



Installation / User Manual

YC500A/I Microinverter

Rev 1.0



Please scan the QR code to get mobile app and more support to help the installation.

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(For Sri Lanka)

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Important Safety Instructions

This manual contains important instructions to follow during installation and maintenance of the APsystems Photovoltaic Grid-connected Inverter (Microinverter). To reduce the risk of electrical shock and ensure the safe installation and operation of the APsystems Microinverter, the following symbols appear throughout this document to indicate dangerous conditions and important safety instructions.

SAVE THESE INSTRUCTIONS! *This manual contains important instructions for models YC500A/YC500I that must be followed during Installation and maintenance of the Photovoltaic Grid-connected Inverter.*

Specifications subject to change without notice - please ensure you are using the most recent update found at www.APsystems.com

WARNING: This indicates a situation where failure to follow instructions may cause a serious hardware failure or personnel danger if not applied appropriately. Use extreme caution when performing this task.



**WARNING
SYMBOL**

NOTE: This indicates information that is important for optimized Microinverter operation. Follow these instructions closely.



**NOTE
SYMBOL**

Safety Instructions

- ✓ **Do NOT** disconnect the PV module from the APsystems Microinverter without first disconnecting the AC power.
- ✓ Only qualified professionals should install and/or replace APsystems Microinverters.
- ✓ Perform all electrical installations in accordance with local electrical codes.
- ✓ Before installing or using the APsystems Microinverter, please read all instructions and cautionary markings in the technical documents and on the APsystems Microinverter system and the solar-array.
- ✓ Be aware that the body of the APsystems Microinverter is the heat sink and can reach a temperature of 80°C. To reduce risk of burns, do not touch the body of the Microinverter.
- ✓ **Do NOT** attempt to repair the APsystems Microinverter. If it fails, contact APsystems Customer Support (206-855-5100) to obtain an RMA number and start the replacement process. Damaging or opening the APsystems Microinverter will void the warranty.

Radio interference statement

FCC Compliance : The equipment can comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules, which are designed to protect against harmful interference in a residential installation. The equipment could radiate radio frequency energy and this might cause harmful interference to radio communications if not following the instructions when installing and using the equipment. But there is no guarantee that interference will not occur in a particular installation. If this equipment causes harmful interference to radio or television reception, the following measures might resolve the issues:

- A) Relocate the receiving antenna and keep it well away from the equipment.
- B) Consult the dealer or an experienced radio / TV technical for help.

Changes or modifications not expressly approved by the party responsible for compliance may void the user's authority to operate the equipment.

Communication Statement

The APsystems Energy Monitoring and Analysis (EMA) software analyzes and reports the performance of each module from real-time data collected through the Energy Communication Unit (ECU) gateway. The EMA promptly detects any performance issues in the array, pinpointing the location and nature of the problem and providing precise guidance for maintenance, all within a user-friendly graphic interface. Communication between inverters and the ECU may be affected by signal "noise" from nearby electrical equipment, the distance between inverters and the ECU, the number of inverters supported, and other factors, so sometimes the ECU experiences loss of signal or data randomly, that is not a problem or a fault. If the ECU does not communicate with the EMA database at all, contact APsystems support.

APsystems YC500 System Introduction

The APsystems Microinverter is used in utility-interactive grid-tied applications, comprised of three key elements:

- APsystems Microinverter
- APsystems Energy Communication Unit (ECU)
- APsystems Energy Monitor and Analysis (EMA) web-based monitoring and analysis system

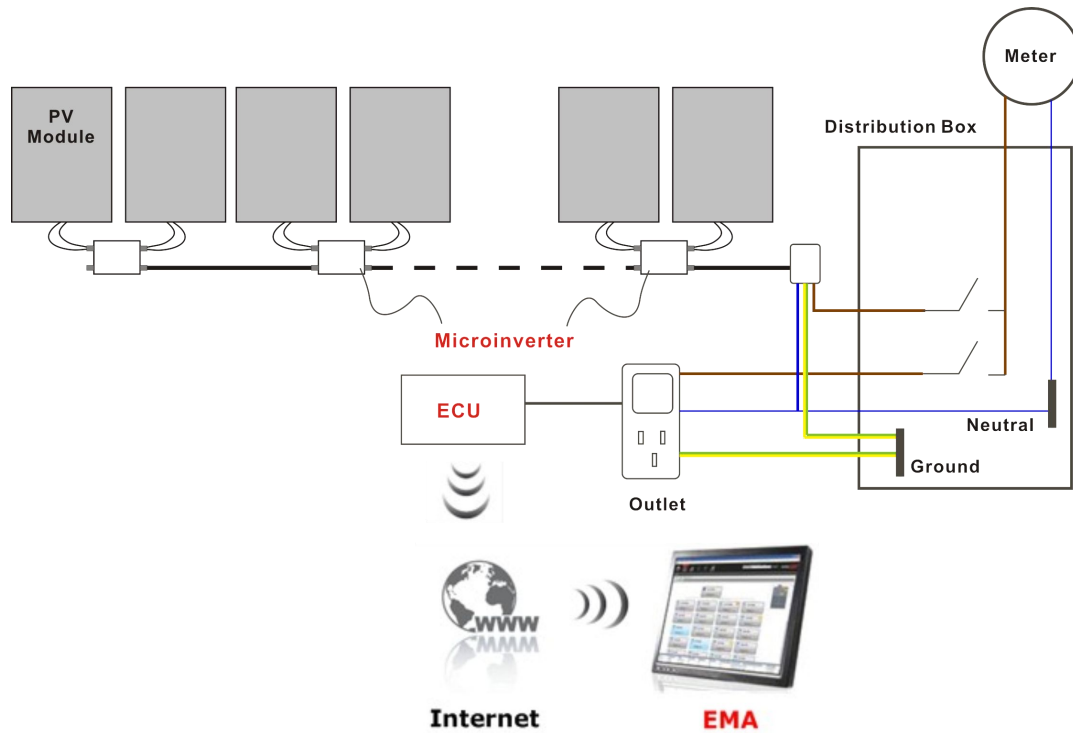


Figure 1

APsystems YC500 System Introduction

This integrated system improves safety; maximizes solar energy harvest; increases system reliability, and simplifies solar system design, installation, maintenance, and management.

APsystems Microinverters maximize PV energy production

Each PV module has individual Maximum Peak Power Tracking (MPPT) controls, which ensures that the maximum power is exported to the utility grid regardless of the performance of the other PV modules in the array. When PV modules in the array are affected by shade, dust, orientation, or any situation in which one module underperforms compared with the other units, the APsystems Microinverter ensures top performance from the array by maximizing the performance of each module within the array.

More reliable than centralized or string inverters

The distributed APsystems Microinverter system ensures that no single point of system failure exists across the PV system. APsystems Microinverters are designed to operate at full power at ambient outdoor temperatures of up to 149°F (65°C). The inverter housing is designed for outdoor installation and complies with the NEMA 6 environmental enclosure rating.

Simple to install

You can install individual PV modules in any combination of module quantity, orientation, different type and power rate. (check our online module compatibility checker called Edecider or contact APsystems).

The Ground wire (PE) of the AC cable is connected to the chassis inside of the Microinverter, eliminating the installation of grounding wire (check local regulation).

Smart system performance monitoring and analysis

The APsystems Energy Communication Unit (ECU) is installed by simply plugging it into any wall outlet and providing an Ethernet or Wi-Fi connection to a broadband router or modem. After installing and setting the ECU (see ECU manual), the full network of APsystems Microinverters automatically reports to the APsystems Energy Monitor and analysis (EMA) web server. The EMA software displays performance trends, informs you of abnormal events, and controls system shutdown when it is needed. (See ECU manual for instructions.)

APsystems Microinverter YC500 Series Introduction

The APsystems YC500 Microinverters connect with the Split-phase grid, and operate with most 60 and 72 cell PV modules. For more information, please see the Technical Data page (p.22) of this manual.

