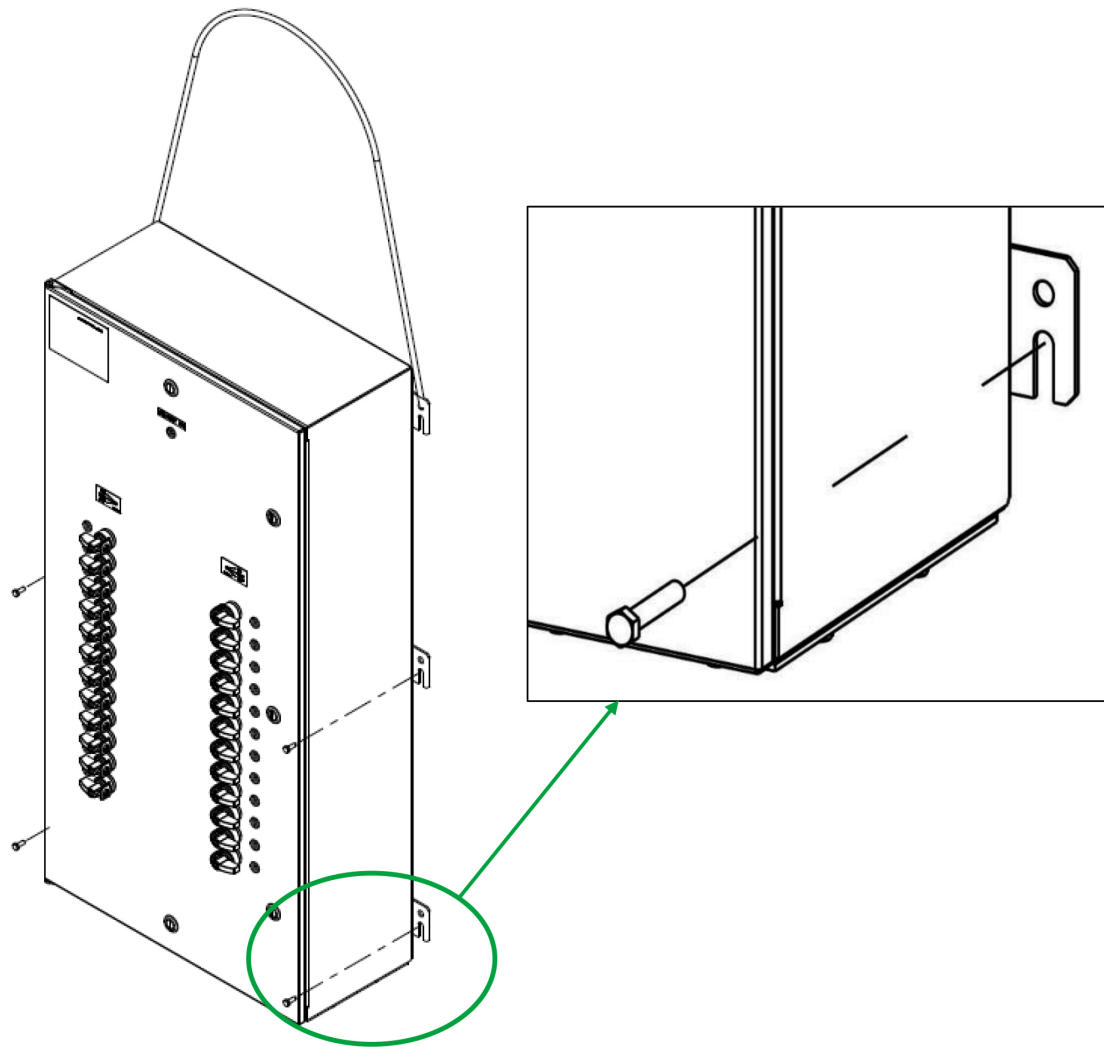


FIGURE 6

Electrical Connections:

- 1) To open the panelboard's cover for wiring, unlock the latches on the panelboard using a screwdriver.
- 2) Incoming supply can be wired to line side of QC housing (Figure 7).
- 3) Load side connections are hard-wired (customer wiring).
- 4) Main ground lug is provided for system ground.

