

# SCYC-CW30

## Passive Wireless Online Temperature Monitoring System for Ring Main Unit

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(For China market):

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## Company Profile

**Sichuan Yachen Electric Co., Ltd.** is a technology-driven manufacturing enterprise headquartered in Mianyang, Sichuan Province—known as China’s “City of Science and Technology.” Since its establishment in 2004, the company has specialized in the R&D and production of electromagnetic pulse (EMP) protection products, power transmission network monitoring equipment, lightning protection systems, instrumentation, high/low voltage electrical switches, and medical isolated power (IT) systems.

Our solutions are widely deployed across diverse sectors, including construction, electric power, telecommunications, railways, healthcare, and defense. Leveraging a robust R&D team, significant capital investment, and state-of-the-art infrastructure, Yachen Electric maintains long-term strategic partnerships with leading universities and research institutions. This commitment to collaboration ensures continuous technological optimization and innovation. To date, the company holds numerous invention and utility model patents, and all products have been rigorously tested and certified by authoritative Chinese industry bodies.

Our unwavering focus on advanced R&D, stringent quality control, and exceptional product reliability has earned Yachen Electric extensive recognition and acclaim from clients worldwide.

**Mission:** To enhance global power reliability through cutting-edge intelligent monitoring technology and innovative protection solutions.

(使命：通过尖端的智能监测技术和创新的防护方案，提升全球电力的可靠性。)

### Core Values:

**Precision:** In every sensor and every data point.

(精准：对待每一个传感器和数据点。)

**Integrity:** Building trust through reliable infrastructure.

(正直：通过可靠的基础设施建立信任。)

**Innovation:** Solving tomorrow's grid challenges today.

(创新：今日即解决明天的电网挑战。)

### Corporate Qualifications & Certifications:

Yachen Electric is committed to operational excellence and holds several international management certifications, including:

- ISO 9001:2015 (Quality Management System)
- ISO 45001:2018 (Occupational Health and Safety Management System)
- ISO 14001:2015 (Environmental Management System)
- AAA-rated Credit Enterprise (since 2011) and AAA-rated Quality & Integrity Excellence Unit (since 2012)

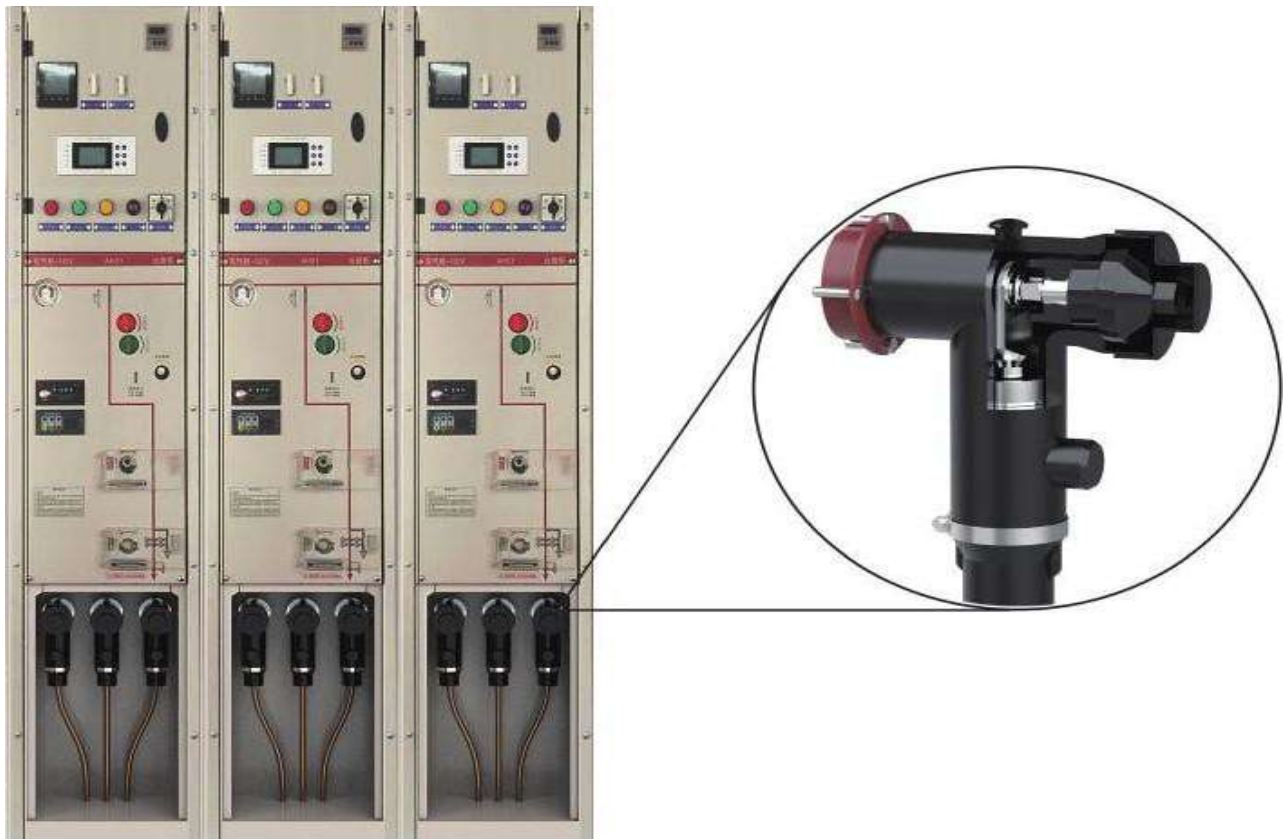
Furthermore, the company serves as the Vice Chairman Unit of the Electromagnetic Pulse and Lightning Protection Technology Professional Committee of the Sichuan Institute of Electronics, and a Director Unit of the Southwest Construction Electrical Information Network. We are also a selected supplier for military-grade products.

