

EC4 Module

User manual

Applicable model:
EC4

JIANGSU SFERE ELECTRIC CO., LTD.

Safety instruction

Thank you for choosing the products developed by Jiangsu Sfer Electric Co., Ltd. In order to facilitate your purchase and help you use this product safely, correctly and efficiently, please read this manual carefully and pay attention to the following points when using it.

CAUTION:

- ◆ Make sure only the qualified technicians perform the installation and maintenance;
- ◆ Before performing wiring operation to the meter, make sure the input signal and the power supply are switched off;
- ◆ The proper voltage detecting device should be used to guarantee no voltage in any part of the meter;
- ◆ The electrical parameters supplied should be within the rated range;

The following situations may result in damage to the device or cause mistakes in the operation of the device:

- ◆ The voltage of the auxiliary power supply goes beyond the rated range.
- ◆ The frequency of the power distribution system goes beyond the rated range.
- ◆ The input polarity of the voltage or the current is incorrect.
- ◆ Remove or connect the communication plugs without powering off.
- ◆ Connect the terminal wires against the related instructions.



**Please don't touch the terminals
when the meter is in operation!**

The latest manual can be downloaded from the company's homepage and some corresponding test software downloads also provided. If you need an electronic user manual, you can obtain it from our technical service department.

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1 Product Profile

1.1 Overview

EC4-GPRS module (hereinafter referred to as EC4) is a wireless transmission module based on the GPRS way, using the existing mobile network can easily let your device achieve wireless connection with Internet. It has many advantages, such as wide network coverage, flexible and fast networking.



Figure 1.1 product physical figure

2 Technical specifications

2.1 Technical specifications

Project		Parameters
Wireless Interface	Frequency band	Support 4 frequency: GSM850MHz/900MHz/ 1800MHz/1900MHz
	Network type	GPRS
	SIM card voltage	3V、1.8V
	Antenna interface	50Ω/SMA(female head)
RS485 Interface	Communication	half duplex
	Communication baud rate	2400~19200bps,default 9600bps
	Data format	n81/n82/o81/e81,default n81
Main module	Model	PD194Z-E1X

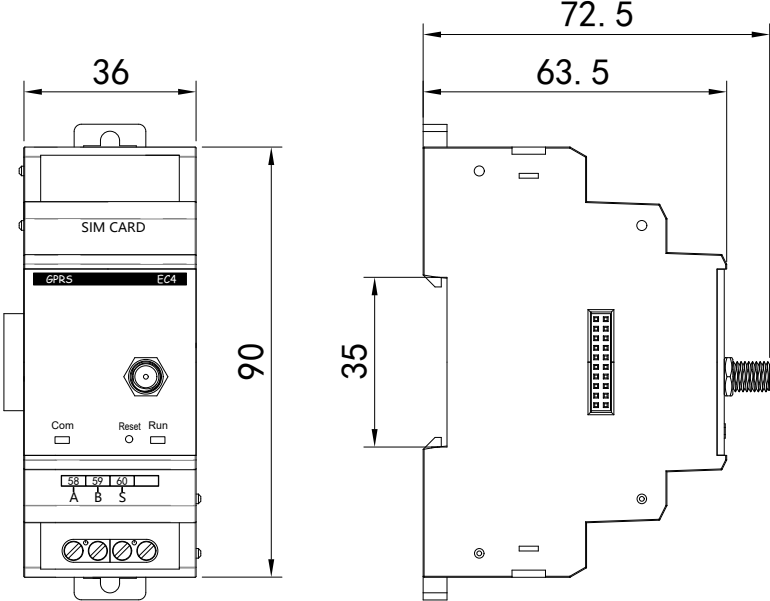
Working environment	-25℃～70℃， ≤93%RH
Storage environment	-40℃～85℃， ≤93%RH