Model Number	AC grid	PV Module	Max. # Per branch	Module Connector
YC500A	50Hz/230V	60,72 Cell	11 for 25A breaker	MC-4 Type or Customize
YC500I	50Hz/230V	60,72 Cell	9 for 20A breaker	MC-4 Type or Customize

APsystems Microinverter System Installation

A PV system using Apsystems Microinverters is simple to install. Each Microinverter easily mounts on the PV racking, directly beneath the PV module(s). Low voltage DC wires connect from the PV module directly to the Microinverter, eliminating the risk of high DC voltage. Installation **MUST** comply with local regulations and technical rules.

Special Statement! *An AC GFCI device **should not** be used to protect the dedicated circuit to the Apsystems microinverter even though it is an outside circuit. None of the small GFCI devices (5mA-30 mA) are designed for back feeding and will be damaged if back feed. In a similar manner, AC AFCIs have not been evaluated for back feeding and may be damaged if back feed with the output of a PV inverter.*

WARNING: Perform all electrical installations in accordance with local electrical codes.



WARNING: Be aware that only qualified professionals should install and/or replace Apsystems Microinverters.



WARNING: Before installing or using an Apsystems Microinverter, please read all instructions and warnings in the technical documents and on the Apsystems Microinverter system itself as well as on the PV array.



WARNING: Be aware that installation of this equipment includes the risk of electric shock.



WARNING: Do not touch any live parts in the system, including the PV array, when the system has been connected to the electrical grid.



NOTE: Strongly recommend to install surge protection devices in the dedicated meter box.



Additional Installation components from Apsystems

- AC Extension Cable (sold separately)
- AC Connector Cap (sold separately)
- Bus Cable End Cap (sold separately)
- Bus Cable T-CONN Cap (sold separately)

Required Parts and Tools from you

In addition to your PV array and its associated hardware, you will need the following items:

- An AC connection junction box
- Mounting hardware suitable for module racking
- Sockets and wrenches for mounting hardware
- A Phillips screwdriver
- A torque wrench

YC500A Installation Procedures

APsystems Microinverters are designed to only operate when they can sense power coming from the grid. Even if they are plugged into the solar array, they will not turn themselves on until they can read power from the grid.

WARNING: Do NOT connect APsystems Microinverters to the utility grid or energize the AC circuit until you have completed all of the installation procedures as described in the following sections.

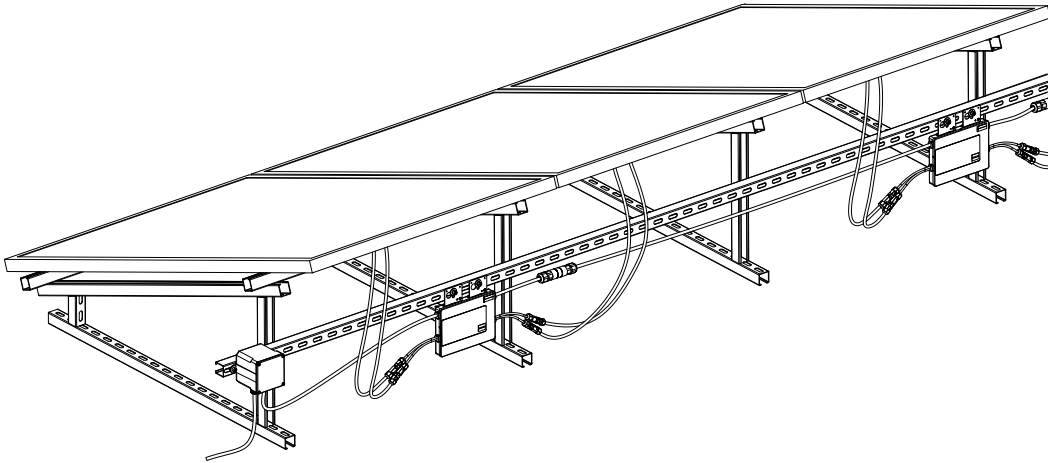


Figure 2

Go to AC junction box

Step 1 - Installing the AC Branch Circuit junction box

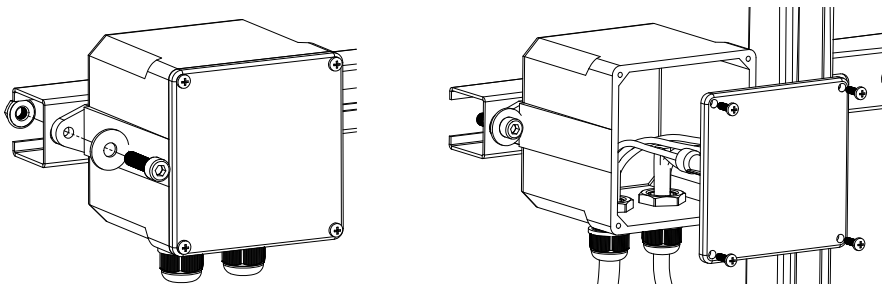


Figure 3

- Install an appropriate junction box at a suitable location on the PV racking system (typically at the end of a branch of modules).
- Connect the open wire end of the AC branch end cable into the junction box using an appropriate gland or strain relief fitting.
- Wire the conductors: L - BROWN; N - BLUE; PE - YELLOW GREEN.
- Connect the AC branch circuit junction box to the point of utility interconnection.

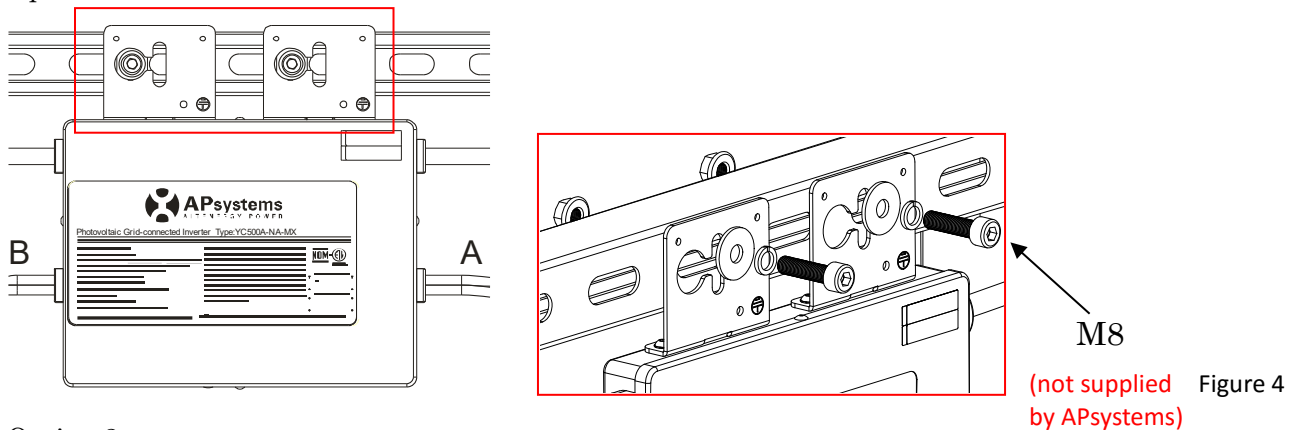
YC500A Installation Procedures

Step 2 - Attaching the APsystems Microinverters to the Racking or the PV Module Frame

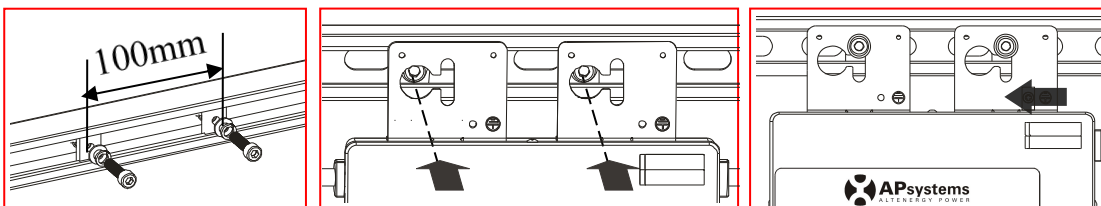
Attach to the racking

- Mark the location of the Microinverter on the rack, with respect to the PV module junction box or any other obstructions.
- Mount one Microinverter at each of these locations using hardware recommended by your module racking vendor.