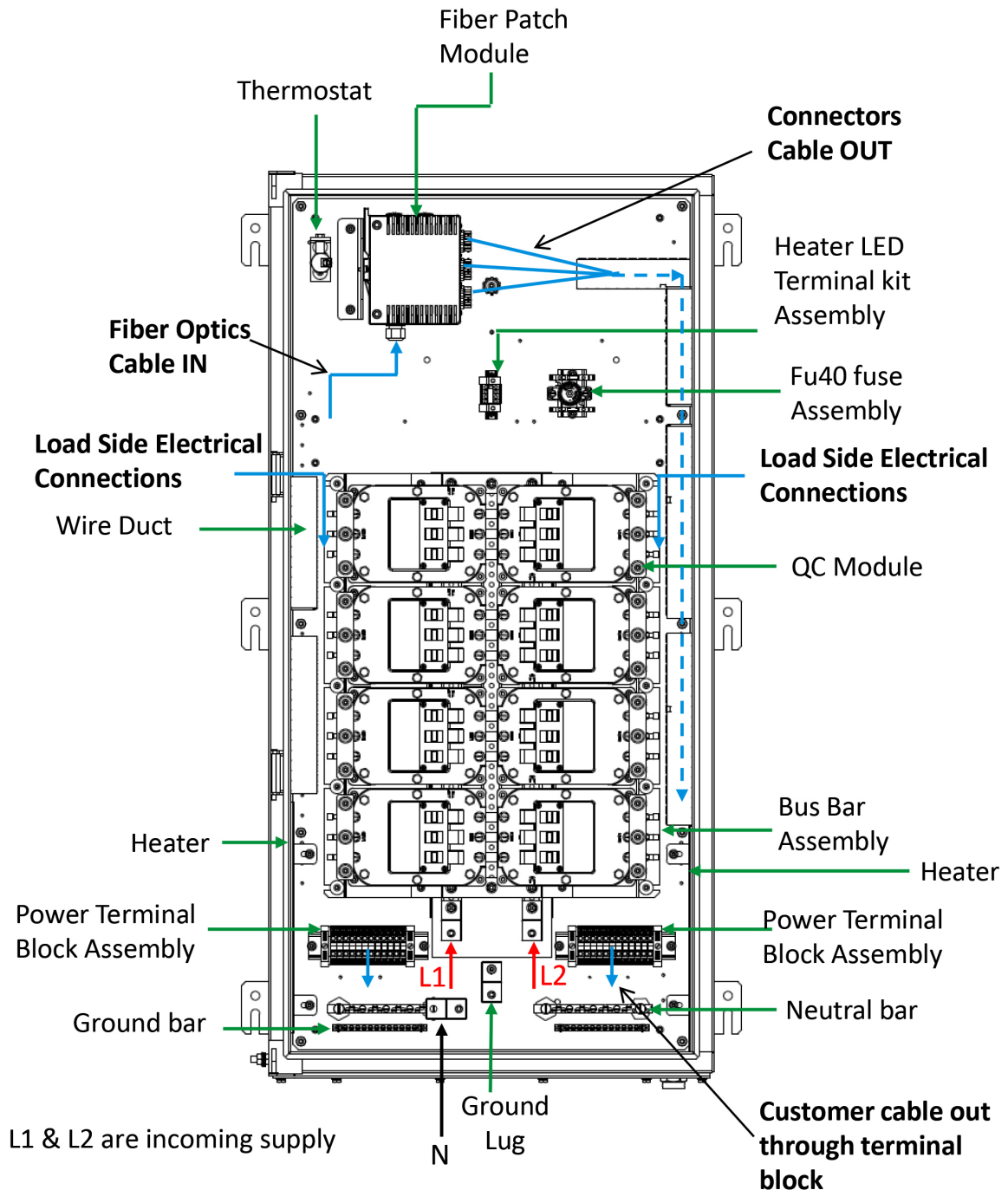


FIGURE 7 - PlexPower Fiber Panel Assembly

Wiring Connections for Customer Input and Output

Incoming and outgoing connection to panel:

- To facilitate cable connections to line of panel and to take out cables towards load from power terminal blocks, user needs to drill holes on gland plate provided on bottom of enclosure.
- User needs to take into consideration the required cable size according to panel specifications.
- User needs to install certified cable gland from which incoming and outgoing wires can be routed.
- Appleton recommends using TC cable series.

