EPEVER TCP 306

User Manual

EN

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Important Safety Instructions

Please reserve this manual for future review.

- Thanks for selecting the EPEVER TCP 306; please read this manual carefully before using the product.
- When you receive the product, check whether any damage occurred in transportation. Contact the transportation company or our company in time for any problem.
- Please read this manual and safety information carefully before installing it.
- Keep the product away from rain, exposure, severe dust, vibration, corrosion, and intense electromagnetic interference.
- Please avoid water and other liquids entering the product.
- There are no user-serviceable parts inside the product. Do not disassemble or attempt to repair it.

WARNING	Do not install this product in humid, salt spray, corrosion, greasy, flammable, explosive, dust accumulative, or other severe environments.

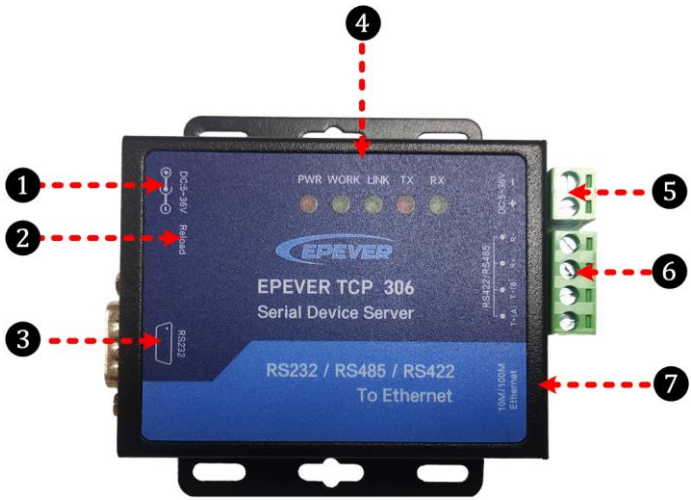
1 Overview

EPEVER TCP 306 is a serial device server connecting with EPEVER solar controller, inverter, and inverter/charger via an RS485 port. Communicating by the TCP network, it transfers collected data to the EPEVER cloud server to realize the remote monitoring, parameter setting, and data analysis. With simple and easy operations, the TCP device server's IP address, TCP server, and TCP client can also be modified by the PC software.

Features:

- Equipped with standard network cable port
- Adjustable 10M/100M Ethernet port
- Configurable serial port baud rate (600bps~230.4Kbps)
- Auto obtain the IP Address by the DHCP function
- High compatibility without any drivers
- Unlimited communication distance
- Flexible power supply for the communication interface
- Designed with low power consumption, and high running speed

1.1 Appearance

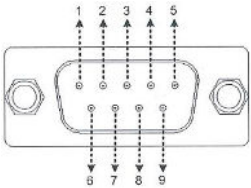


No.	Port	Instruction
❶	Power port	Support 5V~36V DC power adapter
❷	Reload button★	Return to the factory settings
❸	RS232 interface	Reserved
❹	Indicator	To indicate the working status
❺	Power terminal (2P 5.08)	Connect the solar controller, inverter, and inverter/charger for power supplying
❻	RS422/ RS485 interface	Connect the solar controller, inverter, and inverter/charger for data transmission
❼	Ethernet port	To connect the PC or router

★ When the module parameter error occurs, or you forget the setting password, press the Reload button for 5s~15s to restore factory mode. It will not restore when pressing the Reload button for less than 5s or more than 15s.

