



Multiple Three-phase Inverters Power Limit Introduction with SEC1000

CONTENT

1.1 Development Background

1.2 Anti-reverse Device Connection

1.3 Configuration

1.4 Q & A



1.1

Development Background

Development Background

- Varied Electricity Subsidy Policies in Different Countries
 - Feed-in tariff in many countries are getting lower and lower.
 - Electricity price in many countries are more and more expensive.
 - And the most important thing is more and more countries are prohibited to feed in power to Grid, like South Africa.
 - For some commercial projects, it's too expensive if install the anti-reverse device for every inverter, and the old solution ARCB and Ezlogger Pro+Ezmeter+3CT we have for multiple three phase inverters anti-reverse was found with instability and inconvenient to install problems. So a new solution SEC (Smart Energy Controller) which integrated Ezlogger Pro, Smart Meter, SPS power module and onboard CT module for realizing multiple three phase inverters anti-reverse function was born in this background.

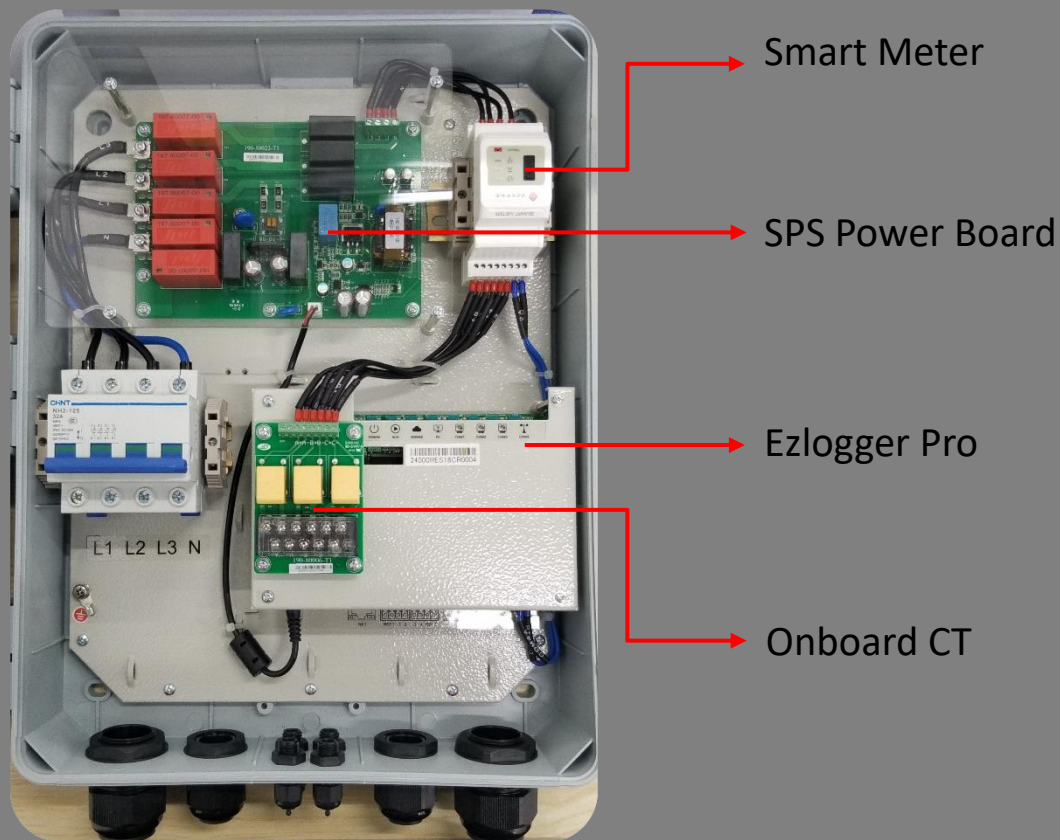


1.2

Product Features

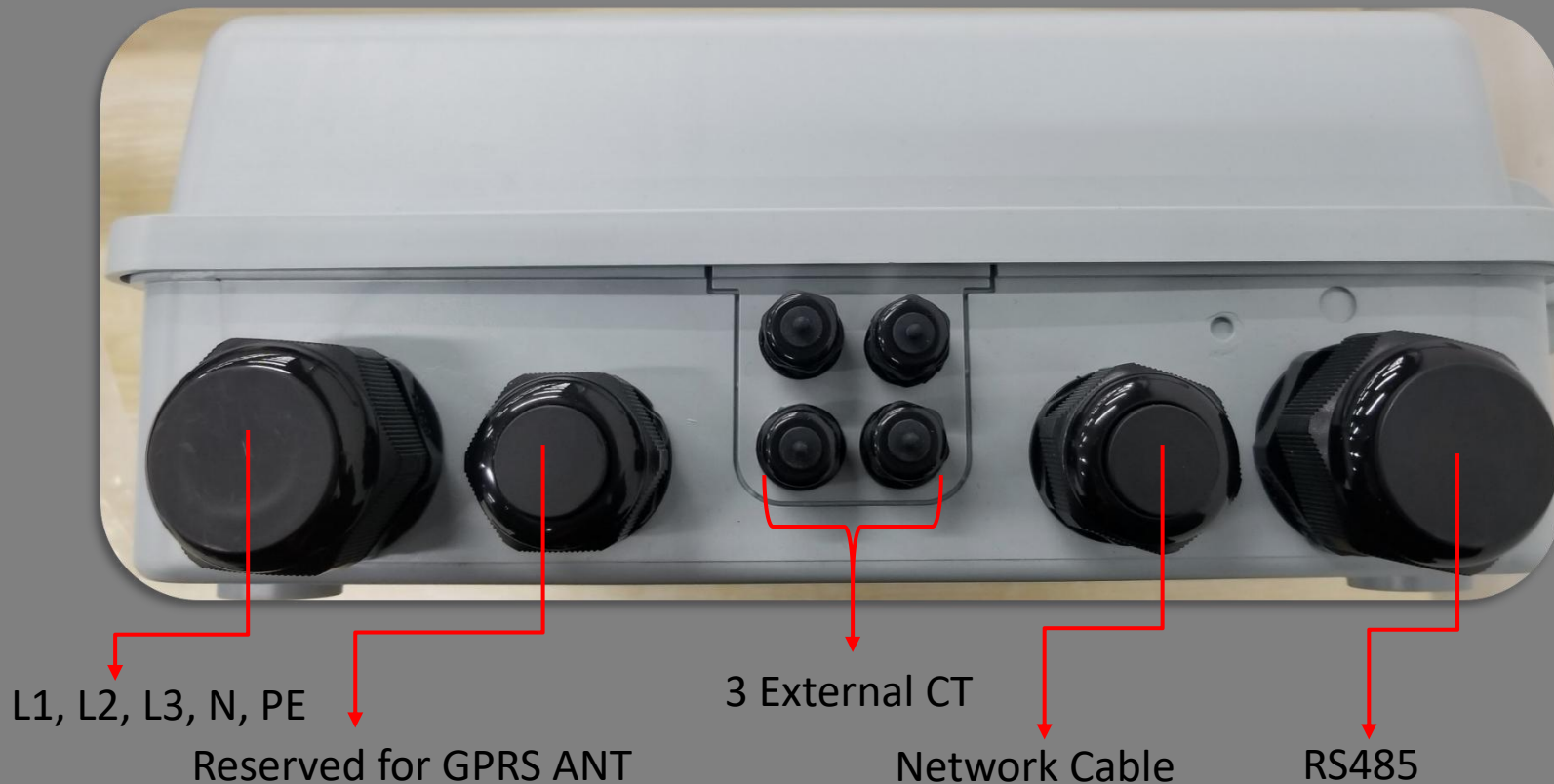
Product Features

- SEC Overview



Product Features

- SEC Overview





1.3

Anti-reverse Wiring Diagram

Anti-reverse Wiring Diagram

● Tools Preparation



SEC1000



3 External CT



Shorting stub



2Pin terminals



Tubular terminal



Pan head screw



Sealer

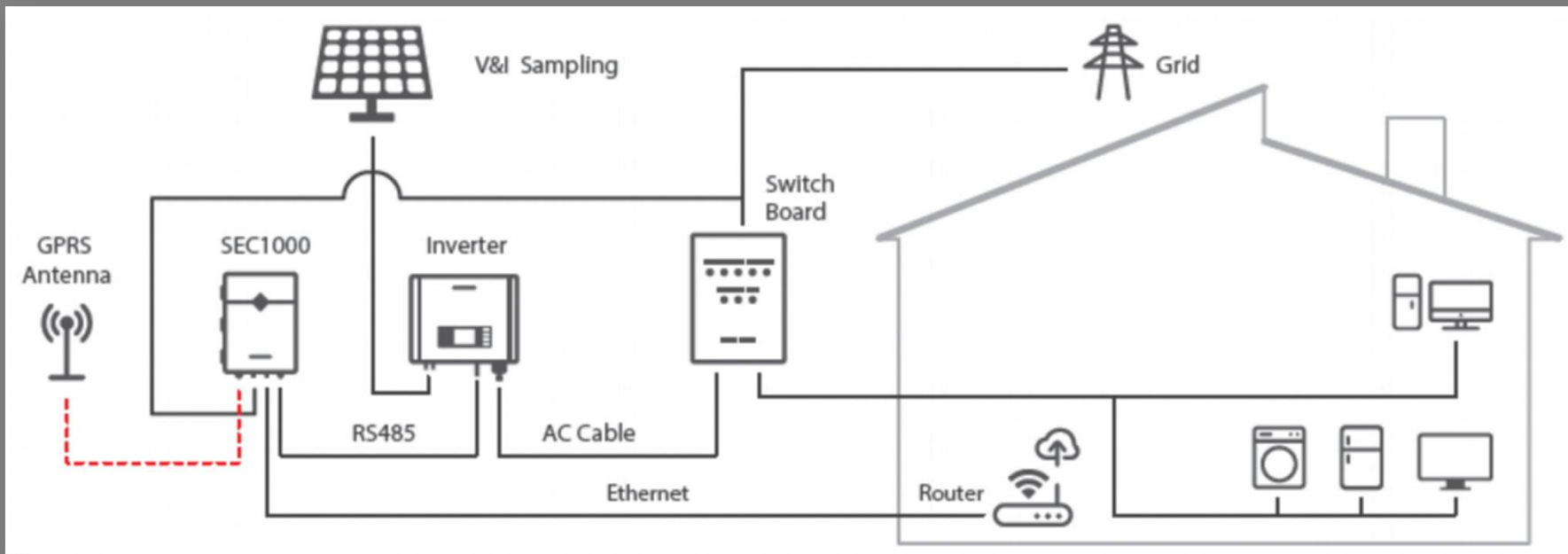


Expansion Bolts



