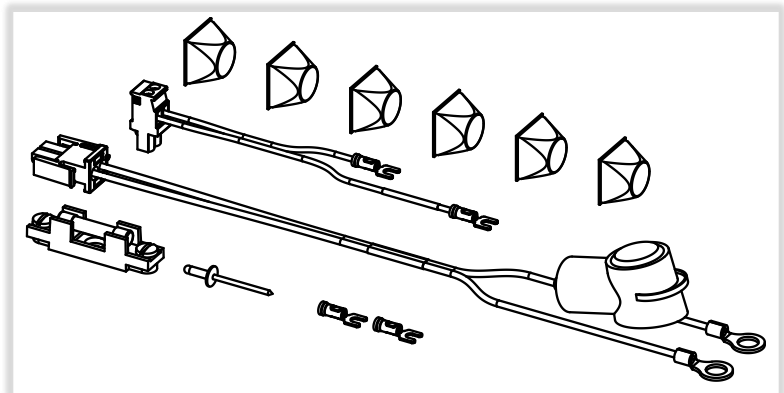


MX Solar Module
 Nominal System Voltage: 12VDC
 Output: 12VDC/12A max.
 Fuse(s): mini blade, 15A, SCCR 1kA
 See PV for PV electrical ratings.

Part number: 91946REVA
 Serial number: YYWW00000NNN

CAUTION: If adjacent cabling routed in the same pole or conduit carries voltages greater than 300V, consider cable insulation ratings and cable sleeving or wrap.
Contains FCC ID: SGG-PINNACLE1 and X9WB7840X
 This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
Contains IC: 3187A-PINNACLE1 and 4100A-BT840X
 This Class A digital apparatus complies with Canadian ICES 003.
 Cet appareil numérique de la classe A est conforme à la norme NMB 003 du Canada.
 Carmanah Technologies Corp. | 1.877.722.8877
 customersupport@carmanah.com | support.carmanah.com



WARNING Ensure all equipment and wiring is de-energized during installation and wiring of the AC power supply.



NOTE This document covers instructions for MX 300/400 AC to solar retrofits. A replacement solar power module circuit board is required for this retrofit.

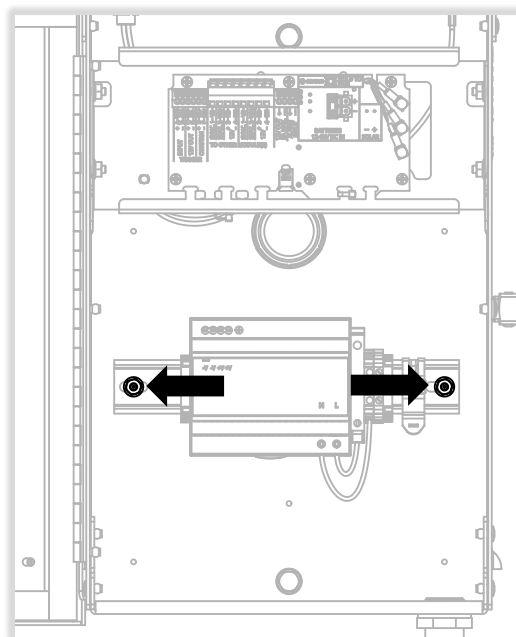
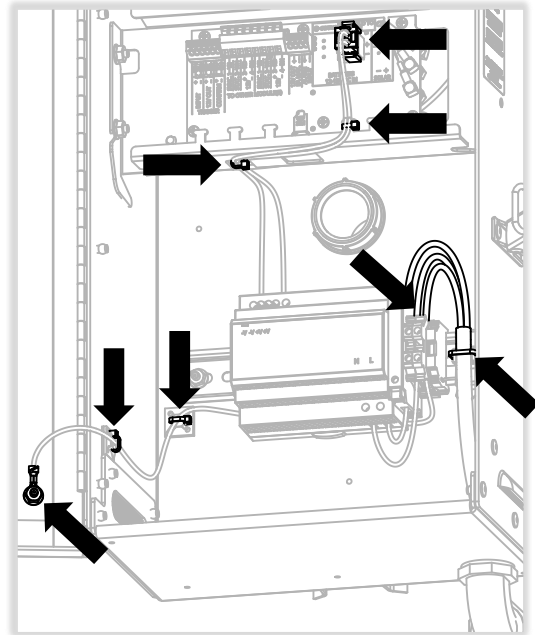
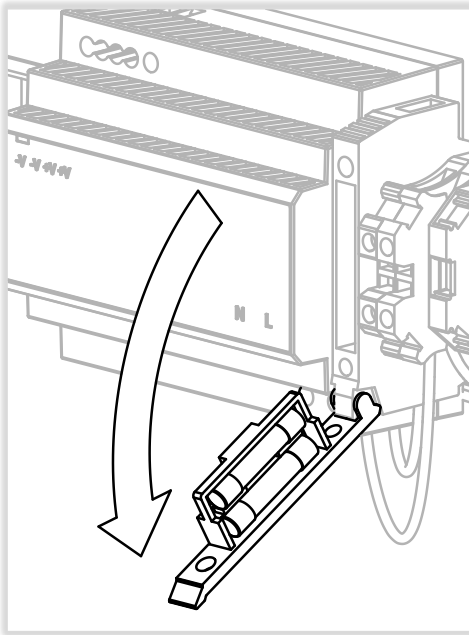


