User Manual

Solis Export Power Manager 5G Series

Applicable Models:

Solis-EPM3-5G-PRO

Version 2.0 Release Date: 2025/07/23

Important Notes (Read Before Installation)

- This device should only be installed by professional personnel who are qualified to operate Solis equipment.

- This device must be installed away from anything that generates a strong magnetic field such as electrical appliances, large metallic objects, or other communication equipment such as radios or broadcasting devices.

- Product specifications are subject to change without notice. Every attempt has been made to make this document complete, accurate and up-to-date. Individuals reviewing this document and installers or service personnel are cautioned, however, that Solis reserves the right to make changes without notice and shall not be responsible for any damages, including indirect, incidental or consequential damages caused by reliance on the material presented including, but not limited to, omissions, typographical errors, arithmetical errors or listing errors in the material provided in this document.

- Solis accepts no liability for customers' failure to comply with the instructions for correct installation and will not be held responsible for upstream or downstream systems Solis equipment has supplied.

- The customer is fully liable for any modifications made to the system; therefore, any hardware or software modification, manipulation, or alteration not expressly approved by the manufacturer shall result in the immediate cancellation of the warranty.

- Solis will not be held liable for defects or malfunctions arising from:
  - Improper use of the equipment.
  - Deterioration resulting from transportation or particular environmental conditions.
  - Performing maintenance incorrectly or not at all.
  - Tampering or unsafe repairs.
  - Use or installation by unqualified persons.

- This manual is to be used for the EPM3-5G-PRO export power manager only. It should not be used for any other Solis device.

- For additional assistance with SolisCloud, please scan the QR code to download the user manual.

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1. Introduction

1.1 Product Description

Solis 5G Series Export Power Manager can monitor and control the backflow (export) power from the inverter to the grid. The export power manager is compatible with all Solis grid-tied US models both single-phase and three-phase. It is not compatible with any energy storage or hybrid inverter models. This is because the hybrid inverters can manage and monitor export power without an EPM by connecting CTs or meter + CTs directly to the inverter. For three-phase 480V and 600V systems the EPM is purchased on its own and includes a three-phase energy meter + CTs. For single-phase 240V systems the EPM is purchased as part of a package (kit) which includes a single-phase energy meter + CTs.

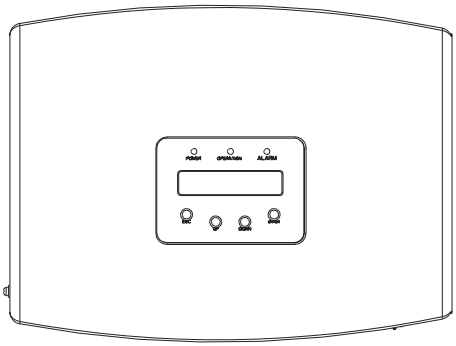


Figure 1.1 Front view

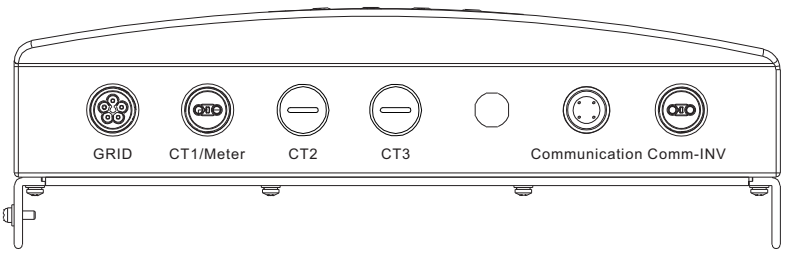


Figure 1.2 Bottom view

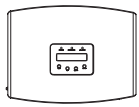
NOTE:

CT1, CT2 and CT3 interfaces for EPM3-5G external CT connection.
Meter interface is for external meter connection.

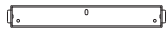
1. Introduction

1.2 Included Components

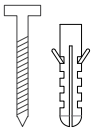
1.2.1 EPM3-5G-PRO Package for Three-Phase Systems



EPM x1



Mounting Bracket x1



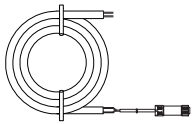
Expansion screw set x3

Locking screws x2

5 core AC connector x1
2 core comm connector x 1

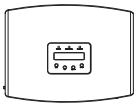
Acrel Energy Meter x1
CTs x 3

RS485 cable x5
(Inverter RS485 terminal x5 pcs)

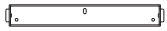


RS485 cable x1
(10m for meter connection)

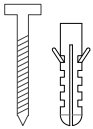
1.2.1 EPM3-5G-PRO Package for Single-Phase Systems with Multiple Inverters



EPM x1

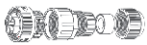


Back plate x1



Expansion screw set x3

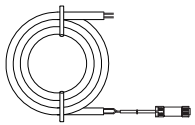
Locking screws x2



5 core AC connector x1
2 core comm connector x1

Acrel Energy Meter x1
CTs x 2

RS485 cable x5
(Inverter RS485 terminal x5 pcs)



RS485 cable x1
(10m for meter connection)

NOTE:

For single-phase systems that have only one inverter the EPM does not need to be installed. The Acrel meter + CTs can be connected directly to the inverter without an EPM for export power management and monitoring.

2. Safety

2.1 Safety Symbols

Safety symbols used in this manual, which highlight potential safety risks and important safety information, are listed as follows:

WARNING:
WARNING symbol indicates important safety instructions, which if not correctly followed, could result in serious injury or death.

NOTE:
NOTE symbol indicates important safety instructions, which if not correctly followed, could result in some damage or the destruction of the inverter.

CAUTION:
CAUTION, RISK OF ELECTRIC SHOCK symbol indicates important safety instructions, which if not correctly followed, could result in electric shock.

CAUTION:
CAUTION, HOT SURFACE symbol indicates safety instructions, which if not correctly followed, could result in burns.

2.2 General Safety Instructions

WARNING:
Electrical installations must be done in accordance with the local and national electrical safety standards.

WARNING:
It is forbidden to insert or unplug the CT cable with power on.
If accidentally disconnected the CT cable, please turn off the main AC switch and wait for 5 mins before reconnect the cable.

CAUTION:
Risk of electric shock. Do not remove cover. There is no user serviceable parts inside. Refer servicing to qualified and accredited service technicians.

CAUTION:
Risk of electric shock from energy stored in capacitors.
Do not remove cover until 5 minutes after disconnecting all sources of supply expect service technician. Warranty may be voided if any unauthorized removal of cover.

2. Safety

2.3 Notice For Use

The Export Power Manager has been constructed according to the applicable safety and technical guidelines.

Use the Export Device in installations that meet the following specification ONLY:

1. Permanent installation is required
2. The electrical installation must all the applicable regulations and standards.
3. The Export Power Manager must be installed according to the instructions stated in this manual.
4. The Export Power Manager must be installed according to correct technical specification.
5. To install the Export Device you should notice the phase of sampling voltage and the direction of sampling current, then you can connect sampling wires and CT (current transformer).

