

Installation / User Manual

**Energy Collect Device(MECD)
& Energy Monitoring Analysis(EMA)**



Introduction

The MECD communications gateway collects and delivers modular performance data in real time, for comprehensive monitor and manage of your solar system, optimizing the performance of your solar system.

With built-in programmable DI, the MECD is able to control the microinverter connected shutdown immediately when the DI status is changed.

Features

User-friendly;

LCD display and buttons, easy operation;

Compact design and light in weight.

Capable

Built-in Zigbee, PLC and WIFI modular;

Compatible with single phase and three phase applications;

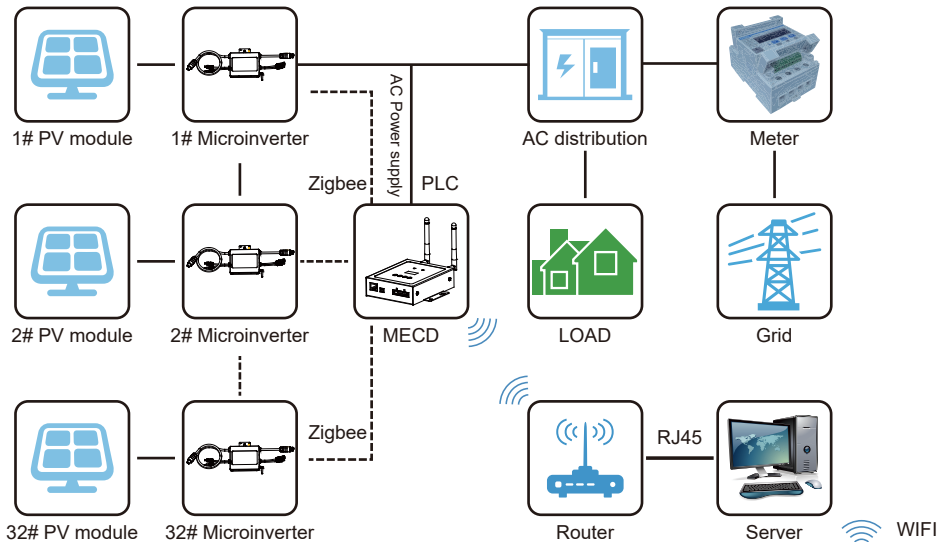
Enables remotely monitoring and management.

Safe

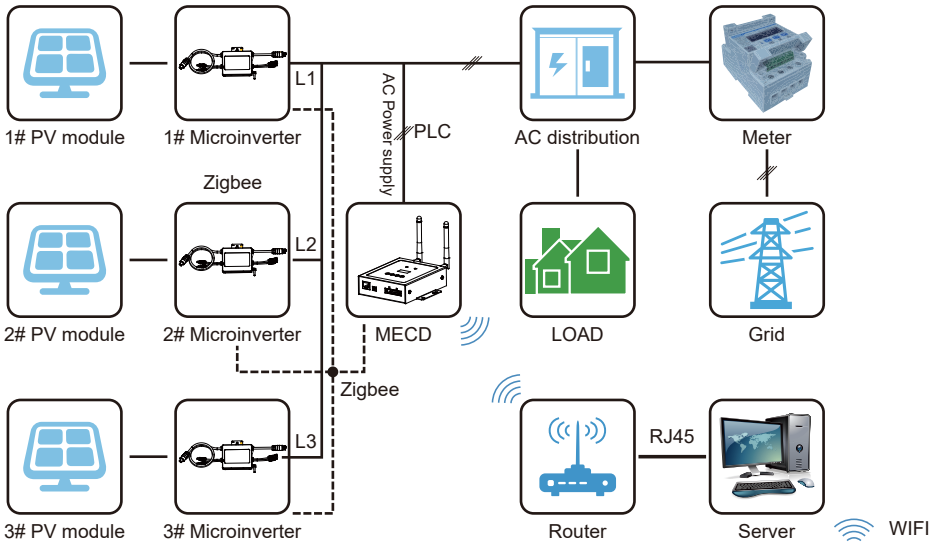
Support quick shutdown remotely for inverter;

Robust design, 3 years warranty.

