Product Introduction

The sensor adopts photoelectric principle and can measure solar radiation in the spectral range of 0.3~3µm. A dust cover with a light transmission rate of up to 95% is installed on the outside of the device. The dust cover is specially treated to reduce dust adsorption and effectively prevent environmental factors from interfering with the internal components. The device has a small and beautiful appearance, and the installation space is small.

Use Case Scenarios

The products are widely used in solar energy utilisation, meteorology, agriculture, aging of building materials and atmospheric pollution where solar radiation energy measurement is required.

Features

1.   High precision photoreceptor, high absorption in the full spectrum range.
2.   Comes with level and adjusting handwheel, easy to adjust on site.
3.   Highly transparent dust cover with good sensitivity and special surface treatment to prevent dust adsorption.

Product Specifications

Specifications	
Model	UB-SR-N1
Power Supply	DC 7~30V
Max Current	410mA（@12V）
Spectral Scope	0.3~3µm
Measuring Range	0~1800W/㎡
Resolution	1W/㎡
Response Time	≤0.8s
Working Environment	-25~60℃, 0~100%RH
Connector	Audio
Cable Length	3m
Communication Protocol	RS485 Modbus RTU Protocol
RS485 Address	0xD1
Baud Rate	1200 bit/s,2400 bit/s, 4800 bit/s (default), 9600 bit/s, 19200 bit/s

Wiring Instruction

Communication protocols

1. Communication basic parameters

Communication Basic Parameter	
Coding System	8–bit binary
Data Bit	8 bits
Parity Checking Bit	none
Stop Bit	1 bit
Error Checking	CRC Check
Baud Rate	1200 bit/s, 2400 bit/s, 4800 bit/s (default), 9600 bit/s, 19200 bit/s

2. Data Frame Format

The Modbus-RTU communication protocol is used in the following format:

- Initial structure ≥ 4 bytes in time.
- Address code: 1 byte, default 0xD1.
- Function code: 1 byte, support function code 0x03 (read only) and 0x06 (read/write).
- Data area: N bytes, 16-bit data, high byte comes first.
- Error check: 16-bit CRC code.
- End structure ≥ 4 bytes of time.

Request					
Slave Address	Function Code	Register Address	No. of Registers	CRC LSB	CRC MSB
1 byte	1 byte	2 bytes	2 bytes	1 byte	1 byte
Response							

Response							
Slave Address	Function Code	No. of Bytes	Content 1	Content 1	...	Content n	CRC
1 byte	1 byte	1 byte	2 bytes	2 bytes	...	2 bytes	2 bytes

3. Register Address

Register Address				
Address (hex)	Content	Register Length	Function Code	Description of definitions
0x0000	Solar radiation value	1	03	Integer
0x07D0	Address	1	03/06	1 ~ 255

NOTE

1. Do not carry electricity wiring, wiring check is correct, before power on.

2. The sensor is a precision device, do not disassemble the protective transparent cover The sensor is a precision device, do not disassemble the protective transparent cover.