NOTE Contact Carmanah to have your MX Plus or MX Pro subscription, if applicable, transferred to the new power module.

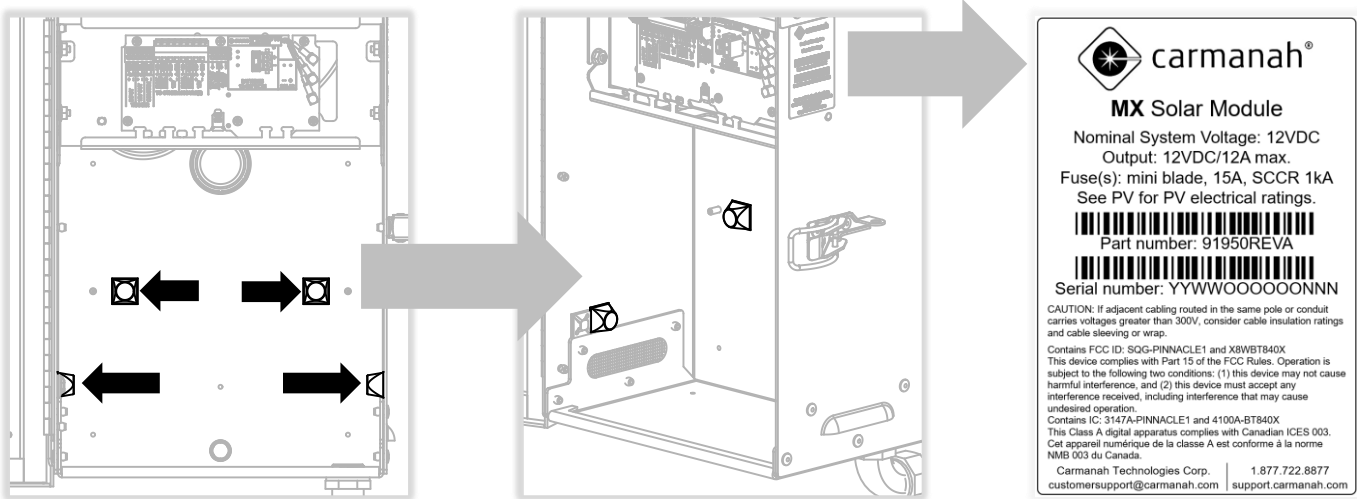


1.0 MX 300 AC to Solar Retrofit

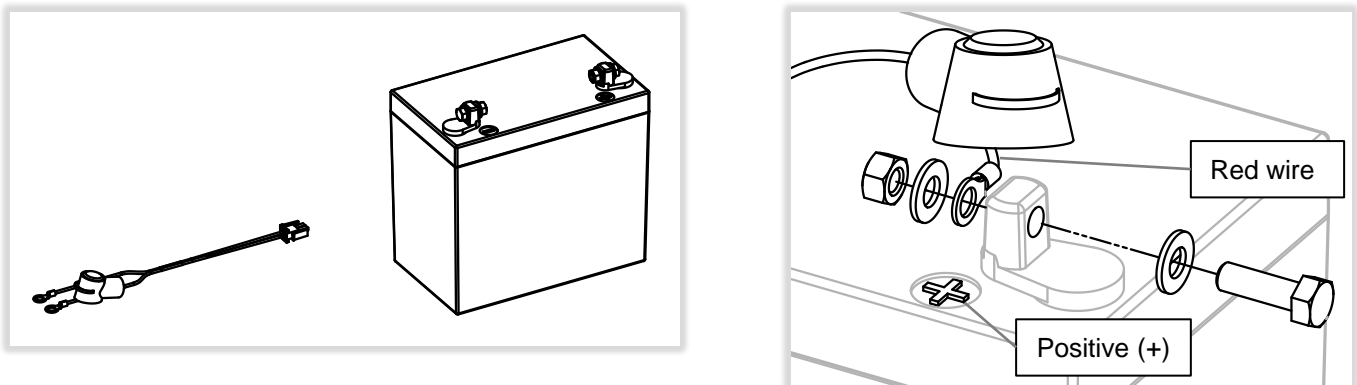
1. Turn off AC power at source.
2. Disconnect power to system by opening fuse holder as shown.
3. Cut cable tie securing AC input cable. Disconnect and remove input wires at terminal blocks.
4. Disconnect power supply output harness connector from circuit board. Cut cable ties securing harness.
5. Remove ground ring terminal on door stud. Cut cable ties securing ground wire.
6. Remove two nuts securing power supply DIN rail assembly. Remove and properly dispose of assembly.