Option 1:

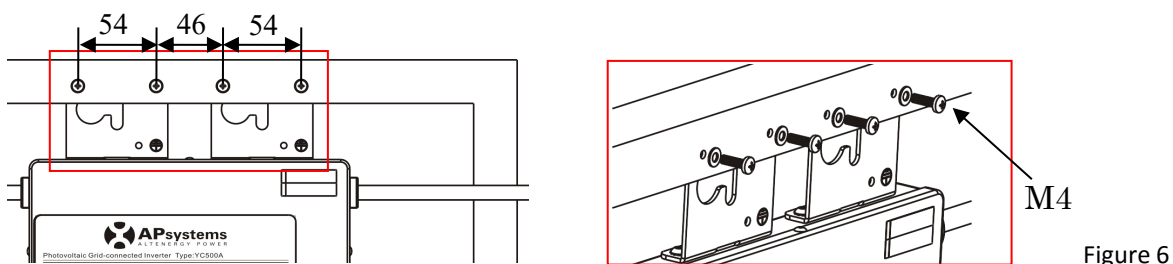


Option:2



Attach to the PV module frame.

Drill holes on the PV module frame before installing YC500A. Please check with the module manufacturer the compatibility of such installation process.



WARNING: Prior to installing any of the microinverters, verify that the utility voltage at the point of common connection matches the voltage rating on microinverter label.



WARNING: Do not place the inverters (including DC and AC connectors) where exposed to the sun, rain or snow, even gap between modules. Allow a minimum of 3/4" (1.5cm.) between the roof and the bottom of the Microinverter to allow proper air flow.



YC500A Installation Procedures

Step 3 - Connecting the APsystems Microinverter AC Cables

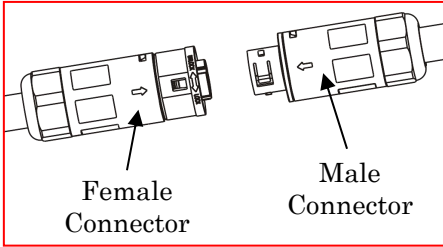
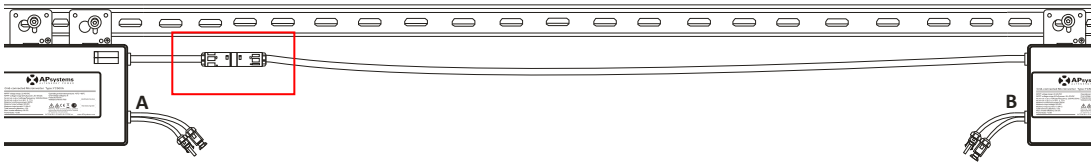


Figure 7

Best Practice: Use screwdriver to split the Main connectors.

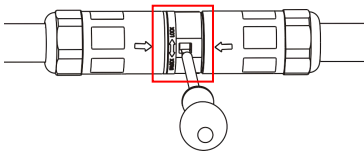


Figure 8

- Check the Microinverter technical data page (P.22) for the maximum allowable number of Microinverters on each AC branch circuit.
- Plug the AC female connector of the first Microinverter into the male connector of the next Microinverter, and so on, to form a continuous AC branch circuit.
- Install a protective end cap on the open AC connector of the last Microinverter in the AC branch circuit.

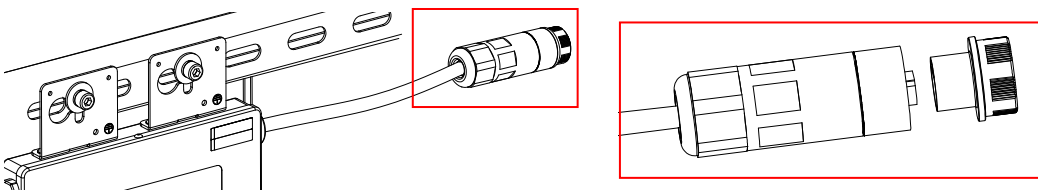


Figure 9

AC connector interface as follows.

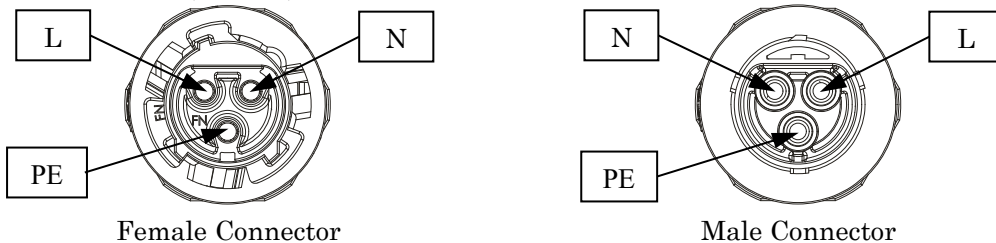


Figure 10

WARNING: Do NOT exceed maximum number of Microinverters in an AC branch circuit, as displayed on the Technical Data page (p.22) of this manual.



NOTE: Please contact with ALTENERGY POWER SYSTEM Inc for the purchase of AC extended cables when microinverters which are installed space far and AC cable is not long enough.



YC500A Installation Procedures

Step 4 - Connecting APsystems Microinverters to the PV Module

Connect the DC cables from the PV Modules to the Microinverter per the diagram below:

NOTE: When plugging in the DC cables, the Microinverter should immediately blink green three times. This will happen as soon as the cables are plugged in and will show that the Microinverter is functioning correctly. This entire check function will start and end within 5 seconds of plugging in the unit, so pay careful attention to these lights when connecting the DC cables.

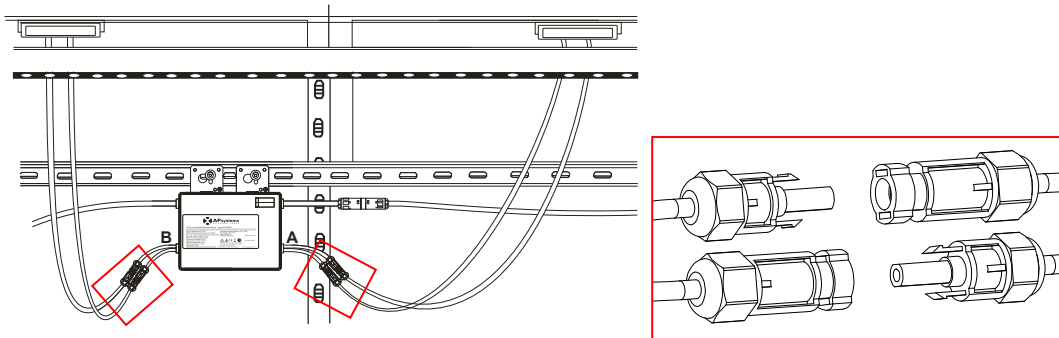


Figure 11

WARNING: Insure that all AC and DC wiring is correct. Check that none of the AC and DC wires are pinched or damaged. Be sure that all junction box are properly closed.



NOTE: About A and B Sides corresponding the location of modules, EMA registration show acquiesce in this installation. if there are different connection methods, please email the detail installation drawings to us to register, or the A, B Sides corresponding component location will not correspond to the EMA position.



Step 5 - Completing the APsystems Installation Map

Fill in the APsystems Registration Cards, which provide system information and the installation map. Feel free to provide your own layout if a larger or more intricate installation map is required. The layout map provided is designed to accomodate labels in vertical or horizontal orientation to meet all the field PV connections.

