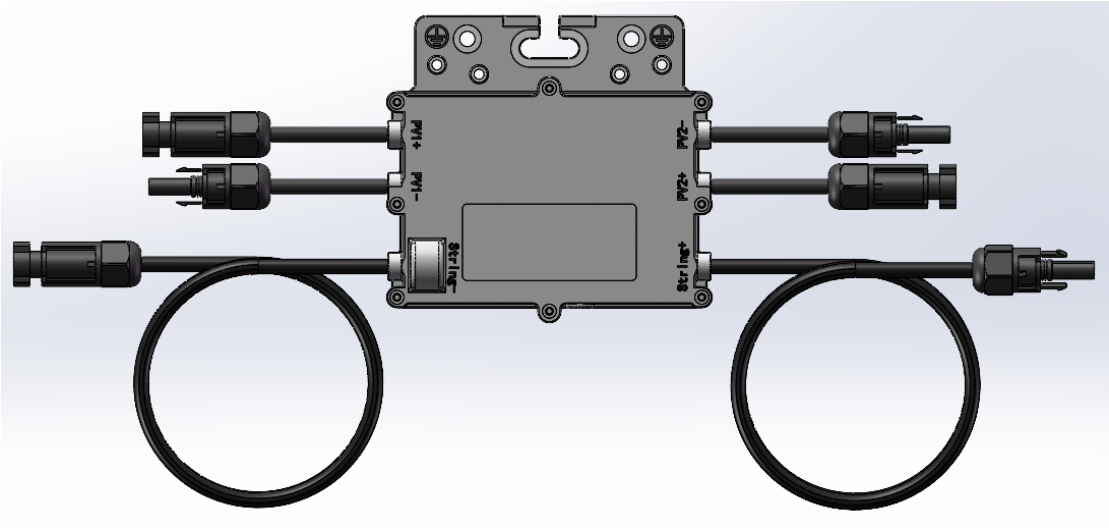
Equipment Grounding of PVG Metal Enclosure