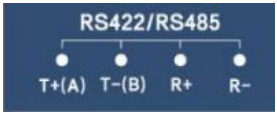
1.1.1 Pin definition

Definition for the RS232 terminal:



Pin	Definition	Pin	Definition
1	NC	6	NC
2	RXD	7	NC
3	TXD	8	NC
4	NC	9	NC default, it can also be used as a power pin.
5	GND		

Definition for the RS422/ RS485 terminal:



Pin	Instruction
T+(A)	For the RS422, they are data transmitting pins to send data to the serial device. For the RS485, they are data transmitting and receiving pins.
T-(B)	
R+	They are data-receiving pins for the RS422 communication.
R-	

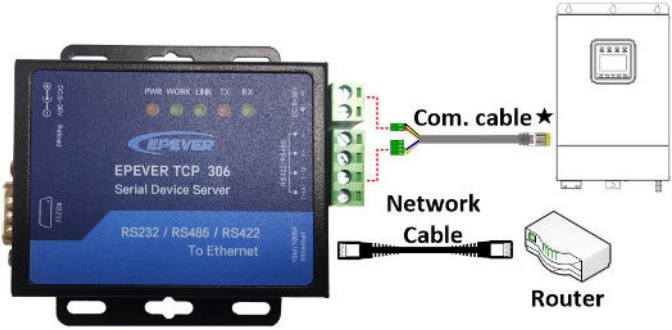
1.1.2 Indicator

Indicator	Status	Instruction
WORK (Work status indicator)	Slowly flashing	Normal work
	Fast flashing	Module upgrading
PWR (Power Indicator)	Red ON	Normal power on
	OFF	No power
LINK (TCP link indicator★)	ON solid	TCP connection normally
	OFF instantly	TCP disconnect normally
	OFF after a delay of 40s	TCP disconnect abnormally
TX (Transmit indicator)	Flashing	The serial port sends data
RX (Receive indicator)	Flashing	The serial port receives data

★ The LINK indicator matches the TCP link function, it just takes effect in the TCP Client or TCP server mode. The LINK indicator is ON solid when enabling the link function in the UDP mode.

2 Work on EPEVER cloud

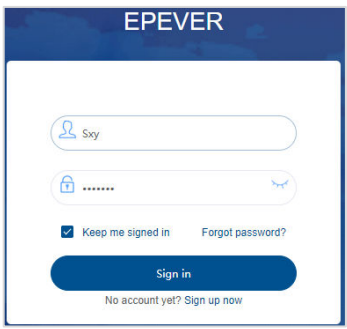
2.1 System connection



★ Select an appropriate communication cable per the communication interface of the controller, inverter, or inverter/charger.

2.2 Work procedures

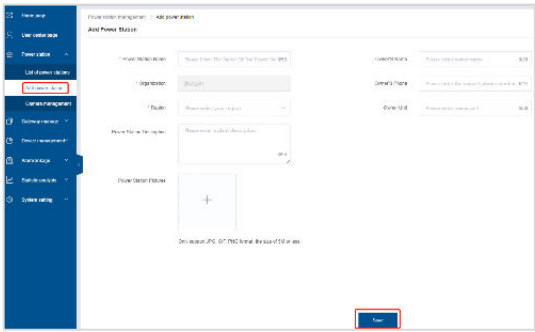
Step 1 log in to the cloud server: Enter (https://hncloud.epsolarpv.com/) in Google browser to log in to the cloud server.



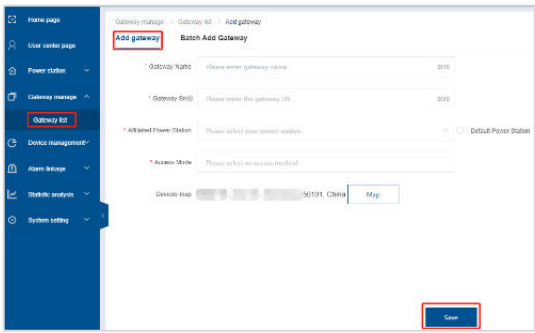
Note: If you do not have a cloud server account, you can register an account for free.

Step 2 Add a power station (optional): Click "Power station > Add power station" on the left navigation. Input the power station information and click the "Save" button.

Note: You can skip this step if the power station already exists.



Step 3 Add a gateway: Click "Gateway manage > Gateway list > Add" to enter the gateway adding interface. Input the gateway information and click the "Save" button.