- a. Each APsystems Microinverter has removable serial number labels. Peel labels off, affix one to the respective location on the APsystems installation map, and fill in A,B in the label below(as figure13) according to the layout on the roof(as figure 12). Then affix another label to the PV module frame which is easy to see. The warranty cards can obtain from the appendix of this manual or APsystems website www.APsystems.com
- b. Fill the warranty cards and email to APsystems at emasupport@altenergy-power.com
- c. APsystems will create the EMA account and email you the account information. Then you can use the EMA website to view detailed performance of your PV system. You can learn more information on energy monitoring and analysis system from APsystems website www.APsystems.com

YC500A Installation Procedures

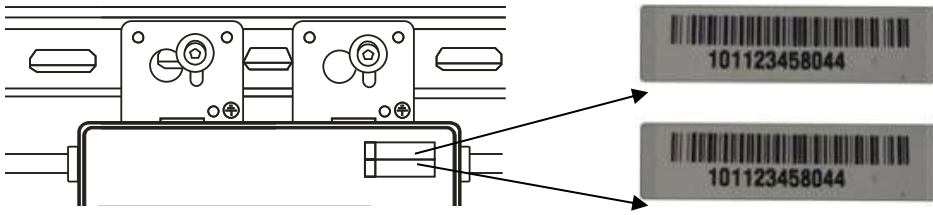


Figure 12

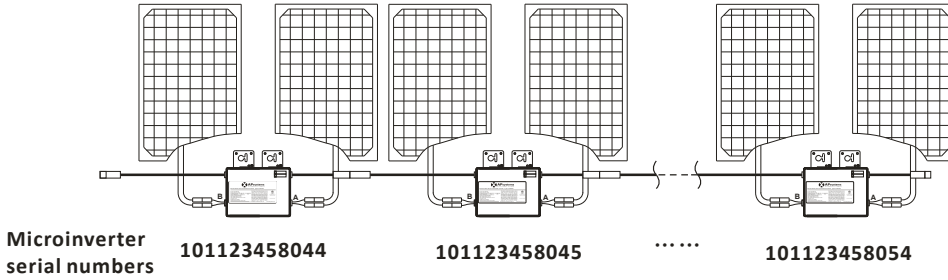


Figure 13

APsystems Microinverter&Energy Communication Unit Warranty Card

The APsystems Installation Map is a diagram of the physical location of each microinverter in your PV installation. Each APsystems microinverter has a removable serial number label located on the mounting plate. Peel the label and affix it to the respective location on the APsystems installation map.

Installation Map Template

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
B	A	B	A							B	A											

To register your APsystems microinverter, please mail this warranty registration card to: emasupport@altenergy-power.com

Figure 15

- NOTE:**
1. The layout of the inverters' serial numbers on the warranty card is only suitable for general arrangement.
 2. Step 1~6 can change sequence for convenience of installation.
 3. Warranty card is located in Appendix last page of this manual.
 4. You can use Scanning Gun or mobile phone to scan the serial numbers on the map when set ECU (see ECU manual).
 5. Using **apsystems' mobile app ArrayApp** can make the installation and registration much more simple.



YC500I Installation Procedures

Step 1 - Position the AC bus cable

Step 2 - Install the AC branch circuit junction box

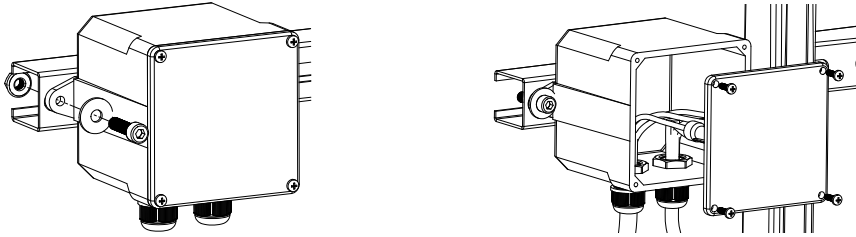


Figure 16

- Install an appropriate junction box at a suitable location on the PV racking system ((typically at the end of a branch of modules).
- Connect the open wire end of the AC bus cable into the junction box using an appropriate gland or strain relief fitting.
- Wire the conductors of the AC bus: L - BROWN; N - BLUE; PE - YELLOW GREEN.**
- Connect the AC branch circuit junction box to the point of utility interconnection.

WARNING: Wiring colour code can be different according local regulation, check all the wires of the installation before connecting to the AC bus to be sure they match. Wrong cabling can damage irreparably the microinverters, such an issue is not covered by the warranty.



Step 3 - Attach the APsystems Microinverters to the racking or the PV module frame

Attach to the racking

- Mark the location of the Microinverter on the rack, with respect to the PV module junction box or any other obstructions.
- Mount one Microinverter at each of these locations using hardware recommended by your module racking vendor.

Option 1:

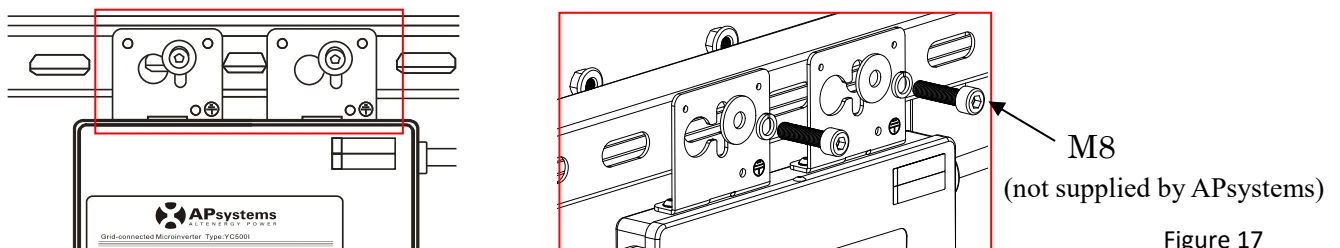


Figure 17

Option 2:

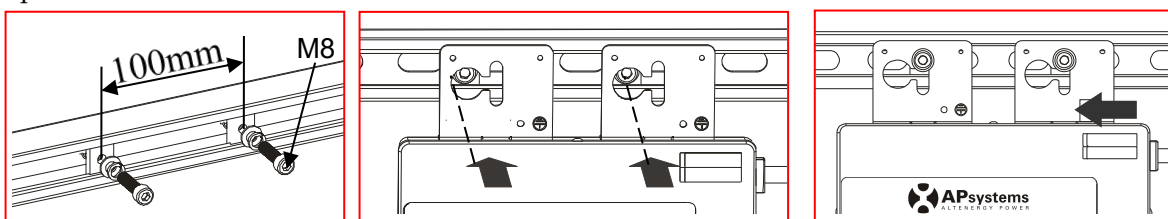


Figure 18

YC500I Installation Procedures

Attach to the PV module frame.

Drill holes on the PV module frame before installing YC500I. Please check with the module manufacturer the compatibility of such installation process.

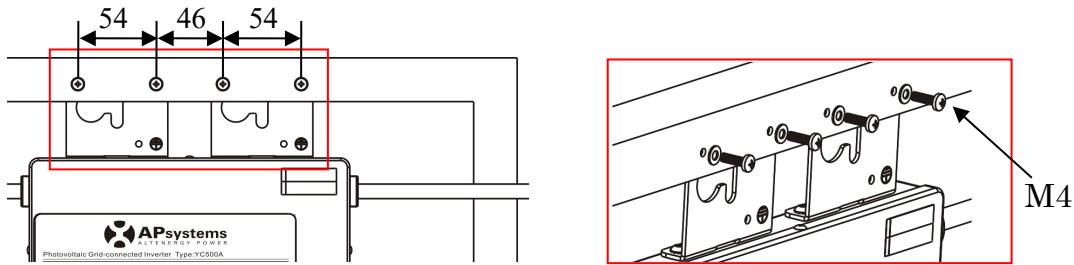


Figure 19

WARNING: Prior to installing any of the microinverters, verify that the utility voltage at the point of common connection matches the voltage rating on microinverter label.

WARNING: Do not place the inverters (including DC and AC connectors) Where exposed to the sun, rain or snow, even gap between modules. Allow a minimum of 3/4" (1.5cm.) between the roof and the bottom of the Microinverter to allow proper air flow.



