

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. Since Solis inverters by design is not able to feed in DC residual current to grid, Solis recommends installing external 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
S6-GR1P(2.5-6)K-S	100mA	300mA
S6-GR1P(2.5-6)K-S(21A)	100mA	300mA
Solis-1P(7-8)K-5G	100mA	300mA
S5-GR1P(7-10)K	100mA	300mA

S6-GR1P(7-10)K03-NV-ND	100mA	300mA
S5-GR3P(3-10)K	100mA	300mA
S5-GR3P(12-20)K	300mA	300mA
S5-GC25K	300mA	300mA
S6-GC3P25K03-NV-ND	300mA	300mA
S5-GC30K	300mA	330mA
S6-GC3P30K03-NV-ND	300mA	330mA
S5-GC33K	300mA	363mA
S6-GC3P33K03-NV-ND	300mA	363mA
S5-GC36K	300mA	396mA
S6-GC3P36K03-NV-ND	300mA	396mA
S5-GC40K	300mA	440mA
S6-GC3P40K04-NV-ND	300mA	440mA
S5-GC50K	400mA	550mA
S6-GC3P50K04-NV-ND	400mA	550mA
S5-GC60K	500mA	660mA
S6-GC3P60K05-NV-ND	500mA	660mA
S5-GC80K/Solis-80K-5G/ Solis-80K-5G-PRO	700mA	880mA
S5-GC100K/Solis-100K-5G/ Solis-100K-5G-PRO	900mA	1100mA
S5-GC110K/Solis-110K-5G/ Solis-110K-5G-PRO	1000mA	1210mA
S6-GC125K	1A	1250mA
S6-GC3P150K07-NV-ND	1A or 1.5A	1500mA
RAI-3K-48ES-5G	100mA	300mA
RHI-3P(3-10)K-5G	100mA	300mA

S5-EH1P(3-6)K-L	100mA	300mA
S6-EH1P(3-6)K-L	100mA	300mA
S6-EH1P(3-10)K-L-PRO/PLUS	100mA	300mA
S6-EH3P(3-10)K-H	100mA	300mA
S6-EA3P(5-10)KAA-NV-YD-H-PRO	100mA	300mA
S6-EH3P(8-18)K02-NV-YD-L	300mA	300mA
S6-EH3P12K-H	300mA	300mA
S6-EH3P15K-H	300mA	300mA
S6-EH3P20K-H	300mA	300mA
S6-EH3P29.9K-H	300mA	330mA
S6-EH3P30K-H	300mA	330mA
S6-EH3P40K-H	300mA	440mA
S6-EH3P50K-H	400mA	550mA
S6-EH3P60K-H(21A)	600mA	770mA
S6-EH3P(80-125)K10-NV-YD-H	1A	1250mA
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.