

Manufacture's Declaration

Compliance with ENA EREC G100 requirements

By UK DNO requirement of fail-safe system, including hard wired communications between the components of the export limit system, power quality and operational time.

Requirement: The scheme has hard wired communication links between the various component parts of the export limitation scheme.

The communication between the different components is via cable (Modbus RS485).

Requirement: The export limitation scheme operates signals to the generation to reduce output within 2 seconds.

The power meter transmits the measurement values (one average value per 400ms) to the power controller. The power controller sends new set-points for the AC power output to the connected inverters.

Power export peaks of typical load steps are limited by the export control circuit within 2 sec.

Requirement: The scheme is fail-safe and limits export if the export limiter fails or it loses its power supply.

Solplanet export control solution is designed fail-safe. If power meter or power controller fails, the export energy will remain to the agreed level or less as originally set.

Requirement: When the export limitation scheme operates it will reduce the exported active power to a value equal to, or less than, the Agreed Export capacity.

Power export peaks of typical load steps are limited by the export control circuit within 5 sec.

Note: In order to operate a 0-watt closed-loop control with the PV system, it is required to operate a base load (self-consumption) of at least 0.5 % of the rated output power of the solar inverters.

1. System Description

Solplanet export control solution measures the active power at the point connected to customer's distribution system and balance the customers demand in order to prevent the export to the distribution system from exceeding the agreed export capacity.

Solplanet export control solution is designed fail-safe. If power meter or power controller fails, the active power exported across the point of grid connection will remain at the agreed export capacity or less.

In addition to this agreed export capacity, the distribution network operator will specify an export power factor or power factor range at the point of grid connection, as applicable. The export control solution is designed to measure and limit the active power only since the power factor and hence the apparent power and reactive power should be controlled by the customer to satisfy the requirements of the connection agreement.

2. System configuration

The Solplanet export control solution consists of a Solplanet power controller, a compatible meter at the point of grid connection and compatible Solplanet inverters.

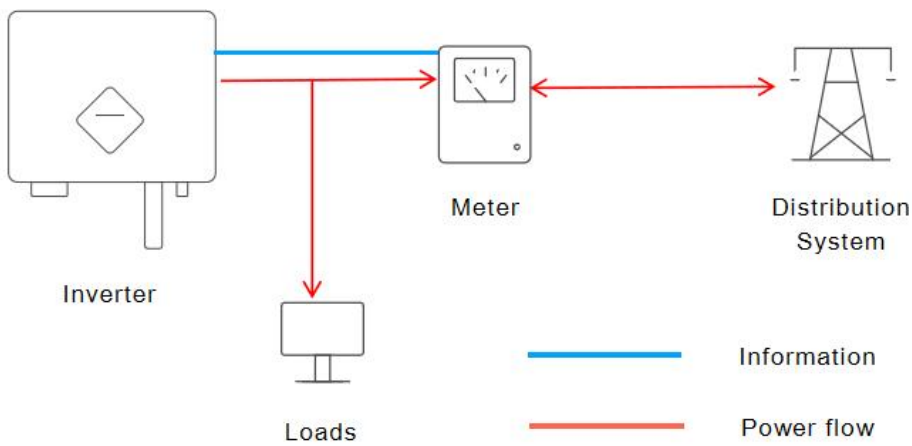
The following table gives an overview of possible system solutions. Please refer to section 3 for block diagrams of the referenced system schemes.

Scheme	Power controller	Power meter	Inverters
A	No additional hardware, export control function is integrated in inverter	SDM230-Modbus	ASW1000-3000S-S ASW3000-5000-S ASW6000-10000-S ASW1000-6000-S-G2 ASW3000-6000H-S2
		SDM630-Modbus SDM630-MCT	ASW3000-10000-T ASW8-20K-LT-G2 ASW3-20-LT-G2 Pro ASW30-50K-LT-G2 ASW40-50K-LT-G2 pro ASW25-50K-LT-G3 ASW8-12K-LT-H1
B	Ai-Logger 1000	SDM230-Modbus	ASW1000-3000S-S ASW3000-5000-S ASW6000-10000-S ASW1000-6000-S-G2 ASW3000-6000H-S2

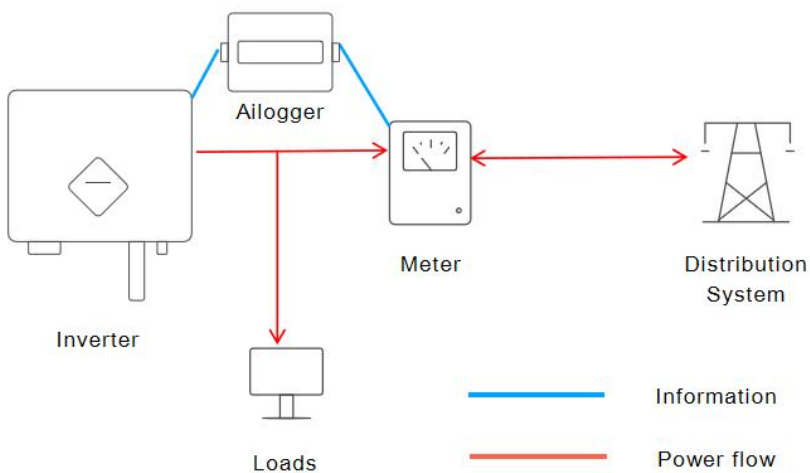
		SDM630-Modbus SDM630-MCT	ASW3000-10000-T ASW8-20K-LT-G2 ASW3-20-LT-G2 Pro ASW30-50K-LT-G2 ASW40-50K-LT-G2 pro ASW25-50K-LT-G3 ASW8-12K-LT-H1
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3. System scheme