Step 4 - Connect the APsystems microinverter to AC bus cable

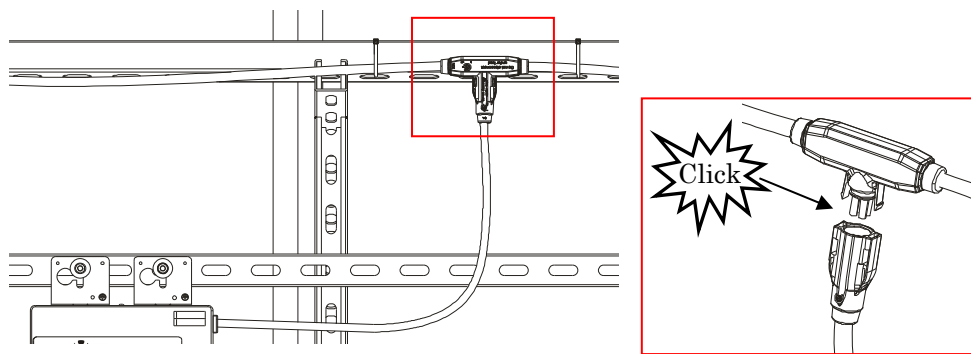
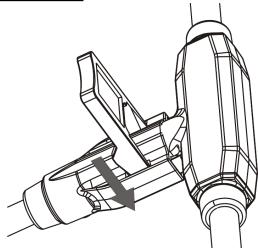


Figure 20

Best Practice: Use the Bus Cable Unlock Tool of AC Bus to split the connectors.



- Check the Microinverter technical data page(p.22) for the maximum allowable number of Microinverters on each AC branch circuit.
- Plug the AC connector of the Microinverter into the AC bus

AC connector interface as follows.

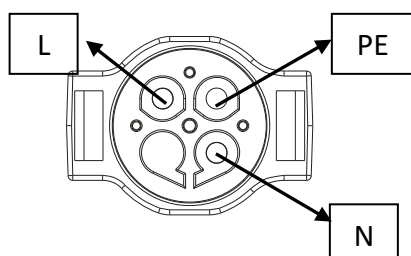


Figure 21

YC500I Installation Procedures

Cover any unused connectors with Bus Cable T-CONN Cap to protect the connectors.

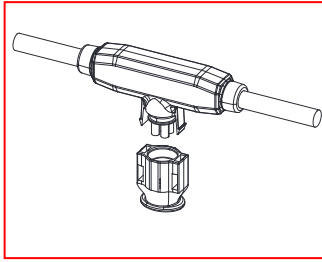


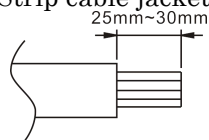
Figure 22

WARNING: Do NOT exceed maximum number of Microinverters in an AC branch circuit, as displayed on the Technical Data page (p.22) of this manual.

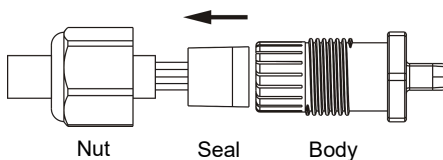


Step 5 - Install a Bus Cable End Cap at the end of AC bus cable

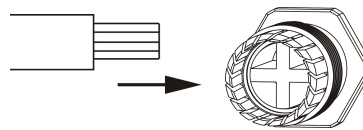
- a. Strip cable jacket.



- b. Insert the cable end into the seal.



- c. Insert the wires into the cable clamps.



- d. Rotate the nut with 3.3N·m until the latching mechanism meets the base.

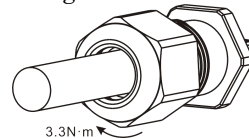


Figure 23

Step 6 - Connect APsystems Microinverters to the PV Modules

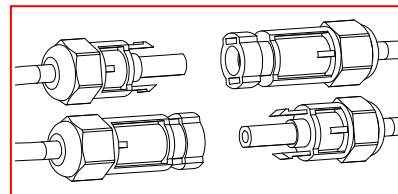
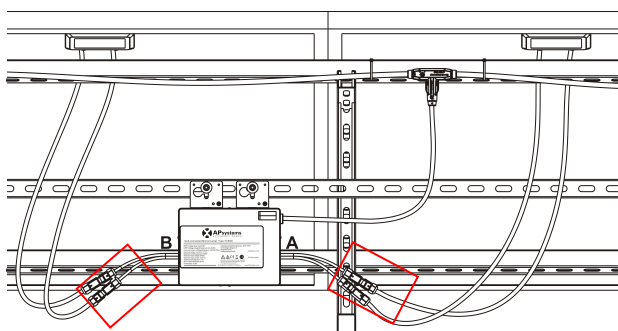


Figure 24

WARNING: Double check to make sure all of the AC and DC wiring has been correctly installed. Ensure that none of the AC and/or DC wires are pinched or damaged. Make sure that all of the junction boxes are properly closed.



NOTE: When plugging in the DC cables, the Microinverter should immediately blink one quick red and three short green. This will happen as soon as the cables are plugged in and will show that the Microinverter is functioning correctly. This entire check function will start and end within 5 seconds of plugging in the unit, so pay careful attention to these lights when connecting the DC cables.



NOTE: About A and B Sides corresponding the location of modules, EMA registration show acquiesce in this installation. if there are different connection methods, please email the detail installation drawings to us to register, or the A, B Sides corresponding component location will not correspond to the EMA position.



YC500I Installation Procedures

Step 7 - Complete the APsystems Installation Map

Fill in the APsystems Registration Cards, which provide system information and the installation map. Feel free to provide your own layout if a larger or more intricate installation map is required. The layout map provided is designed to accommodate labels in vertical or horizontal orientation to meet all the field PV connections.

- d. Each APsystems Microinverter has removable serial number labels. Peel labels off, affix one to the respective location on the APsystems installation map, and fill in A,B in the label below(as figure27) according to the layout on the roof(as figure 26). Then affix another label to the PV module frame which is easy to see. The warranty cards can obtain from the appendix of this manual or APsystems website www.APsystems.com
- e. Fill the warranty cards and email to APsystems at emasupport@altenergy-power.com
- f. APsystems will create the EMA account and email you the account information. Then you can use the EMA website to view detailed performance of your PV system. You can learn more information on energy monitoring and analysis system from APsystems website www.APsystems.com

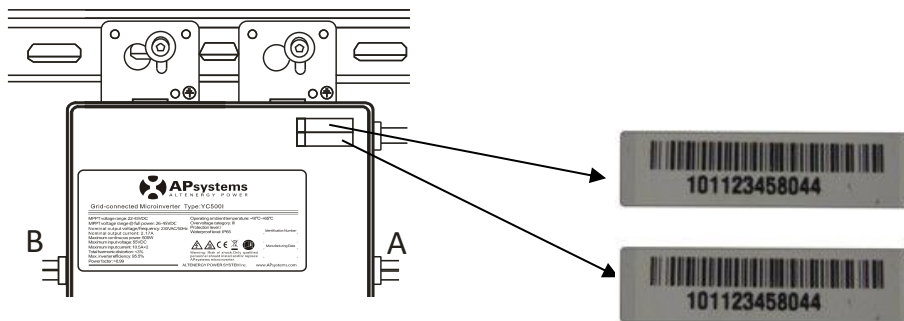


Figure 25

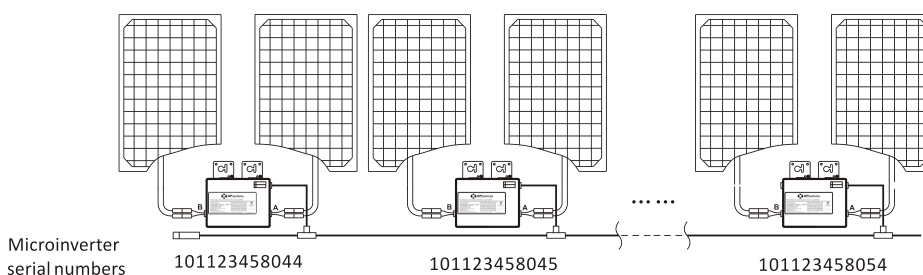
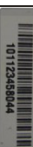
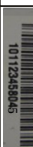



Figure 26

APsystems Microinverter&Energy Communication Unit Warranty Card

The APsystems Installation Map is a diagram of the physical location of each microinverter in your PV installation. Each APsystems microinverter has a removable serial number label located on the mounting plate. Peel it the label and affix it to the respective location on the APsystems installation map.