7. Follow **LEVEL 4** Power Module Circuit Board Replacement Guide to replace existing AC circuit board with solar version supplied. AC circuit board may be kept as a spare for AC powered systems or be properly disposed of.
8. Clean battery bumper mounting locations shown with isopropyl alcohol. Install four adhesive backed bumpers.
9. Locate product label on outside of MX 300 cabinet. Apply new product label overtop existing product label.

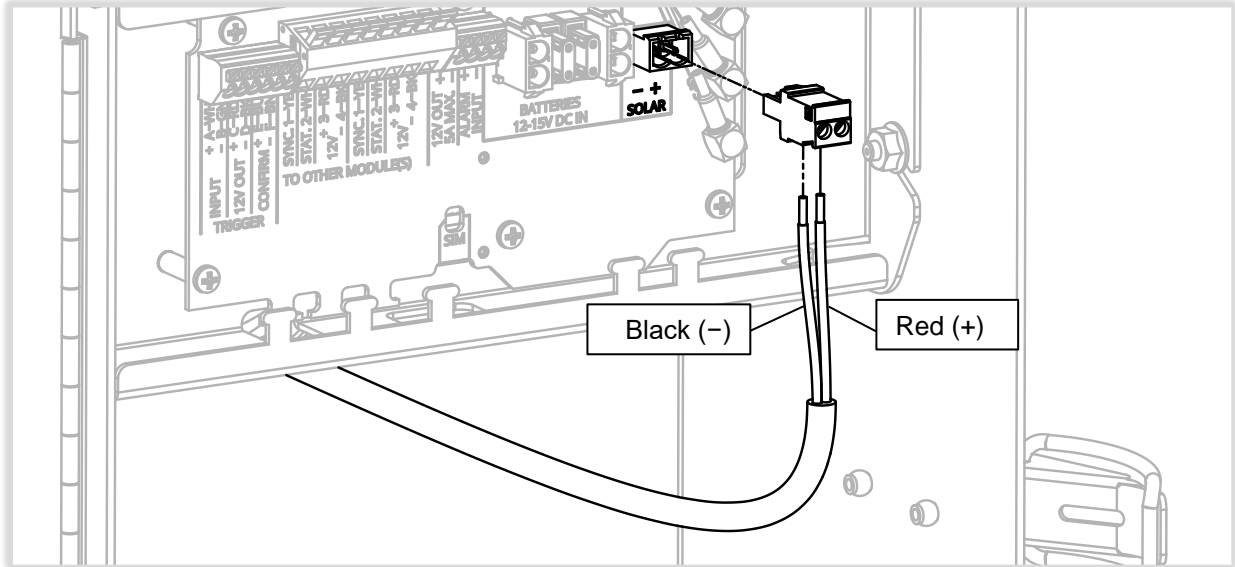


10. Fasten ring terminals to battery terminals as shown:
 - Red wire to positive battery terminal, black wire to negative battery terminal.
 - Install screws, washers and nuts to terminals and tighten firmly.
 - Place battery boot over positive terminal.

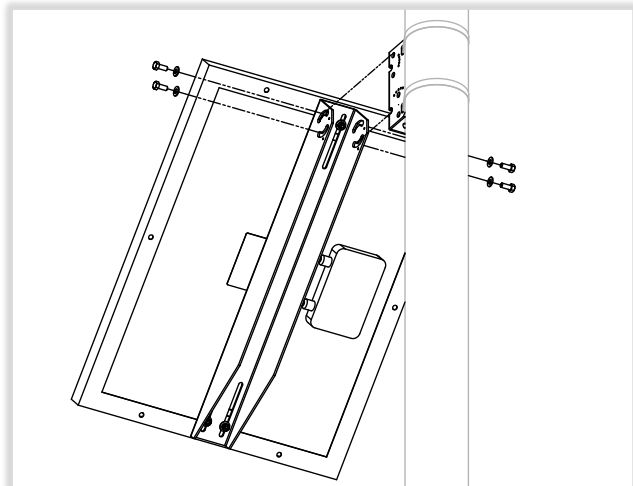
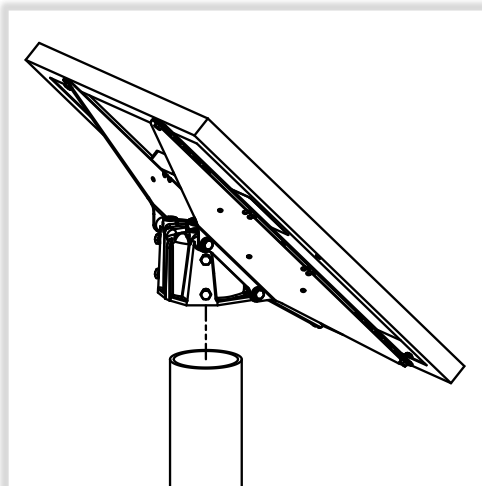




