

Customized Enclosures for PV Harvesting Solar Plants

Allied Moulded Success Story



Application: Our customer is a specialist that works on DC-DC optimizers for solar energy and storage. The primary application is photovoltaic (PV) harvesting systems for solar plants. As compared to residential PV harvesting, solar plants require large-scale thinking and solutions. For these applications, enclosures are necessary for handling high-stress electrical components that are often under very large loads.

Scope: The boxes were intended to house portions of the electrical system for PV solar plants. One box would serve as a disconnect switch from incoming DC lines to the customer's DC to DC converters. This required the implementation of custom components from them.

The other box was intended for use in grounding and rapid disconnect. It housed a system that detects and isolates arc and ground faults in the array. It can then correct the fault while the PV system is still producing power. In this system, grounding is mission-critical, and the boxes would inevitably be put under large electrical stress.

Challenges: Three challenges had to be met. The enclosures had to accommodate custom modifications, they were needed in large quantities, and they had to be made from brand new designs in order to outperform the competition.

Solution: The solution involved AMU1206L and AMP1860L. Each enclosure model used a custom hole configuration that was designed specifically for the customer.

The fiberglass enclosure was used for the disconnect switch. The polycarbonate was used for grounding and rapid disconnect. In both cases, the enclosure is non-conducting, which proved a superior option for these PV applications. With non-conducting boxes, the enclosures did not require additional grounding in order to prevent issues. This saved on material cost and installation costs, making these enclosures the perfect solution.

AMP and AMU Features

- Molded with ULTRAGUARD fiberglass reinforced polyester material construction for durability (AMU)
- Flush cover base design
- Patented multi-mounting capability
- 316 stainless steel foot/flange mounting screws
- Solid opaque or clear polycarbonate cover options
- Partial molded hinges, providing secure cover-to-base closure
- Formed-In-Place polyurethane gasket
- Mounting panel inserts for optional back panel installation



AMU1206L and back panel with special order holes

AMP1860L and back panel with special order holes

