CFPT100 RS485 PT100 Temperature

Product Introduction

This product adopts modbus-rtu protocol, and the computer can monitor the temperature through the communication mode of RS485 interface. Cooperate with WS1 Pro series product to monitor the data on computer platform or mobile APP, and generate temperature data report through the platform.

The PT100 probe is made of specially treated platinum wire wrapped around the inner surface of the probe.Compared with the general axial thermal resistance, it can reflect the actual temperature of the measured object quickly and accurately. The buttcock line is made of high temperature zone shielded fiberglass material, with a temperature range of up to 200 degrees Celsius. PT100 adopts the chip imported from Germany with high stability, and adopts a more stable three-wire connection mode to ensure the accuracy of temperature measurement and anti-interference ability of the system.The probe shell is made of 304 stainless steel, which has good resistance to acid and alkali corrosion. The shell is completely wrapped and can reach IP68 waterproof grade, which means the probe can be continuously measured in water.

Use Case Scenarios

Widely used in chemical plants, power plants, oil refineries, cold storage, sewage treatment plants, steel plants, food plants and other industrial temperature measurement sites.

Features

1.RS485 Interface。
2.High precision, wide range, good consistency.
3.Super stability and anti-interference.
4.Wide voltage input，DC5-12V.
5.Standard MODBUS RTU protocol.
6.Cooperate with WS1 Pro to achieve remote monitoring,
 report generation and other functions.

Main Parameters

Communication Parameters	
Working Voltage	DC5V~DC12V
Output Interface	Micro USB,3.5mm Audio
Communication Methods	RS485
Communication Protocol	MODBUS RTU
Communication Address	1-255 (can be customized)
Baud Rate	300 bit/s,600 bit/s, 1200 bit/s, 2400 bit/s, 4800 bit/s, 9600 bit/s, 19200bit/s,38400bit/s,43000 bit/s, 56000 bit/s, 57600 bit/s,115200 bit/s (can be

	customized)
Standby Current	≤20mA
Dimensions	85x33x60mm

Measurement Parameters	
Measuring Range	-200~400℃
Measuring Accuracy	±（2%+1℃）
Probe Length	200mm
Probe Diameter	Φ5
Lead Length	3 meters
Buttcock Line Temperature Range	-30~200℃

Communication Protocol

1、All communication circuits shall follow the master/slave mode. In this way, data can be transferred between one primary station　(e.g., PC) and multiple sub-stations. Any communication cannot start from a slave.

2、The information transmission mode is asynchronous, byte format is 1 start bit, 8 data bits, and 1 stop bit, no check.

3.Compliance with MODUBS RTU protocol standards.

4.The default baud rate is 9600 and the address is 0xC2.

Query Message from Master(Read)							
Address	Function Code	Starting Address MSB	Starting Address LSB	No. Of Registers MSB	No. Of Registers LSB	CRC16 LSB	CRC16 MSB
0xC2	0x03						

Response								
Address	Function Code	Byte Count	Data 1 MSB	Data 1 LSB	Data 2 MSB	Data 2 LSB	...	CRC16 LSB	CRC16 MSB
0xC2	0x03							

Query Message from Master(Write)							
Address	Function Code	Starting Address MSB	Starting Address LSB	Data MSB	Data LSB	CRC16 LSB	CRC16 MSB
0xC2	0x06						

Response							
Address	Function Code	Starting Address MSB	Starting Address LSB	Data MSB	Data LSB	CRC16 LSB	CRC16 MSB
0xC2	0x06						

Internal Message Information		
Register Address（Decimalism)	Function	R/W
0X0064	Device address (factory default 01)	R/W
0X0065	Baud rate (factory default 9600, code: 05)	R/W
0X0000	Channel 0 temperature data	R
0X0088	Version Information	R
...	...	R

*The baud rate code starts at 0 and the actual baud rate is：300、600、1200、…、115200

E.g.：The baud rate code is 08, that is, the baud rate is set to 43000bit/s

Product Application

1. Do not directly place the transmitter in a high temperature environment.

2. It is prohibited to place the transmitter in the environment of steam, water mist, water curtain or condensation for a long time.

3. The temperature tolerance of the probe buttcock line is 200℃. Exceeding this temperature will lead to the failure of normal temperature measurement and even permanent damage.

4. Once the waterproof box of transmitter is opened, it will not be returned or replaced.