

Manufacturer's declaration

For usage of residual current devices with Autarco grid-tied inverters

All series of Autarco inverters are protected by an integrated residual current monitoring device which protects against feeding-in DC fault currents to the grid. They fulfill this requirement in accordance with DIN VDE 0100-712 as well as IEC 60364-7-712:2017.

This statement applies to all MIII inverter series:

SX-MIII Series

MX-MIII Series

LD-MIII Series

LQ-MIII Series

XLX-MIII Series

Based on requirement of IEC 62109-2, 4.8.3.5, non-isolated inverters shall provide residual current monitoring that functions whenever the inverter is connected to the mains with the automatic disconnection means closed. The residual current monitoring means shall measure the total (both AC and DC components) RMS current.

Residual current sudden change	Max. time for inverter to disconnect from the mains
30mA	0.3s
60mA	0.15s
150mA	0.04s
Continuous residual current	
maximum 300 mA for inverters < 30 kVA	0.3s
10 mA/kVA for inverters > 30 kVA	0.3s

When the inverter is operating, the DC leakage current is less than 6mA.

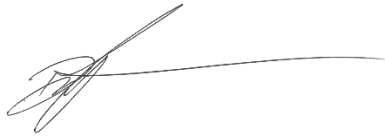
Based on above, we recommend to use type A RCD with the following rating:

Rated power	RCD
30kW<	100mA
30kW>	300mA
40kW>	$((\text{rated power [W]}/10000)-1) * 100 \text{ [mA]}$

Due to the circuit topology, transformer-less inverters emit residual currents that are the result of the isolation resistance of the generator and its capacity to ground.

The RCD's rated residual current must be equal to at least the sum of the rated residual currents of the connected inverter.

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