Application Diagram for Single Phase System(5#,10#,20#,32#Max)



Application Diagram for Three Phase System

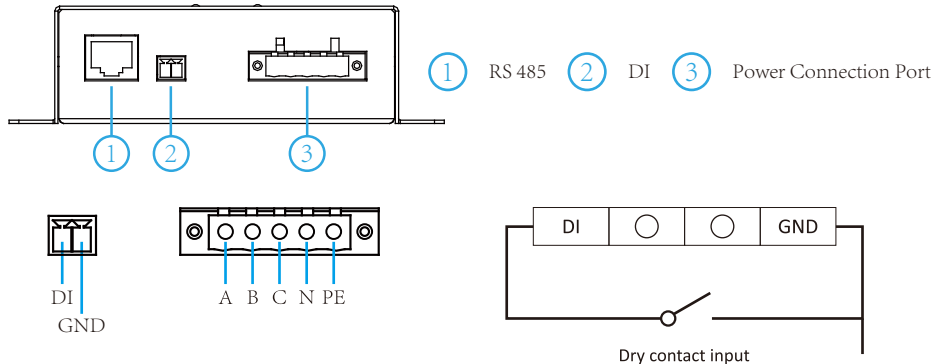


The maximum number of microinverters allowed for each branch depends on the model of the microinverter. And the total number of microinverses of the system is not allowed to exceed the maximum number of microinverter allowed of MECD.

Interface Explanation

Interface position

All of the MECD interface as below, from left to right, are Network port, DI and Power Connection Port.



RS485: This port function is reserved.

DI: Digital input. When the DI status changed from 1 to 0, the MECD will send command to control the microinverter shutdown immediately via Zigbee or PLC.

Power connection port: L1, L2, L3, N, PE, connects power through the power line. Power cable included in the MECD package.

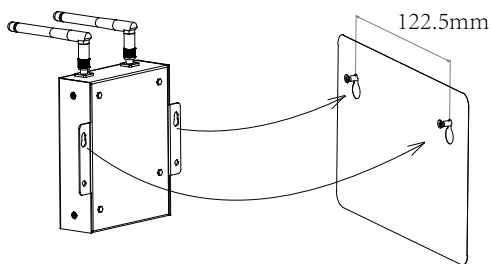
Preparation

Make sure you have the following things taken care of before attempting to install the ECD:

- A dedicated standard AC electrical outlet (located electrically as close to the array as is possible).
- A broadband Internet connection is available for your use.
- Wireless router is available for you use a laptop.
- With a web browser (to view the EMA online monitoring application).
- A pre-programmed MECD.

Selecting an Installation Location for the MECD

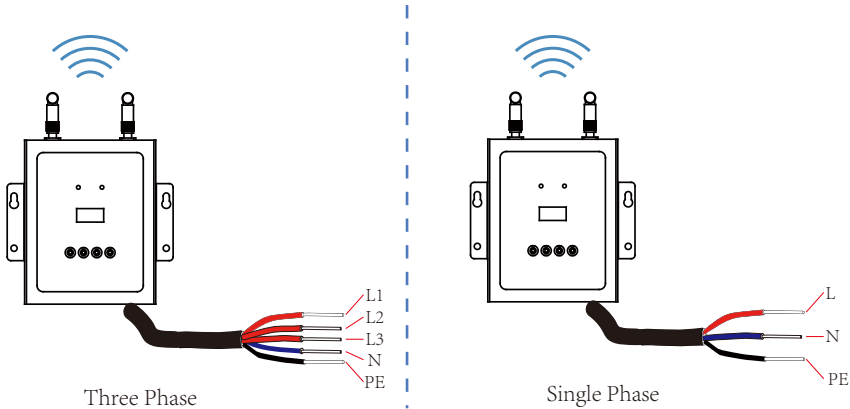
- A location that is electrically as close to the array as possible-preferably a dedicated outlet installed directly to the solar system sub-panel.
- The ECD is not rated for outdoor use, so if installing outdoors near a junction box or breaker panel, making sure that you enclose it in an appropriate weather proof NEMA electrical box.
- Using wall-mounted
When mounting the MECD on the wall, make sure to select a cool, dry, indoor location.
- Depending on the wall surface you are mounting the MECD, use either two #4 drywall screws or wall anchors, installed 122.5 mm apart. The drywall screws and wall anchors are NOT included in the MECD kit.
- Align and slide the MECD onto the mounting screws.