3. Overview

3.1 Front Panel Display

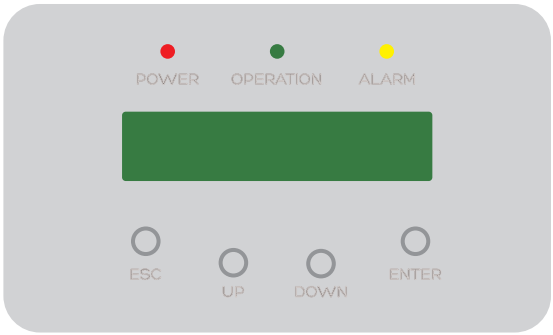


Figure 3.1 Front Panel Display

3.2 LED Status Indicator Lights

	Light	Status	Description
①	POWER	ON	EPM is getting power
		OFF	EPM is not getting power
②	OPERATION	ON	Communication with inverter
		OFF	No communication with inverter
③	ALARM	ON	Alarm
		OFF	No alarm

Table 3.1 Status Indicator Lights

3.3 Keypad

There are four keys in the front panel of the Inverter(from left to right): ESC, UP, DOWN and ENTER keys. The keypad is used for:

- Scrolling through the displayed options (the UP and DOWN keys);
- Access to modify the adjustable settings (the ESC and ENTER keys).

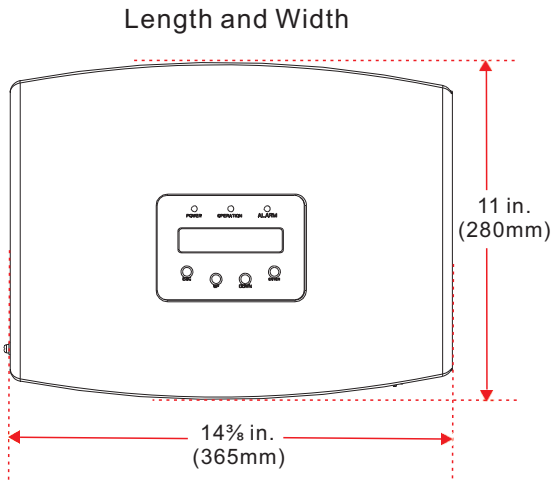
3.4 LCD

The two-line Liquid Crystal Display (LCD) is located on the front panel of the EPM, which shows the following information:

- Export Power Manager operation status and data;
- Service messages for operator;

3. Overview

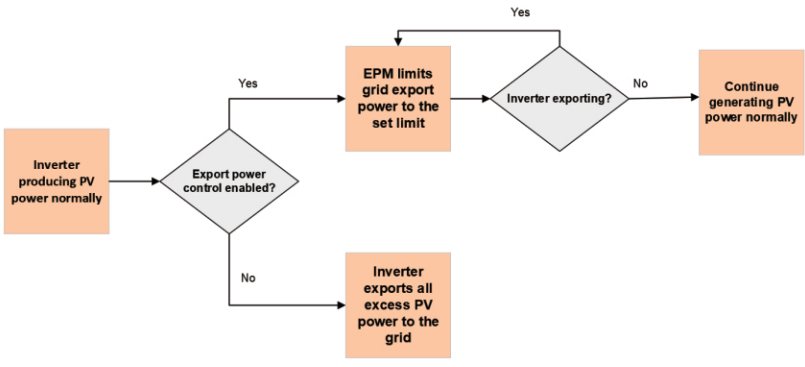
3.5 EPM Dimensions & Weight



Weight of EPM Only: 5.95 lbs (2.7kg)

3.6 EPM Operating Logic

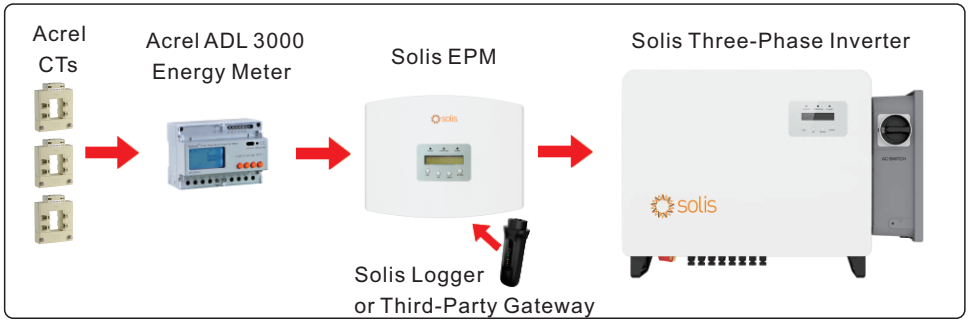
The purpose of the EPM is to be able to monitor and regulate (control) inverter power produced such that there is limited or no backflow (export) power to the grid. The inverter relies on data coming from the external energy meter + CTs to be able to do this. The EPM monitors the power exchange between the grid and the system. If a limit has been set, the EPM controls the inverter through RS485 as to limit the output power such that the export power remains within the set limit. If no limit is set or there is no EPM the system will export all excess PV power to the grid.



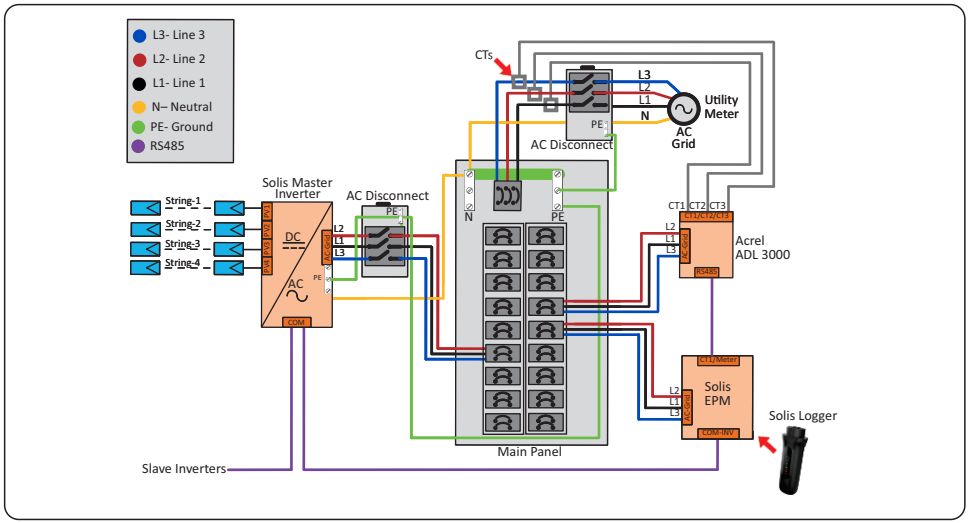
3. Overview

3.7 Three-Phase Systems Export Power Control

For three-phase systems, the EPM is paired with the Acrel ADL 3000 energy meter. A set of three split-core CTs are included with the Acrel meter. These CTs get installed on the conductors that connect the grid with the main service panel of the site. The CTs measure the current and the direction of power flow. The energy meter collects this data and then provides it to the Acrel meter. The Acrel meter then sends this data to the EPM through RS485 Modbus. Once the EPM export power limit has been set, the EPM controls the inverter output power such that the export (backflow) power to the grid does not exceed the set limit. A Solis logger (gateway) or third-party gateway can be connected to the EPM directly with RS485 for monitoring and control of the whole system.