Application Note: PVG-20240528
Version: 1.0

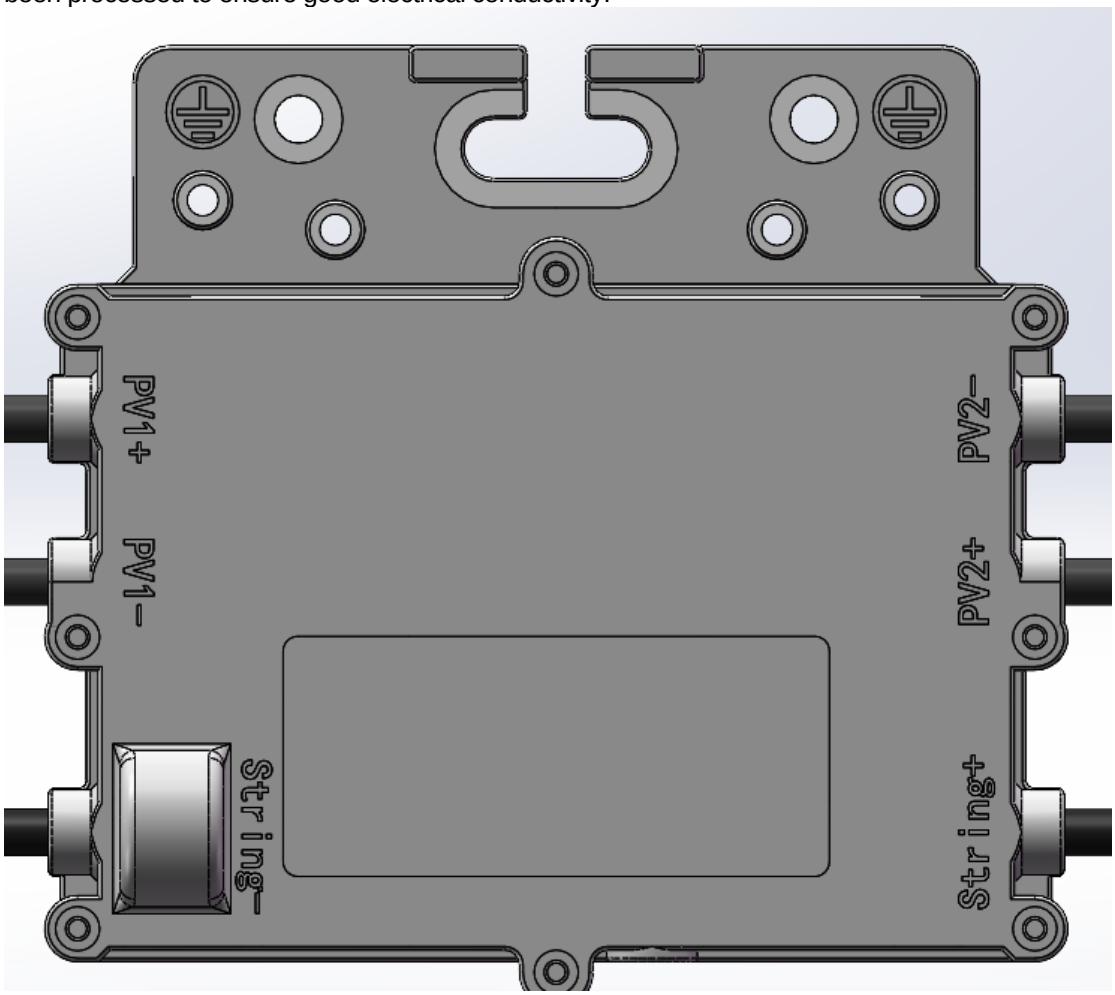
1 Executive Summary

Rapid shutdown of rooftop solar systems is a mandatory safety requirement of NEC 690.12. For improved reliability and safety, PVG-2-20A and PVG-3-20A are designed with metal enclosure. This note provides a guidance on equipment grounding of PVG metal enclosure according to NEC 690.43-690.46.