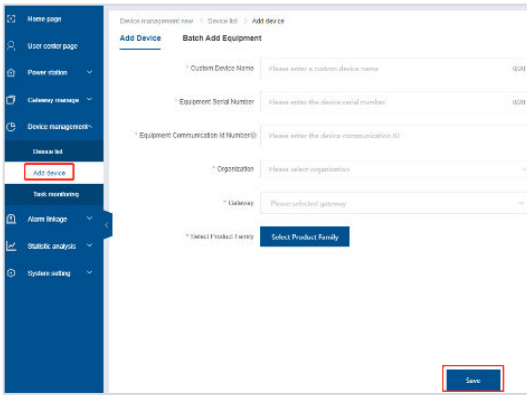


"Gateway SN" is obtained by scanning the QR code on the module sticker via the EPEVER cloud APP.

"Access Mode" selects the "TCP-A."

Note: You can also add gateways in batch by uploading a file.

Step 4 Add a device: Click "Device management > Add device" on the left navigation. Input the device information and click the "Save" button.



"Equipment Serial Number" can be obtained from the device sticker.

"Gateway" must be the added gateway in Step 3.

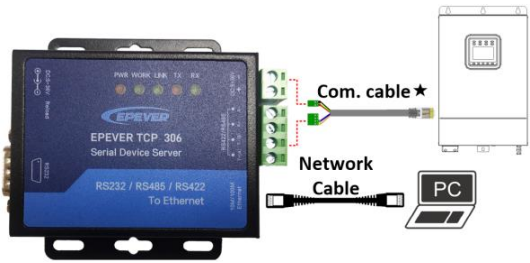
"Select Product Family" must be selected correctly, or it will cause a communication failure.

Step 5 Set the IP type: There are two methods to obtain the IP address for the module.

One is "Static IP," which must manually input the IP address, submask, and gateway.

The other is "DHCP," which automatically obtains the IP address. You need to set the method for obtaining the IP address as below.

1) Connect the module to a PC by a network cable, and connect the module to a controller, inverter, or inverter/charger by an RS485 cable.

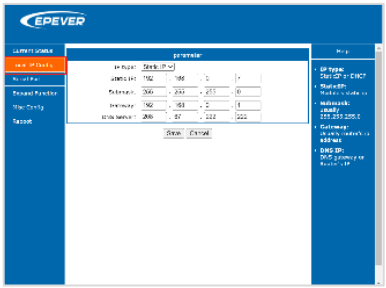


2) Set the computer's local IP address to the same network segment of the module. Such as the module's IP address is "192.168.0.7", you need to set the computer's local IP address as "192.168.0.x (x states any number among 0~255, except 7.)."

3) Input the module's IP address in the Google browser, and a login prompt box shows. And then, input the user account and password to log in.

Note: The module's IP address, user account, and password can be obtained on the sticker.

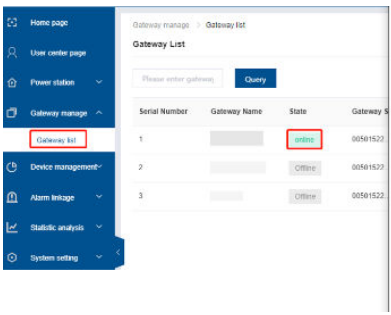
4) Click the "Login" to enter the picture below. Click the "Local IP Config" on the left navigation, and select the "IP type" as "Static IP" or "DHCP."

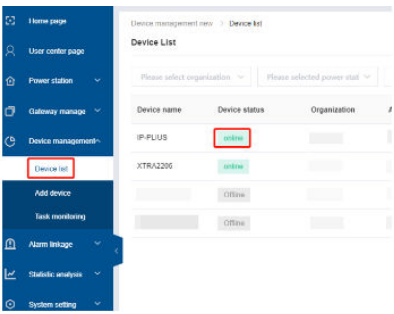


Step 6 System connection: Connect the EPEVER TCP 306 module to a router by a network cable, and connect the module to a controller, inverter, or inverter/charger by an RS485 cable. See 2.1 System connection.

