Application Note – RCD Information for Sigenergy inverters

Revision History

Version 1.0, April, 2024 – Initial release

For the following inverters:

SigenStor EC 3.0/3.6/4.0/4.6/5.0/6.0 SP
Sigen Hybrid 3.0/3.6/4.0/4.6/5.0/6.0 SP
Sigen PV Max 3.0/3.6/4.0/4.6/5.0/6.0 SP
SigenStor EC 5.0/6.0/8.0/10.0/12.0/15.0/17.0/20.0/25.0 TP
Sigen Hybrid 5.0/6.0/8.0/10.0/12.0/15.0/17.0/20.0/25.0 TP
Sigen PV Max 5.0/6.0/8.0/10.0/12.0/15.0/17.0/20.0/25.0 TP

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

Technical Description

Once the residual current exceeds the preset threshold (see below table), the inverter will disconnect within the time limit to protect against possible electric shock and fire hazard. This value is set according to section 4.8.3.5 in IEC62109-2 as below table.

Inverter Capacity	**Max. Continuous Residual Current Limit**	**Time to Disconnect from the Grid**
Less than or equal to 30 kVA	300 mA	0.3 s

In case of a sudden change in residual current, the inverters will disconnect from the grid within the following time specified in the table.

Residual Current Sudden Change	**Max. Time to Disconnect the Inverter from the Grid**
30 mA	0.3 s
60 mA	0.15 s
150 mA	0.04 s

An external RCD is required in some countries. The installer must check which type of RCD is required by the specific local electric codes. Installation of an

RCD must always be conducted in accordance with local codes and standards. Sigenergy recommends the use of a type-A RCD. Unless a lower value is required by the specific local electric codes, Sigenergy suggests an RCD rating as below table.

Inverter Model	**Recommended External Type A RCD Rating**
SigenStor EC 3.0/3.6/4.0/4.6/5.0/6.0 SP Sigen Hybrid 3.0/3.6/4.0/4.6/5.0/6.0 SP Sigen PV Max 3.0/3.6/4.0/4.6/5.0/6.0 SP SigenStor AC 3.0/3.6/4.0/4.6/5.0/6.0 SP	100 mA
SigenStor EC 5.0/6.0/8.0/10.0 TP Sigen Hybrid 5.0/6.0/8.0/10.0 TP Sigen PV Max 5.0/6.0/8.0/10.0 TP SigenStor AC 5.0/6.0/8.0/10.0 TP	100 mA
SigenStor EC 12.0/15.0/17.0/20.0/25.0 TP Sigen Hybrid 12.0/15.0/17.0/20.0/25.0 TP Sigen PV Max 12.0/15.0/17.0/20.0/25.0 TP SigenStor AC 12.0/15.0/17.0/20.0/25.0 TP	300 mA