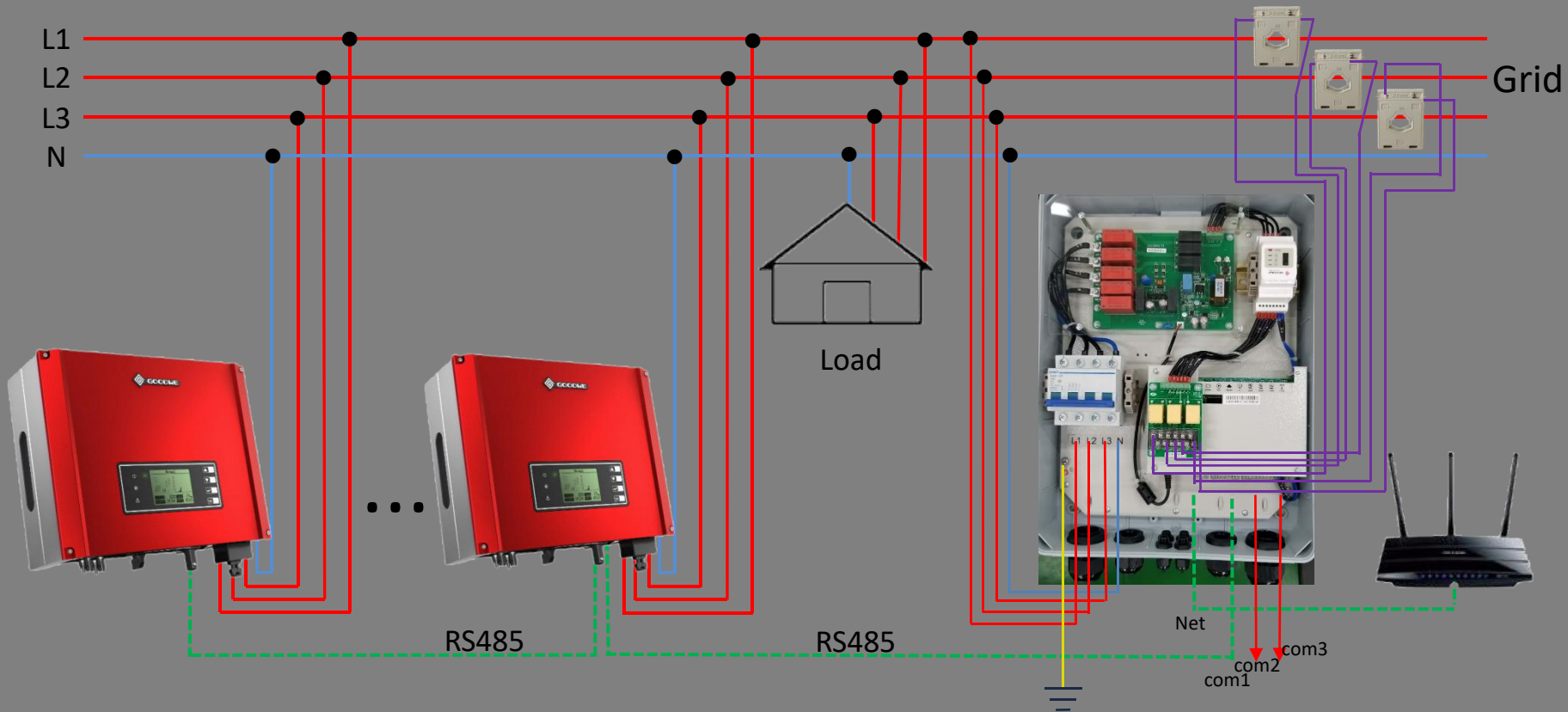
Key to open the SEC box

Anti-reverse Wiring Diagram



Anti-reverse Wiring Diagram

● System Wiring Diagram

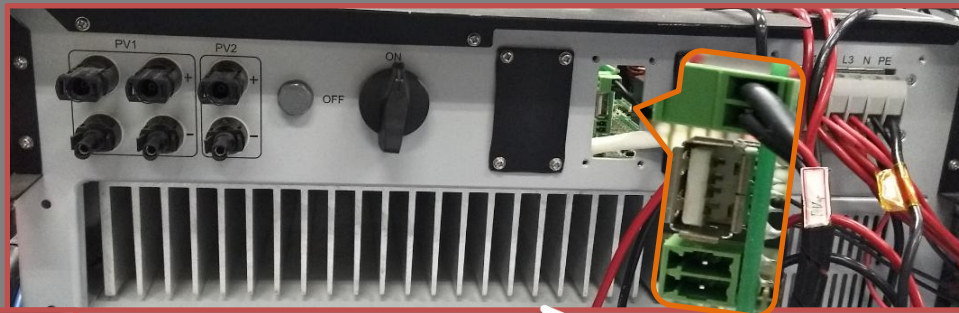


The RS485 ports of SDT



SDT 4K → 10K

SDT 17K → 20K



SDT 12K → 15K



The RS485 ports of MT



The RS485 ports of MT G2



The RS485 ports of MT G2

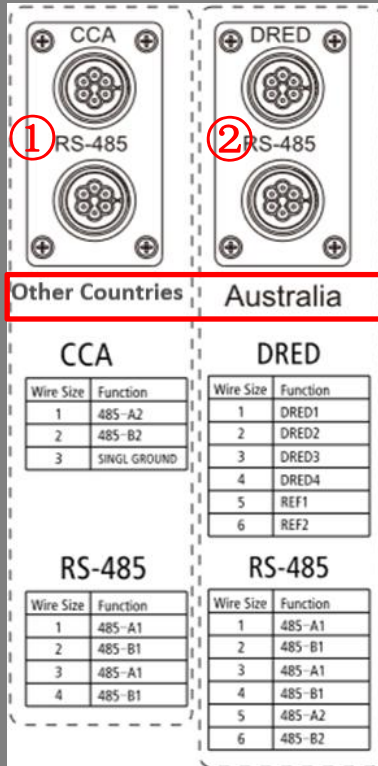


The RS485 ports of SMT

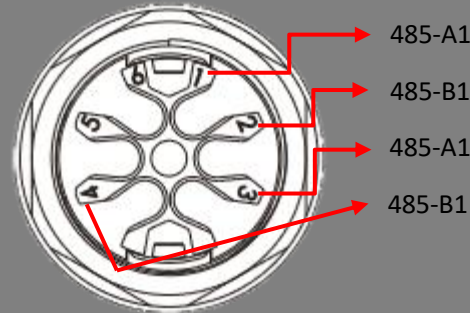


The RS485 ports of SMT

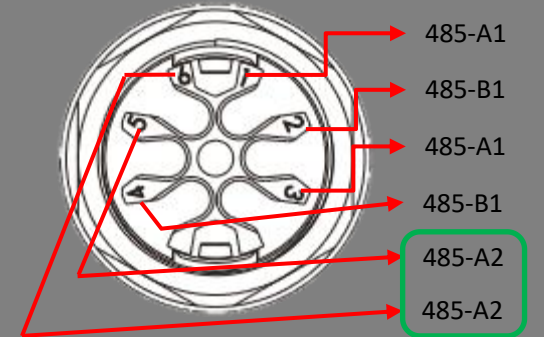
➤ Definition for RS485/CAA/DRED connectors



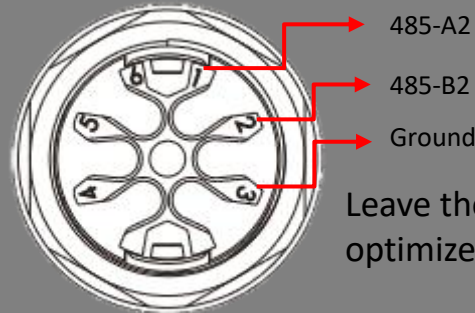
For V① RS485



For V② RS485



For V① CCA



Reserved for Tigo CCA

Leave the CCA connector alone if you don't use Tigo optimizer in your solar system