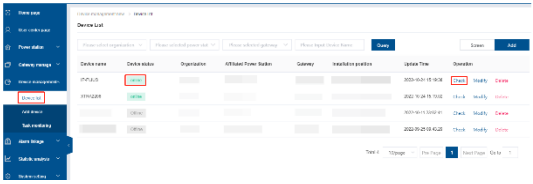
Step 7 Power on the controller, inverter, or inverter/charger: When the LINK indicator is ON solid, it indicates the TCP connection is normal.

Note: Click "Gateway manage > Gateway list "and "Device management > Device list"; the newly added gateway and device are online. It indicates that the gateway and device have been added to the EPEVER cloud.





Step 8 Monitor the device's real-time status and set parameters: Click "Device management > Device list" to enter the device list interface. Click the "Check" icon to monitor the device's real-time status.



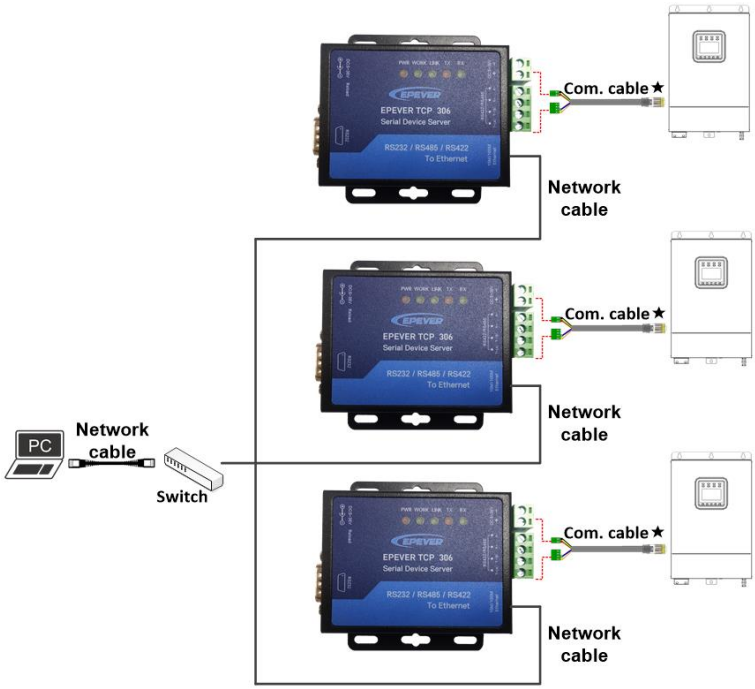
Click the "User center page" to enter the power station list. Select a power station to enter its overview page. You can check the real-time status, historical curve, device information, alarms, etc., and set parameters.

3 Work on LAN

3.1 LAN connection

Connect the TCP module to a PC by the Ethernet port, and connect the module to a controller, inverter, or inverter/charger by an RS485 cable.

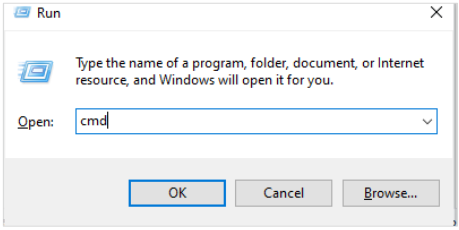
After successfully connecting to the PC, users can modify the TCP module's parameters or monitor the connected devices with the PC software.



