

# AC-DC current, voltage type intelligent power transmitter, temperature transmitter / sensor / direction for use

## ▲ 1. Physical interface and functional features:

- 1.1 Serial communication adopts RS485.
- 1.2 The transmission mode is half-duplex asynchronous mode, with 1 start bit, 8 data bit, 1 stop bit, and no check.
- 1.3 Address factory default is 01H, port rate default 9600bps.
- 1.4 In the bus equipment, this sensor is the slave, current (or voltage) input, the standard RS-485 digital interface output, realize the interconnection with computer or other upper computer, and is widely used in power, communication, transportation, environmental protection, petrochemical, steel and other fields, used to detect the current or voltage consumption of AC / DC equipment.
- 1.5 Adopt industrial-grade imported chip professional algorithm, with high precision.
- 1.6 With automatic thermal shutdown and ESD protection function
- 1.7 A variety of power supply modes are available for choice: DC12V, DC15V, DC24V, 220V and so on.
- 1.8 A variety of installation methods are available, such as standard guide rail installation, plane screw fixing, detachable open structure, PCB welding installation, etc.
- 1.9 Adopt new electromagnetic isolation, photoelectric isolation technology, low power consumption.
- 1.10 The average working time is greater than 100,000 hours, and the working environment temperature is -20°C ~80°C
- 1.11 Support the special customization of three parameters: input range, output type and working power supply.

## ▲ 2. Read the data command example:

### 2.1 Single input transmitter COMMAND (down command):

From the machine address	FC	Data Start (H)	Data Start (L)	Number of data (H)	Number of data (L)	CRC-L	CRC-H
01H	03H	00H	0E H	00H	01H	E5 H	C9 H

### RETURN (Return the information):

From the machine address	FC	Data data length	data H	data L	CRC-L	CRC-H

01H	03H	02H	08 H	CB H	FE H	13 H
-----	-----	-----	------	------	------	------

Note: 2.1.1 Keep 2 decimal places for the specified range  $\leq 3300$  and 1 decimal place for  $> 300$ .

2.1.2 Communication examples (read PV):

Example 0-30A (V) transmitter device address is 1, i. e. (address range 1-255)

The CRC check = E5 C9. Send and return data are as follows:

Send to: 01 03 00 0 E 00 01 E5 C9

Return: 01 03 02 05 DC BA 8D

Data 05 DC hexadecimal decimal to 1500 (retain 2 decimal places)

Therefore, current current value is 15.00A (in A)

### ▲ 3. modify the address (station number) command example (function code is 06): (the slave address is changed from the current ADD 1 to ADD 2)

COMMAND (Down command):

From the machine address	FC	Start-up register address		Data that is written to the register		CRC-L	CRC-H
01H (ADD1)	06 H	00H	04 H	00H	02H (ADD2)	49H	CA H

RETURN (Return the information):

From the machine address	FC	Start-register address		Data that is written to the register		CRC-L	CRC-H
01H (ADD1)	06 H	00H	04 H	00H	02H (ADD2)	49H	CA H

Modify examples:

For example: 01 address is changed to 02 address

Sent: 01 06 00 04 00 02 49 CA

Return: 01 06 00 04 00 02 49 CA

The original address is 01, modified to 02 success

explain:

3.1. The above command ADD 1 is the original address number of the transmitter, and ADD 2 is the address number to be changed. Change the address to power to restart, can take effect

3.2. The default address of sensor is 01H, ADD 1 and ADD 2 are set from 00 ~ FEH with 255 addresses

for modification; it should be noted that the user cannot change the address to FFH.

3.3. If the current address of the transmitter is not clear, you can use the automatic search software to search for the current address as shown



below:

▲ 4. Example of modifying the port rate command (function code is 06): (change the port rate to 4800bps)

Description: COMMAND (pass down command):

From the machine address	FC	Start-register address		Data that is about to be written to the register		CRC-L	CRC-H
01H	06 H	00H	05 H	00H	30 H	99 H	DF H

R  
ETURN  
(Retur

n the information):

From the machine address	FC	Start-register address		Data that is about to be written to the register		CRC-L	CRC-H
01H	06 H	00H	05 H	00H	30H	99 H	DF H

examples:

For example, modify the port rate of 9600bps to 4800bps

Sent: 01 06 00 05 00 3099 DF

Returns: 01 06 00 05 00 3099 DF

The original port rate of 9600bps is modified to 4800bps, after the modification, the restart takes effect, and the power is saved

4.1 The port rate command list is as follows:

Baud rate	1200	2400	4800	9600	19200	38400	57600	115200
Corresponding code	CH	18H	30H	60H	COH	180H	240H	480H

## ▲ 5. Read the transmitter address and port rate command example (function code is 03)

COMMAND (Down command):

From the machine address	FC	Start-up register address		Number of registers		CRC-L	CRC-H
01H	03H	00H	04 H	00H	02 H	85 H	CA H

RETURN (Return the information):

From the machine address	FC	Number of registers		Current from machine address		Current slave-port rate	CRC-L	CRC-H
01H	03H	04H	00H	01 H	00H	60 H	AB H	DB H

Modify examples:

For example, read the transmitter address and port rate

Sent: 01 03 00 04 00 02 85 CA

Return: 01 03 04 00 01 00 60 AB DB

Description: In the data frame returned after the transmission command is sent (blue mark): 01H is the current slave address and 60H is the baud rate of the current slave (see Article 4 for the baud rate code).

