

SPEC NO.: D33020260703

Specification

TO:STE

Model Name: Wireless Temperature Data Collector

PART NO:ZXCW-02

CUSTOMER PART NO.:

Approval sheet:

Approved	Yes
	No.
Customer's comments are welcomed here.	
Please return this copy as a certificate of your approval by Email.	
Approved By	Date: _____

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History Record

Date	Part No.	SPEC No.	Description.	Remarks.
2018-11-17			Initial issue	
				
ISO9001:2000	ISO14001:2004	Approved by	Check by	Design by
		Nov-17-2018	NOV-17-2018	NOV-17-2018
Reversions	Total Page	<i>Xu gang dong</i>	<i>Liu jun</i>	<i>Wang hong</i>

1. Overview

1.1 Main Application Scope

The passive wireless temperature measuring device is developed with cutting-edge microprocessor, digital signal processing (DSP) and surface acoustic wave (SAW) technologies. It can replace numerous traditional infrared, optical fiber and active wireless temperature measuring devices to realize online temperature monitoring of primary electrical equipment, and provide scientific reference for maintenance and overhaul of primary electrical equipment. The SAW temperature sensor of the passive wireless temperature measuring device works on the SAW temperature measurement principle. Its passive wireless temperature measuring mode effectively solves the defects of traditional temperature measurement technologies in terms of safety, reliability, stability and practicability.

1.2 Product Features

- . Dual 32-bit microcontroller system with abundant system redundancy. The temperature acquisition module adopts a 32-bit DSP processor manufactured by Texas Instruments; programs and data run on-chip, delivering fast operating speed and high reliability.
- .Adopts Modbus communication protocol to connect with background monitoring system, supporting online temperature monitoring, temperature alarm and time synchronization functions.
- .Wireless temperature data acquisition with excellent safety performance.
- .Compact SAW temperature sensor with flexible and easy installation, not limited by the structure and internal space of switch cabinets.
- .The SAW temperature sensor operates in fully passive mode, requiring almost no maintenance after installation.
- .The SAW temperature sensor can operate reliably in harsh environments with strong magnetic fields, high voltage, dust and other severe conditions.

1.3 Measurement Principle

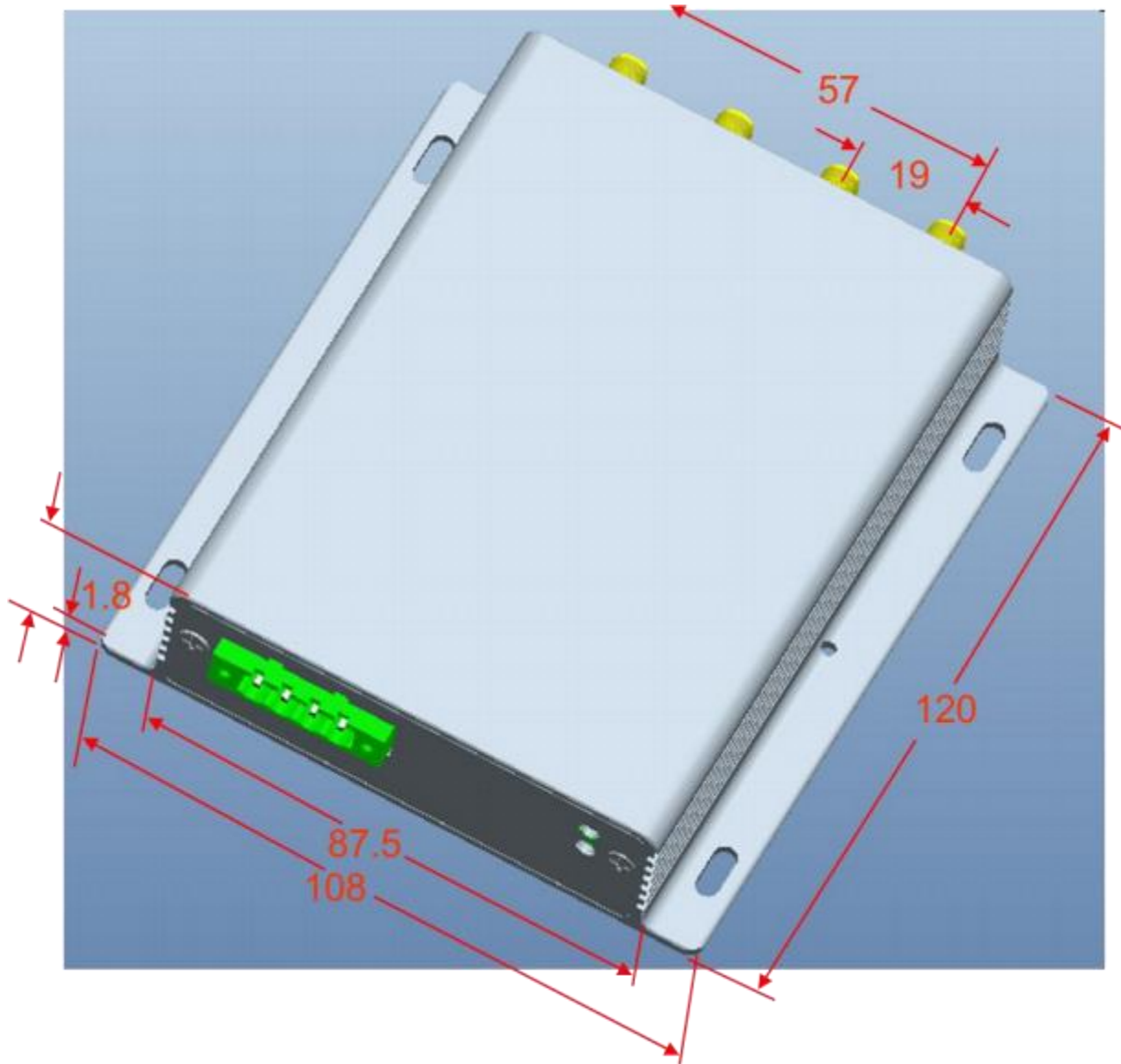
A specially designed SAW resonator is adopted. When radio waves of fixed frequency are input into the SAW resonator, the frequency of the radio signal output by the resonator varies with the ambient temperature sensed by the resonator. Based on this characteristic, the corresponding ambient temperature can be calculated by collecting the output frequency of the resonator to complete temperature measurement.