2.2 Main functions

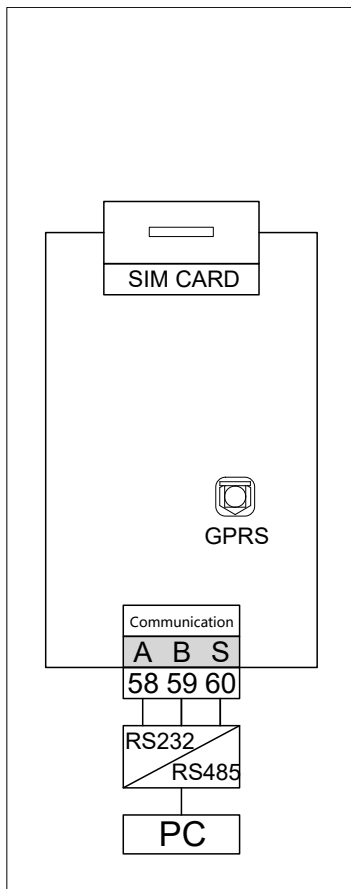
- ✧ Support dynamic domain name or IP address access.
- ✧ Support break line automatic reconnection function.
- ✧ Support local graphical interface configuration and maintenance.
- ✧ Have Reset key, can restore to factory configuration in case of system parameter configuration confusion.
- ✧ Support local firmware update capability to facilitate user to update the device.

3 Dimensions and wiring diagrams

3.1 Size

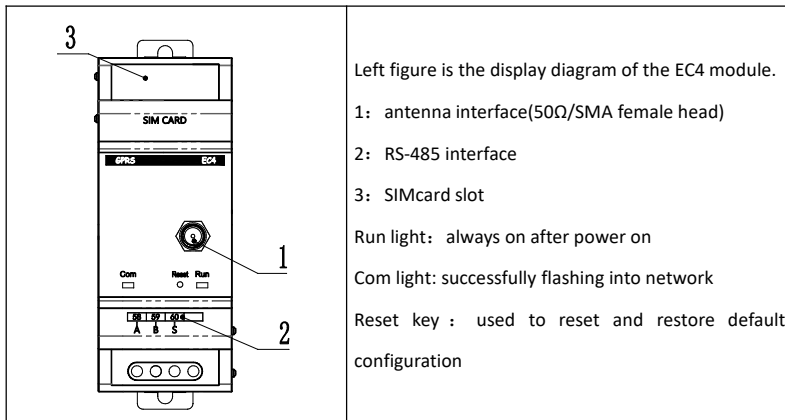


3.2 Wiring



4 Operation

4.1 Panel



4.2 Use Preparation and Function Description

4.2.1 Hardware preparation

The EC4 module is spliced with PD194Z-E1X series of instruments, the RS-485 interface of the EC4 module is connected to the computer, the SIM card is inserted, the antenna is connected to the antenna interface, and then the power is on.

4.2.2 Light function description.

There are two small lights on the panel: Run and Com. The function of each lamp is described in detail below.

1. All small lights flash once after power on, then the Run light is always on.
2. Connect server successfully, Com light flash slowly.
3. Data interaction with the server, Com lights flash quickly.

4.2.3 Key function description

Reset key have the following functions:

1. The Run indicator is always on. Press the Reset button to enter the configuration mode, Run the indicator light flashes.
2. The Run indicator flashes. Press the Reset button to launch the configuration mode. The Run indicator is always on.
3. Press and hold the Reset button for 3-4 seconds to release, all indicators