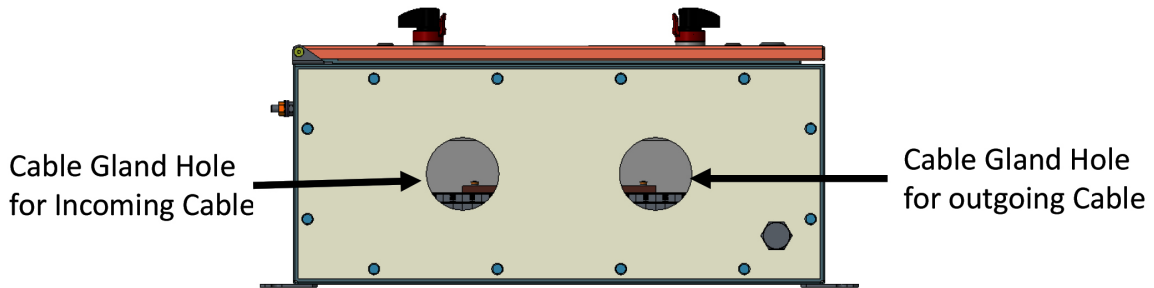


FIGURE 8

Bottom in Bottom Out Connection

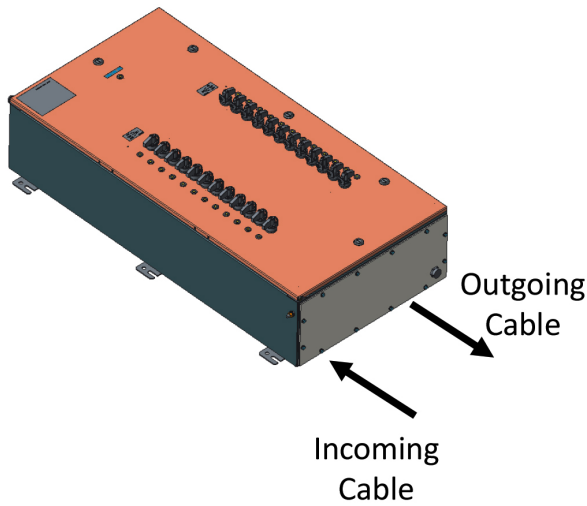


FIGURE 9

Top in Bottom Out Connection

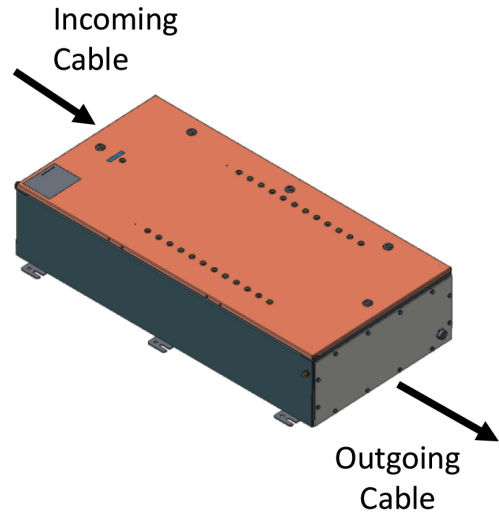


FIGURE 10

Wiring Diagram

To connect cables from load to panelboard power terminal blocks, refer below wiring diagram and terminal block marking.