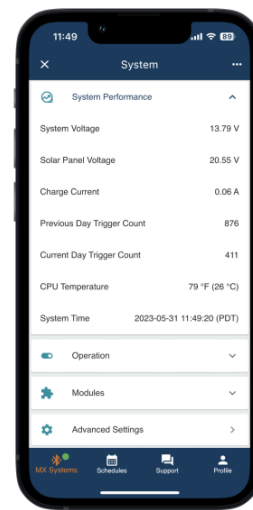
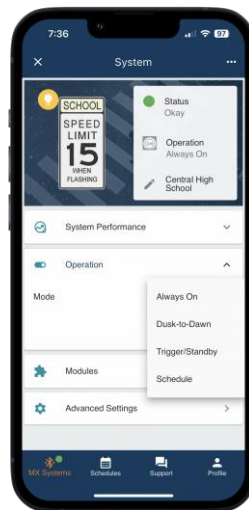
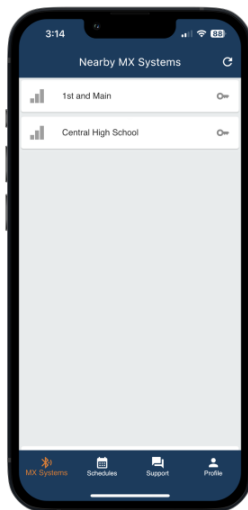
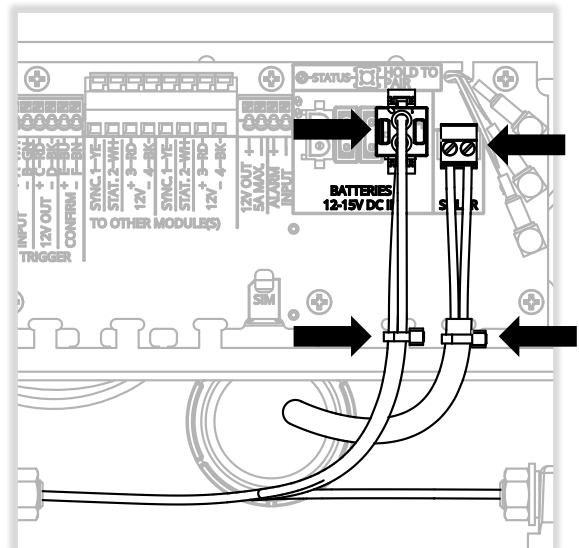
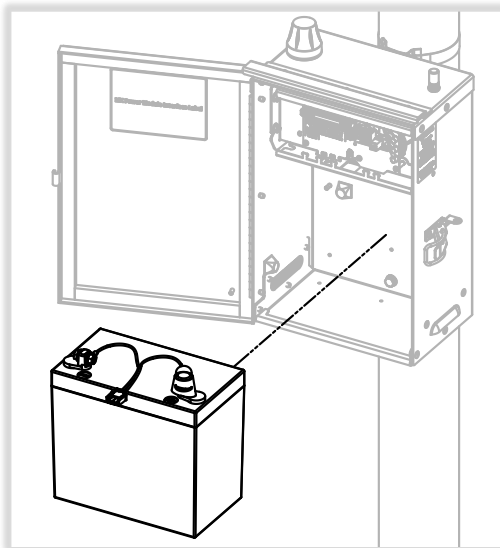
11. Insert red and black solar wires into supplied connector and tighten screws. Install screw terminal connector onto circuit board connector. Leave solar cable with MC4 connectors in cabinet to be terminated to solar panel at a later step.



12. Follow **LEVEL 4** Top of Pole or Side of Pole Install Guide to install solar panel and mount. Leave MC4 solar panel connectors disconnected.



13. Ensure flasher module or other peripheral device installation and wiring is completed (if applicable).
14. Install battery into cabinet with terminals towards door. Mate battery harness connector to circuit board shown. Install cable ties to secure battery and solar cables.
15. Connect solar harness from step 11 to solar panel MC4 connectors.
16. Uncover solar panel as required.
17. Check the MX Field App to ensure system is charging, if daytime.
18. Adjust settings as required:
 - Change operation mode.
 - Adjust trigger duration.
 - Upload a schedule.
 - Link system with others at crosswalk.
19. See the MX Field App guide for more information.