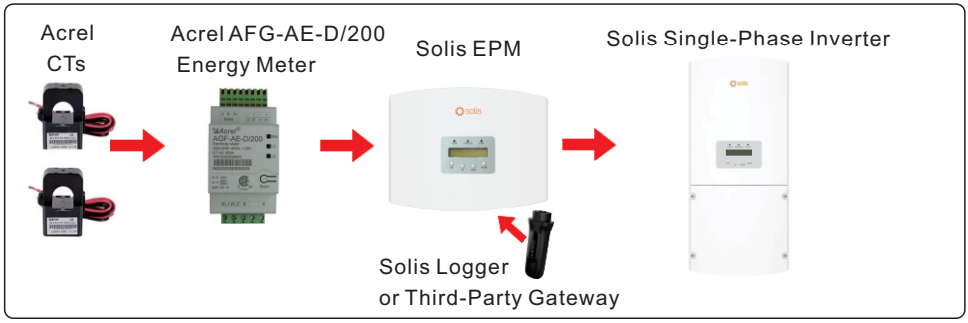
For systems with multiple inverters, the inverters get daisy-chained together with RS485. The first inverter in the chain connects to the EPM. There is a designated meter input for the EPM RS485. The gateway, whether Solis or third-party, gets connected to the EPM with RS485 as well. However, if a Solis logger is used, a maximum of 10 inverters can be connected. If more than 10 inverters are installed, a third-party gateway must be used instead. Solis recommends using FOMware instead of the EPM for this application.



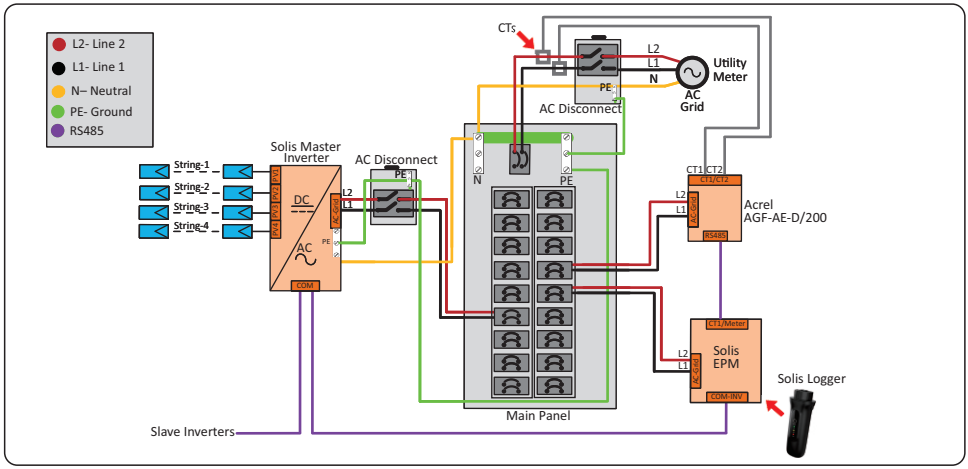
3. Overview

3.8 Single-Phase Systems Export Power Control

For single-phase systems, the EPM is paired with the Acrel AGF-AE-D/200 energy meter. A set of two split-core CTs are included with the Acrel meter. These CTs get installed on the conductors that connect the grid with the main service panel of the site. The CTs measure the current and the direction of power flow. The energy meter collects this data and then provides it to the Acrel meter. The Acrel meter then sends this data to the EPM through RS485 Modbus. Once the EPM export power limit has been set, the EPM controls the inverter output power such that the export (backflow) power to the grid does not exceed the set limit. A Solis logger (gateway) or third-party gateway can be connected to the EPM directly with RS485 for monitoring and control of the whole system.



For systems with only one inverter, only the Acrel meter + CTs need to be installed. The EPM is not required when there is only one single-phase inverter. For systems with multiple inverters, the EPM is required in addition to the Acrel meter + CTs. The inverters get daisy-chained together with RS485. The first inverter in the chain connects to the EPM. There is a designated meter input for the EPM RS485. The gateway, whether Solis or third party, gets connected to the EPM with RS485 as well. However, if a Solis logger is used, a maximum of 10 inverters can be connected. If more than 10 inverters are installed, a third party gateway must be used instead. Solis recommends using FOMware instead of the EPM for this application.



4.Installation

4.1 Select a Location for the EPM

To select a location for the EPM, the following criteria should be considered:

- The temperature of the EPM could up to 75℃.
- The EPM is designed to work in extreme temperature range is from -25℃ to 60℃.
- The EPM should be kept minimum 300mm clearance from the other device.
- The EPM cannot be placed in direct sunlight.

4.2 Mounting the EPM

Please attach mounting plate on to wall horizontally where to install the product. Then mark A , B and C to fix mounting plate.(see Figure 4.1)

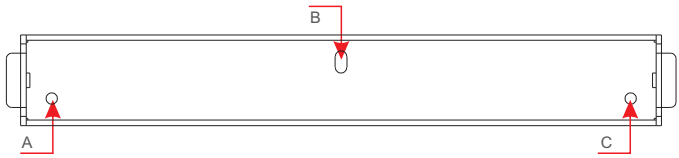


Figure 4.1 Bracket

Drill three φ8 holes and insert expandable shell into the holes which make the bracket alignment. After that fix the bracket on the wall.(see Figure 4.2)

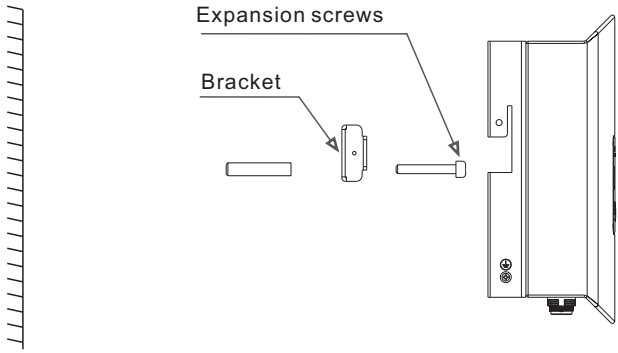


Figure 4.2 Fix the bracket on the wall

4.Installation

Hang the EPM in the bracket by the steps below .(see Figure 4.3)

Figure 4.3 Hang the EPM in the bracket

Fix the two screw at the side of bracket.(see Figure 4.4)

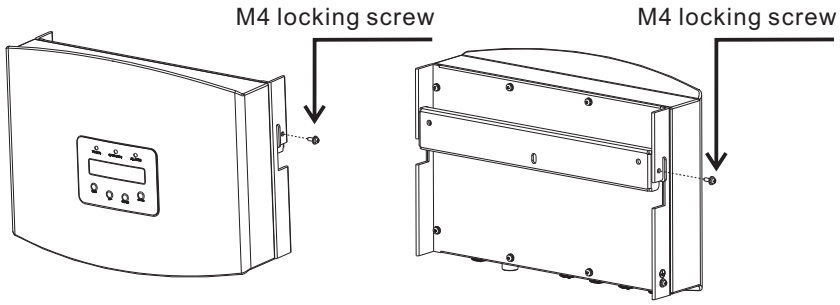


Figure 4.4 Fix the two screw

4.Installation

4.3 Electrical Connections

The EPM is designed for electrical connection without removing the cover.
The meaning of the symbols located at bottom of the EPM is listed in Table 4.1.