Anti-reverse Wiring Diagram

● SEC1000 & Three Phase Inverter Connection



RS485

RS485

RS485

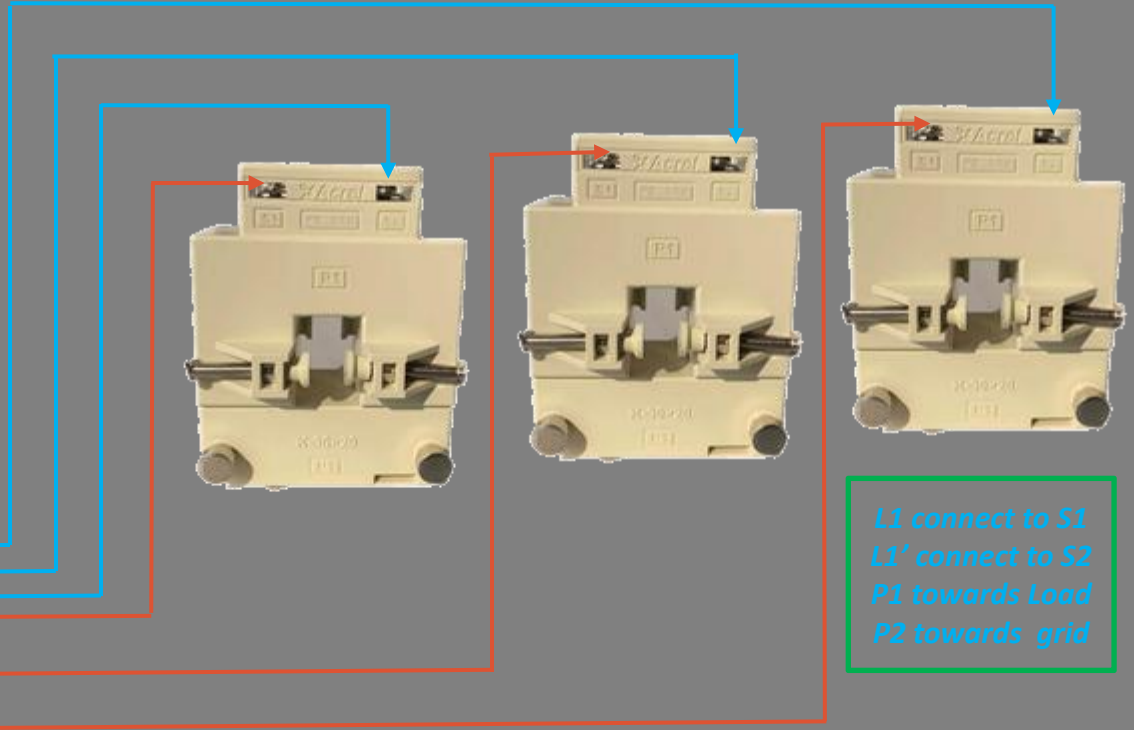
com1

com3

com2

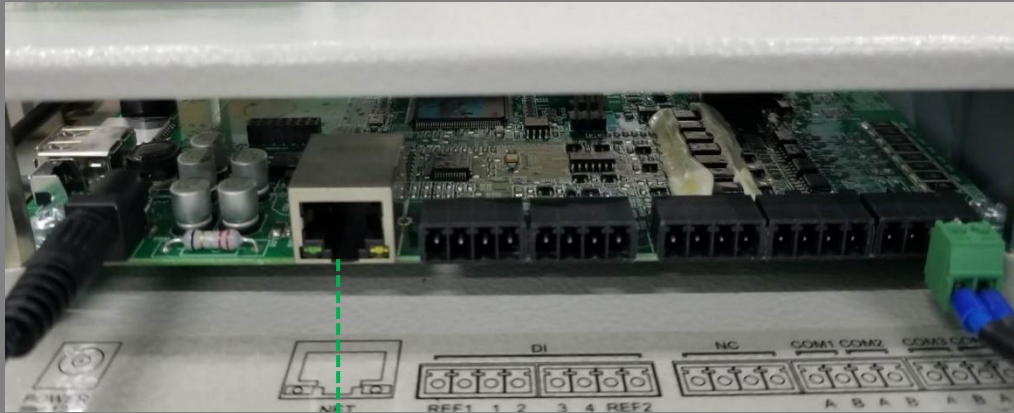
Anti-reverse Wiring Diagram

- SEC1000 & CT Connection
Onboard CT



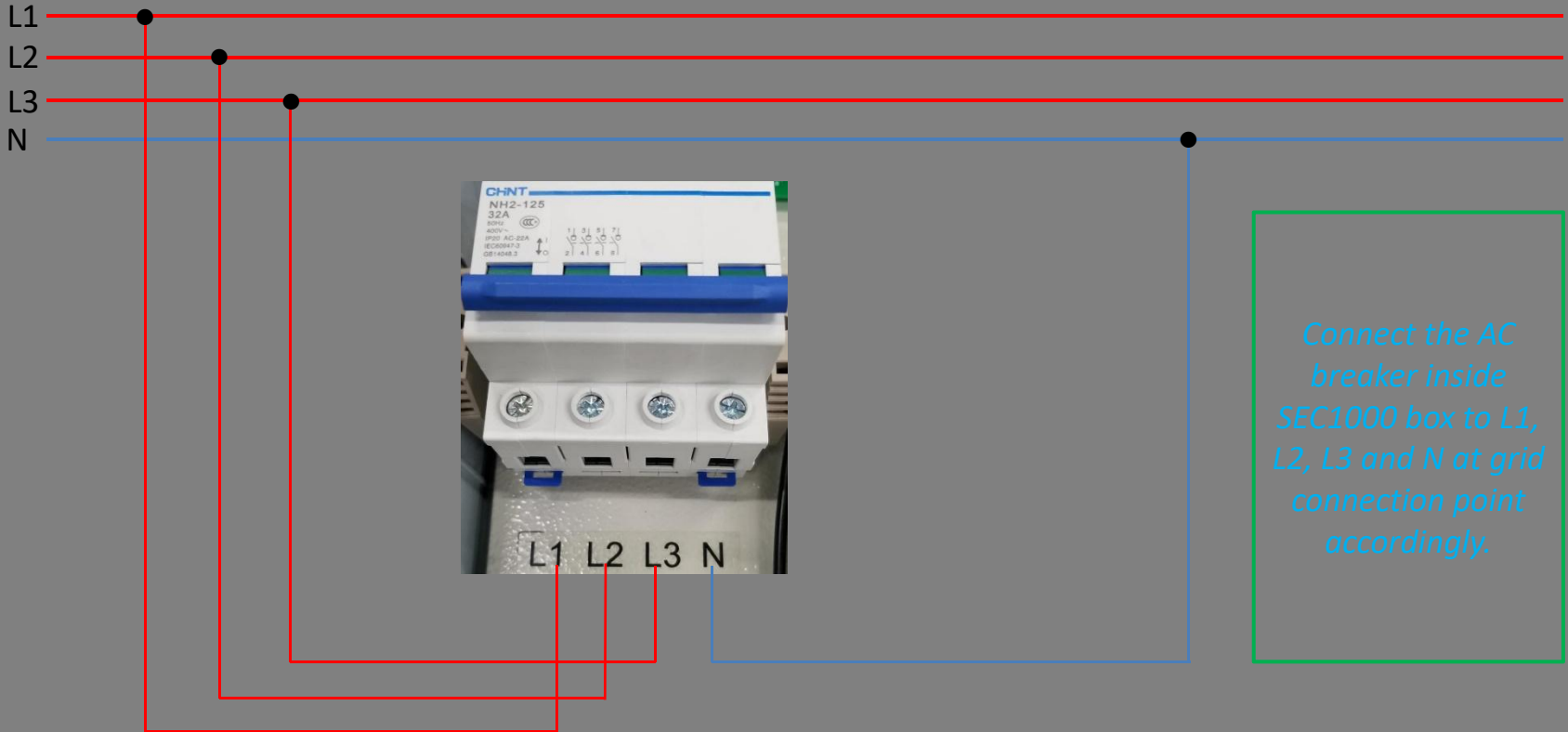
Anti-reverse Wiring Diagram

- SEC1000 & Router Connection (for LAN version)



Anti-reverse Wiring Diagram

● SEC1000 & Grid Connection



Connect the AC breaker inside SEC1000 box to L1, L2, L3 and N at grid connection point accordingly.



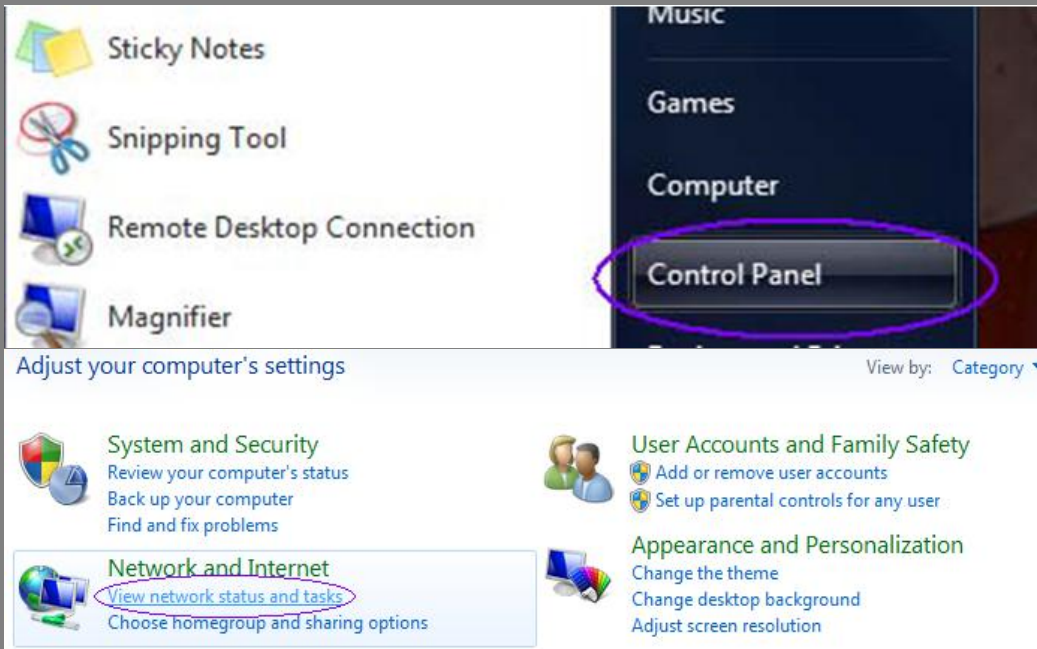
1.3

ProMate Configuration

ProMate Configuration

● ProMate Configuration

- Change the Ezlogger Pro to Static IP mode by pressing “Reload” button around 10s. Led indicators on Ezlogger pro flashing from right to left means Ezlogger Pro in static IP mode.
- Set the local area IP address to 192.168.1.100 on PC by following the steps below:



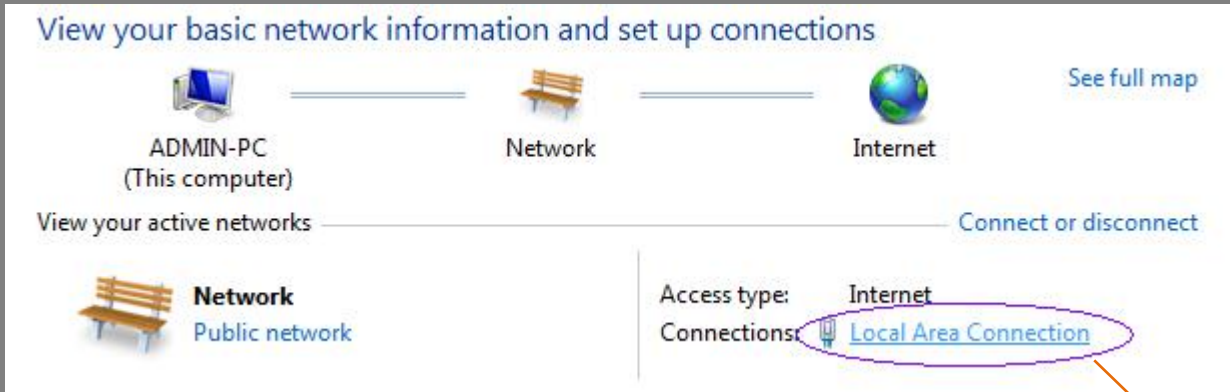
1. Click “Start”, and Click “Control Panel”.

2. Click “View network status and tasks”.

ProMate Configuration

● ProMate Configuration

- Set the local area IP address to 192.168.1.100 on PC by following the steps below:



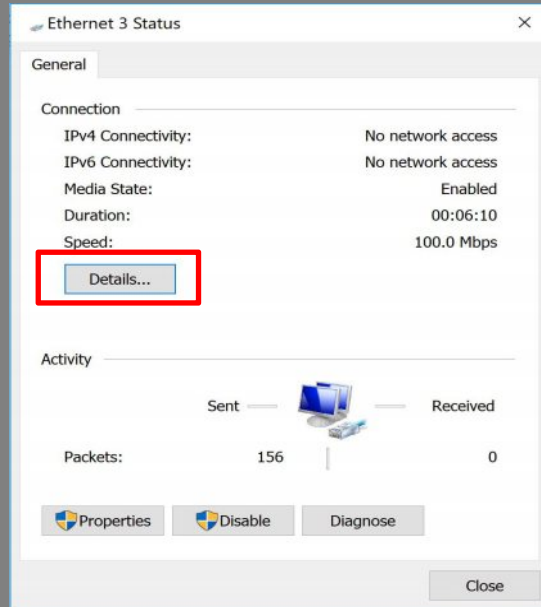
3. Click "Local Area Connection".

Note: The "Local Area Connection" option will appear only when the net port is connected.

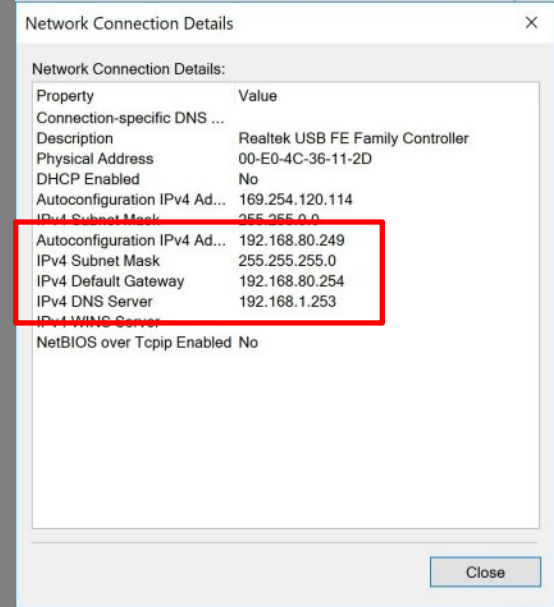
ProMate Configuration

● ProMate Configuration

➤ Set the local area IP address to 192.168.1.100 on PC by following the steps below:



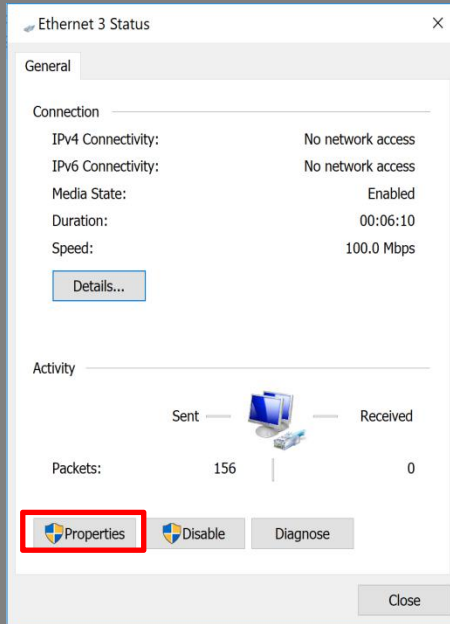
4. Click "Details".



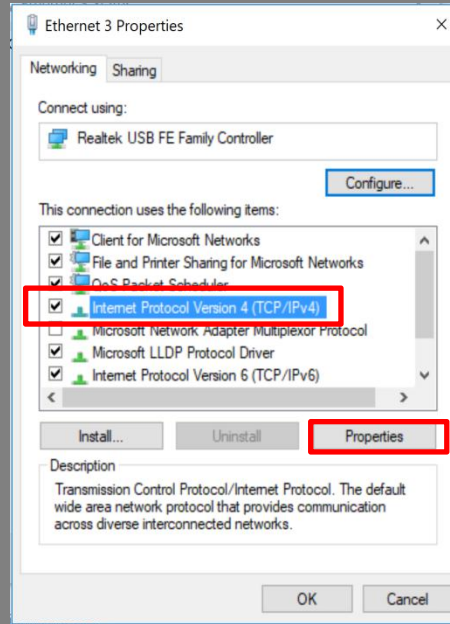
5. Record the IP, Subnet Mask, Default Gateway and DNS in this step.

ProMate Configuration

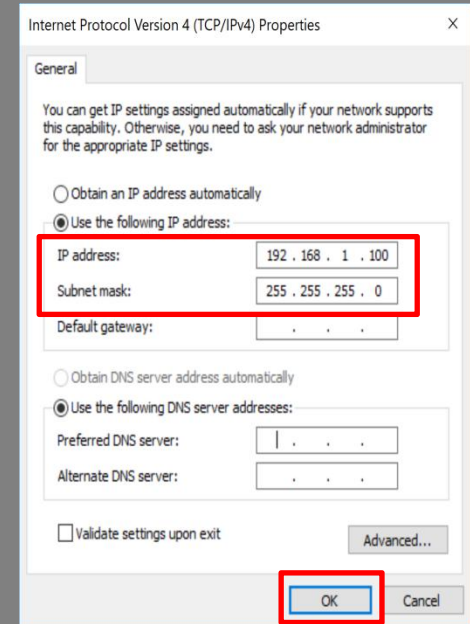
- ProMate Configuration
- Set the local area connection IP address to 192.168.1.100 on PC by following steps below.