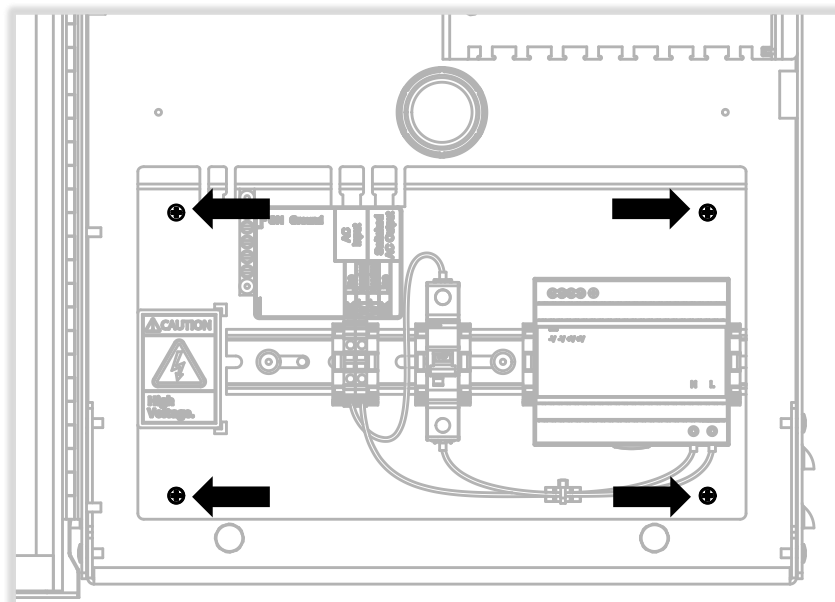
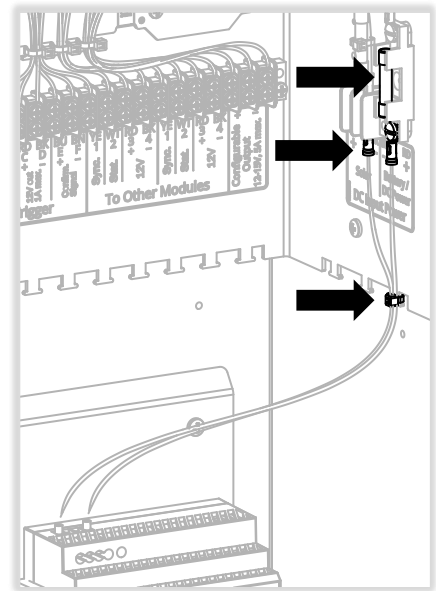
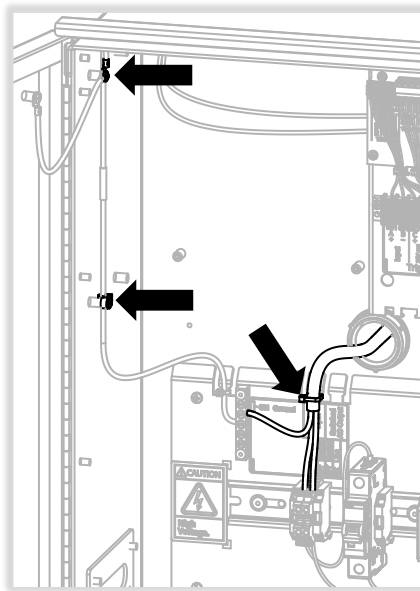
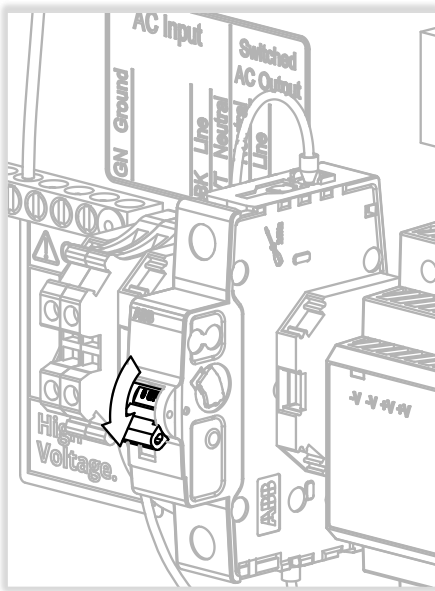


