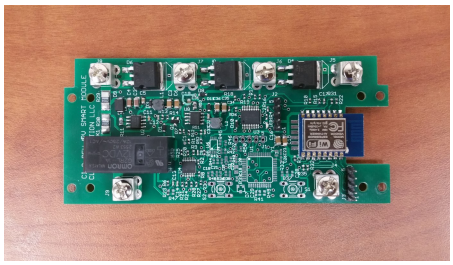
PMSM-1 PV MODULE SMART MANAGER

CLAT INNOVATION

2016 Rev 2

Features

- Meets NEC 2017 article 690.12
- Suitable for 1500V PV system
- Designed to fit in PV panel junction box
- Designed with reverse diodes
- A mechanical relay is used as disconnect means to meet UL requirements for PV disconnect.
- Receives commands from host to connect or disconnect the panel with PV circuit
- Measures PV module current and PV cell voltage to determine whether the module functions normally
- Reports PV module operation status such as shading, reverse current, PV cell failure, etc.
- Communication to system host via WIFI at 2.4GHZ
- Reliable operation attribute to long distance powerful WIFI module
- WIFI module is certified to FCC802.11B/G/N
- Operation temp -40 to 80C. Storage temp -40 to 85C



PMSM - 1

PMSM-1 inside a junction box

Description

Upcoming 2017 NEC (National Electrical Code, to be released later 2016) article 690.12(B)(2)(b) requires "PV system circuits installed on or in buildings shall include a rapid shutdown function to reduce shock hazard for emergency responders".

690.12(B)(2)(b) further indicates that "… Controlled conductors located inside the boundary or not more than 1 m (3 ft) from the point of penetration of the surface of the building shall be limited to not more than 80 volts within 30 seconds of rapid shutdown initiation. Voltage shall be measured between any two conductors and between any conductor and ground…" Note: "The use of the term, array boundary, in this section is defined as 305 mm (1 ft) from the array in all directions."

Designed by Clat Innovation LLC, PMSM-1 product is an electronic module which can be installed in a PV junction box or other enclosure. Its main functions are: 1). With built-in reverse diodes, it serves as a PV module junction box. 2). It is part of Rapid Shutdown System (required by NEC 2017 article 12 for PV arrays installed on a rooftop) to limit the voltage inside PV array to below 80V (within the 305mm boundary of PV circuit) should an emergency occur. 3). It monitors and reports the PV module status. The PMSM-1 product also measures PV panel current, PV cell voltage, and reports to PV system host via its built-in FCC certified WIFI module.

PV arc fault detection is also provided as an option.

Please contact Clat Innovation LLC (email: info@clatinnov.com) for more information.