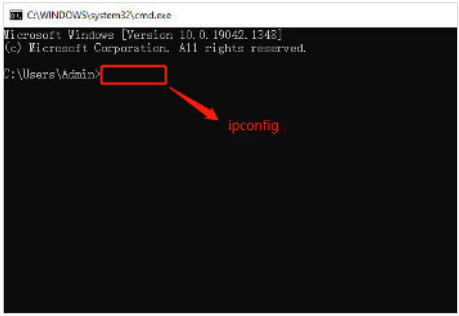
3.2 Work procedures

3.2.1 Check the local IP address

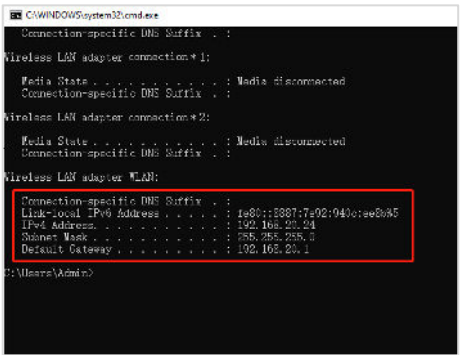
1. Pop up the "Run" window by clicking the shortcut key " +R" on the PC keyboard, enter the "cmd" command, and press the "Enter" key.



2. Enter the "ipconfig" command in the pop-up window and press the "Enter" key to view the local IP address.

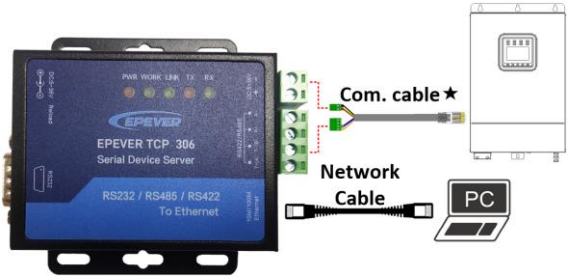


3. It is shown in the figure below: Local IP address: 192.168.20.24; Subnet mask: 255.255.255.0; Default Gateway: 192.168.20.1.



3.2.2 Configure TCP module

1. Connect the TCP module's power terminal and RS485 terminal with the device. And connect the TCP module's "Ethernet" port to a PC.



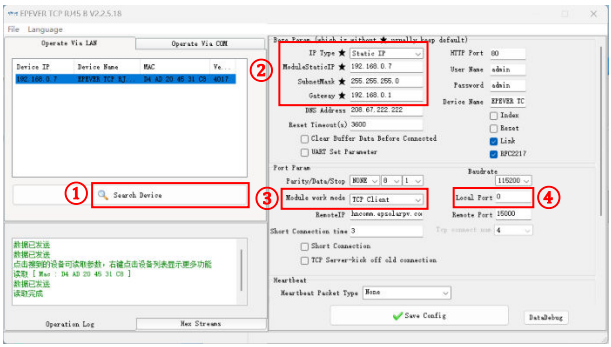
2. After the TCP module is successfully connected to the PC (the Link indicator is green ON), set the IP address of the computer and TCP module in the same network segment.

   Note: The IP address of the TCP module is shown on the module label.

3. Click to open the "EPEVER TCP RJ45 B.exe" tool

, which can be requested from the after-sales technicians.

4. Modify the parameters by the sequence number marked in the figure below :



（1）Click "Search Device" to read the TCP module information.

（2）Change the "IP Type" to "Static IP."

The first 3 bits of the "Module Static IP" item should be consistent with the current PC. The current PC's local IP is 192.168.20.24. Thus the "Module Static IP" item needs to be changed to 192.168.20.130 (the last bit can be written at will).

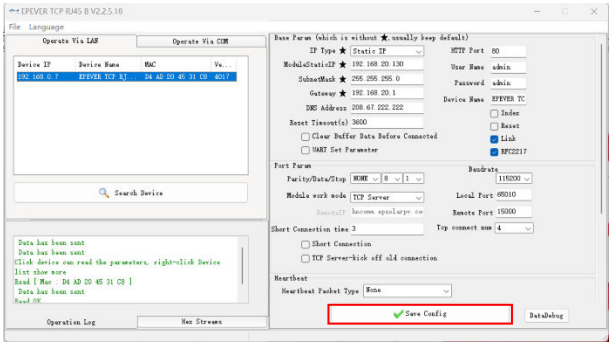
The value of the "Subnet Mask" and "Gateway" items should be consistent with the current PC. The current PC's subnet mask is 255.255.255.0, and the default gateway

is 192.168.20.1. Change the value of the "Subnet Mask" and "Gateway" items to the same.