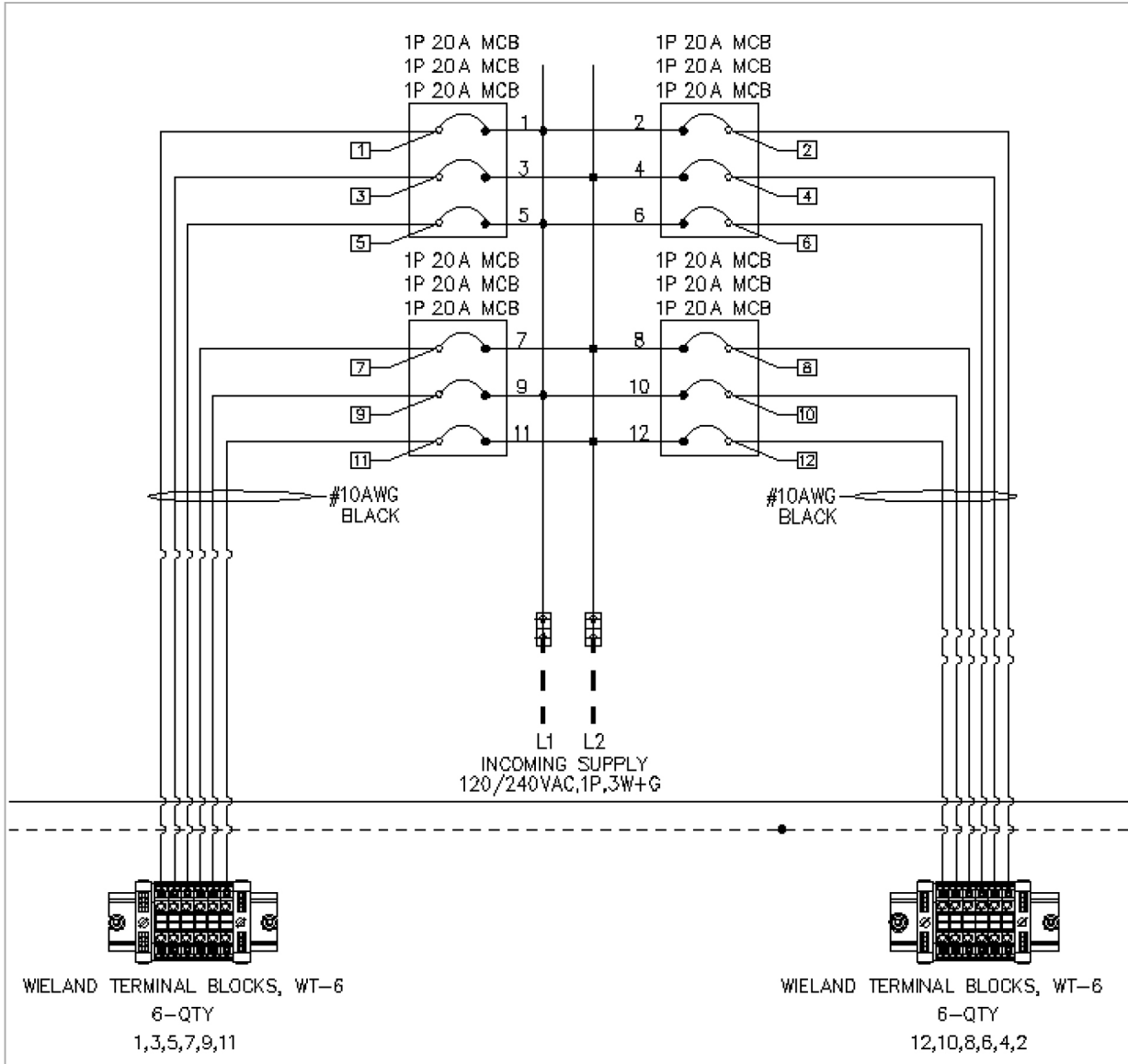


FIGURE 11


Wire Sizing Chart For Breaker- Reference - CSA C22.2, NO. 5-02, Table 6.1.4.2.1, UL 489.

| TABLE 1 | |
|----------------|--------------------|
| Current (AMPS) | Required WIRE SIZE |
| 15A OR LESS | 14 AWG |
| 20A | 12 AWG MINIMUM |
| 25A-30A | 10 AWG MINIMUM |
| 40A-50A | 8 AWG MINIMUM |
| 60A | 6 AWG MINIMUM |

