

Application Note for External RCD Selection

Solis inverters have a residual current monitoring unit (RCMU) integrated inside which complies with the requirements of IEC 62109-1 and IEC 62109-2.

In case of a sudden change in residual current, Solis inverters will disconnect from the grid within the following time specified in the table and show alarm code accordingly.

| Residual Current Sudden Change | Max Time to Disconnect From Grid | Alarm Code |
|--------------------------------|----------------------------------|--------------|
| 30mA | 0.3s | Ileak-PRO 01 |
| 60mA | 0.15s | Ileak-PRO 02 |
| 150mA | 0.04s | Ileak-PRO 03 |

In case of continuous residual current, Solis inverters will disconnect from the grid within 0.3s and show the alarm code "Ileak-PRO04", if the continuous residual current exceeds the values in the following table.

| | |
|--|------------------|
| Inverters with continuous output power rating \leq 30kVA | Max 300mA |
| Inverters with continuous output power rating $>$ 30kVA | Max 10mA per kVA |

External RCD may be required to be installed in some countries. Customers need to check in local regulations to confirm the required RCD type and the installation must also follow the local regulations. In general, Solis recommends installing Type A RCD with Solis inverters and the recommended ratings are listed below:

| Inverter model | Recommended External Type A RCD Rating | Max Continuous Residual Current in IEC 62109 |
|-------------------------|--|--|
| S6-GR1P(0.7-3.6)K-M | 100mA | 300mA |
| S6-GR1P(2.5-6)K | 100mA | 300mA |
| Solis-1P(7-8)K-5G | 100mA | 300mA |
| S5-GR1P(7-10)K | 100mA | 300mA |
| S5-GR3P(3-10)K | 100mA | 300mA |
| S5-GR3P(12-20)K | 300mA | 300mA |
| S5-GC25K | 300mA | 300mA |
| S5-GC30K | 300mA | 330mA |
| S5-GC33K | 300mA | 363mA |
| S5-GC36K | 300mA | 396mA |
| S5-GC40K | 300mA | 440mA |
| S5-GC50K | 400mA | 550mA |
| S5-GC60K | 500mA | 660mA |
| S5-GC80K/Solis-80K-5G | 700mA | 880mA |
| S5-GC100K/Solis-100K-5G | 900mA | 1100mA |
| S5-GC110K/Solis-110K-5G | 1000mA | 1210mA |
| S5-EH1P(3-6)K-L | 100mA | 300mA |
| S6-EH1P(3-6)K-L | 100mA | 300mA |
| S6-EH3P(3-10)K-H | 100mA | 300mA |
| RAI-3K-48ES-5G | 100mA | 300mA |
| RHI-3P(3-10)K-5G | 100mA | 300mA |

Note: Recommendations also apply to other derived models with suffixes such as -4G, -5G, -LV, -HV, etc. with the same power rating.