Installation Map Template

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
																						
B	A	B	A							B	A											

To register your APsystems microinverter, please mail this warranty registration card to: emasupport@altenergy-power.com

Figure 27


- NOTE:**
1. The layout of the inverters' serial numbers on the warranty card is only suitable for general arrangement.
 2. Step 1~7 can be done in any order.
 3. Warranty card is located in Appendix last page of this manual.
 4. You can use Scanning Gun or mobile phone to scan the serial numbers on the map when set ECU (see ECU manual).
 5. **Using apsystems' mobile app ArrayApp can make the installation and registion much more simple.**




Step 8 - Place a Warning Notice

A warning notice shall be placed in such a position that any person gaining access to live parts will be warned in advance of the need to isolate those live parts from all points of supply. Special attention should be paid that the power supply, measuring circuits (sense lines) and other parts may not be isolated from the network when the switch of the interface protection is open. As a minimum, warning labels shall be placed:

- On the switchboard (DNO panel and consumer unit) that has the micro-generator connected to it;
- On all switchboards in between the consumer unit and the micro-generator itself;
- On, or in the micro-generator itself;
- At all points of isolation for the micro-generator.



WARNING
dual supply



Do not work on this equipment until it is isolated from both mains and on-site generation supplies

Isolate on-site generator at PV connector

Isolate mains supply at AC connector

Figure 28

To operate the ASystems microinverter PV system:

1. Turn ON the AC circuit breaker on each microinverter AC branch circuit.
2. Turn ON the main utility-grid AC circuit breaker. Your system will start producing power after a five-minute waiting time.
3. The units should start blinking green every 2 seconds five minutes after turning on the AC circuit breaker. This means they are producing power normally, but have not yet connected to the ECU. After the ECU has been plugged in and acknowledges the Microinverters, they will start to blink green every 10 seconds.
4. Plug in the ECU and follow the instructions according to the manual for the ECU.
5. The ASystems Microinverters will start to send performance data over power line to the ECU. The time required for all the Microinverters in the system to report to the ECU will vary with the number of Microinverters in the system. You can verify proper operation of the ASystems Microinverters via the ECU. See the ECU Installation and Operation Manual for more information.

NOTE: Once AC power is applied, about 0.1A current and 25VA(W) power for each microinverter may be measured with a meter. This Current and Power are Reactive. The inverters ARE NOT operating. After an over 300s waiting time, the inverters will start operation.



Troubleshooting

Qualified personnel can use the following troubleshooting steps if the PV system does not operate correctly:

Status Indications and Error Reporting

Start up LED

One quick red light followed by three short green blinks when DC power is first applied to the Microinverter indicates a successful Microinverter startup.

Operation LED

Flashing Slow Green (10 sec. gap) - Producing power and communicating with ECU

Flashing Fast Green (2 sec. gap) - Producing power and not communicating with ECU over 60mins

Flashing Red - Not producing power

Steady Red - Electrode assembly ground fault protection

GFDI Error

A solid red LED indicates the Microinverter has detected a Ground Fault Detector Interrupter (GFDI) error in the PV system. Unless the GFDI error has been cleared, the LED will remain red and the ECU will keep reporting the fault.

After the ground fault error is fixed, follow the instructions in the ECU Installation and Operation Manual to clear this GFDI error reporting.

Other Faults

All other faults are reported to the ECU. Refer to the ECU Installation and Operation Manual for a list of additional faults and troubleshooting procedures.

WARNING: Only qualified personnel should directly handle the APsystems microinverter.



WARNING: Never disconnect the DC wire connectors under load. Ensure that no current is flowing in the DC wires prior to disconnecting. An opaque covering may be used to cover the module prior to disconnecting the module.



WARNING: Always disconnect AC power before disconnecting the PV module wires from the APsystems microinverter. Either disconnecting by the appropriate AC circuit breaker or unplugging the first AC connector of the first Microinverter in a branch circuit is suitable as a means of disconnection.



WARNING: The APsystems microinverter is powered by PV module DC power. AFTER disconnecting the DC power, when reconnecting the PV modules to the Microinverter, be sure to watch for the three short LED flashes.



Troubleshooting a non-operating APsystems Microinverter

There are two possible overall areas of trouble:

- A. The Microinverter itself may be having problems.
- B. The Microinverter itself is working fine but it is having trouble communicating with the ECU. The items below refer to Microinverter issues, not communication issues (addressed in the ECU manual).

A quick way to tell whether the issue is the Microinverter or a communication problem with the ECU:

1. **Diagnosing from the Microinverter:** A red light – either blinking or solid on the Microinverter, or no light at all. No light, or a red light, means it is definitely a Microinverter problem.
2. **Diagnosing from the ECU:**
 - a. **No-Data-Display:** This is probably a communication issue- not a Microinverter problem.
 - b. **Problems with erratic display:** Data is displayed for some period and then no data is displayed: most likely a communication issue.
 - c. **0 watts, or 2 watts:** Possibly a Microinverter problem
 - d. **Erratic data display** that is not coordinating with data displays from other units: most likely a Microinverter problem.

To troubleshoot a non-operating APsystems Microinverter, Follow the steps below in order:

1. Verify the utility voltage and frequency are within ranges shown in the Technical Data section of this manual.
2. Check the connection to the utility grid. Verify utility power is present at the inverter in question by removing AC, then DC power. **Never disconnect the DC wires while the microinverter is producing power.** Re-connect the DC module connectors and watch for three short LED flashes.
3. Check the AC branch circuit interconnection between all the microinverters. Verify each inverter is energized by the utility grid as described in the previous step.
4. Make sure that any AC breaker are functioning properly and are closed.
5. Check the DC connections between the microinverter and the PV module.
6. Verify the PV module DC voltage is within the allowable range shown in the Technical Data of this manual.
7. If the problem persists, please call APsystems Customer Support.

WARNING: Do not attempt to repair the APsystems microinverter. If troubleshooting methods fail, please return the microinverter to your distributor for replacement.



Replace a microinverter

Follow the procedure to replace a failed APsystems Microinverter.

- A. Disconnect the APsystems Microinverter from the PV Module, in the order shown below:
 1. Disconnect the AC by turning off the branch circuit breaker.
 2. Disconnect the AC connector of the microinverter.
 3. Cover the module with an opaque cover.
 4. Disconnect the PV module DC wire connectors from the Microinverter.
 5. Remove the Microinverter from the PV array racking.

- B. Remove the opaque cover, Install a replacement Microinverter to the rack. Remember to observe the flashing LED light as soon as the new Microinverter is plugged into the DC cables.

- C. Connect the AC cable of the replacement Microinverter. (**YC500I**)

- C. Connect the AC cable of the replacement Microinverter and the neighboring Microinverter to complete the branch circuit connections. (**YC500A**)

- D. Close the branch circuit breaker, and verify operation of the replacement Microinverter.

Technical Data

WARNING: Be sure to verify the voltage and current specifications of your PV module match with those of the Microinverter. Please refer to the datasheet or usermanual which can be download from APsystems website www.APsystems.com.



WARNING: You must match the DC operating voltage range of the PV module with the allowable input voltage range of the APsystems Microinverter.



WARNING: The maximum open circuit voltage of the PV module must not exceed the specified maximum input voltage of the APsystems



YC500A/I Microinverter Datasheet

Region	Sri Lanka	
Model	YC500A	YC500I
Input Data (DC)		
MPPT Voltage Range	22V-45V	
Operation Voltage Range	16V-52V	
Maximum Input Voltage	55V	
Startup Voltage	22V	
Maximum Input Current	10.5A x 2	
Output Data (AC)		
Nominal Output Voltage	230V	
Maximum Output Power	500W	
Nominal Output Current	2.17A	
Default Output Voltage Range	195.5V-253V*	
Extended Output Voltage Range	149V-278V	
Nominal Output Frequency	50Hz	
Default Output Frequency Range	49Hz-51Hz*	
Extended Output Frequency Range	45.1Hz -54.9Hz	
Power Factor	>0.99	
Total Harmonic Distortion	<3%	
Maximum Units Per Branch	11 for 25A Breaker**	9 for 20A Breaker**
Efficiency		
Max. Inverter Efficiency	95.5%	
Night Power Consumption	120mW	
Mechanical Data		
Operating Ambient Temperature Range	-40 °F to +149 °F (-40°C to +65°C)	
Storage Temperature Range	-40 °F to +185 °F (-40°C to +85°C)	
Dimensions (W x H x D)	8.7" × 6.6" × 1.1" (221mm × 167mm × 29mm)	
Weight	5.5lbs/2.5kg	
Enclosure Rating	IP67	
Cooling	Natural Convection-No Fans	
Features & Compliance		
Communication (Inverter To ECU)	Power Line Communication	
Transformer Design	High Frequency Transformers, Galvanically Isolated	
Monitoring	Via EMA Software	
Grid Connection Compliance	IEC 61727	

Specifications subject to change without notice - please ensure you are using the most recent update found at www.APsystems.com

*Programmable through ECU to meet customer need.