Terminals - Connection Devices

| TABLE 2 | | | | |
|-------------------|-------------------------|------------------------|-----------|-----------------------|
| Purpose | Conductor Size (UL/CSA) | Conductor Strip Length | Max. Amps | Pressure Screw Torque |
| Lug ILSCO TA-250 | 1/0 AWG | 0.85" | 150 A | 275 in.-lbs. |
| Conductor Range | Bolt/Stud Size | Standard Package | Item ID | NAED/UPC Number |
| 250 kcmil - 6 AWG | 5/16 | 25 | TA-250 | 0783669889420 |

| INFORMATION SHEET TIGHTENING TORQUE VALUES FOR ILSCO SOCKETHEAD SCREW CONNECTORS | |
|---|----------------------------------|
| Internal Socket Size Across Flats in Inches | Tightening Torque in Inch Pounds |
| | 5/16 |



INTERNAL SOCKET

Electrical Testing

All wiring must be checked and tested to ensure all circuits are according to plan and there are no unwanted opens, shorts or grounds. Do not power to the panel until the following steps are completed:

- Test each circuit to verify correct phasing and ground connections.
- Test each circuit for insulation resistance by merge ring, high voltage or hi-pot test; Be sure the system does not have any short circuits or unwanted grounds.
- If any circuit displays a resistance to another circuit or to ground of One Mega ohm or less, that circuit must be analyzed, corrected and tested to more than One Mega ohm before applying power.
- Perform these tests with circuit breakers in both the "ON" and "OFF" conditions.
- Once it has been determined that all Load and Line circuits are satisfactory, the next steps of installation may be completed.
- Check the terminals and connectors for looseness or signs of overheating.
- Overheating will show as discoloration, melting, or blistering of conductor/connector insulation, or as pitting or melting of conductor surfaces due to arcing.
- If there is evidence of overheating, terminations should be cleaned or replaced.
- Before re-energizing the panel, all terminations and cables should be refurbished to the condition when originally installed.

Operation

Branch Breaker

The Status of the branch breaker is determined by position of knob as indicated by the label. Operation is as simple as twisting the handle to the desired position.

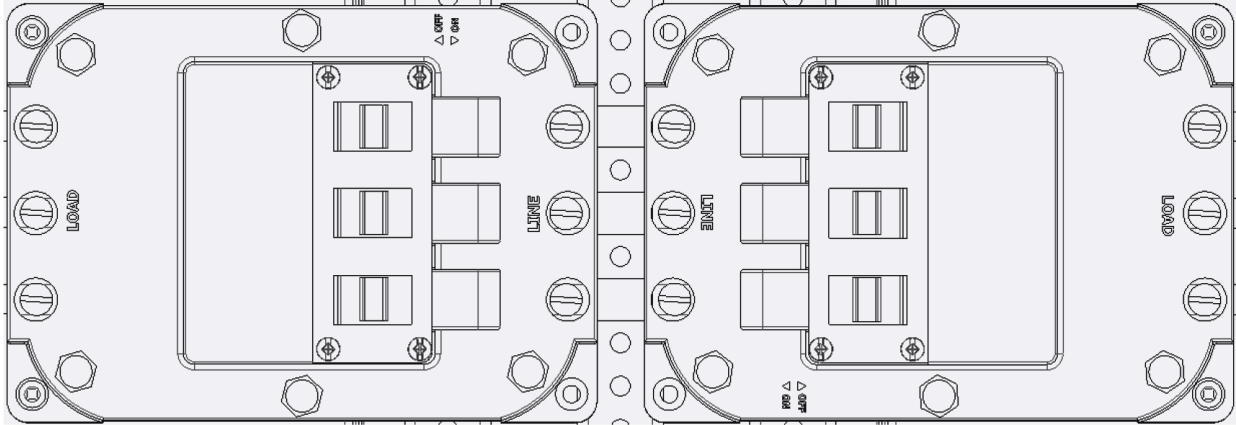


FIGURE 12

Split Type Dead Front:

By using a split type dead front arrangement a user can access power and data transmission parts separately inside a panel.