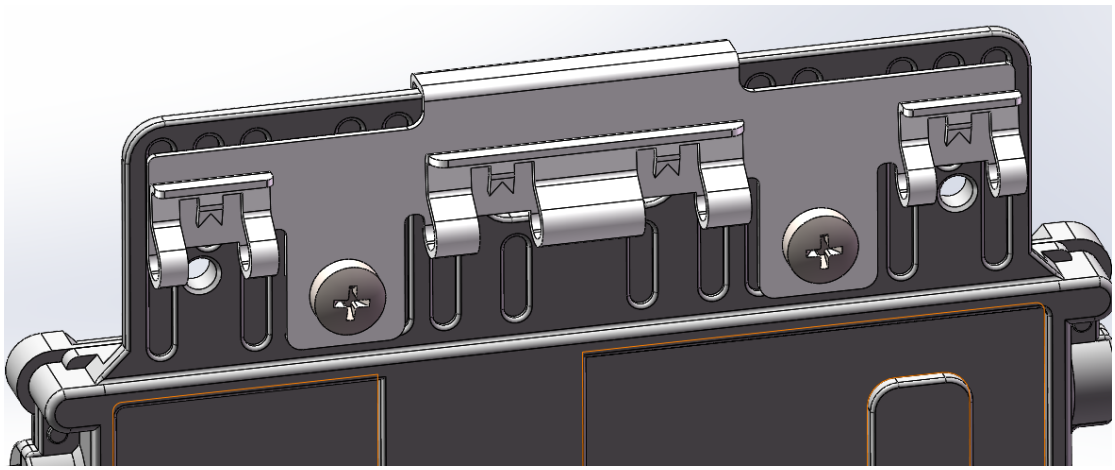
2 Metal Enclosure of PVG-2 and PVG-3

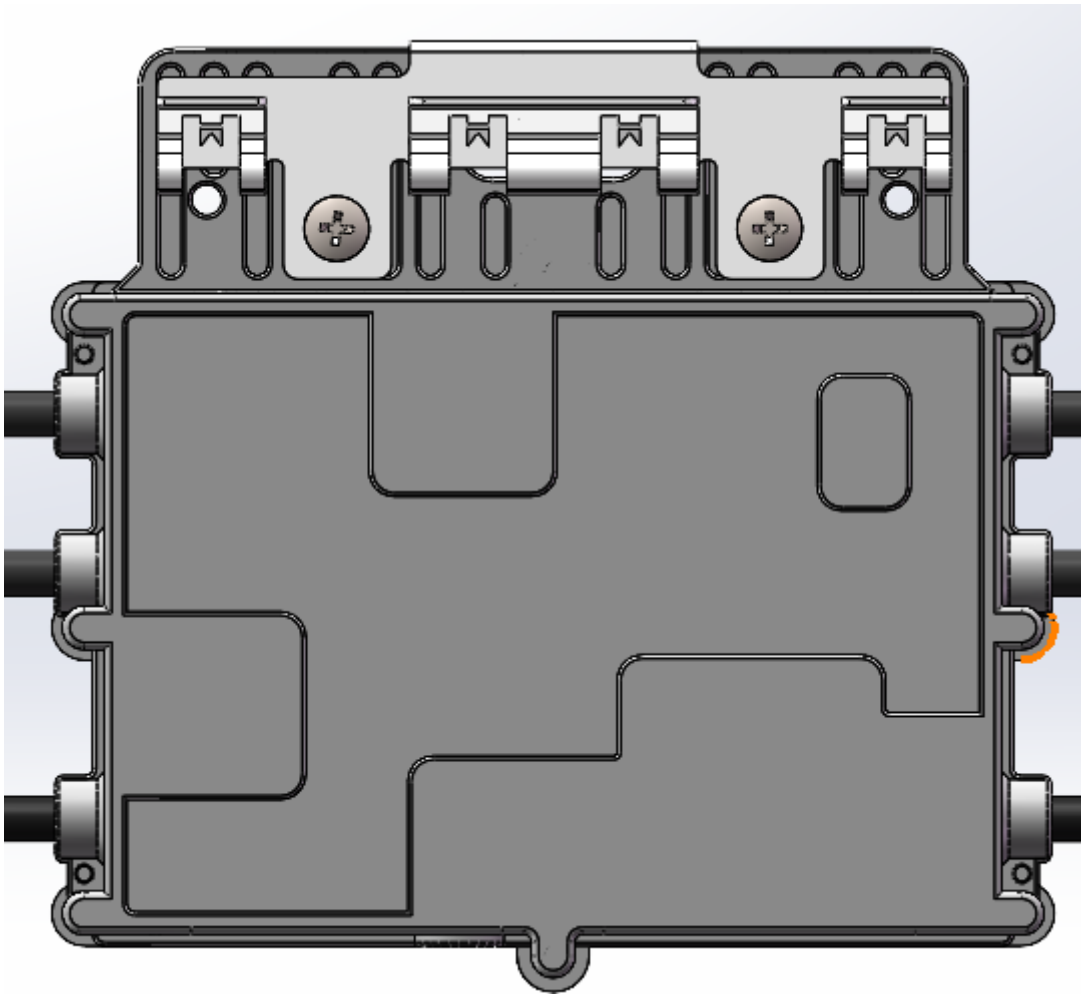
There are multiple grounding points marked on the PVG metal enclosure. Corresponding areas have been processed to ensure good electrical conductivity.

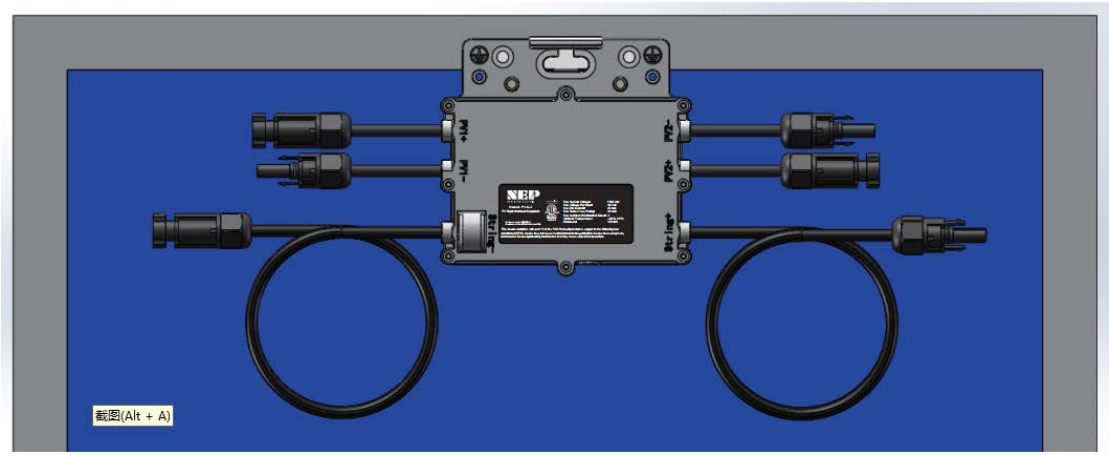


3 Equipment Grounding Method-1: Using Solar Module Frame Mounting Clip

If the PV module frame is grounded, PVG can be mounted on the PV module frame and grounded using the frame mounting clip. PVG frame mounting clips can be acquired through NEP distributors. Teeth on the frame mounting clips penetrate the anodized coating of aluminum solar module frame and provide good conductivity.