NOTE

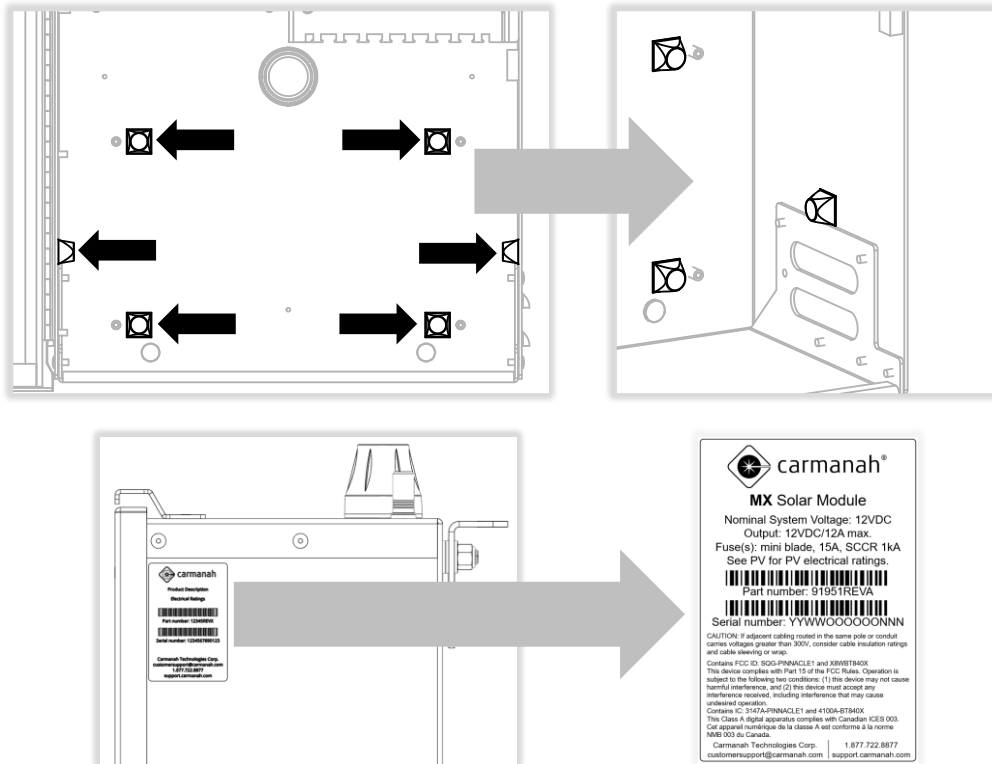
Once the new power module has been installed it will begin to report into MX Cloud. Authorized MX Cloud users can contact Carmanah to have the old power module removed from your MX Cloud account if this is a not a warranty replacement.

1.1 MX 400 AC to Solar Retrofit

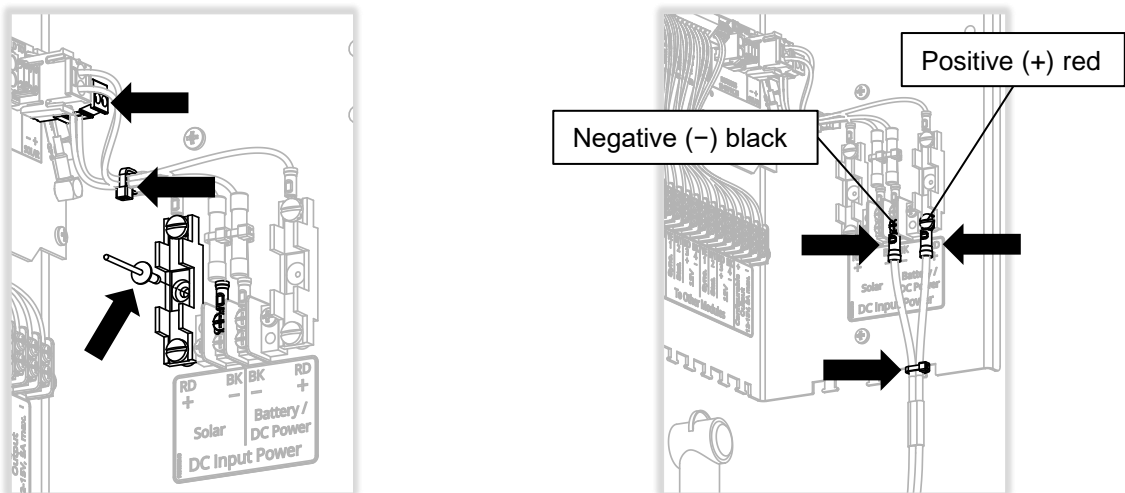
1. Turn off AC power at source.
2. Disconnect power to system by turning off breaker as shown.
3. Remove ground ring terminal in cabinet.
4. Cut cable tie securing AC input cable. Disconnect and remove input wires at terminal blocks and ground bus bar. Properly dispose of AC input cable.
5. Remove DC power fuse. Keep removed until the end of this section.
6. Disconnect power supply output harness from fuse holder. Cut cable tie securing harness.
7. Remove four screws securing power supply backplane. Remove and properly dispose of assembly.