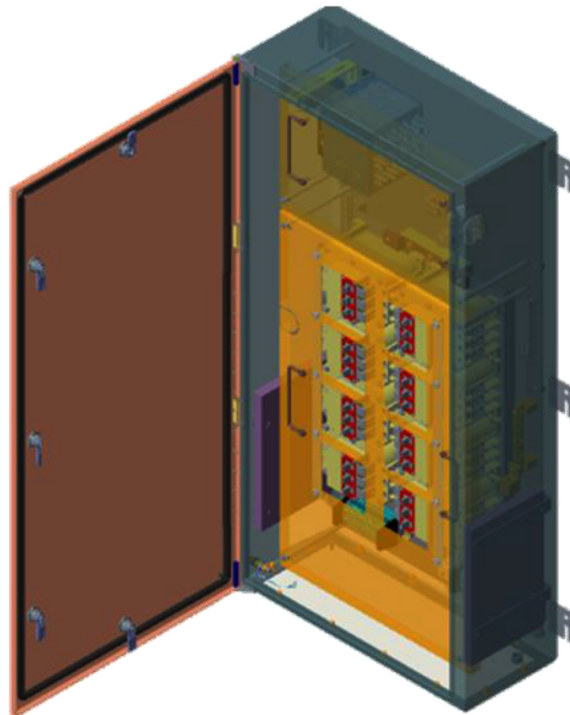
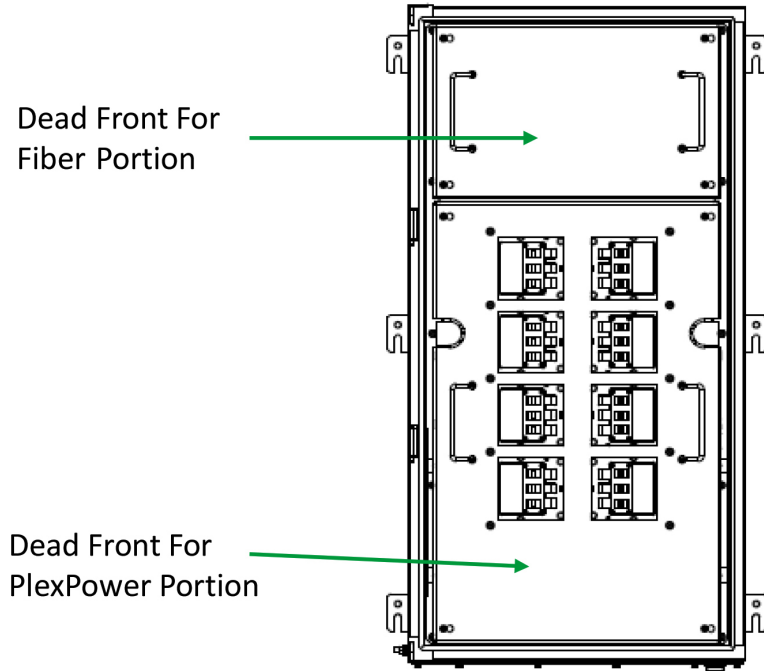


FIGURE 13

General Maintenance

Maintenance:

1. Before carrying out any work on equipment, cited safety instructions must be very carefully observed (DO NOT OPEN WITH POWER "ON").
2. Incoming power should be locked and tagged out for safety while in maintenance.
3. The hardware installed shall be inspected on regular schedule.
4. It is user's responsibility to ensure these inspections are implemented according to the protection modes of equipment hardware installed.
5. To ensure that breaker housing remain explosion-proof, before use of product, confirm cover attaching screws and cable inputs are appropriately torqued.
6. The flameproof function for product must be maintained for complete duration of service life therefore joints must be maintained in good condition.
7. No scratches, marks or modification is allowed on parts which are important for flame path (e.g. Body, Cover).
8. External lug assembly and connecting wires from other devices should be checked at regular intervals, for appropriate secureness, electrical safety etc.
9. Any appliance found to be defective should be replaced immediately.
10. Perform visual, electrical, and mechanical checks on all components on regular intervals.
 - Carry out Visual checks for undue heating events such as discoloration of wires or other components, damaged or worn parts, or leakage evidence such as ingress of water or corrosion of interior.
 - Conduct Electrical inspection to ensure that all connections are clean and tight.
 - Conduct Mechanical inspection to ensure all parts are properly assembled, and operating mechanisms are moving freely.
11. Contact service personnel if product does not function as desired.
12. Maintenance should be done by skilled and authorized personnel who have complete knowledge and understanding about product service and application.