Grid	AC voltage sampling terminal
Meter	Connect to Meter RS485 interface
Comm_INV	Connect to solis inverters
Communication	Monitoring device or Upgrade Stick

Table 4.1 The meaning of the symbols located at bottom of the EPM

System connection diagram is as follows:

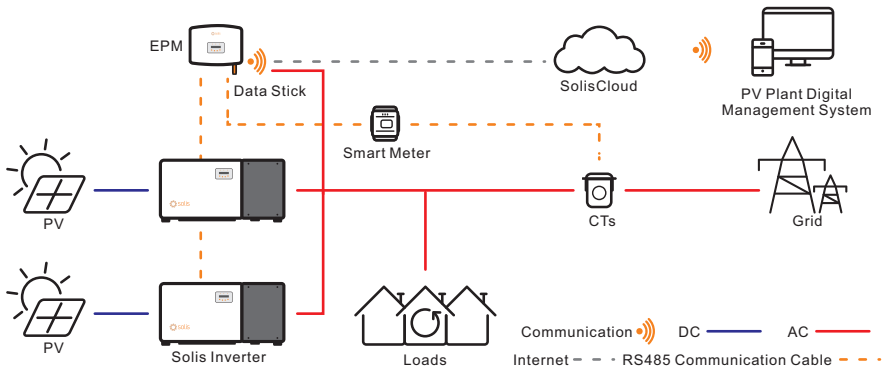


Figure 4.5 EPM3-5G-PRO low voltage side system connection diagram

4.Installation

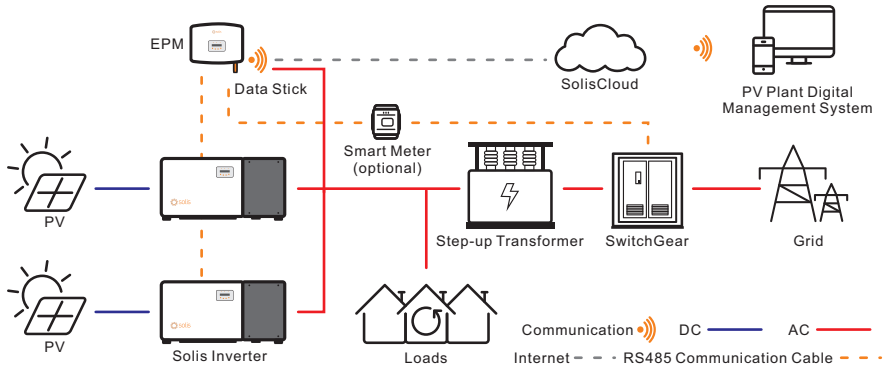


Figure 4.6 EPM3-5G-PRO middle and high voltage side system connection diagram

4.3.1 Make the Grid input cable

a. Measure the distance from EPM to power distribution box. And find proper cable for grid input. Use a 5-core cable for three-phase systems and a 4-core cable for single-phase systems.

b. Connect L1, L2, L3, N and PE to pins 1, 2,3, N and PE. (see figure 4.8)

c. If this is a single-phase system, connect nothing to Pin 3 (L3).

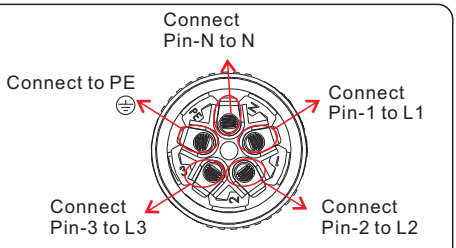


Figure 4.7 Three-phase connection

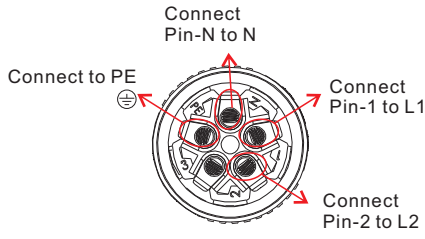


Figure 4.8 Sinlge-phase connection

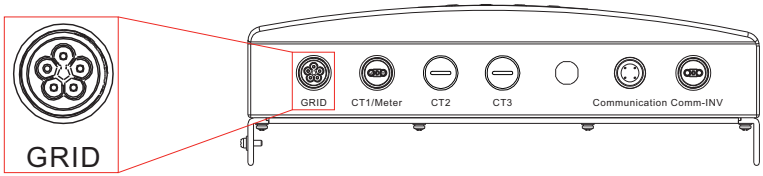


Figure 4.9 EPM Grid Connection Port Location

4.Installation

d. Strip ¼ inch off the end of each conductor

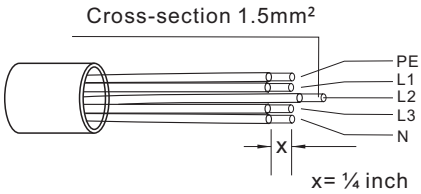


Figure 4.10 Strip the cable(three-phase)

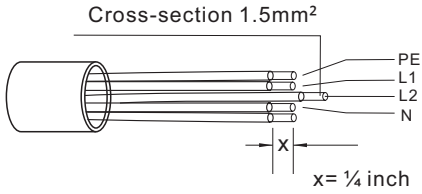


Figure 4.11 Strip the cable(single-phase)

e. Thread the cable through the connector and insert each conductor end into the designated pin. Use a small flathead screwdriver to tighten the pins until snug.

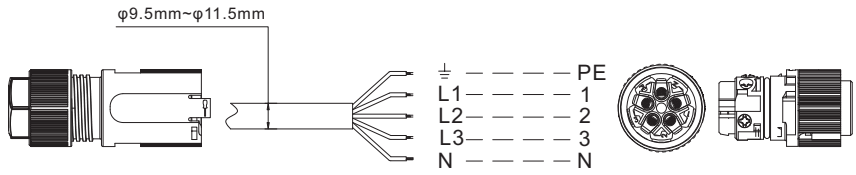


Figure 4.12 5-core conductor to connector (three-phase)

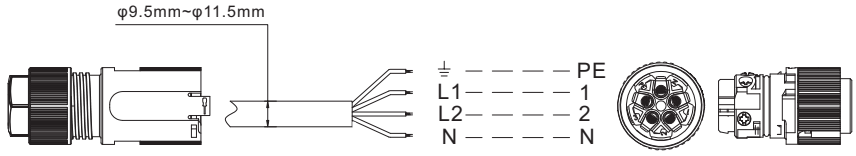


Figure 4.13 4-core conductor to connector (single-phase)

f. Assemble the connector.

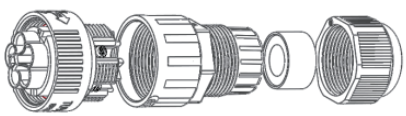


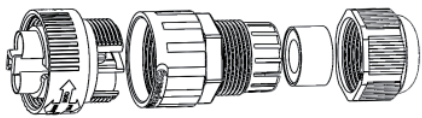
Figure 4.14 Grid connector assembly

4.Installation

4.3.2 Make an RS485 cable for Inverter Comms (COMM-INV port)

a. Using a 2-core cable, thread the cable through the 2-pin connector after stripping off about a quarter of an inch from the end of each core. Land one core in the + pin and one core in the - pin. Make sure on the inverter side the + connects to the inverter RS485A and the - connects to the inverter RS485B.

.



+ to connect RS485 A
- to connect RS485 B

Figure 4.15 RS485 terminal

b. Refer to figure 4.16, connect communication cable between inverter with EPM, and then measure the distance from EPM to inverter.
Note: The EPM to master inverter RS485 comm cable must not exceed 150 feet.

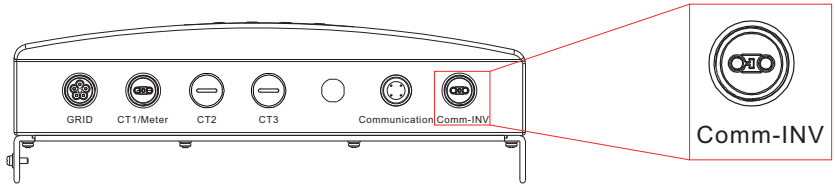


Figure 4.16 EPM Inverter Communication Port (RS485)

c. Following Figure 4.15 daisy-chain the EPM with the inverters making sure to connect RS485 IN of the master inverter to RS485 OUT. If this is a single-phase system, you must use the EC-5 or EC-10 accessory cable to daisy-chain the 4-pin ports of the inverters together.