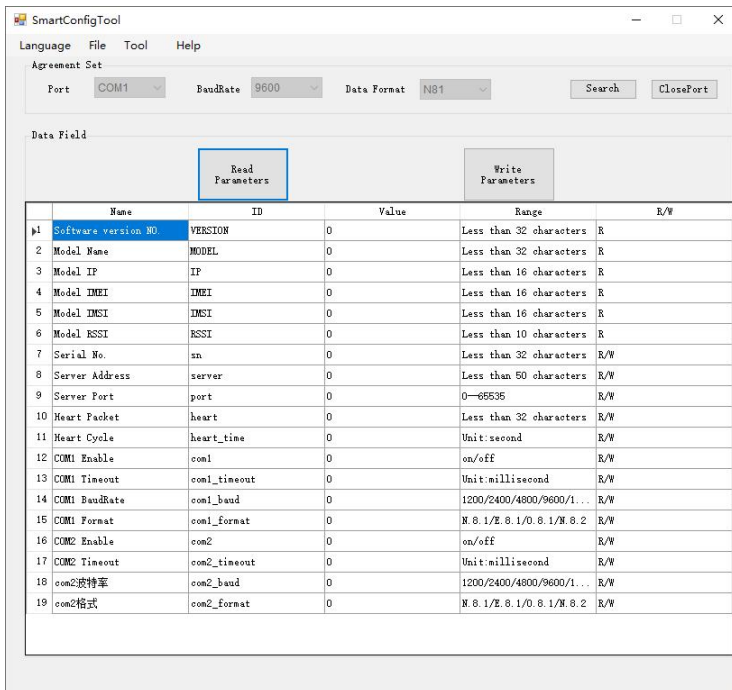
flash quickly, EC4 module resets.

4. Press and hold the Reset button for more than 10 seconds and release, all the indicators flash slowly, and the EC4 module restores the factory settings

4.3 Parameter configuration and reading

Connect the RS-485 interface of the EC4 module with the PC, open the SmartConfigTool software and configure the serial port parameters (baud rate :9600, data format: N81), press the Reset button to enter the configuration mode.

Click on the import configuration option under the SmartConfigTool file menu, select TGate.xlsx profile to import the configuration parameters.



4.3.1 Parameter reading

Click the Parameter Reading button to read the configuration parameters within the module.

The screenshot shows the SmartConfigTool application window. At the top, there is a menu bar with 'Language', 'File', 'Tool', and 'Help'. Below the menu is the 'Agreement Set' section, which includes dropdown menus for 'Port' (set to COM21), 'BaudRate' (set to 9600), and 'Data Format' (set to N81). There are also 'Search' and 'ClosePort' buttons. The main area is labeled 'Data Field' and contains two buttons: 'Read Parameters' (highlighted with a blue box) and 'Write Parameters'. Below these buttons is a table with the following columns: Name, ID, Value, Range, and R/W. A 'Read Succeed' dialog box is overlaid on the table, with a '确定' (OK) button. The table contains 19 rows of configuration parameters.

	Name	ID	Value	Range	R/W
1	Software version NO	VERSION	EC4.2003.191216	Less than 32 characters	R
2	Model Name	MODEL	EC4	Less than 32 characters	R
3	Model IP	IP	10.154.42.21	Less than 16 characters	R
4	Model IMEI	IMEI	865429043843866	Less than 16 characters	R
5	IMEI	IMEI	460043197802399	Less than 16 characters	R
6	RSSI		-51 dBm	Less than 10 characters	R
7	sn		123	Less than 32 characters	R/W
8	server		119.23.105.150	Less than 50 characters	R/W
9	port		8004	0-65535	R/W
1	heart		heart	Less than 32 characters	R/W
1	heart_time		60	Unit:second	R/W
12	COM1 Enable	com1	on	on/off	R/W
13	COM1 Timeout	com1_timeout	1000	Unit:millisecond	R/W
14	COM1 BaudRate	com1_baud	9600	1200/2400/4800/9600/1...	R/W
15	COM1 Format	com1_format	N.8.1	N.8.1/E.8.1/O.8.1/N.8.2	R/W
16	COM2 Enable	com2	on	on/off	R/W
17	COM2 Timeout	com2_timeout	1000	Unit:millisecond	R/W
18	com2波特率	com2_baud	9600	1200/2400/4800/9600/1...	R/W
19	com2格式	com2_format	N.8.1	N.8.1/E.8.1/O.8.1/N.8.2	R/W

4.3.2 Parameter configuration

Modify the value of the parameter in the value column according to the requirements. after the parameter is set, click the parameter configuration button to write the parameter to the EC4 module and save it.

