**Functionality**

- Disconnect the system from photovoltaic array
- Provide sensor data for PV array
- Ground fault detection

**Exterior Layout**

A1. Earth
A1A. Earth screw with lock
RPI1A. Ground fault detector - Remote when 24V is not present, monitor if 24V is present, power is supplied to the ground fault detector.
RPI0A. Grounding bus for the ground fault detector.
RPI0B. Safety circuit trip below - Relay for safety circuit.
RPI1B. Safety circuit over breaker - Over the safety circuit.
RPI0C. Provide power indicator - Light when the ESS relay is turned and power is being provided to the system.
RPI0U1. Volt indicator - Volt where the PV panel in mounted.
RPI0U2. Event indicator - Light when the system is reset.
RPI0U3. Power indicator - Indicates PV is supplying power to the system.
RPI0U5. PV status indicator - Indicates PV is operational and receiving power.
RPI0U6. Safety indicator - Indicates PV is operational and receiving power.
RPI0U7. Safety indicator - Indicates PV is operational and receiving power.
RPI0U8. Safety indicator - Indicates PV is operational and receiving power.
RPI0U9. Safety indicator - Indicates PV is operational and receiving power.
RPI0U10. Safety indicator - Indicates PV is operational and receiving power.
RPI0U11. Safety indicator - Indicates PV is operational and receiving power.
RPI0U12. Safety indicator - Indicates PV is operational and receiving power.
RPI0U13. Safety indicator - Indicates PV is operational and receiving power.
RPI0U14. Safety indicator - Indicates PV is operational and receiving power.
RPI0U15. Safety indicator - Indicates PV is operational and receiving power.
RPI0U16. Safety indicator - Indicates PV is operational and receiving power.

**Interior Layout**

PCB with PIC (RPI08)

15A Fuse

Current Transformer (RPI01)

solid-state relay (RPI02)

output blocks

system power

30V+ & DC indicators (RPI10 & RPI11)

*GFPN mounted on box door (RPI04)

Safety relay (RPI05)

PCB (RPI03)

RPI06

RPI07

*red pattern indicates shielded HV region

**System Diagram**

RPI

PCB

12V/5V from ESS to EDS

RPIW3

RPIW4

RPIW6

RPIW10

RPIW11

RPIW12

RPIW14

RPIW15

RPIW16

Low voltage connection

High voltage connection

Earth ground

Isolated supply

Non-isolated supply

RS485

12V/5V power connection

High voltage connection

Low voltage connection

Earth ground