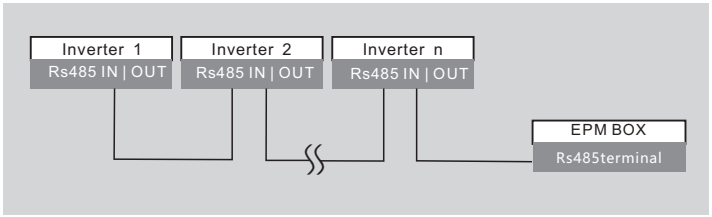


Figure 4.17 RS485 cable connection

4.Installation

4.3.3 Energy Meter Connection (three-phase)

Connection between the EPM and the Acrel ADL 3000 energy meter (three-phase)

EPM3-5G-PRO needs to connect to the RS485 communication of the meter to read and display the power, voltage, and current data on the grid side.

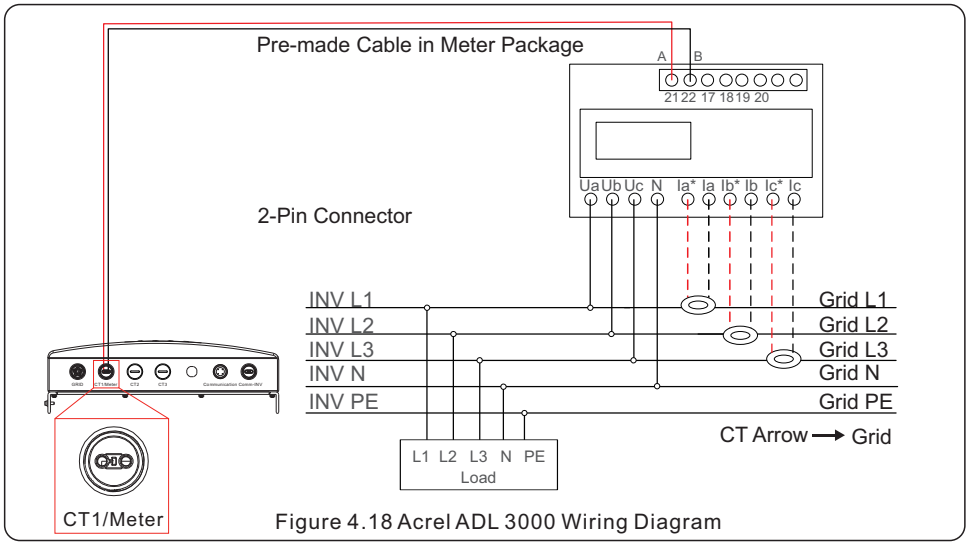


Figure 4.18 Acrel ADL 3000 Wiring Diagram

4.3.4 Energy Meter Connection (single-phase)

Connection between the EPM and the Acrel AGF-AE-D/200 energy meter

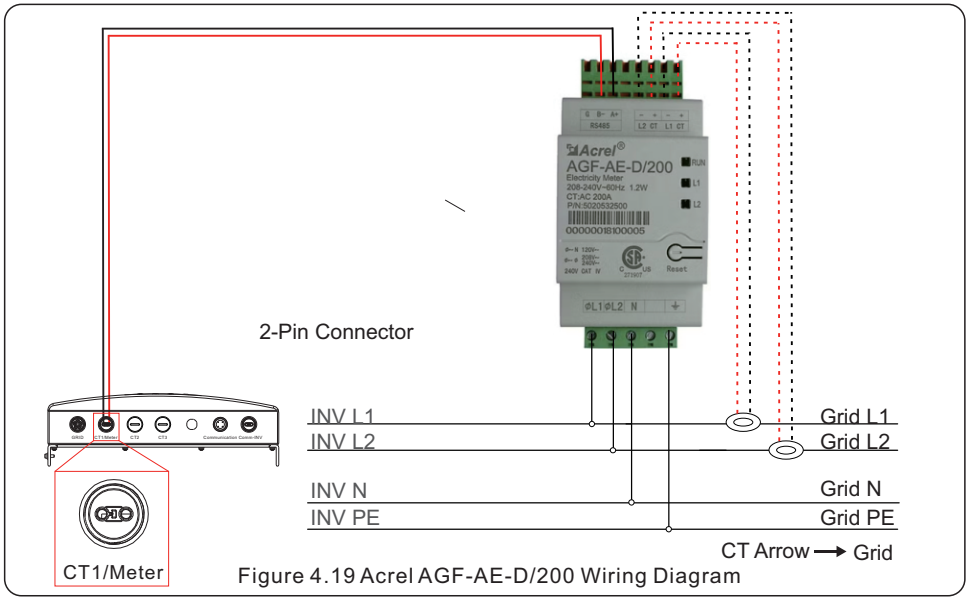


Figure 4.19 Acrel AGF-AE-D/200 Wiring Diagram

4.Installation

4.3.5 Acrel ADL 3000 Dimensions

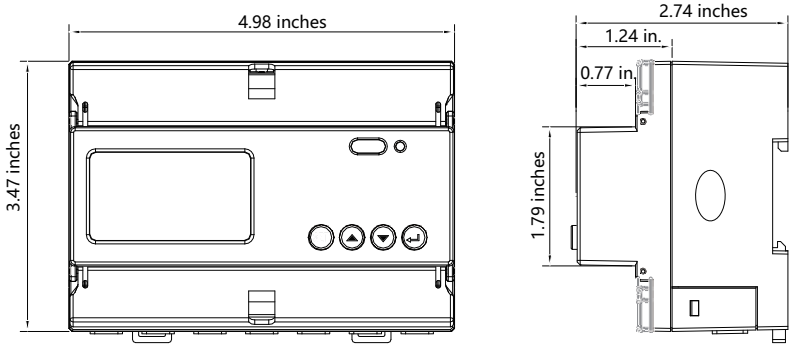


Figure 4.20 Acrel ADL 3000 Energy Meter Dimensions

4.3.6 Acrel ADL 3000 Technical Specifications

Specification		3 phase 3 wires, 3 phase 4 wires
Voltage	Reference voltage	3-110V, 3-400V, 3-480V, 3-66/115V, 3-230/400V, 3-277/480V
	Input voltage fluctuation	0-120%
	Consumption	<10VA(Single phase)
	Impedance	>2MΩ
	Accuracy class	Error±0.2%
Current	Input current	3-1(6)A
	Consumption	<1VA(Single phase rated current)
	Accuracy class	Error±0.2%
Power		Active, reactive, apparent power, error±0.5%
Frequency		45~65Hz, error±0.2%
Energy		Active energy(Accuracy class:0.5, 1), reactive energy(Accuracy class 2)
Energy pulse output		1 active optocoupler output, Resistive load(Voltage is not more than 24V, current is not more than 5mA)
Switching input		1 optocoupler input,Maximum allowed voltage: ~ 220V, OVC III
Width of pulse		80±20ms
Pulse constant		400imp/kWh
Interface and communication		RS485 Modbus RTU
Range of communication address		Modbus RTU:1~ 247;
Baud rate		1200bps~19200bps
Working temperature		-25℃~+55℃
Relative humidity		≤95%(No condensation)
Altitude		≤ 2000m
Installation environment		Indoor use
Protection Rating		Nema 4X

4.Installation

4.3.7 Connect and fix the CT

To measure the backflow (export) power, the CTs need to be installed at the utility POI (Point of Interconnection) with the main service panel.

