

SM1000A

RS232 temperature acquisition module

Product Overview

SM1000A temperature data acquisition module, with USA imports sensors, low-cost temperature online monitoring of practical professional module, the module can be (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) need to monitor the temperature of various other occasions.

In order to facilitate networking and industrial applications, the module uses MODBUS-RTU communication protocol widely used in industry to support secondary development. Users only need to use any serial communication software module data query and set according to our protocol.

Parameters

Parameter	Value
Display temperature range	-55℃~+125℃
Measurement accuracy	±0.5℃
Display resolution	0.01℃
Baud Rate	9600
Communication port	RS232
Power supply	DC6-24V 1A
Power Consumption	2W
Support Sensor	1-24
Operating Environment	-40 - 85℃
Dimensions	59×83×33mm ³

Interface Description

1. Power interface, which is two wire.

Wire color	Interface Line	Note
Red	VCC	Power supply, V+, $6 < V < 24V$
Green	GND	Power supply, V-, Negative

2. Sensor Interface

Pin 1	Pin 2	Pin 3
Red	Blue Line	Black line
5V +	DQ	GND

3. Rs232 interface

DB9, Standard rs232 interface.

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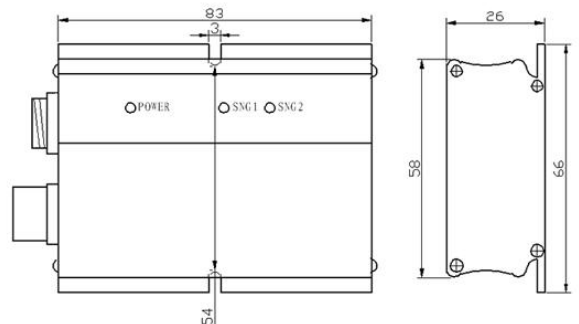
[http:// www.sonbus.com](http://www.sonbus.com)



ORDERING INFORMATION

Type	Interface
SM1000A	RS232
SM1000B	RS485
SM1000C	CAN

Dimensions



In order to meet the needs of industrial applications, SM series instruments and modules are used ModBus RTU communication protocol. Here ModBus RTU protocol briefly described as follows:

Modules default baud rate: 9600,8, n, 1

Read the temperature

Computer sends commands :

[Device Address] [function id] [00] [00] [01] [CRC low 8] [CRC high 8]

Example : [01 03 00 00 00 01 C5 C8]

Meaning is as follows :

A, Device Address : 485 on a bus can mount multiple devices , device address range here is 01-249 , 250 that 0XFA as a wildcard address, when I do not know the device address, use this command address lookup .

B,Function id : 0x03, read the temperature .

C, channel number : This value defaults to 00 .

D, Sensor ID: indicates the start of a bus read data from the sensor location , value range is 01 .

E, reads the number of high- eight low 8 : Indicates read several temperature sensors , up to 16 .

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

Device response:

[Device Address] [Order] [number of bytes returned] [Data] [CRC low 8] [CRC high 8]

Example : [01 03 02 05 46 3A E6]

Meaning is as follows :

A, device address and command number: as above.

B, the number of bytes returned : indicates the number of bytes of data , the data value is 1,2 ... n of the n .

C, Data : DS18B20 temperature value , occupies two bytes. See note .

D, CRC checksum : as above.

Note: Each ds18B20 read the temperature of the return value occupies two bytes.

Send : 01 03 00 00 00 01 C5 C8

Responded : [01 03 02 05 46 3A E6]

Methods: The actual temperature expand a hundredfold , then this value can be divided into two bytes sent out

Example 1: The measured temperature is out of 28.65 °C, expanded a hundredfold , namely 2865 , the first byte transmitted is 2865 / 256 that is 11 , the second byte is 2865% 256 so that 49 send two . bytes of 0x0B and 0x31.

Example 2: The measured temperature is out of 30.15 °C, expanded a hundredfold , namely 3015 , its hexadecimal number 0XBC7, two bytes and then send that 0x0B 0xC7.

Example 3: Measured out is -55.00 °C, expanded a hundredfold , namely -5500 , its hexadecimal number is 65536-5500 = 60036 ,

hexadecimal , 0xEA and 0x84.

In the software configuration king , this register is named 4x0001.