6. Click "Properties"



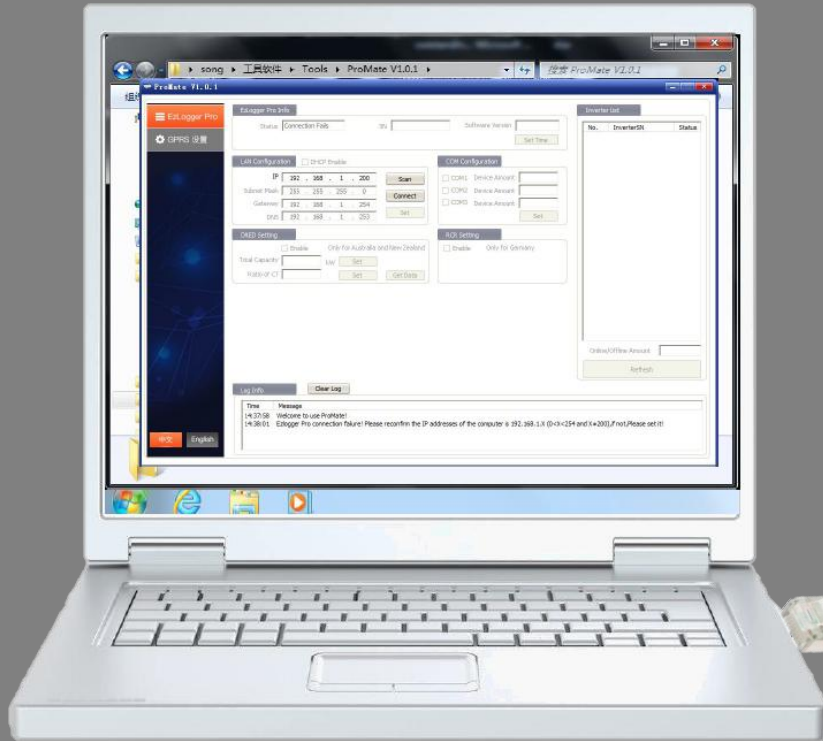
6. Click "TCP/IPv4"



6. Change the IP to 192.168.1.100, click "Ok"

ProMate Configuration

- ProMate Configuration
- Connect Ezlogger Pro with your Laptop



Network Port

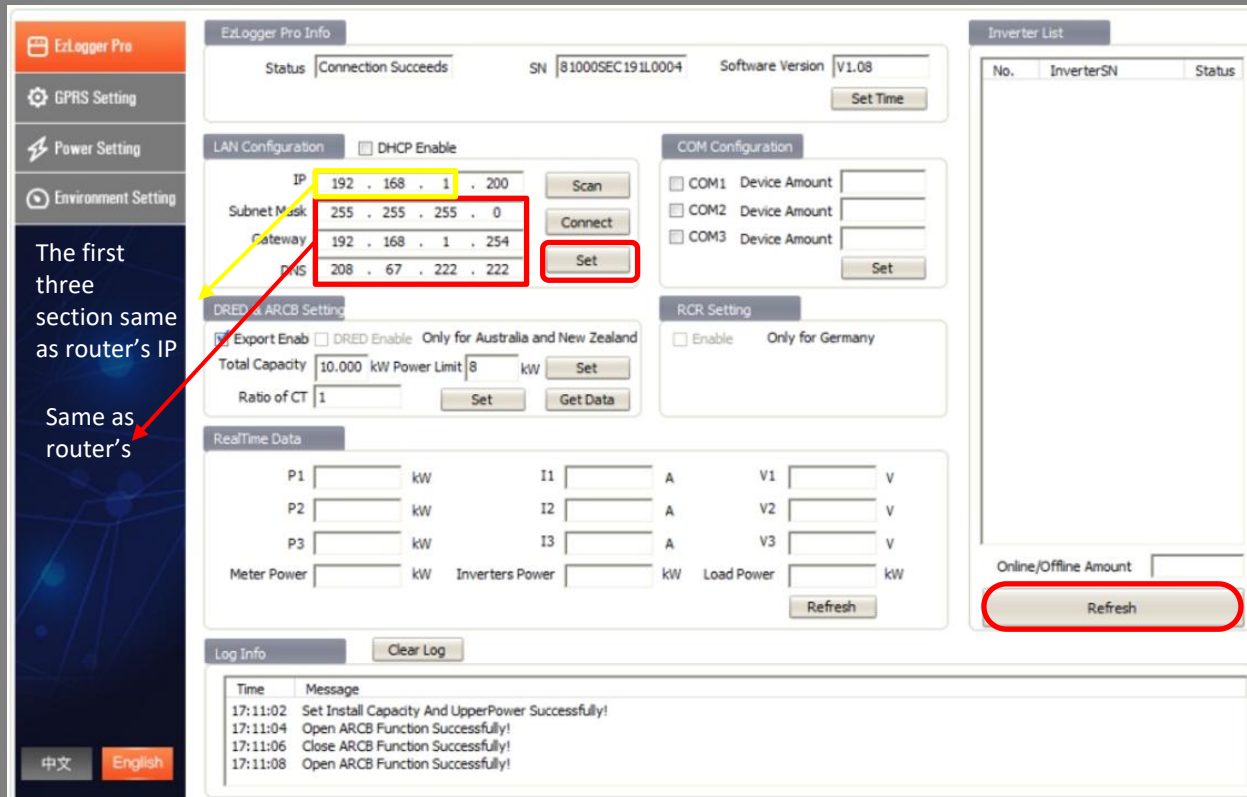
Network cable pass through this port

ProMate Configuration

● ProMate Configuration

- Open the software “Promate V1.0.8” wait till it shows “Connection Succeeds”.
- Click “Refresh” to check if the connected inverter(s) is online.
- Modify the IP, Subnet Mask, Gateway and DNS to match router.
- Click “Set”

🔑: The Promate version should \geq V1.0.8 if you need to use it to configure SEC1000



The first three section same as router's IP

Same as router's

EzLogger Pro Info
Status: Connection Succeeds SN: 81000SEC191L0004 Software Version: V1.08

LAN Configuration DHCP Enable

IP	192 . 168 . 1 . 200	<input type="button" value="Scan"/>
Subnet Mask	255 . 255 . 255 . 0	<input type="button" value="Connect"/>
Gateway	192 . 168 . 1 . 254	<input type="button" value="Set"/>
DNS	208 . 67 . 222 . 222	

COM Configuration

<input type="checkbox"/> COM1	Device Amount	<input type="text"/>
<input type="checkbox"/> COM2	Device Amount	<input type="text"/>
<input type="checkbox"/> COM3	Device Amount	<input type="text"/>

DRED & ARCB Setting

Export Enab DRED Enable Only for Australia and New Zealand

Total Capacity: 10.000 kW Power Limit: 8 kW

Ratio of CT: 1

RCR Setting

Enable Only for Germany

RealTime Data

P1	<input type="text"/> kW	I1	<input type="text"/> A	V1	<input type="text"/> v
P2	<input type="text"/> kW	I2	<input type="text"/> A	V2	<input type="text"/> v
P3	<input type="text"/> kW	I3	<input type="text"/> A	V3	<input type="text"/> v

Meter Power: kW Inverters Power: kW Load Power: kW

Log Info

Time	Message
17:11:02	Set Install Capacity And UpperPower Successfully!
17:11:04	Open ARCB Function Successfully!
17:11:06	Close ARCB Function Successfully!
17:11:08	Open ARCB Function Successfully!