NOTE:
For three phase system, CTs must be installed on L1/L2/L3 with correct sequence, otherwise EPM can not detect the correct data.
"The CT cable outer diameter is 6.5mm-7.5mm, cross-sectional area 1.5mm²".

a. Switch off the main switch, disconnect the line cables.
b. Insert the cables through the CT, make sure the P1 on CT is towards grid and P2 is towards the inverter.
c. Reconnect the line cables.

NOTE:
If the CT is installed facing the wrong direction, the EPM will not work normally.

NOTE:
The CT must be grounded on the secondary side.

4.Installation

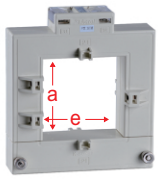
Specification	Dimensions(mm) W x H x D	Hole size(mm) a x e	CT Ratio	AKH-0.66K
CT-30×20-100A	90 x 114 x 40	22 x 32	100:5A	
CT-60×40-300A	114 x 140 x 36	42 x 62	300:5A	
CT-80×40-600A	122 x 162 x 40	42 x 82	600:5A	
CT-80×40-1000A	122 x 162 x 40	42 x 82	1000:5A	
CT-160×80-2000A	184 x 254 x 52	82 x 162	2000:5A	
CT-160×80-3000A	184 x 254 x 52	82 x 162	3000:5A	

Table 4.2 CT Ratio

NOTE:

Solis recommends customers to purchase suitable current transformers from local suppliers according to the max possible current in different projects.
As long as the secondary current is 5A, no matter what the primary current is, it will not affect the warranty of the EPM devices and inverters.
Solis can also provide above current transformers as an optional accessory. Customers can contact Solis sales rep to place the order based on their project requirements.

4.3.8 Multiple-Inverter Connection

Please follow the previous system diagrams to connect multiple inverters. The EPM can control 60 inverters maximum, varying models is allowed. However, if Solis monitoring is being used, then only 10 inverters can be connected at most.

4.3.6 Monitoring

Inverters that are connected to EPM can be monitored by Solis Monitoring devices. (Wi-Fi/Cellular/LAN stick). Plug the Solis logger into the 4-pin Communication port. Do not connect the logger to the inverter, only to the EPM. Compatible loggers include: S1-W4G-ST (4-pin), S2-WL-ST (4-pin), S3-WIFI-ST, and S5-WIFI-ST (4-pin). This port can also be used to connect a third-party gateway.

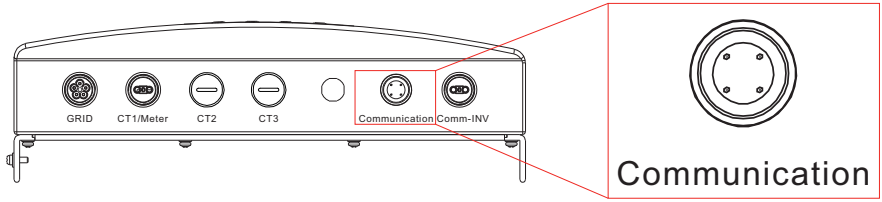


Figure 4.21 EPM Inverter Communication Port (RS485)

5.Comissioning & Decommissioning

5.1 Commissioning

1. Switch off all the AC breakers and DC breakers in the system.
2. Complete AC and DC wirings for inverters by following inverter manuals.
3. Connect AC cables to the Grid terminal on the EPM.
4. Install the CTs to the grid connection side with correct direction as mentioned in EPM manual.
5. Connect RS485 communication cables between inverters and EPM Comm-INV port.
6. Switch on the DC breakers for Inverters and set the inverters to "OFF" in LCD and Set "External EPM Set"- "5G EPM" -"Failsafe: ON". Then assign slave addresses accordingly in inverters.
7. Switch on all the AC breakers for inverters and EPM
8. Set EPM settings including“Inverter Qty Set”, "Backflow Power", "Set CT Ratio" and "Set Capacity" based on the actual system configuration.
9. Turn on some loads and check the power flow data on EPM. Negative power indicates taking power from grid and CT direction is correct. Positive power indicates export power to grid and the CT direction is reversed (Change the CT direction accordingly).
10. If the CT direction is confirmed correct and EPM is not reporting any alarms, set all inverters to ON in inverter LCD.
11. Commissioning Completed.

5.2 Decommissioning

To avoid backflow power to the Grid, please stop the inverter before stopping the EPM.

1. Turn off the inverter output AC breaker.
2. Turn off inverter input DC breaker or pull out PV cable to stop inverter.
3. Turn off the grid input breaker of EPM.
4. Disconnect all cable of EPM, disassemble EPM after 5mins.

6. Operation

During normal operation, the display alternately shows the power of grid side and the operation Status .Screens can also be scrolled manually by pressing the UP and DOWN keys. Press the ENTER key to access to the Main Menu.

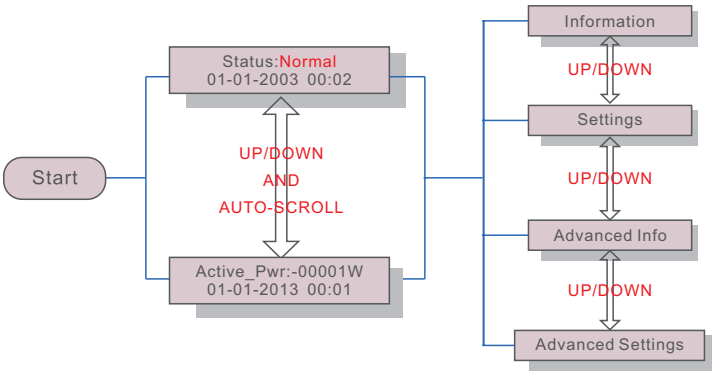


Figure 6.1 Operation Overview

There are 4 status:

Normal: The system works normally

RS485 AllFail: EPM has lost communication with ALL inverters

CT-Failsafe: Current Sensor failed

RS485Fail: EPM has lost communication with one or some of the inverters

6.1 Main Menu

There are four submenus in the Main Menu (see Figure 6.1):

1. Information
2. Settings
3. Advanced Info.
4. Advanced Settings

6.2 Information

Solis Export Power Manager main menu provides access to operational data and information. The information is displayed by selecting "Information" from the menu and then by scrolling up or down.

6. Operation

Display	Description
VacA_Grid: 000.0V IacA_Grid: 000.0A	Vac_Grid: Grid voltage and current.
VacB_Grid: 000.0V IacB_Grid: 000.0A	
VacC_Grid: 000.0V IacC_Grid: 000.0A	
Load_Pwr: 0000.0KW Total_PINV: 0000.0KW	Load_Pwr: Load Power. Total_PINV: Total output power of inverters.
Export Limited: 000% Frequency: 00.00Hz	Export Limited: Inverter output power percentage. Frequency: Grid frequency.
Active_APwr: +00000W Active_BPwr: +00000W	Active_Pwr: Power of the power grid.
Active_CPwr: +00000W Active_TPwr: +00000W	Active_Pwr: Power of the power grid. Active_TPwr: :Power flows through CTs.
Inverter SN: XXXXXXXXXXXXXXX	Serial number of the inverter.

