

Inverter communication protocol V1.0

Compatible products: IP series, IP-Plus series, and NP series

Features:

1. Adopt the Modbus-RTU standard protocol
2. Default inverter ID is 3
3. Serial communication parameters: baud rate 115200bps, data bit 8, stop bit 1, no data flow control.
4. The register's address adopts the hexadecimal format, and the offset of the base address is 0x00.
5. All 32-bit length data is represented by two 16-bit length registers, represented by the L register and H register. For example, the actual value of the load output power is 3000, and the data multiple is 100 times. The value of the variable L register (address 0x310E) is 0x93E0, and the value of the variable H register (address 0x310F) is 0x0004.

✧ **Input register: (Read only code0x04)**

Variable	Address	Unit	Times	Note
Load input voltage	0x3108	V	100	
Load input current	0x3109	A	100	If 0 is always displayed, it means that the hardware does not support this model.
Load input power	0x310A	W	100	Low input power
Load input power	0x310B	W	100	High input power
Load output voltage	0x310C	V	100	
Load output current	0x310D	A	100	
Load output power	0x310E	W	100	Low output power
Load output power	0x310F	W	100	High output power
Device temperature	0x3111	°C	100	
Heat sink temperature	0x3112	°C	100	
Load status	0x3202			D15~ D14, 00 Normal input voltage, 01 Low input voltage, 02 High input voltage, 03 No connect to the input power, etc. D13~D12, Output power 00-Light load, 01-Medium load, 02-Nominal Load, 03-Overload D5 Output fail, D6 High voltage side short-circuit, D7 Input over-current, D8 Abnormal Output voltage, D9 Unable to stop discharging, D10 Unable to discharge, D11 short-circuit. D0, 1 Run, 0 Standby D1, 0 Normal, 1 Faults

✧ **Discrete register: (Read only, function code0x02)**

Variable	Address	Note
Device over temperature	0x2000	1 The temperature inside the device is higher than the over-temperature protection value. 0 Normal

✧ **Holding register: (Read and write, function code 0x03 and 0x10)**

Variable	Address	Unit	Times	Note
Low input voltage	0x902F	V	100	Over-discharge, immediately (cannot be modified)
Low input voltage (5s)	0x9030	V	100	Over-discharge, 5 seconds
Low input voltage recovery voltage	0x9031	V	100	Over-discharge, recovery
High input voltage recovery voltage	0x9032	V	100	Over-voltage, recovery
High input voltage (5s)	0x9033	V	100	Over-voltage, 5 seconds
High input voltage	0x9034	V	100	Over-voltage, immediately (cannot be modified)
High input current	0x9035	A	100	It cannot be modified.
High input current recovery voltage	0x9036	A	100	It cannot be modified.

Note: The above eight variables' addresses need to be sent at one time. For the variables that cannot be modified, you can fill in the default value or 0.

✧ **Holding register: (Read and write, function code 0x03 and 0x10)**

Output AC voltage setting	0x9022	A	100	It can be set as 110V or 120V in the 110V system. It can be set as 220V or 230V in the 220V system. Other values are invalid.
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✧ **Holding register: (Read and write, function code 0x03 and 0x10)**

Output AC frequency setting	0x9023	A	100	It can be set as 50Hz or 60Hz. Other values are invalid.
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Note: Only the IP-Plus series, NP4000-22, and NP5000-42, support the Output AC voltage setting and Output AC frequency setting. IP series and other NPower models adopt the hardware dial switches.

✧ **Coil register: Digital switch (Read and write) (function code 0x01 and 0x05)**

Variable	Address	Note
Clear the faults	0x13	1 Clear the current and historical faults and resume normal operation. 0 No action
Local/Remote control	0x11	1 Remote control 0 Local control
Inverter ON/OFF	0xF	In the remote control mode: (This function takes effect after the remote control is enabled.) 1 Turn on the inverter output 0 Turn off the Inverter output
Power saving mode enable	0x4	In the remote control mode: (Only SHI series support this function, other products do not support it.) 1 Power saving mode enable 0 Power saving mode disable