SAW resonators feature full passivity, monotonic response, excellent repeatability and high linearity.

2. Specifications & Technical Parameters

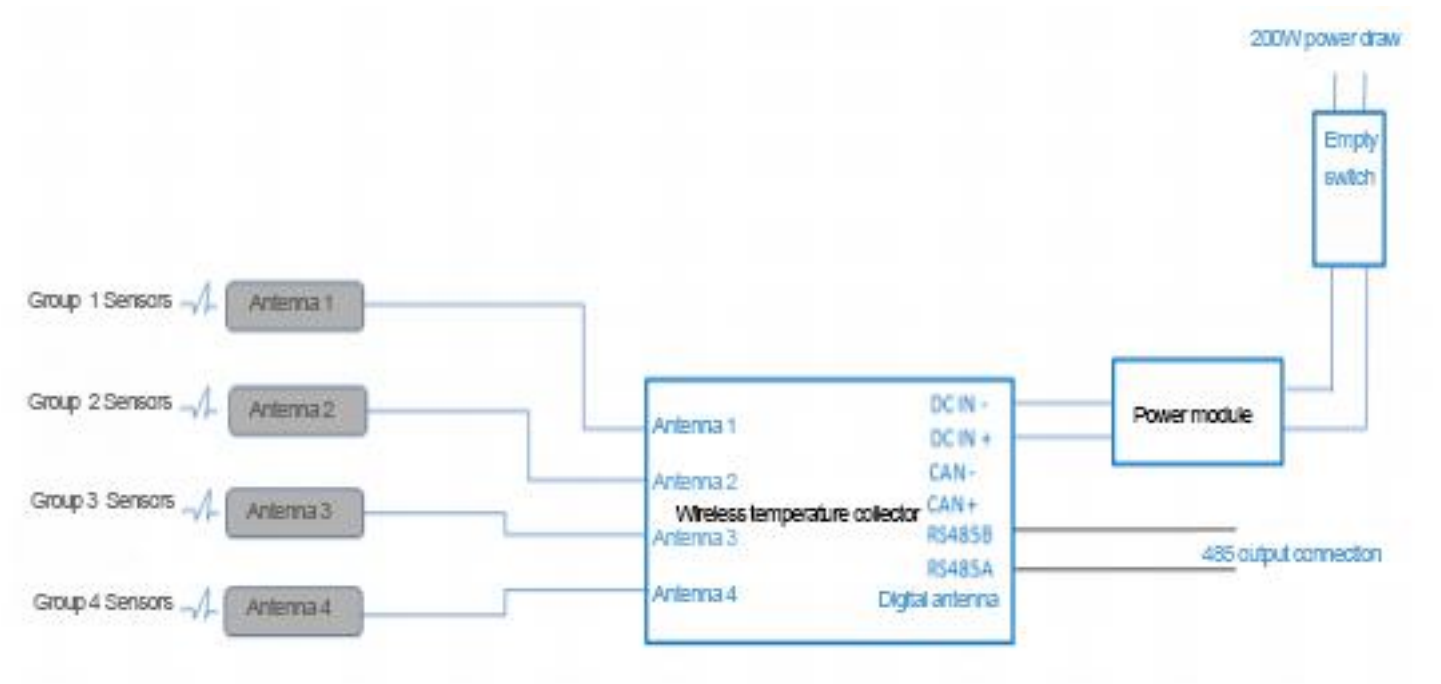
Item	Parameter Value
Number of SMA Antenna Interfaces	4
Maximum Supported Sensors	12
Temperature Measuring Distance	20cm ~ 200cm
Operating Frequency Band	410 ~ 510MHz
Operating Temperature	-20℃ ~ +85℃
Operating Humidity	10% – 95% RH at 40℃ (non-condensing)
Operating Power Supply	DC 10–24V, 500mA
Sampling Cycle	Approx. 200ms
Data Transmission Protocol	ModBus_RTU (non-standard customized version)
Power Interface	European terminal with 5.08mm pitch
Communication Interface	RS485 serial port, European terminal with 5.08mm pitch
Collector Dimensions	13311042mm (including SMA antenna terminals and DIN rail mounting clip)
Collector Weight	300g (including DIN rail mounting clip)



3. Overall dimensions: (Unit: mm)

4. Wiring instructions:

1. Wiring diagram:



2、Power and communication interface terminals:

NO.	Number Symbol	Description
1	DC+	Positive 12V~24V DC power supply
2	DC-	Ground
3	RS485A	RS485A 485 interface phase A
4	RS485B	RS485B 485 interface phase B

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