WIRING CONNECTION

Comm.	Color	Description
Power	Brown	Power+(10-30Vdc)
	Black	Power-
Comm.	Yellow(Green)	485-A
	Blue	485-B

Wide voltage power input: 10–30V is supported.
*When connecting RS-485 signal lines,
make sure A and B lines are not reversed.
Device addresses on the same bus must not conflict.

LETTER of AGREEMENT

Basic communication parameters

Code	8-bit binary
Data bit	8-bit
Parity bit	no
Stop bit	1 person
Error checking	CRC (Redundant Cyclic Code)
Baud rate	1200bit/s、2400bit/s、4800bit/s、9600 bit/s、19200 bit/s、38400 bit/s、57600 bit/s、115200 bit/s，Default: 4800bit/s

Data frame format definition

Modbus-RTU communication protocol is adopted, the format is as follows:

Initial structure ≥ 4 bytes of time

Address code = 1 byte

Function code = 1 byte

Data area = N bytes

Error check = 16-bit CRC

Ending structure ≥ 4 bytes of time

Address code: It is the address of the transmitter, which is unique
in the communication network (factory default 0x01).

Function code: The function instruction of the command issued by the host

Data area: The data area is the specific communication data. Note that the high byte
of the 16bits data comes first!

CRC code: two-byte check code.

Host inquiry frame structure:

Address code	Function code	Register start address	Register length	Check digit low	Check digit high
1byte	1byte	2byte	2byte	1byte	1byte

Slave response frame structure:

Address code	Function code	Effective bytes	Data area	Second data area	Nth data area	Check code
1byte	1byte	1byte	2byte	2byte	2byte	2byte

Register address

Register address	PLC or configuration address	Content	Support function code	Definition description
0000 H	40001	Wind direction (0-359.9°)	0x03/0x04	The definition indicates that the uploaded data is 10 times of the real value
0001 H	40002	Wind direction (0-359.9°)	0x03/0x04	Real value
07D0 H	42001	Device address	0x03/0x04/0x06	1~254 （Factory default 1）
07D1 H	42002	Device baud rate	0x03/0x04/0x06	0 stands for 2400 1 stands for 4800 2 for 9600 3 for 19200 4 stands for 38400 5 stands for 57600 6 represents 115200 7 for 1200

Communication protocol example and explanation

Example: Read wind direction at device address 0x01

Inquiry frame:

Address code	Function code	Starting address	Data length	Low check bit	Check code high
0x01	0x03	0x00 0x00	0x00 0x02	0xC4	0x0B

Response frame: (for example, read that the angle value with one decimal place is 160.8 degrees)

Address code	Function code	Returns the number of valid bytes	The angle value with one decimal place is expanded 10 times (0~3599)	The actual value of the angle value of integer bits (0~359)	Check code low bit	High bit of check code
0x01	0x03	0x04	0x06 0x48	0x00 0xA0	0x7A	0xD5

Angle calculation:

The angle value with one decimal place is expanded by 10 times (0~3599): 0648H (hexadecimal) =

1608 => angle value = 160.8 degrees

The actual value of the angle value of integer bits (0~359): 00A0H (hexadecimal) = 160 degrees

COMMON PROBLEMS & SOLUTIONS

Device cannot be connected to PLC or computer

possible reason:

1) The computer has multiple COM ports, and the selected port is incorrect.

2) The device address is wrong, or there are devices with duplicate addresses (the factory defaults are all 1).

3) The baud rate, check method, data bit, stop bit are wrong.

4) The host polling interval and waiting response time are too short, and both need to be set above 200ms.

5) The 485 bus is disconnected, or the A and B wires are connected reversely.

6) If the number of equipment is too much or the wiring is too long, power supply should be nearby,
   add 485 booster, and add 120Ω terminal resistance at the same time.

7) The USB to 485 driver is not installed or damaged.

8) The equipment is damaged.