



The meter is the power measurement unit and the export limitation is solely calculated by the inverter and communication protocol and no other hardware. Any schematic will therefore not comprise of additional discrete units such as detailed in G100 (Load Control Unit, Interface Unit, Generator Interface Unit or Control Unit).

The inverter adjusts the power from the 390 RGHV by controlling the operating points so that the inverter does not generate energy it does not need from the solar PV panels.

The inverter do not make use of resistive, inductive or any other type of load to dump excessive energy, including water heaters, therefore there are not additional harmonics due to the Export Limitation System functioning.

The inverter generated harmonics are stated in the respective G/G certification.

The ELS may be programmed with a site export limit in W and is prevent system owner override. The limit can also be set to zero, upon which the inverters output relays will open circuit the inverter to give a true zero output.

There is also the option to set P(V) limits should the DNO specifically request this to prevent exported power above statutory voltage limits. The regulation states The ELS must detect an excursion and reduce the export to the Agreed Export Capacity or less within 5 seconds.

Failure Modes – the following detail describes why the GivEnergy ELS is a failsafe scheme

1. As the Energy meter is located at the grid connection point, a power failure would naturally isolate the PV system through standard G98/G99 methods.
2. If the Energy meter itself were to fail, the RS485 communications would be lost and the inverters would permanently reduce to the site export limit which has been set.
3. If the EMS were to lose its power supply/fail then the inverters would permanently reduce to any export limit which has been set due to communications failure from the unit.
4. If the RS485 communication connections/cable is damaged, then the RS485 signal would be lost and the inverters would permanently reduce to the export limit which has been set.
5. If an individual inverter fails, then that inverter is bypassed due to a parallel connection and does not affect the operation of other components which would continue to limit the system to the export limit which has been set.
6. If the current transformer wiring is removed, or the signal is lost, the inverters would permanently reduce to the site export limit which has been set. Requires the installer to enable the CT loss feature instead of Meter Type in Remote settings page.

**Technical Director**

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A rectangular box containing a handwritten signature in black ink that reads "DLambert".