Scheme A – Inverter integrated export control

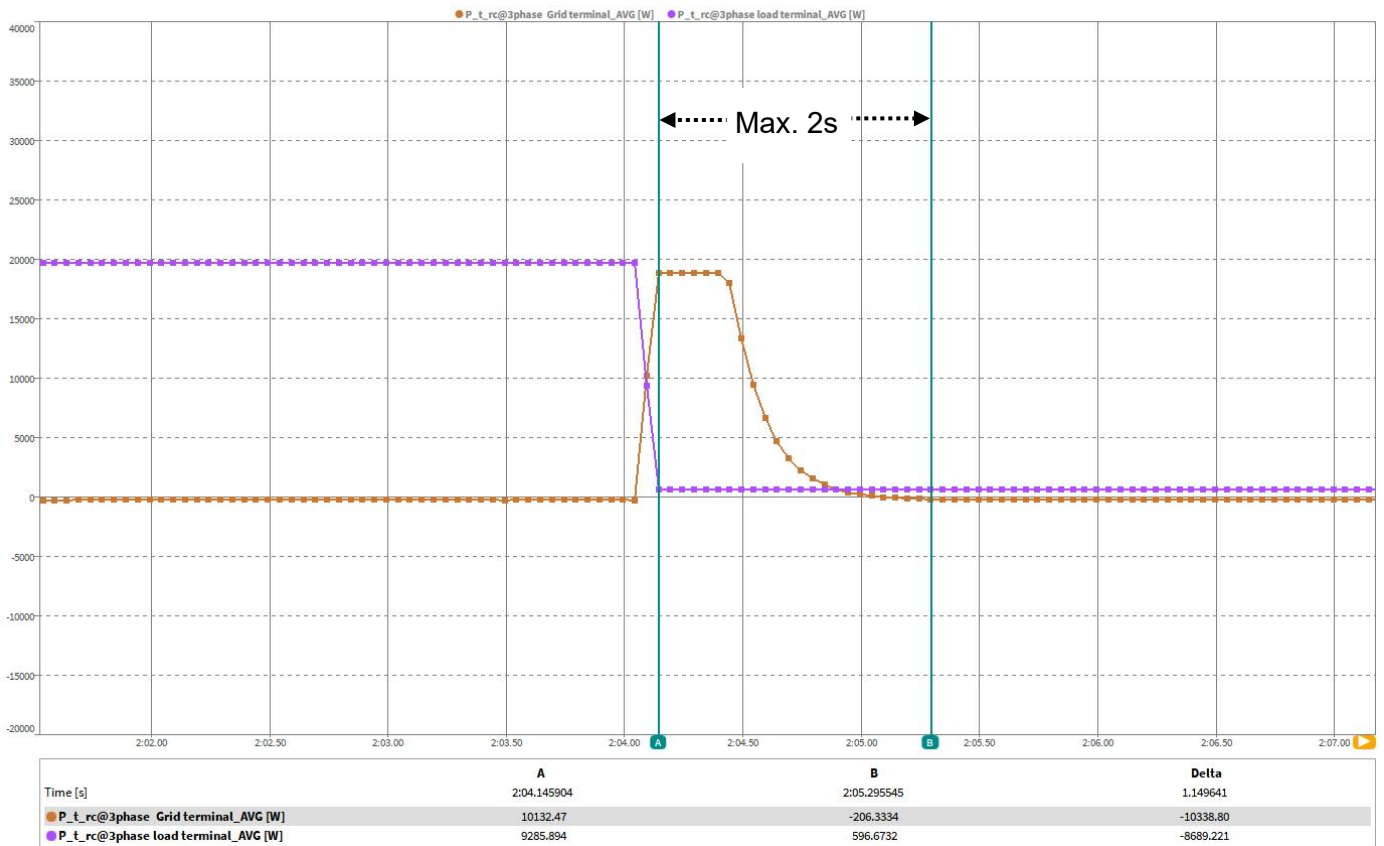


Scheme B – External power controller

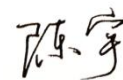


4. Control result

The following charts illustrate the typical power export response to load steps for the system configurations above. The export control can reduce the feed-in power automatically to the limited value within 2 seconds.



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