SD2101B

Wall PT100 temperature data logger

Product Overview

D2101B Wall PT100 temperature data logger, with the United States imported sensors, low-cost online monitoring of temperature practical professional module, this module can be used:

(1) SMT industry temperature data monitoring, (2) Electronic Equipment Factory temperature data monitoring (3), cold storage temperature monitoring (4), storage temperature monitoring, (5) pharmaceutical GMP monitoring system (6) Ambient temperature monitoring (7), telecommunications room temperature monitoring, (8) the need to monitor the temperature of various other occasions.

In order to facilitate networking and industrial engineering applications, this module uses MODBUS-RTU communication protocol widely used in industry, can be easily and PLC, configuration software newsletter online. Users with any serial communication software device data query and set according to protocol.

This device can be used to detect PT100 sensors or temperature acquisition and display.

Parameters

Parameters	SD2101B
Display range	-120 ℃ ~ + 600 ℃
Display Accuracy	± 1% FSD
Display Resolution	0.1 ℃
Baud Rate	9600
Communication port	RS485
Power supply	DC6-24V 1A
Power	2W
Support sensor	PT100
Operating Environment	-40 - 85 ℃
Dimensions	115 × 96 × 40mm³

Package dimensions

Feature

1 provides a secondary development of communication protocols

2 Each instrument has a unique address number, via DIP switch settings

3 Based Industrial generic MODBUS-RTU protocol can access PLC or configuration software

4 easy to read and write data, a command can be read out all measurement data

5 can be connected directly with a variety of PT100 sensors

6 gift secondary development test software

7 double display, PT100 resistance temperature and displayed simultaneously.

Interface with the set

Interface Description

1. Display Description

There are two rows of the instrument display, the display shows the temperature measurement, the lower display shows the value of the PT100 resistance.

When the sensor is not connected or disconnected, the bottom two rows show 888.8, when the temperature is below the minimum range is displayed when the show 0.

2. RS485 communication interface

Located SD2101B RS485 interface module to the left, for the four-pin connector, the pin is defined as shown below:

Pin Number	Pin Definitions	Lead color
1	DC 6-24VPower Positive	red
2	DC 6-24VPower negative	green
3	RS485 A+	yellow
4	RS485 B-	blue

3. Sensor Interface

Equipment comes standard 3-pin 0.5 m lead wire is red, black, blue three colors, which symbols are marked: Cn- red, Bn- black, An- blue.

PT100 device supports two-wire or three-wire temperature sensor, external sensor interface pins are defined as follows:

Two-wire   Three-wire
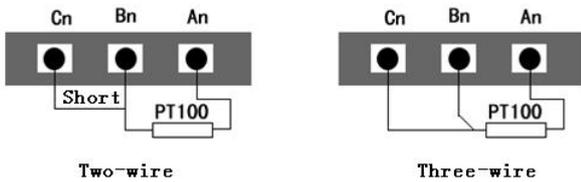
When the wire, you need short Cn, Bn, namely direct short red and black wire core.

4. The device address changes

Equipment address by DIP switch settings inside the product.

In practice, it is sometimes necessary to use multi-machine networking, networked devices in the address can not be the same, so the user to change the device address, the address range is 0-15. Change the device address of this equipment is through DIP switch S2 to achieve. DIP switch to "ON" indicates "0", pull to the digital side is "1", 1-4 DIP switch S1 segment and address the relationship shown in the following table:

DIP switch S2				Device Address
Segment 1	Segment 2	Segment 3	Segment 4	
0	0	0	1	1
0	0	1	0	2
0	0	1	1	3
...	...	...	...	
1	1	1	1	15

The default device address is 1, DIP position as shown above.

Note: You must restart the new device address setting device (power off) to be able to enter into force.

Figure 1 address

Protocol

Equipment or reply to all operations command hexadecimal data. The default baud rate: 9600,8, n, 1.

The basic command format:

[Device Address] [Function Code] [Start Address: 2 bytes] [Data Length: 2 bytes] [CRC16 checksum]

The following meanings:

A, device address: device address range is 1-15, set by the built-in DIP, which is a default address.

B, function code: function code different needs of different applications, such as 3 for query input register data.

C, starting address: query or operation register starting address.

D, Data length: the data length of the read.

E, CRC checksum: CRC16 checksum, low front, high in the post.

1) Read data

[Device Address] [Function Code: 03] [Start Address: 2 bytes] [Data Length: 2 bytes] [CRC16 checksum]

Device response:

[Device Address] [Order No.] [return the number of bytes] [Data 1] [Data 2] ... [data n] [CRC16 checksum]

Response data have the following meanings:

A, the number of bytes returned: indicates the number of bytes of data, i.e. data values 1,2 ... n of the n.

B, Data 1 ... N: measurement value of each sensor, each data occupies two bytes. Integer data, the true value of this value is divided by 100.

For example: Query on the 1st device temperature data:

Send: 01 03 00 00 00 03 05 CB

In response: 01 03 06 00 00 03 E7 11 BC 9C E7

Reply data on patients: 01 for the address for the command numbers 1,03, 06 meter length of 6 bytes of data, due to the length of the measuring point two bytes of data, followed by three data values for temperature, resistance, voltage, .

The first data for 0000, shall be converted into decimal: 0, because the module with a resolution of 0.1, this value is divided by 10 required that the actual temperature is 0.

Similarly: The second data for 03 E7, shall be converted into decimal: 999, because the module with a resolution of 0.1, this value is divided by 10 required that the actual resistance value of 99.9. The third data for 11 BC, that is folded into decimal: 4540, which is a quantitative data voltage, only use the factory calibration.