## ▲ 6. Message format

6.1 Function code 03H- -Query the slave register data

Host message (posted below)

From the machine address	1 Byte (00 H ~ FFH)
FC	1-byte (03H)
Start-up register address	2 Bytes
Number of registers	2 Bytes
CRC check code	2 Bytes

Machine message (response)

From the machine address	1 Byte (00 H ~ FFH)
FC	1-byte (03H)
Number of bytes in the data area	1 Bytes
data field	2 * Register Digital section Register content
CRC check code	2 Bytes

6.2 Function code 06 H-number of slave

Host message (posted below)

From the machine address	1 Byte (00 H ~ FFH)
FC	1-byte (06H)
Register address	2 Bytes
Data that is written to the register	Number of bytes = number of 2 * registers
CRC check code	2 Bytes

Machine message (response)

From the machine address	1-byte (data written to the register)
FC	1-byte (06H)
Register address	2 Bytes
Number of registers	2 Bytes
CRC check code	2 Bytes

▲ 7, Register description

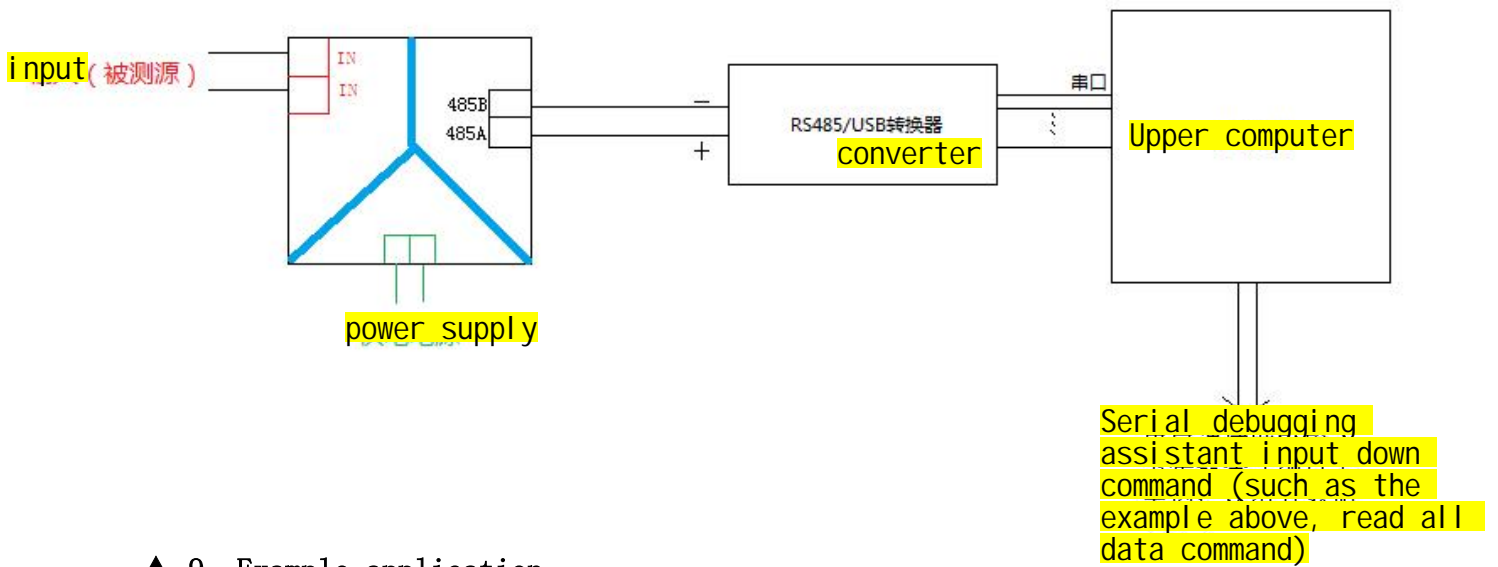
7.1 Single-circuit power input register definition table

Register address	Register content	Number of registers	Register status	data area
000E H	Single road power	1	read only	-32767~+32767

8.3 Address and port rate register definition table

Register address	Register content	Number of registers	Register status	data area
0004 H	address	1	Read / write	00H~FE H
0005 H	Baud rate	1	Read / write	CH~480 H

▲ VIII. Connection diagram of the sensor and the computer:



▲ 9. Example application

Model number: JXK series

Input: AC0~20A

output:RS485

Power supply: + 24V

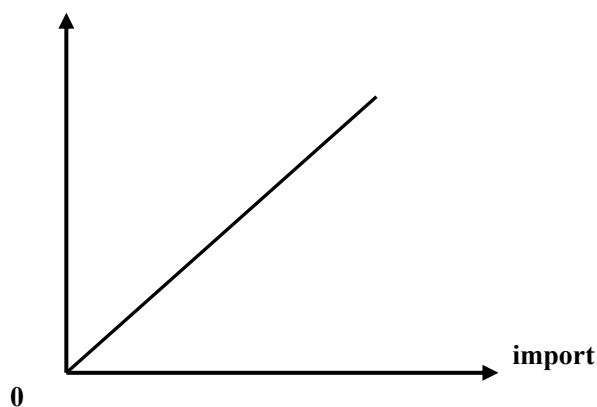
Paud rate: 9600bps

Address: 01H

Input and output reference table (theoretical value):

	current input (A)	output (A/D-H+A/D-L)	Output (decimal system)	Actual current value (retain 2 decimal places)
0%	0	0000 H	0	0
20%	4	018F H	399	3.99
40%	8	0320 H	800	8.00
60%	12	04B1 H	1201	12.01
80%	16	0642 H	1602	16.02
100%	20	07D0 H	2000	20.00

output



## ▲ Upper computer software debugging 1 —— serial port debugging assistant



**Read the data instruction: 01 03 00 0E 00 01 E5 C9**

**Read the port rate and address instruction: 01 03 00 04 00 02 85 CA**

**Modified address instruction: 01 06 00 04 00 01 09 CB needs to power off and restart**

**Modify port rate instruction: 01 06 00 05 00 01 58 0B need power restart**