WARNING

- Electrical Power must be turned OFF before and during Maintenance.
- Modification of this panel or substitution of parts with non-standard parts may result in Serious/Fatal Personnel injury due to Electrocutation.

Replacement Of Fiber Module:

- Remove all Fiber optics cable from Fiber Module.
- Remove Fiber module from the Din Rail.
- Replace module with (LC, SC or ST type) as per requirement.
- Reinstall Fiber Module in Din Rail.

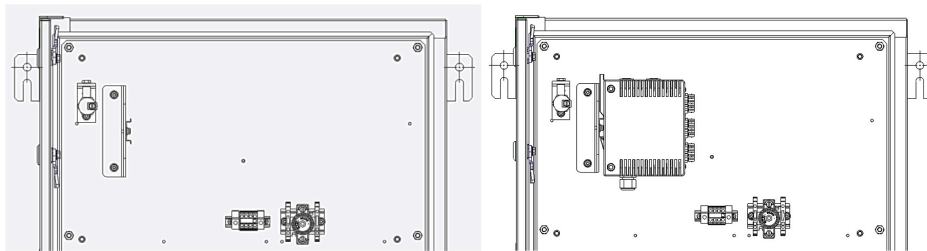
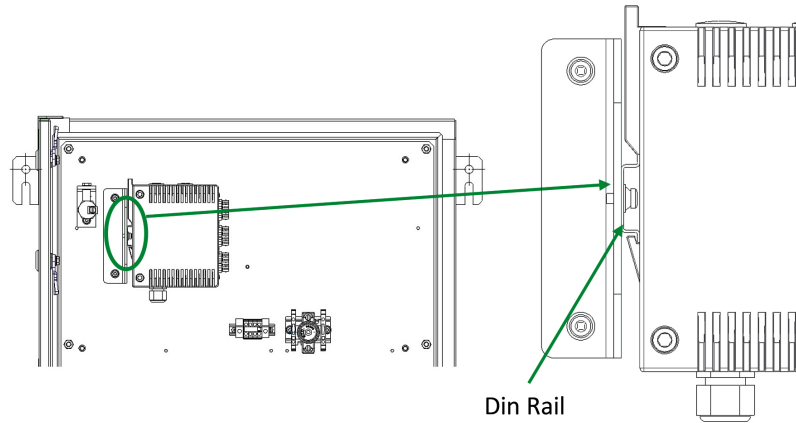


FIGURE 14 - ST Type Fiber Module

Replacement Of Fuses

1. Check continuity of fuse, if it is damaged, replace fuse.
2. Open fuse holder cap as shown in below sequence of images.
3. Then remove Fuse from Fuse holder body.
4. Install new Fuse into the Fuse Holder
5. Fix Fuse holder cap on body till it is securely fastened.