Connections

- 1. Connect the power cable to the power connection port on the bottom of the ECD;
- 2. Config the wifi device with your home router.

Single phase / Three phase PLC/ZIGBEE type MECD wifi connection



MECD + WIFI Plug Setup Sequence

Once power is supplied to the ECD, it automatically steps into the main screens on its LCD display which including below details info.



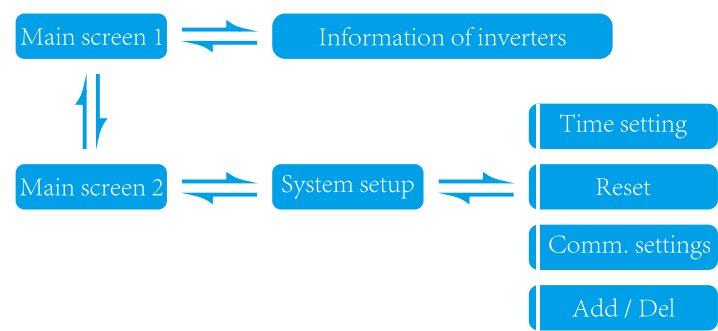
Buttons	Name	Functions
Esc	Return button	Allows you to return to the last page or end an operation.
Up	Cursor Up button	Allows you to go to the upper-level menu or set parameters.
Down	Cursor Down button	Allows you to go to the lower-level menu or set parameters.
Enter	Confirm button	Allows you to go to the menu or confirm the value.

MECD LED indications

There are two indicators of the MECD. The following description will tell how it works.

Indicator	Status	Meaning
Normal indicator (left LED)	Steady blue	All inverters connected works normal
	Off	All inverters connected has alarms
	Blinking blue	Some inverters connected has alarms
Comm indicator (right LED)	Steady blue	All inverters connected communication successfully
	Off	All inverters connected communication failed
	Blinking	Some inverters communication failed

MECD LCD operation flow chart



Information on the LCD home page

Power: 0 W

E-Today: 0 W

E-Total: 572 Wh

MECD main interface 1:

- 1: Output power;
- 2: Today’s total power generation;
- 3: Total power generation of microinverters connected.

Ver: 0100

INV_Num: 5

Comm.Mode: PLC

ID: 0

MECD main interface 2:

- 1: version information.
- 2: Number of connected inverters.
- 3: Communication method.
- 4: MECD Serial number.

Information of inverters

1 / 5: 0000000000

Power: 0 W

Connect failed

- 1: Inverter ID currently connected;
- 2: Power generation;
- 3: Connection Status.

System setup

TimeSet <--

Reset

CommSet

ADD/DEL

- 1: Time setting;
- 2: Reset;
- 3: Communication settings;
- 4: Add or Delete.

Time setting

TimeSet

2020.04.26

21:00:43

OK Cancel

- 1: Time setting;

Reset

Energy Reset

MECD Res INV_ Res

OK Cancel

- 1: MECD reset: reset to factory setting.
- 2: Inverter reset: clear all inverters information of MECD.

Communication settings

Comm Set

Zigbee PLC

OK Cancel

- 1: Zigbee or PLC communication method selection.



Add or delete inverter ID on ECD

Add and Del

AddDel

Add Inverters

ID: 0000000000

AddCancel

1 / 4: 0000000001

2 / 4: 0000000002

3 / 4: 0000000003

4 / 4: 0000000004

Monitoring Platform

The MECD has built-in WIFI modular which is able to connect router directly.

Web monitoring address: <https://pro.solarmanpv.com>; (for Solarman distributor account);
<https://home.solarmanpv.com> (for Solarman end user account).

For mobile phone monitoring system, scan the below QR code to download the APP.