Inverter List

No.	InverterSN	Status
-----	------------	--------

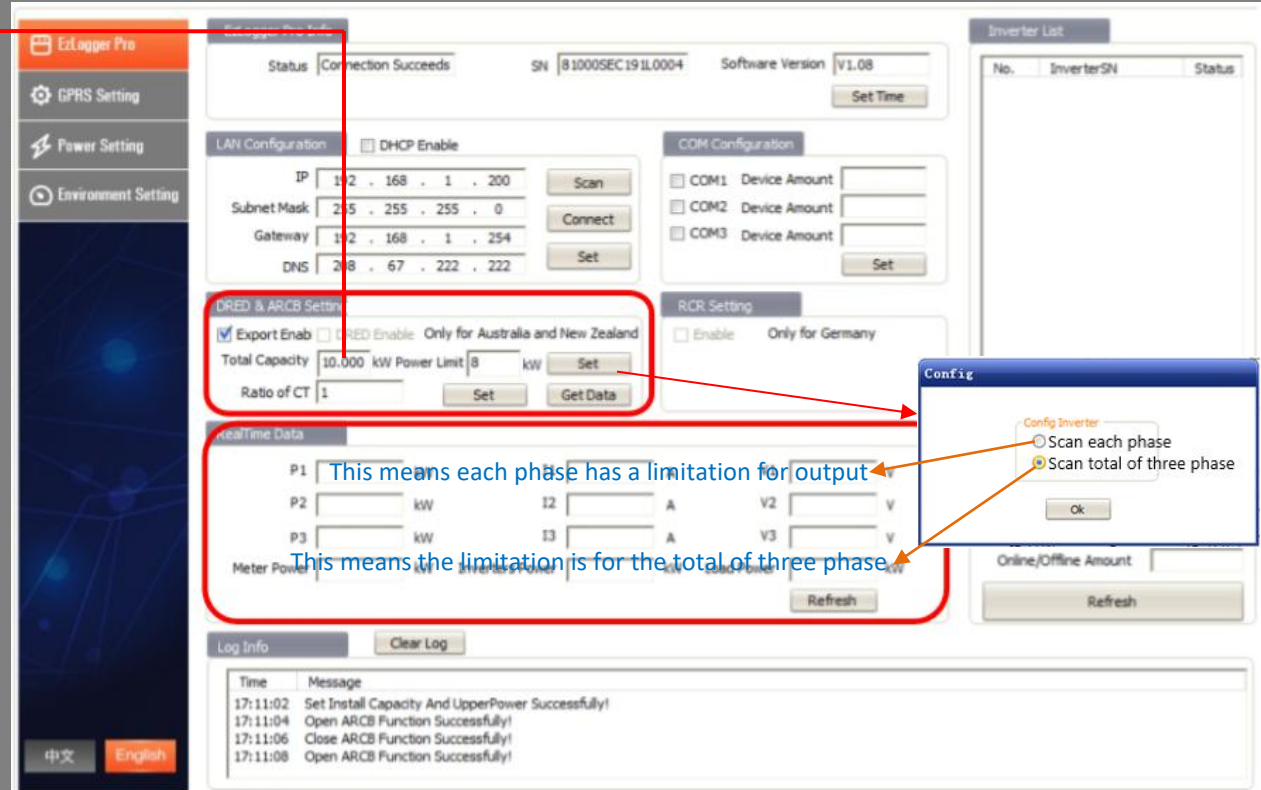
Online/Offline Amount

中文 English

ProMate Configuration

● ProMate Configuration

- Set power limit or anti-reverse data in this area.
- Put a tick in the box which before “Export Enab” and input the other data accordingly.
- “Ratio of CT” means rated current transformation ratio.
- If the electricity company limits each phase input or output, please select “Scan each phase”, otherwise select “Scan total of three-phase”.



The screenshot displays the configuration interface for ErLogger Pro. The interface includes a sidebar with navigation options: ErLogger Pro, GPRS Setting, Power Setting, and Environment Setting. The main content area is divided into several sections:

- Status:** Connection Succeeds, SN: 81000SEC191L0004, Software Version: V1.08, Set Time button.
- LAN Configuration:** DHCP Enable checkbox, IP: 192.168.1.200, Subnet Mask: 255.255.255.0, Gateway: 192.168.1.254, DNS: 208.67.222.222, Scan, Connect, and Set buttons.
- COM Configuration:** COM1, COM2, and COM3 Device Amount input fields, Set button.
- DRED & ARCB Setting:** Export Enab (checked), DRED Enable: Only for Australia and New Zealand, Total Capacity: 10.000 kW, Power Limit: 8 kW, Ratio of CT: 1, Set, Get Data, and Set buttons.
- RCR Setting:** Enable (unchecked), Only for Germany checkbox.
- RealTime Data:** P1, P2, P3 (kW), I2, I3 (A), V2, V3 (V), Meter Power, Refresh button.
- Log Info:** Clear Log button, Log table with Time and Message columns.
- Inverter List:** Table with No., InverterSN, and Status columns.
- Config Dialog:** Config Inverter options: Scan each phase (radio button), Scan total of three phase (radio button), Ok button.

Annotations in the image include:

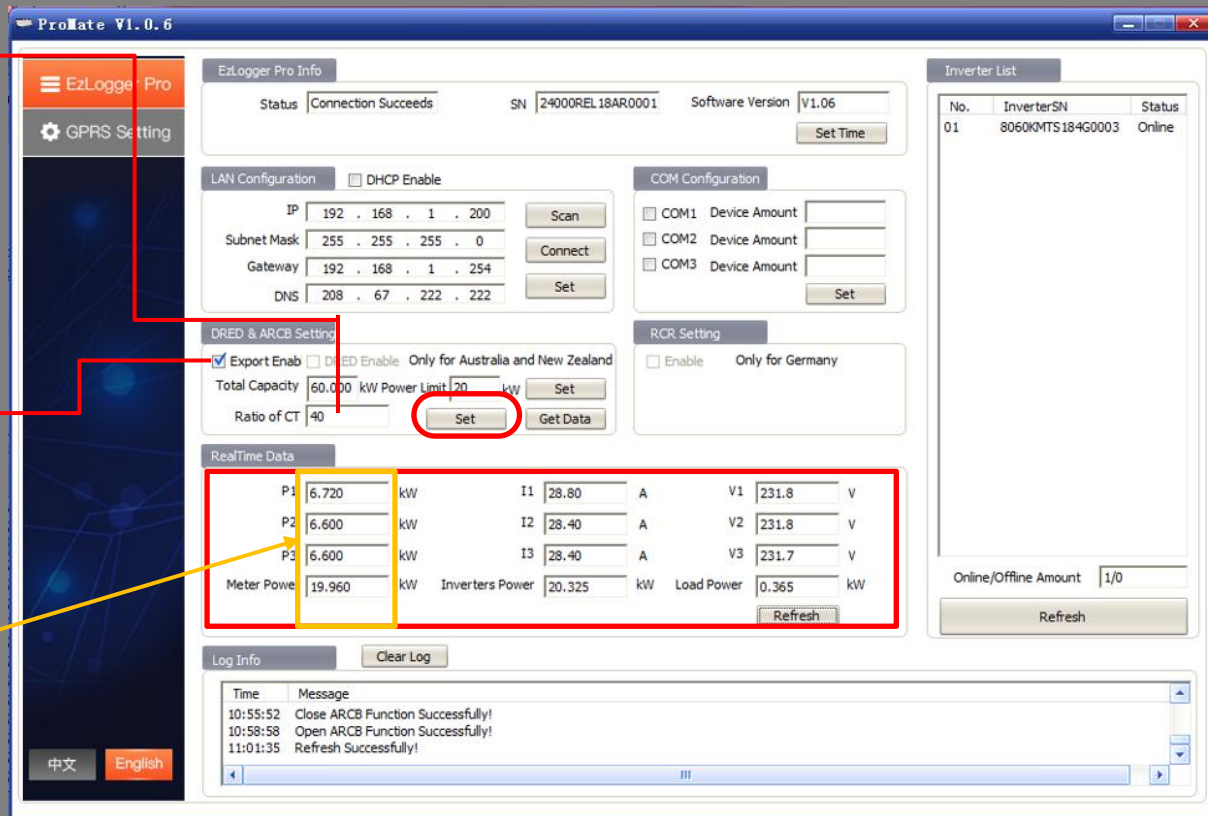
- A red box highlights the DRED & ARCB Setting section.
- A red arrow points from the "Export Enab" checkbox to the "Config" dialog.
- A blue box highlights the "Scan each phase" option in the "Config" dialog.
- A blue box highlights the "Scan total of three phase" option in the "Config" dialog.
- Text annotations: "This means each phase has a limitation for output" points to the "Scan each phase" option, and "This means the limitation is for the total of three phase" points to the "Scan total of three phase" option.