8. Follow **LEVEL 4** Power Module Circuit Board Replacement Guide to replace existing AC circuit board with solar version supplied. AC circuit board may be kept as a spare for AC powered systems or be properly disposed of.
9. Clean battery bumper mounting locations shown with isopropyl alcohol. Install six adhesive backed bumpers.
10. Locate product label on outside of MX 300 cabinet. Apply new product label overtop existing product label



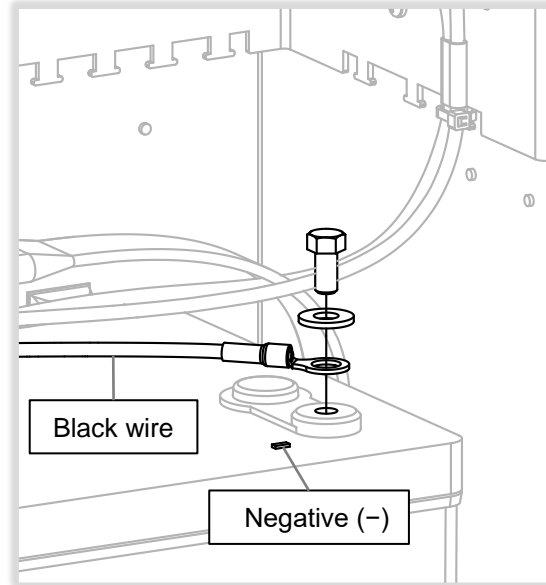
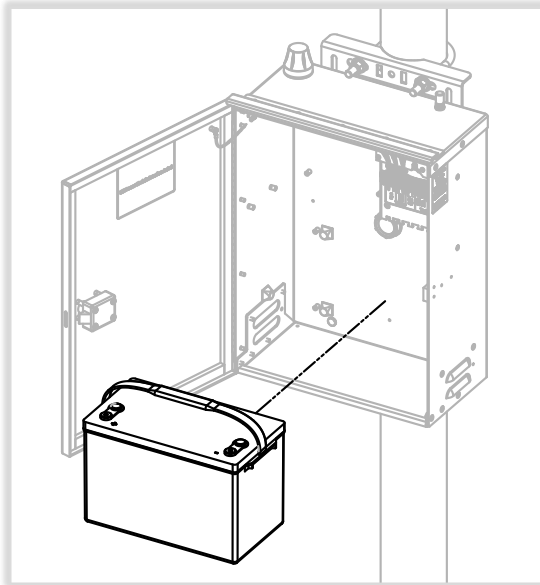
11. Rivet solar fuse holder and connect harness connector to circuit board. Secure harness to tie base.
12. Install battery harness to fuse holder. Secure with cable tie.





13. Install battery into cabinet with terminals towards door. Connect positive battery ring terminal first and then the negative ring terminal:

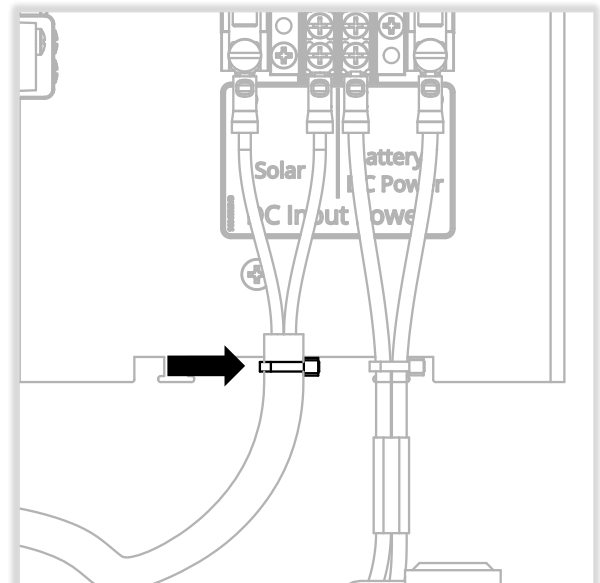
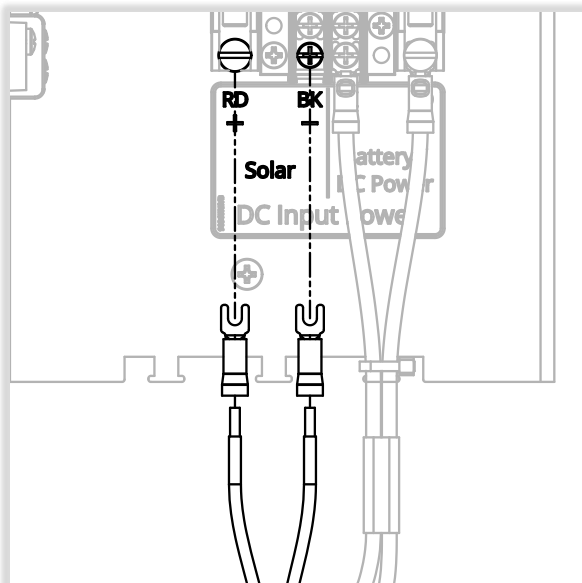
- Positive: fasten red wire ring terminal to positive terminal and tighten firmly. Slide red boot over terminal.
- Negative: fasten black wire ring terminal to negative terminal and tighten firmly.