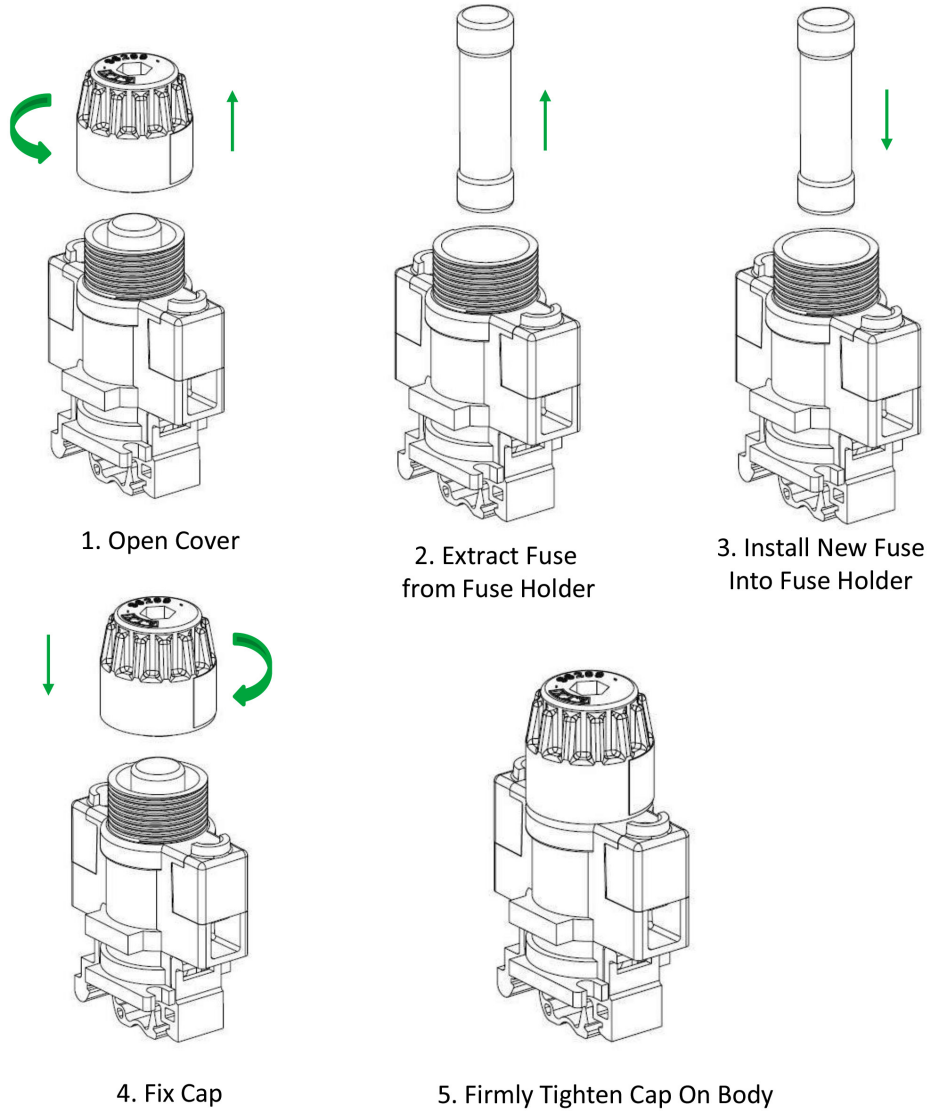


FIGURE 15

Replacement* Part Numbers

| Part Number | Description |
|--------------------|---|
| 59503856001 | aM FUSE 2 AMP 14x51 mm |
| ZF138213G | Terminal Block, Type WT6 GR |
| 59504457000 | Heater - HEF 100 |
| 59503931001 | Thermostat |
| 59504450002 | Modular Industrial Patch Panel 2 x Single Modules |
| 59504450004 | Belden Patch Panel Model MIPP/00/1B9N/ |
| SP59351106000 | PlexPower LED Indicator |

Except as expressly provided by Appleton Grp, LLC (Appleton), Appleton products are intended for ultimate purchase by industrial users and for operation by persons trained and experienced in the use and maintenance of this equipment and not for consumers or consumer use. Appleton warranties DO NOT extend to, and no reseller is authorized to extend Appleton's warranties to any consumer.

While every precaution has been taken to ensure accuracy and completeness in this manual, Appleton Grp, LLC, assumes no responsibility, and disclaims all liability for damages resulting from use of this information or for any errors or omissions. Specifications are subject to change without notice. The Appleton and Emerson logos are registered in the U.S. Patent and Trademark Office. All other product or service names are the property of their registered owners.

©2017 Appleton Grp, LLC. All rights reserved.