Or by searching “Solarman Business” in App store or Google Play store, and this app is for distributor account. Searching “Solarman Smart” in App store or Google Play store and choose “Solarman smart”, this app is for end user account.



3. Set WiFi connection on PC

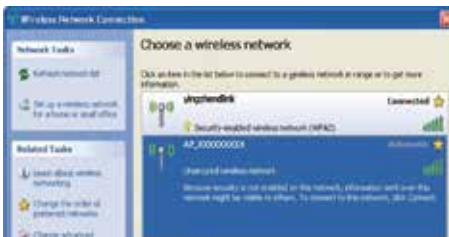
Notice: The setting hereinafter is operated with Windows XP for reference only. If other operating systems are used, please follow the corresponding procedures.

1. Prepare a computer or device with WiFi, e.g. tablet PC and smartphone with WiFi function.
2. Obtain an IP address automatically.
3. Set WiFi connection to the logger
- 3.1 Open wireless network connection and click View

Wireless Networks



- 3.2 Select wireless network of the logger. The network name consists of AP and the serial number of the product. Input the password shown on the logger. Then click Connect.



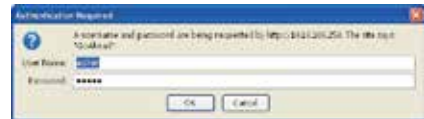
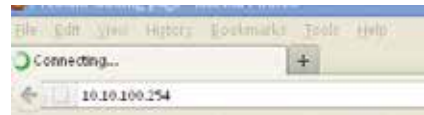
Default password: 12345678

Notice: If AP_(serial number of product) is not available in the wireless network list, there may be problems in the connection or setting of logger. Please wait several minutes to refresh the list or plug in the logger again.

4. Set parameters of logger

- 4.1 Open a web browser, and enter 10.10.100.254, then fill in username and password, both of which are admin as default.

Recommended browsers: Internet Explorer 8+, Google Chrome 15+, Firefox 10+



- 4.2 In the Status page, you can view general information of the logger.



4.3 Follow the setup wizard to start quick setting.

(a)Click Wizard to start. Select the wireless network you need to connect, then click Next



Notice: If the signal strength (RSSI) of the selected network is <15%, which means unstable connection, please adjust the antenna of the router, or use a repeater to enhance the signal.

The SSID of your selected router network should be less than 30 characters, in which blank space should not be included.

(b)Enter the password for the selected network, select Enable to obtain an IP address automatically, then click Next



Notice: Router password cannot be recognized if it contains any character such as '&','#','%,' and blank space.

The password is being verified, please wait for a while. If you have entered an invalid password or encryption method, an error notice will pop up.

(c)Enhance security settings of the WiFi logger by selecting any options as listed, then click Next



(d) If setting is successful, the following page will display. Click OK to restart.



(e) If restart is successful, the following page will display. If this page does not display automatically,please refresh your browser.



(f) Re- log in this setting page to Status page after the Web server restart, and check the network connection status of the logger.



Notice: After network setting is complete, the Wireless AP mode should be enabled and relative information of your router will display on the interface automatically. Besides the Remote server A should be connected.
If you meet any problems and need support, please provide the screenshot of the status page as shown below.



Datasheet

Model		MECD
Communication		
Communication method	Zigbee, PLC	
Max. number of inverters connected	5、 10、 20、 32 (Max.)	
Communication to router	WIFI	
WIFI wireless security	WEP, WPA2-PSK	
RS485	Reserved	
Max.distance(free space)	PLC 300m; Zigbee 100m(Max. straight-line distance)	
Power Supply		
AC Power Supply	100 to 240V AC, 50/60Hz	
Power consumption	5W typical, 10W Maximum	
Mechanical Data		
Dimensions(W×H×D)	133.6×132×35.5 mm	
Weight	0.3KG	
Operation temperature range	-20~+50℃	
Mounting method	Wall-mounted	
Display	OLED and LED indicators	
Features		
Grid type	Single phase / three phase	
Digital Input	Control device connection	
Others		
Compliance	IEC60950, IEC61000-6-2, FCC Part15 Class B / Class C	
Warranty	3 years	