（3）Change the "Module work mode" to "TCP Server."

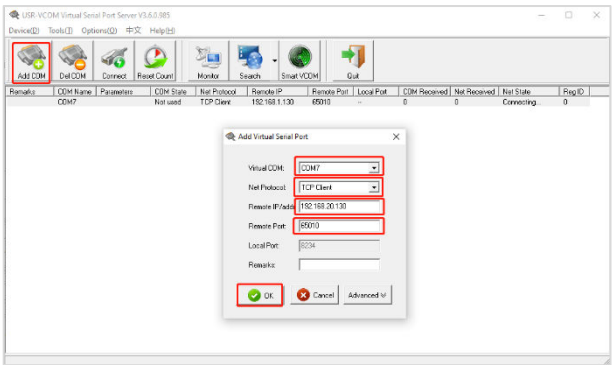
（4）Change the "Local Port" to "65010."

After modifying the above parameters, click the "Save Config" button.



3.2.3 Add Virtual COM

1. Install and open the USR-VCOM software . The software installer can be requested from the after-sales technicians.
2. Click the "Add COM" icon to add a virtual COM port per the following procedures:



（1）"Virtual COM": COM1~COM255. For example, select "COM7 ".

（2）"Net Protocol": Select "TCP Client."

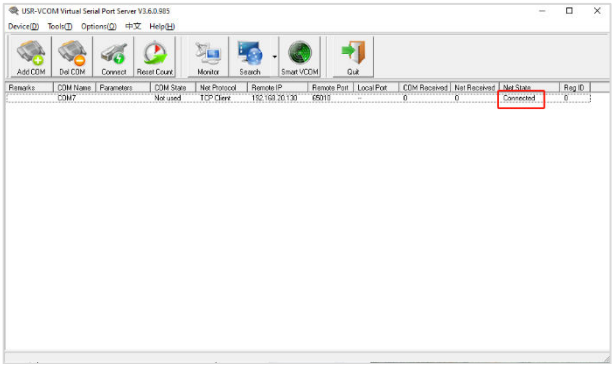
（3）"Remote IP/addr": Enter the "Local IP (192.168.20.130)", which is set by the TCP tool

in chapter 3.2.2 Configure TCP module.

（4）"Remote Port": Automatically display "65010" by the TCP Tool.

（5）After finishing all settings, click the "OK" button.

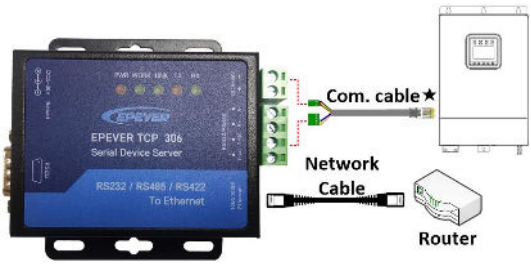
3. The "Net State" column displays "Connected," indicating that the virtual COM has been added successfully.



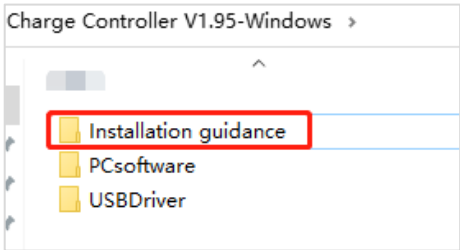
Note: If the "Net State" column displays a failed connection, please check whether the TCP module and the current PC are in the same network.

3.2.4 Monitor devices with the PC software

1. Connect the TCP module's power terminal and RS485 terminal with the device. And connect the TCP module's "Ethernet" port to the router by a network cable (The TCP module and the PC must share the same network).

