



# **Export Power Management and Load Monitoring By CT**

**Ginlong Technologies Co., Ltd.**

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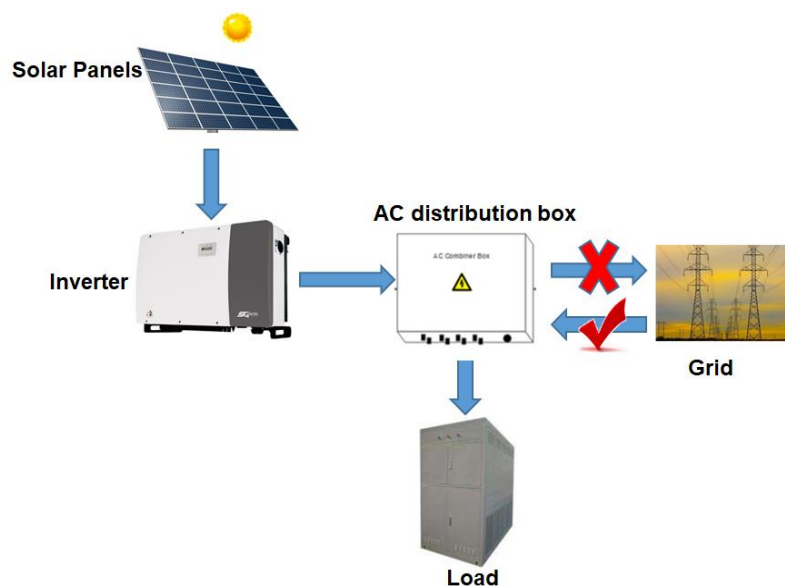
## Revision History

- Version 1.0- Oct 27th, 2023: Initial release

## 1. Background

### 1.1 What is Export Power Management

Solis inverters integrate the export power management function which can dynamically adjust inverter's output power to match the load consumption, thus limiting the export power flow at the grid connection point of the system. For instance, when load consumption drops, Solis inverter will adjust its output power down accordingly to prevent delivering power to the grid.



**Export Power Control Diagram**

### Why need Export Power Management

- Increasing amount of distributed energy resources requires higher quality of power network facilities and increases the difficulty for grid network operator to manage the stability of the network. Therefore, in some areas, exporting power to the grid may not be allowed by the local network operator.
- Sometimes the local distributed network transformer may not be able to take extra installed capacity of PV system
- Before obtaining the permission of exporting power to grid, customer may be able to energize the distributed system for self-consumption use in some areas.
- When the actual installed capacity of the system is higher than the approved capacity, limited export power control can be used to meet the approved capacity.

### 1.2 What is Load Monitoring

The load monitor function is that when the Solis inverter is working, the user can watch the related data on the monitor platform (Solis cloud platform), such as the energy , power on load side, the voltage, current, power and energy on grid side. The function can easily let users know the system situation.

The Load monitoring by CT can support 24H load monitoring. So the system also can upload the related data on monitor platform at night.

## 2. Solis Inverter Models That Support Export power management and 24H load monitoring

Below are the inverter series which support the CT solution for the export power management and 24H load monitoring.

Solution	Model	Specification	Inverter Series	Function 1	Function2	Software Version support function2
CT Solution	CTSA016-100A	CT:100A/33.33mA	S6-GR1P(0.7-3.6)K-M	✓	✓	V8903
			S6-GR1P(2.5-6)K	✓	✓	V8903
			S5-GR1P(7-10)K	✓	✓	V8903
			Solis-mini-(0.7-3.6)K-4G	✓		
			Solis-1P(2.5-6)K-4G	✓		
			Solis-1P(7-8)K-5G	✓		
			S6-GR1P(7-8)K2	✓	✓	V8903
			S6-GR1P(2.5-6)K-S	✓	✓	V4008

Function1: export power management (if the function 1 enabled, the function 2 is enabled at the same time)

Function2: 24H load monitoring

**Note:** CT solution for export power control is suitable for the system which only has 1 inverter. If there are multiple inverters in the system, please refer to the EPM solution for export power control.