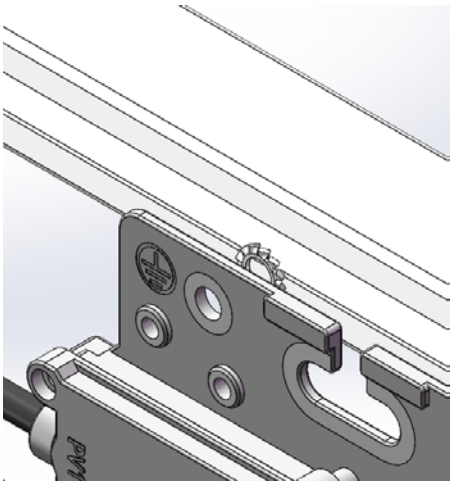


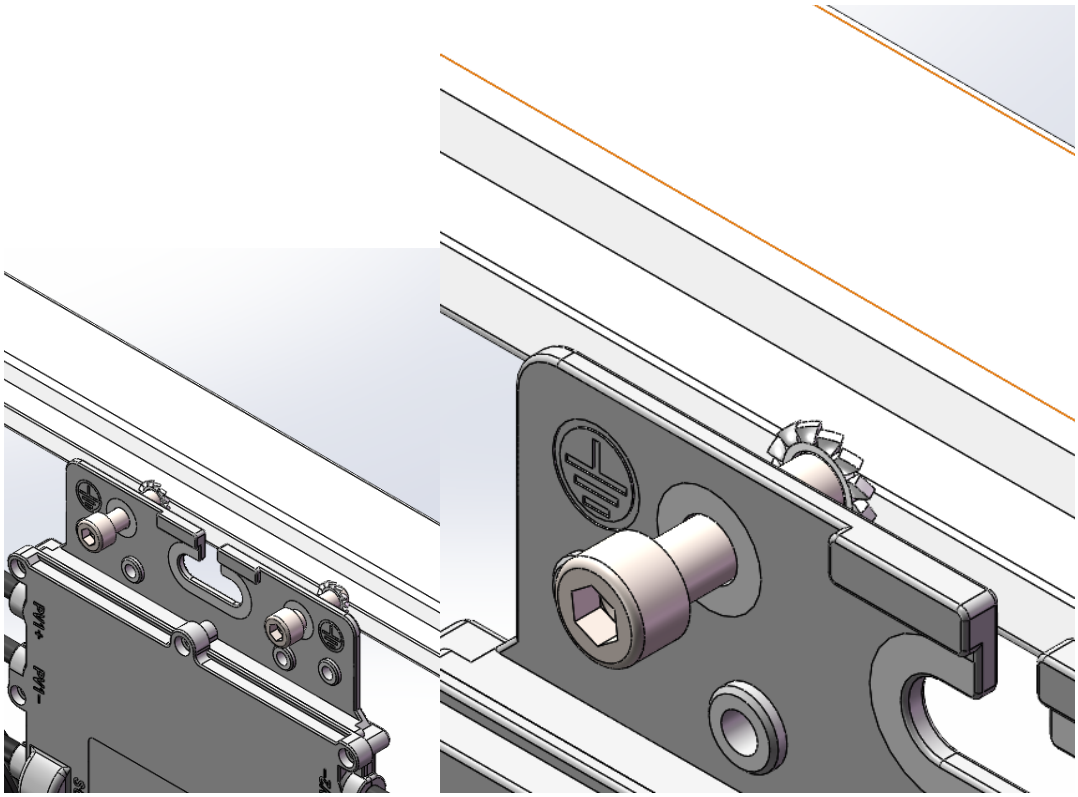




4 Equipment Grounding Method-2: Using Star Washer

If the mounting structure is grounded, star washer can be used to ground PVG metal enclosure through the mounting structure. Star washer can be acquired through NEP distributors. In installation, a torque of 9.5 Nm / 7 ft lb is recommended so that the teeth on star wash can penetrate the galvanized or anodized coating of metal structure for good conductivity.





5 Equipment Grounding Method-3: Using Grounding Copper Wire

If the mounting structure is not grounded, PVG metal enclosure can be grounded through grounding copper wire. Accessory grounding lug can be acquired through NEP distributor. Recommended torque to tighten the strew of the grounding lug is 9.5 Nm / 7 ft lb. The grounding terminal will accept a wire size of 6-12 AWG in accordance with NEC Table 250.122.