**Depending on the local regulations.

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Wiring Diagram

YC500A Sample Wiring Diagram - Split Phase

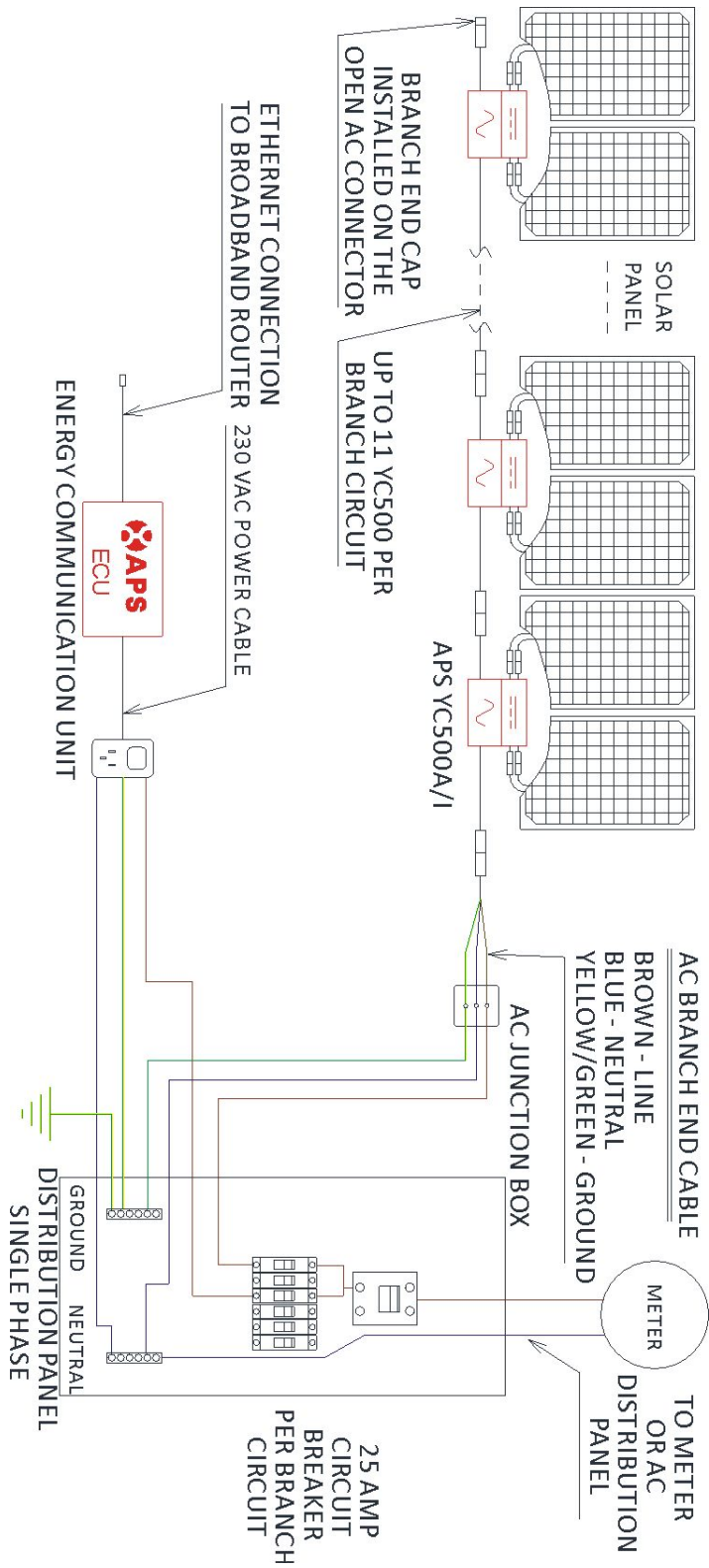


Figure 29

Wiring Diagram

YC500A Sample Wiring Diagram - Three Phase

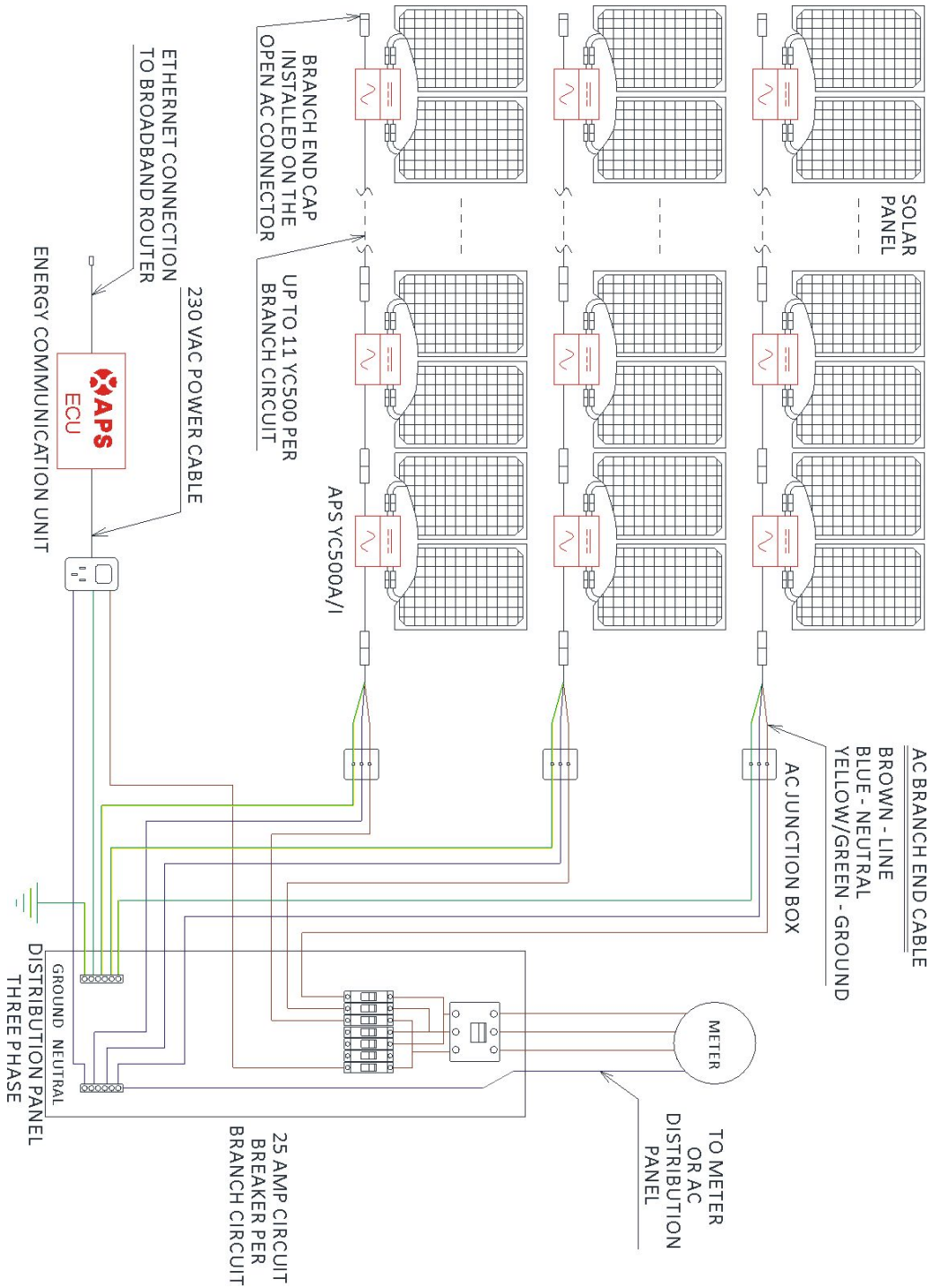


Figure 30

Wiring Diagram