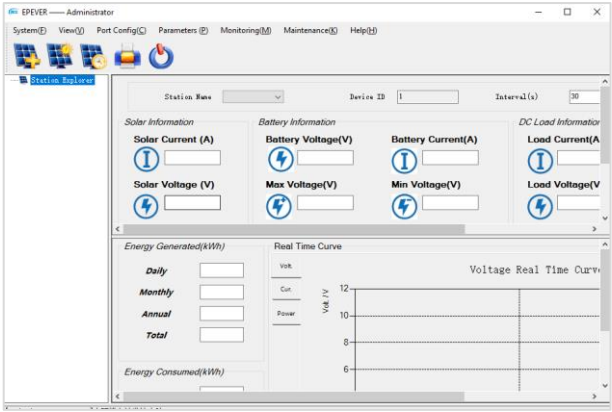


2. Download the PC software "Charge Controller V1.95 Windows" from the EPEVER website: https://www.epever.com/support/softwares/. Install the PC software "Solar Station MonitorV1.95" as per the *Installation guidance*.

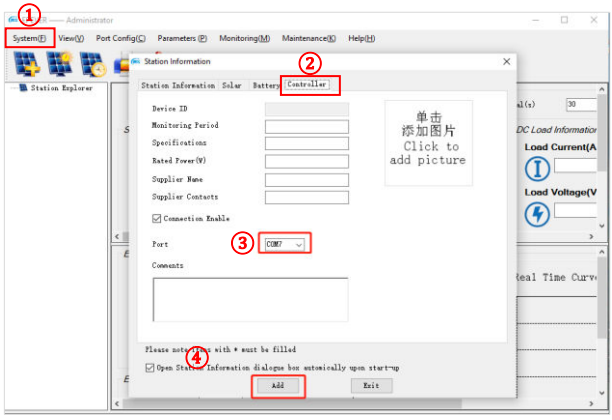


3. Double-click the icon

on the PC to open the "Solar Station MonitorV1.95" software. The initial interface is shown in the figure below.

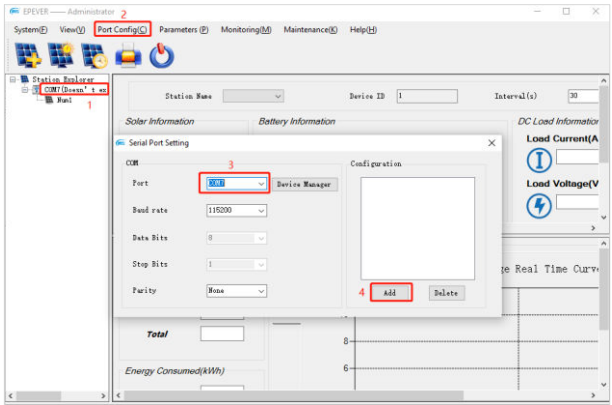


4. Click the "System" menu to pop a "Station Information" box. Then click the "Controller" tab and select "COM7" for the "Port" item ("COM7" is the virtual COM set in chapter 3.2.3 Add Virtual COM).



After finishing all settings, click the "Add" button.

5. After adding the "COM7", it displays "COM7 (Doesn't exist or not yet set up)" in the left navigation window. Configure the "COM7" in the following procedures.

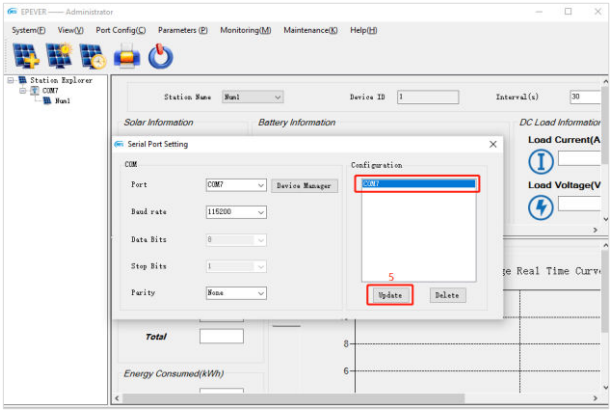


（1）Click the "COM7 (Doesn't exist or not yet set up)" in the left navigation window.

（2）Click the "Port Config" on the top menu bar to pop up a "Serial Port Setting" box.