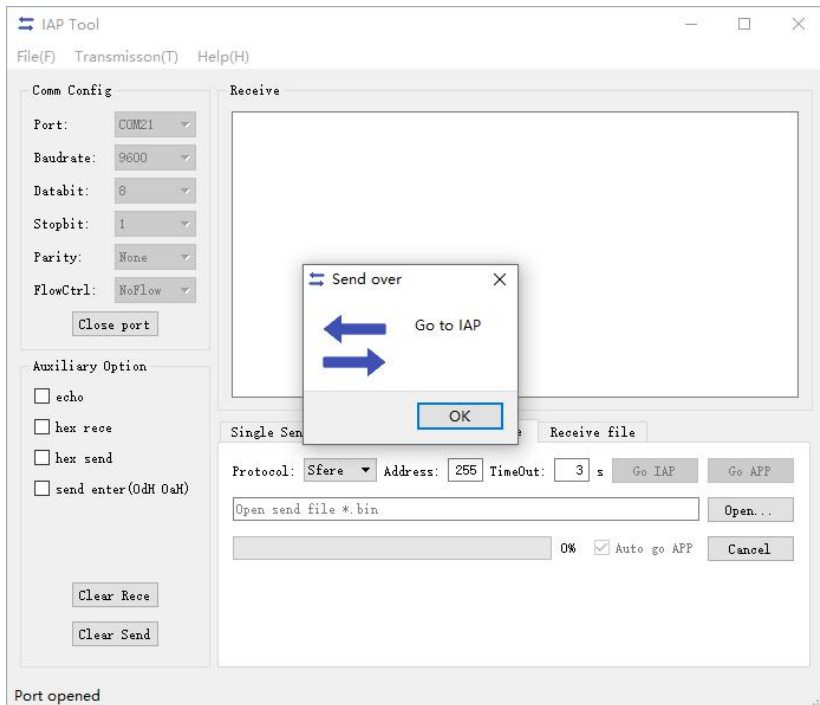
The screenshot shows the SmartConfigTool interface. At the top, there is a menu bar with 'Language', 'File', 'Tool', and 'Help'. Below it is the 'Agreement Set' section with dropdown menus for 'Port' (COM21), 'BaudRate' (9600), and 'Data Format' (N81), along with 'Search' and 'ClosePort' buttons. The main area is titled 'Data Field' and contains two buttons: 'Read Parameters' and 'Write Parameters'. Below these is a table of parameters. A 'Write Succeed' dialog box is overlaid on the table, with a '确定' (OK) button.

	Name	ID	Value	Range	R/W
1	Software version NO.	VERSION	EC4.2003.191216	Less than 32 characters	R
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5	IMEI	IMEI	460043197802399	Less than 16 characters	R
6	RSSI	RSSI	-51 dBm	Less than 10 characters	R
7	sn	sn	123	Less than 32 characters	R/W
8	server	server	119.23.105.150	Less than 50 characters	R/W
9	port	port	8004	0-65535	R/W
10	heart	heart	heart	Less than 32 characters	R/W
11	heart_time	heart_time	60	Unit:second	R/W
12	COM1 Enable	com1	on	on/off	R/W
13	COM1 Timeout	com1_timeout	1000	Unit:millisecond	R/W
14	COM1 BaudRate	com1_baud	9600	1200/2400/4800/9600/1...	R/W
15	COM1 Format	com1_format	N.8.1	N.8.1/E.8.1/O.8.1/N.8.2	R/W
16	COM2 Enable	com2	on	on/off	R/W
17	COM2 Timeout	com2_timeout	1000	Unit:millisecond	R/W
18	com2波特率	com2_baud	9600	1200/2400/4800/9600/1...	R/W
19	com2格式	com2_format	N.8.1	N.8.1/E.8.1/O.8.1/N.8.2	R/W

4.4 Firmware upgrade

4.4.1 Access IAP

Under configuration mode, click the firmware upgrade option under the SmartConfigTool software tools menu, pop up the upper computer, set the serial port parameters (baud rate :9600, data format: N81). Select Protocol Sfere, Click Enter IAP. Enter successfully, Run light flashes quickly.



4.4.2 Firmware update

Open the firmware file and click send, waiting for the firmware update completed.

Pop up the “send finish” prompt box. If checked complete enter APP, close prompt box and enter application execution.