14. Terminate solar harness ends with included fork terminals.

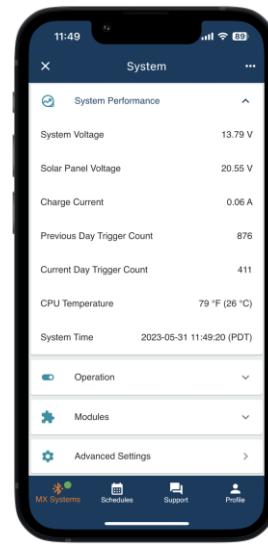
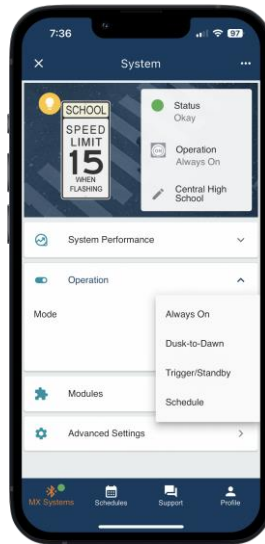
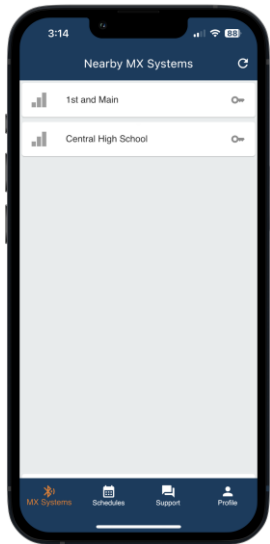
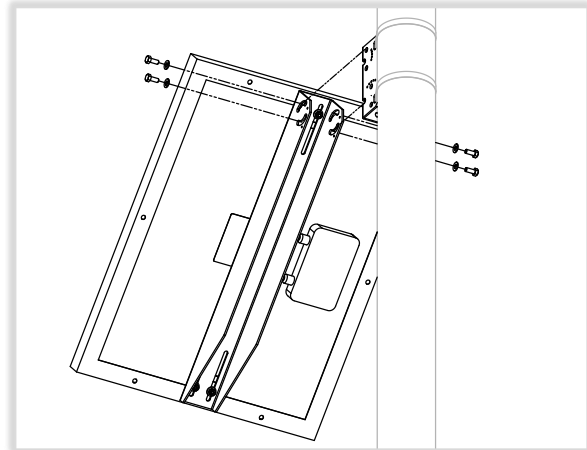
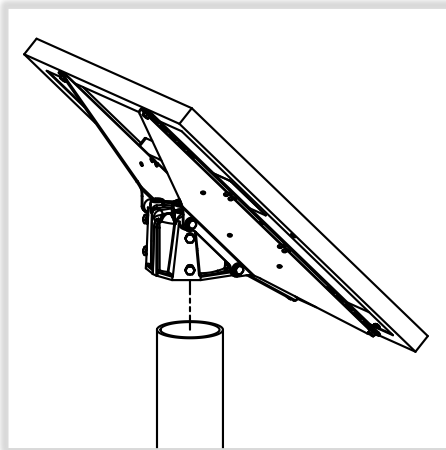
15. Install solar harness onto solar input terminals on right side of cabinet. Leave solar cable in cabinet to be routed and terminated at a later step.

- Red wire to "RD +" terminal.
- Black wire to "BK -" terminal.
- Secure cable jacket with cable tie.





16. Follow **LEVEL 4** Top of Pole or Side of Pole Install Guide to install solar panel and mount.
17. Reinstall battery fuse removed from step 5.
18. Route solar cable from step 15 to solar panel. Connect cable to MC4 connectors.
19. Uncover solar panel as required.
20. Check the MX Field App to ensure system is charging, if daytime.
21. Adjust settings as required:
 - Change operation mode.
 - Adjust trigger duration.
 - Upload a schedule.
 - Link system with others at crosswalk.
22. See the MX Field App guide for more information.



NOTE

Once the new power module has been installed it will begin to report into MX Cloud. Authorized MX Cloud users can contact Carmanah to have the old power module removed from your MX Cloud account if this is a not a warranty replacement.