Table 6.1 Information list

6.2.1 Lock screen

Pressing the ESC key returns to the Main Menu. Pressing the ENTER key locks (Figure 6.2(a)) or unlocks (Figure 6.2 (b)) the screen.

(a) (b)

Figure 6.2 Locks and Unlocks the Screen of LCD

6. Operation

6.3 Settings

The following submenus are displayed when the Settings menu is selected:

1.Set Time

2.Set Address

6.3.1 Set Time

This function allows time and date setting. When this function is selected, the LCD will display a screen as shown in Figure 6.3.

Figure 6.3 Set Time

Press the UP/DOWN keys to set time and data. Press the ENTER key to move from one digit to the next (from left to right). Press the ESC key to save the settings and return to the previous menu.

6.3.2 Set Address

This function is used to set the address when multi inverters are connected to three monitor. The address number can be assigned from “01”to “99”(see Figure 6.4).
The default address number is “01”.

Figure 6.4 Set Address

Press the UP/DOWN keys to set the address. Press the ENTER key to save the settings. Press the ESC key to cancel the change and return to the previous menu.

6. Operation

6.4 Advanced Info - Technicians Only

NOTE:
To access to this area is for fully qualified and accredited technicians only.
Enter menu “Advanced Info.” and “Advanced settings” (need password).

Select “Advanced Info.” from the Main Menu.
The screen will require the password as below:

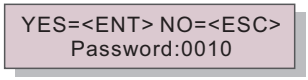


Figure 6.5 Enter password

After enter the correct password the Main Menu will display a screen and be able to access to the following information.

1. Inverter Power 2. CT Connect Status 3. Version

4. Model Inverter 5. Communication Data 6. Energy Info

6.4.1 Inverter Power

The screen shows the information of Inverter Power for each inverter which connected to the EPM.

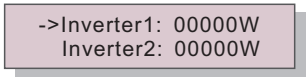


Figure 6.6 Inverter Power

6.4.2 CT Connect Status

The position of three-phase CT installation and direction of current detection refer to 4.3, P1 on CT is towards grid and P2 is towards the inverter, the CT connect status only works when you switch to"grid off'" mode and when the load is large enough for EPM to detect an import, then EPM detection will display OK, as shown in figure 6.7. Otherwise, the status will display "NG" which indicates wrong CT direction.

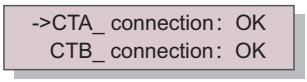


Figure 6.7 CT Connect Status

6. Operation

6.4.3 Version

The screen shows the model version and the software version of the Inverter.

Figure 6.8 Version

6.4.4 Model Inverter

The screen shows the Rated power of inverters that are connected to the EPM.

Figure 6.9 Model Inverter

6.4.5 Communication Data

The screen shows the internal communication data of the Inverter,
for service technicians only.

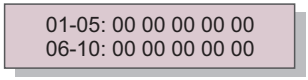


Figure 6.10 Communication Data

6.4.6 Energy Info

This shows the energy records on the EPM.
1.Load Total E. 2.INV Send Total E. 3.Send Grid Total E. 4.Get Grid Total E.

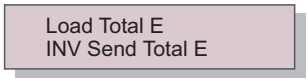


Figure 6.11 Energy Info

6. Operation

NOTE:
To access to this area is for fully qualified and accredited technicians only.
Please follow 6.4 to enter password to access this menu.

Select Advanced Settings from the Main Menu to access the following options:

1. Inverter Qty. Set 2. Backflow Power 3. Set CT Ratio 4. FailSafe ON/OFF

5. Backflow Work Mode 6. PELD ON/OFF 7. Transmit ON/OFF 8. System Updade

9. Reset Password 10. Restore settings 11.Set Capacity

6.4.7 Inverter Qty. Set

This submenu is used for setting inverter number.

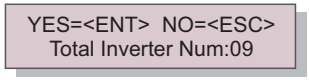


Figure 6.12 Inverter Qty. Set

Enter the screen ,it shows all the number of inverters which conected to the EPM.

The number(01~99) can be select by pressing the UP/ DOWN keys.

Press the ENTER key to set the inverter number ESC key to return to the previous menu.

6.4.8 Backflow Power

This submenu is used for setting allowed power that inverter can generate to grid.

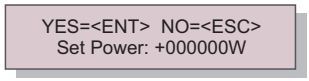


Figure 6.13 Set Backflow Power

Press the UP/DOWN keys to set data.Press the ENTER key to set backflow power

Then press UP/DOWN keys to change the number(the times of 100).

Press the ESC key to save the settings and return to the previous menu.

6.4.9 Set CT Ratio

This is used to set the CT ratio for the current transformer.
Setting range is from 20:1 to 9900:1 with 10:1 interval.
For example, if 1000:5A current transformer is used, please set the ratio as 200:1

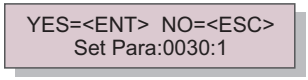


Figure 6.14 Set Meter CT

Press the UP/DOWN keys to set data. Press the ENTER key to set CT Para.
Press the ESC key to save the settings and return to the previous menu.

6.4.10 FailSafe ON/OFF

The submenu is used for setting fail Safe ON/OFF.
Fail Safe indicates the communication status between EPM and inverters.
The default setting is "Run". DON'T change it without technicians.

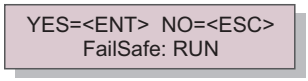


Figure 6.15 FailSafe ON/OFF

When the Fail Safe is set as "Run". If some of inverters lost communication with EPM , EPM's LCD screen will display " RS485 fail"; if all inverters lost communication with EPM, then the LCD screen of EPM will display "fail safe". And The inverter stops output power.

When the Fail Safe is set as "Stop", communication lost between EPM and inverters will not affect the output of inverters.

6.4.11 Backflow Work Mode

This submenu is used for set backflow work mode: 01, 02. "01" is the default mode.

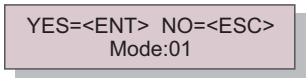


Figure 6.16 Backflow Work Mode

6. Operation

Mode “01”, As shown in the figure 6.17, the average limiting mode, the output power of each phase is the average of the three-phase load power, and it is more than the phase of the lowest power in three phases.

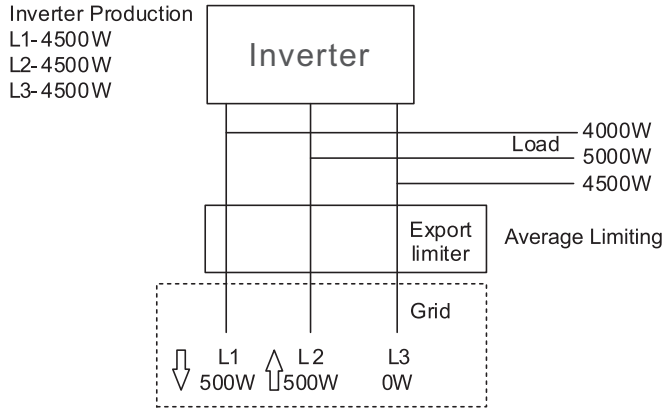


Figure 6.17

Mode “02”, as shown in the figure 6.18 the per phase limiting mode, the inverter only generate the power that equals to one of three-phase load power that is the lowest load power of a certain phase.