ProMate Configuration

● ProMate Configuration

- Set “Ratio of CT” and click “Set”.
- ☛ “Ratio of CT” mean current conversion ration, if the sticker on the CT marked 200/5A, the ration is 40.
- Click “Export Enab” to activate the power limit or anti reverse function.

☛ : Positive number here means selling power to grid, negative number here means buying power from grid.



The screenshot displays the ProMate V1.0.6 web interface. The left sidebar contains navigation options: 'EzLogger Pro' and 'GPRS Setting'. The main content area is divided into several sections:

- EzLogger Pro Info:** Shows 'Status: Connection Succeeds', 'SN: 24000REL18AR0001', and 'Software Version: V1.06'. A 'Set Time' button is present.
- LAN Configuration:** Includes fields for IP (192.168.1.200), Subnet Mask (255.255.255.0), Gateway (192.168.1.254), and DNS (208.67.222.222). There are 'Scan', 'Connect', and 'Set' buttons.
- COM Configuration:** Features checkboxes for COM1, COM2, and COM3, each with a 'Device Amount' field and a 'Set' button.
- DRED & ARCB Setting:** Contains checkboxes for 'Export Enab' (checked) and 'DRED Enable'. It also has fields for 'Total Capacity' (60,000 kW) and 'Power Limit' (20 kW), with 'Set' and 'Get Data' buttons.
- RCR Setting:** Includes an 'Enable' checkbox and the text 'Only for Germany'.
- RealTime Data:** A table showing power and voltage data for three phases (P1, P2, P3) and meters. The data is as follows:

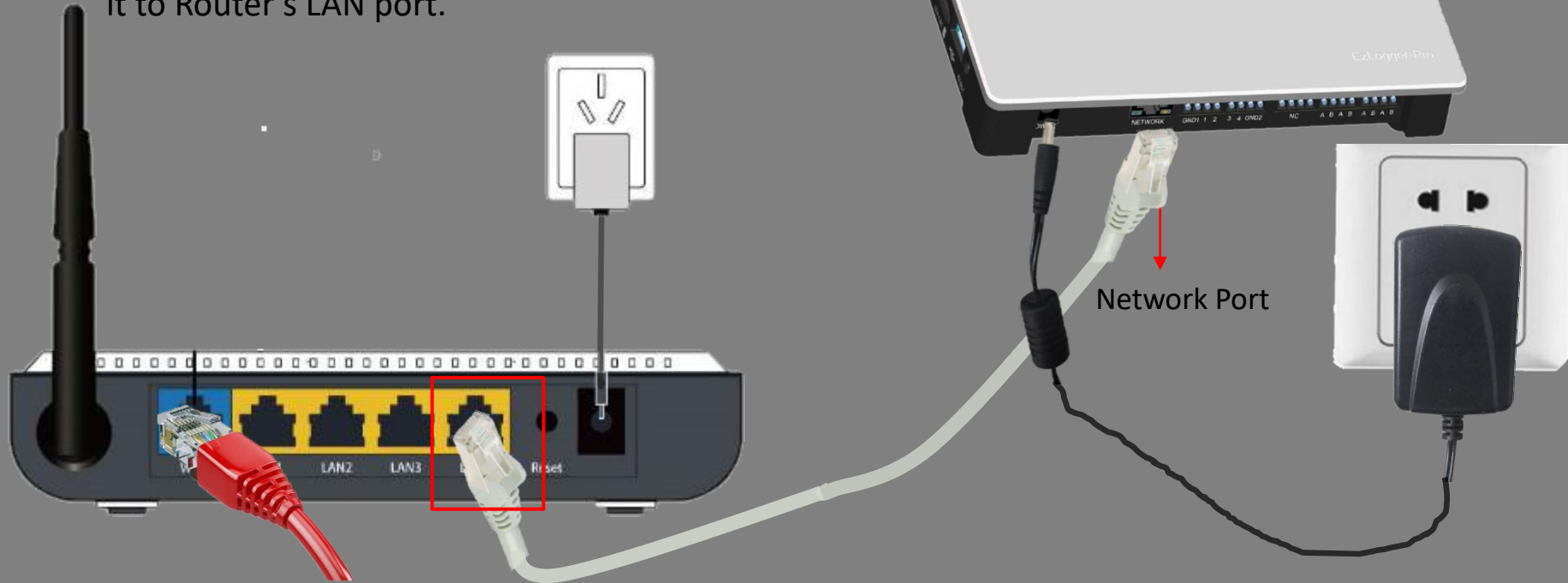
Phase	Power (kW)	Current (A)	Voltage (V)
P1	6.720	28.80	231.8
P2	6.600	28.40	231.8
P3	6.600	28.40	231.7
Meter Power	19.960	Inverters Power: 20.325	Load Power: 0.365
- Log Info:** A 'Clear Log' button and a log list with columns for 'Time' and 'Message'. The log entries are:
 - 10:55:52 Close ARCB Function Successfully!
 - 10:58:58 Open ARCB Function Successfully!
 - 11:01:35 Refresh Successfully!

Red arrows point from the text in the first two list items to the 'Ratio of CT' field and the 'Set' button in the 'DRED & ARCB Setting' section. A yellow box highlights the 'Ratio of CT' field and its 'Set' button. A red box highlights the 'RealTime Data' table. A yellow box highlights the 'Meter Power' row in the table. A yellow arrow points from the text in the third list item to the 'Export Enab' checkbox.

ProMate Configuration

- ProMate Configuration

After finished the ProMate configuration, disconnect the LAN cable from PC and connect it to Router's LAN port.



● ProMate Configuration

Q1: Are All versions Ezlogger Pro available for doing multi-inverter anti current reverse?

A1: From a hardware perspective, all versions Ezlogger Pro available for doing multi-inverter anti current reverse. But, from a software perspective, only the firmware version of the Ezlogger Pro V.08 can be used to do multi-inverter anti current reverse.

Q2: Is the customer need to set the power limit percentage on the inverter screen when they use Ezlogger Pro to do multi-inverter anti current reverse?

A2: No. Ezlogger Pro will make the whole system always in buying power status and the proportion of the buying electricity is 5%-8% of installed capacity.

Q3: How many kinds of the CTs are available for customer selection?

A3: Three, they are 250/5A, 1000/5A, 5000/5A.

● ProMate Configuration

Q4: What is the length for CT communication line?

A4: For 250/5A CT, suggested length for 1.5mm² cable is 3.4m, 2.5mm² cable is 5.4m, 4mm² cable is 8.6m.

A4: For 1000/5A CT, suggested length for 1.5mm² cable is 16.2m, 2.5mm² cable is 27m, 4mm² cable is 43m.

A4: For 5000/5A CT, suggested length for 1.5mm² cable is 48.6m, 2.5mm² cable is 81m, 4mm² cable is 129.7m.

Q5: What is the maximum length for RS485 cable?

A5: 1000m.



THANKS

Thanks for choosing GoodWe