YC500I Sample Wiring Diagram - Split Phase

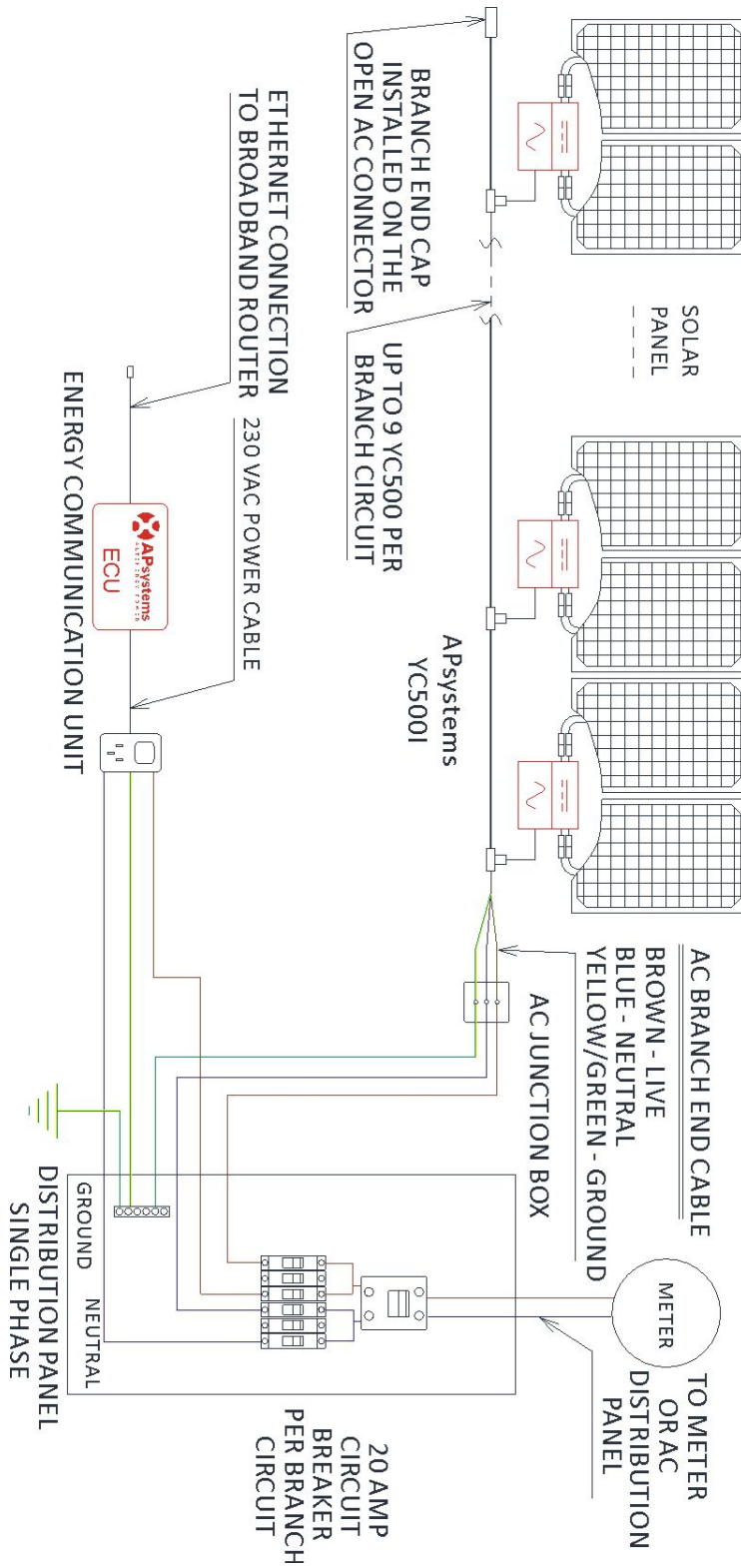


Figure 31

Wiring Diagram

YC500I Sample Wiring Diagram - Three Phase

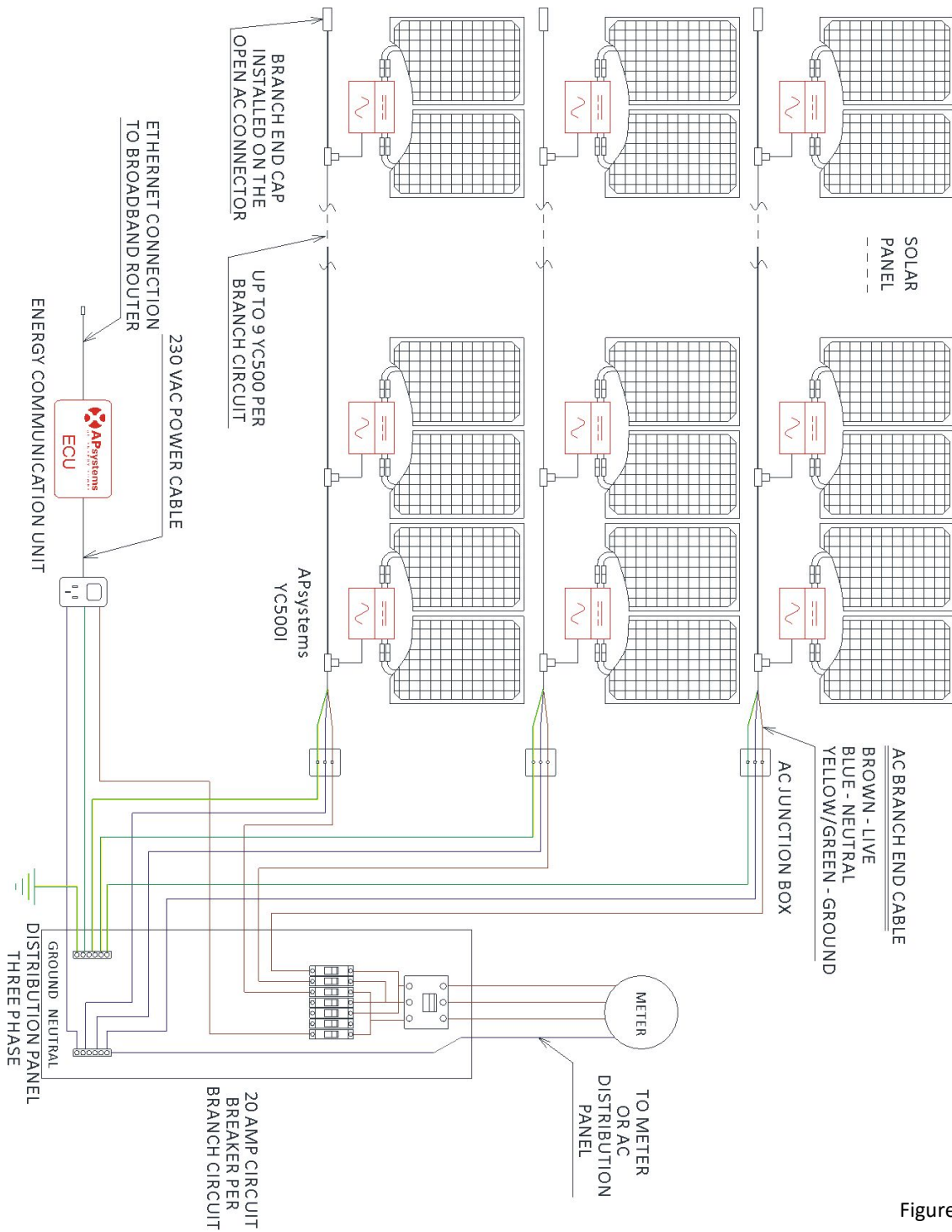


Figure 32

APsystems Microinverter & Energy Communication Unit Warranty Card

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