## 4. Solis Export Power Management Solution and 24H load monitoring Solution

### 4.1 CT Solution

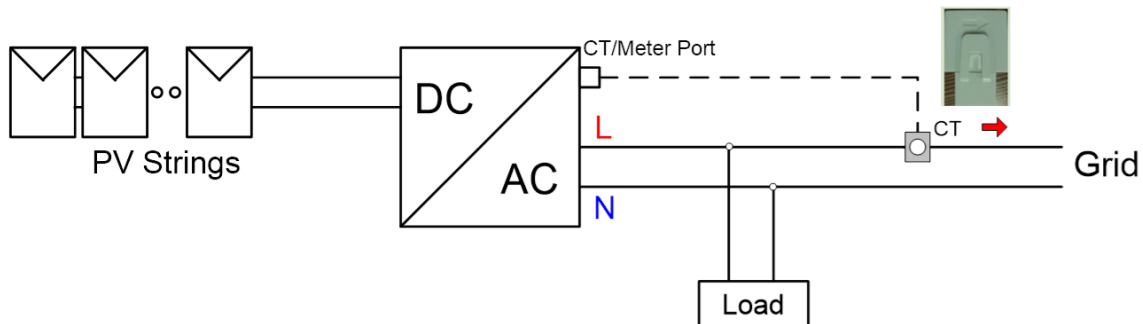
The CT solution can only be used on Solis **single-phase** inverters with CT Port Integrated.

Note: Please confirm with Solis Sale Reps before placing orders. Solis single phase inverters have two different hardware, one with CT Port and another with Meter Port.

#### 4.1.1 CT Installation

The CT is used to detect the power flow at the system grid connection point. If the detected power flow is reaching the backflow power limit set point, the inverter will actively limit the generation in order to follow the limit.

The CT **MUST** be installed onto the hot line at the grid connection point of the system. And the arrow sign on the CT must be towards the grid direction



Cable connection of CT solution

#### 4.1.2 Operation step

Solis inverter with CT port supports the two functions, the detailed operation steps as below:

##### Function 1: Only 24H Consumption load Monitoring function by Smart Sensor

After CT installation, steps below should be taken to enable the export power control function:

##### Step 1: Follow the path to find “Internal EPM Set” on inverter LCD screen

Advanced Settings -> Password: 0010 -> Internal EPM Set.

##### Step 2: Select option 5 “LoadMonitor\_CT”

Advanced Settings -> Password: 0010 -> Internal EPM Set-> Mode Select -> LoadMonitor\_CT

##### Step 3: Set the 24H Switch as Enable

Advanced Settings -> Password: 0010 -> 24H Switch-> Enable

##### Step 4: Configure the Solis monitoring system

(Please refer to the manual of monitoring device).

## **Function 2: Both Internal Export power management Consumption and 24H Consumption load Monitoring by Smart Sensor**

After CT installation, steps below should be taken to enable the export power control function:

### **Step 1: Follow the path to find “Internal EPM Set” on inverter LCD screen.**

Advanced Settings -> Password: 0010 -> Internal EPM Set.

### **Step 2: Select option 6 “Current Sensor”.**

Advanced Settings -> Password: 0010 -> Internal EPM Set-> Mode Select -> Current Sensor

### **Step 3: Set “CT Sampling Ratio” as 3000:1**

Advanced Settings -> Password: 0010 -> Internal EPM Set-> Mode Select -> Current Sensor -> CT Sampling Ratio

### **Step 4: Set the 24H Switch as Enable**

Advanced Settings -> Password: 0010 -> 24H Switch-> Enable

### **Step 5: Back to “Internal EPM Set” menu and find “Back flow power”. Set a value of how much power is allowed for your system to export to the grid.**

Advanced Settings -> Password: 0010 -> Internal EPM Set-> Backflow power

### **Step 6: Find “Failsafe ON/OFF”, make sure it is ON (Default is ON)**

Advanced Settings -> Password: 0010 -> Internal EPM Set-> Failsafe ON/OFF

### **Step 7: Configure the Solis monitoring system**

(Please refer to the manual of monitoring device)

## 5. Data logger that supports CT load Monitoring

Data logger type	Time to support load monitoring	Software version
WIFI	2023/12/14	000101A8
WL	2023/12/14	10011125