



Description of Grid Monitoring and Active Islanding Detection

Grid Monitoring and Active Islanding Detection (AID) in Sunny Central Series

Irrespective of the type of grid monitoring integrated in the Sunny Central the Anti Islanding functionality can be additionally activated via the parameter setting. Only the manufacturer can activate and deactivate this feature. In standard setting, the feature is deactivated.

The inverter's grid monitoring function is permanently activated after the inverter has been connected. It is continuously monitored if the effective value of the grid voltage exceeds or falls below the set parameter limit values. In addition, the grid frequency is monitored in terms of the set parameter limit values during operation. If the value exceeds or falls below the limits, the line contactor and the inverter bridge are immediately disconnected. The inverter changes to the "Failure" operating mode and the grid failure is signalized. The inverter will not be restarted until the grid voltage is within the permitted limits.

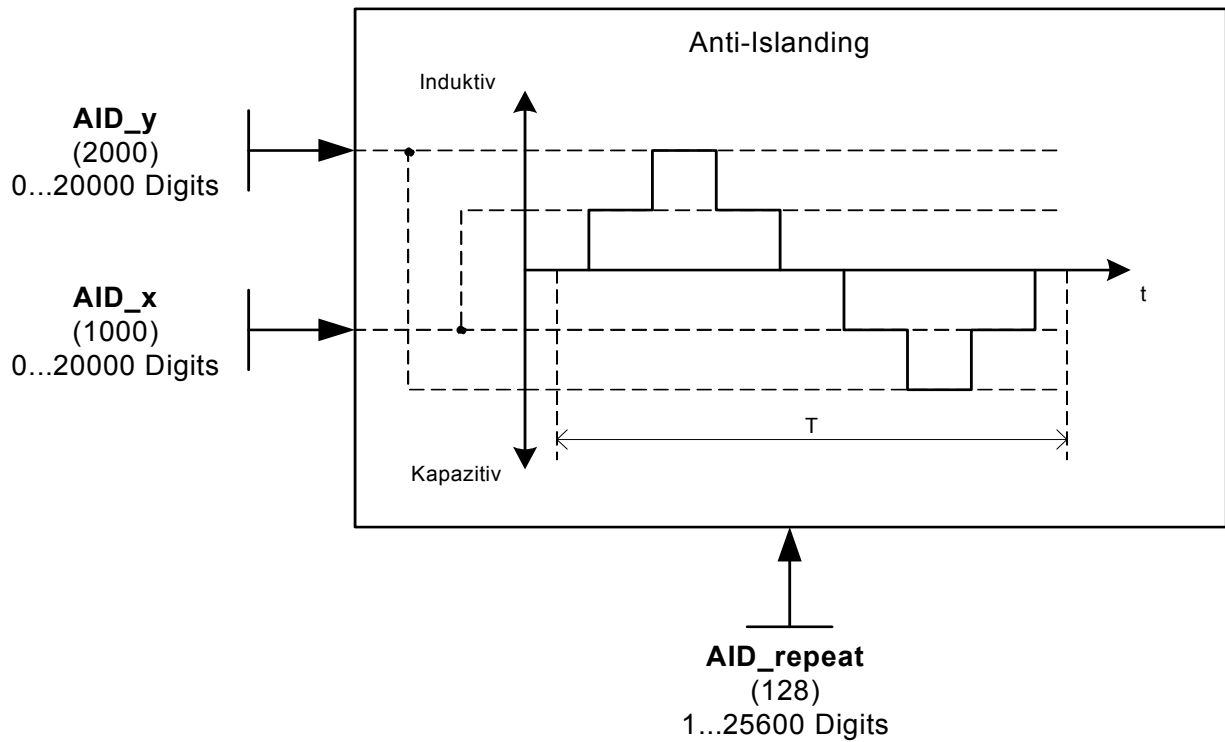
Islanding

Islanding is theoretically possible if the load within the grid matches the current grid-feeding power in case of grid failure. The grid monitoring cannot detect this if the voltage and frequency values are within the permitted limits. This event is very unlikely to occur due to the very low grid impedance.

In order to quickly detect possible islanding the AID feature attempts to actively destabilize the grid. This feature is required for all US devices.

AID Feature

For the active islanding detection the setpoint of the reactive current controller is changed in order to allow inductive or capacitive power to be alternately fed into the energy supply system. If no supply system is available or if there is an LCR oscillating circuit at the Sunny Central output the reactive power cannot be supplied. The grid monitoring unit disconnects the inverter.



The feature is activated via parameters. The peak value of the reactive power and the frequency defined in order to change between inductive and capacitive reactive power can be adapted.