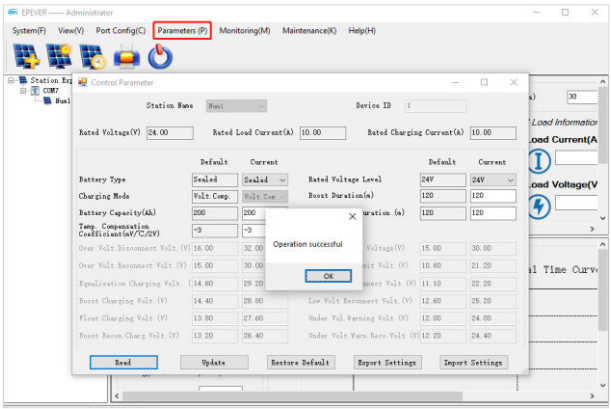
（3）Select "COM7" for the "Port" item.

（4）Click the "Add" button to add the "COM7 "into the "Configuration" field, and then, the "Add" button automatically becomes the "Update" button. Shown as below:



（5）Select the "COM7 "in the "Configuration" field, and click the "Update" button to finish.

6. Click the "Parameters" on the top menu bar to monitor the devices and modify related parameters.

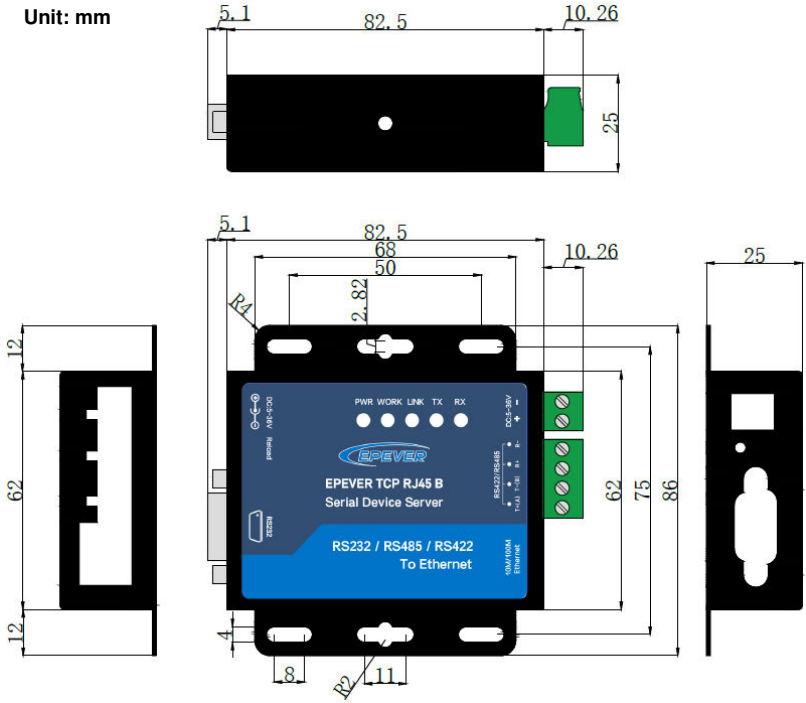


4 Specifications

Model	EPEVER TCP 306
Work voltage	5V~36VDC
Work current	116mA@ 5V; 53mA@ 12V
Ethernet type	RJ45, 10/100Mbps, cross-direct adaptive
Support network protocol	IP, TCP/UDP, ARP, ICMP, IPV4, HTTP
Serial port baud rate	600bps~230.4Kbps
Transmission mode	TCP Server, TCP Client, UDP Server, UDP Client
Transmission delay	<10ms
Work temperature range	-25℃~75℃
Storage temperature range	-40℃~105℃
Relative humidity	≤ 95% (N.C)
Dimension (Length x Width x Height)	98.0mm x 86.0mm x 25.0mm
Reliable level	1.5KV Electromagnetic isolation
Net Weight	205g

Appendix 1 Dimension

Unit: mm



Any changes without prior notice! Version number: V1.0

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