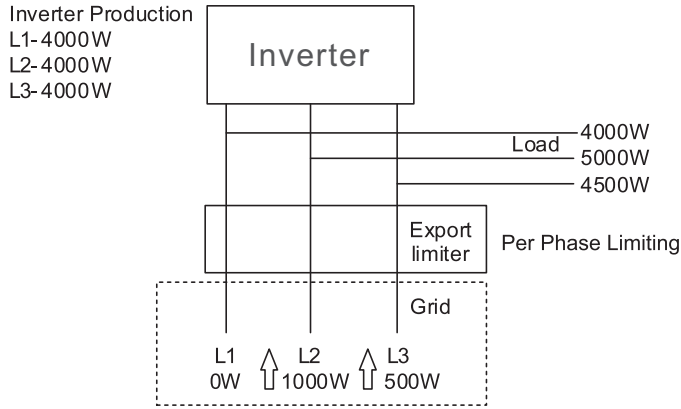


Figure 6.18

6.4.12 Transmit ON/OFF

This is a setting for Solis technician use only.

Please keep the switch as OFF for normal use.

Figure 6.19 Transmit ON/OFF

6.4.13 System Update

The upgrade of EPM's system can realize by external wire.

Please consult our technical engineer for more details.

Figure 6.20 System Update

6.4.14 Reset Password

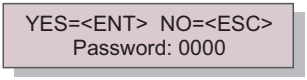


Figure 6.21 Reset Password

First, enter the current password and press Enter button;

Second, enter the new password, press Enter button to save it. UP/DOWN button can be used to move the cursor.

Third, press ESC button to get to the previous page.

6.4.15 Restore Settings

When Restore Settings is selected, the LCD will display as shown in Figure 6.22.

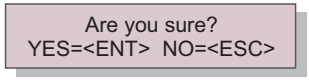


Figure 6.22 Restore Settings

Press the ENTER key to execute the setting.

Press the ESC key to return to the previous menu.

6.4.16 Set Capacity

This item is used to set the sum of the capacities of the connected inverters.

Figure 6.23

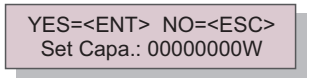


Figure 6.24

6. Operation

6.5 Inverter Set

EPM has two versions: EPM-2G, EPM-5G. While inverter is working with EPM, please be reminded to change the inverters settings as below:

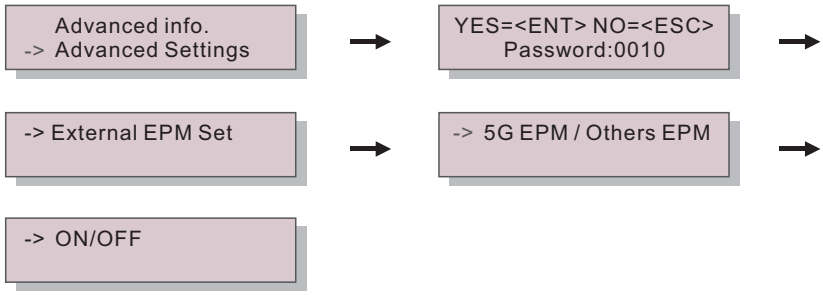


Figure 6.25

NOTE:
If you are using EPM-5G, please choose “5G EPM”, and set it “ON”, if you are using EPM-2G. Please choose “Others EPM”, and set it “ON”, only one setting needs to be set.

NOTE:
If “5G EPM” is chosen, for inverters produced before Nov 30th 2019 (SN: XXXXXX19B30XXXX) need to update the firmware, please contact with Solis local service center or service@ginlong.com for instructions on firmware update.

7. Troubleshooting

The EPM is designed in accordance with the most important international safety and EMC requirements. Before delivering to the customer, the EPM has been subjected to several tests to ensure its optimal operation and reliability.

In case of failure, the LCD screen will display alarm message.
The EPM can show its own alarms or alarms from inverter. There are 3 alarm can be showed on LCD:

1. Backflow

There is backflow current to the grid, customer needs to stop inverter and check the connections for the RS485 cable between EPM and inverter.

2. INV. fault

There is a fault alarm in inverter, need to check inverter status.

3. Fail safe

RS485 AllFail: EPM has lost communication with ALL inverters

CT-Failsafe: Current Sensor failed

RS485Fail: EPM has lost communication with one or some of the inverters

8. Technical Specifications

Model	Solis-EPM3-5G-PRO
AC Input	
Rated voltage	3Φ/PE, 480 V
Input voltage range	175V-519V (L-L)
Maximum input current	0.5A
Input frequency range	45-65Hz
Communication	
Inverter communication	Modbus
Communication with inverter	RS485 (Wired)
Maximum communication distance	1000m
Maximum communication inverter numbers	10 pcs
Monitoring	Wi-Fi/4G/LAN Stick (Optional)
General data	
Ambient temperature	-13F to 140F (-25℃ to 60℃)
Relative humidity	5%~95%
Protection Rating	NEMA 4X
Self power consumption	＜6W
Dimensions(WxHxD)	364mm x 276mm x 114mm
Weight	2.7kg (without CT, Meter)
AC connection	Quick connection terminal
Display	LCD
Smart meter	Yes
CT conection	Plug terminal
CT specification	Optional (Secondary current is 5A)
Features	
Failsafe fuction	Yes
Remote upgrated	Yes
PF adjustment	Yes
Control time	5 seconds
Power Control Accuracy	1%
Warranty	2 years

9. Appendices

9.1 Product Certificate of Compliance

Certificate of Compliance

Certificate: 80147983 **Master Contract:** 273488

Project: 80147983 **Date Issued:** 2023-04-28

Issued to: Ginlong Technologies Co., Ltd.
No.57, Jintong Road, Xiangshan
Ningbo, Zhejiang, 315712
CHINA

Attention: Ruyi Pan

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only

C US

Issued by: Magic Zhang
Magic Zhang

PRODUCTS

CLASS - C531109 - POWER SUPPLIES - Distributed Generation Power Systems Equipment
CLASS - C531189 - POWER SUPPLIES - Distributed Generation-Power Systems Equipment - Certified to U.S. Standards

Export Power Manager Equipment, models Solis-EPM3-5G and Solis-EPM3-5G-PRO, permanently connected.

For details related to rating, size, configuration, etc., reference should be made to the CSA Certification Record, Certificate of Compliance, Annex A, or the Descriptive Report.

APPLICABLE REQUIREMENTS

CSA-C22.2 No.107.1-16	- Power Conversion Equipment
*UL Std No. 1741	- Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources (Third Edition, Dated September 28, 2021)

9. Appendices

9.1 Product Certificate of Compliance

Certificate: 80147983 **Master Contract:** 273488
Project: 80147983 **Date Issued:** 2023-04-28

Notes:

Products certified under Class C531109 have been certified under CSA's ISO/IEC 17065 accreditation with the Standards Council of Canada (SCC). www.scc.ca

9. Appendices

9.1 Product Certificate of Compliance

Supplement to Certificate of Compliance

Certificate: 80147983 **Master Contract:** 273488

The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.

Product Certification History

Project	Date	Description
80147983	2023-04-28	Export Power Manager Equipment, models Solis-EPM3-5G and Solis-EPM3-5G-PRO, permanently connected (C/US)

Ginlong Technologies Co., Ltd.
No. 57 Jintong Road, Binhai Industrial Park, Xiangshan,Ningbo,
Zhejiang, 315712, P.R. China.
Telephone: +1(866)438-8408
Email: usservice@solisinverters.com
Website: www.ginlong.com/us

If you encounter any problems with the logger, please take note of the logger serial number and then contact us using the phone number or email listed above.