To ensure superior customer experience, Yachen Electric maintains a strong presence across major regions in China, providing rapid and high-quality technical support and after-sales service. Our global reach is further extended through an extensive network of authorized distributors.

We sincerely welcome domestic and international partners to explore collaborative opportunities and achieve mutual growth.

## I. Application Scenarios

The SCYC-CW30 ring main unit cable accessory built-in passive wireless temperature measurement system can be used for temperature acquisition and monitoring of high-voltage power equipment with various cable plugs, such as ring main units, cable junction boxes, and prefabricated substations. The product can be networked independently for online temperature monitoring of power equipment, or it can connect with substation communication management equipment to forward data. It can also upload data to the cloud, providing temperature measurement information for the intelligentization of primary equipment.



## II. Product Features

methods and technologies for temperature monitoring and early warning of cable T-joints inside ring main units. This is mainly because cable T-joints have fully enclosed, high-temperature resistant, and insulating characteristics. Traditional contact temperature measurement methods cannot effectively and accurately measure the temperature.

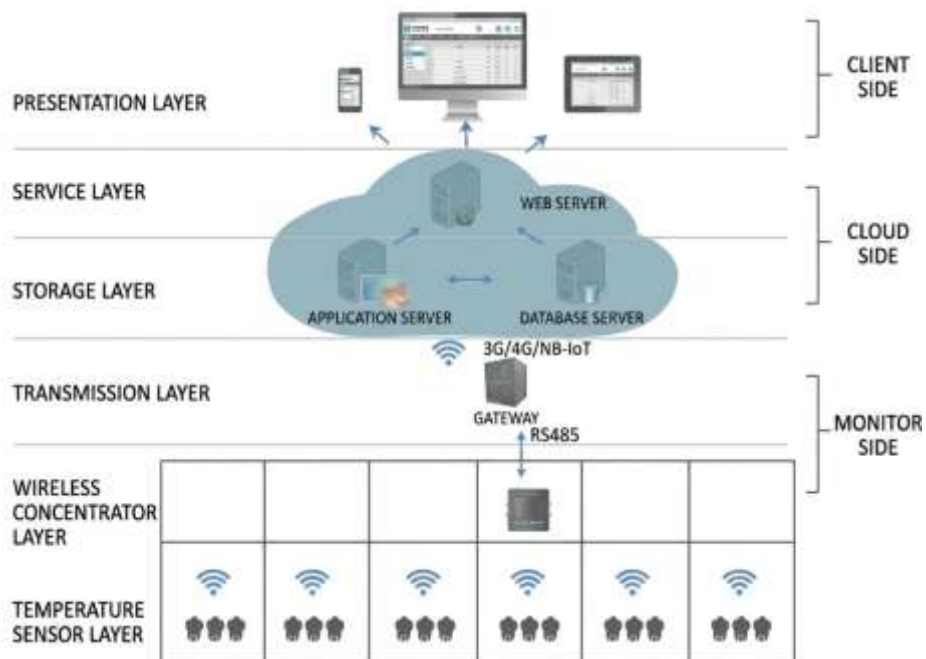
Sichuan Yachen Electric Co., Ltd. has independently developed a passive wireless temperature monitoring device based on the principle of electric field space power extraction. It is mainly used for temperature monitoring of cable T-type connectors in ring network cabinets.

This device consists of a passive wireless temperature sensor and a wireless temperature concentrator. The temperature sensor is built into an insulating plug inside the ring main unit accessory, making direct and close contact with the heat source, thus accurately reflecting the temperature of the heat source.



### III. System Topology

The SCYC-CW30 ring main unit cable accessory built-in passive wireless temperature monitoring system is a real-time online passive wireless temperature monitoring system developed to address the frequent accidents involving T- type cable connectors in ring main units in China. The system consists of a data acquisition layer, a cloud data processing layer, and a user monitoring layer. It can be used to monitor the temperature of cable plugs in various ring main units and switchgear online. Based on the actual temperature of the cable plugs, the system determines the degree of overheating of the monitoring equipment, detects temperature anomalies in advance, and issues timely alarms.



## IV. Temperature Sensor

Temperature sensor parameters	
Temperature measurement range	-30°C~135°C
Temperature measurement accuracy	± (standard reading × 1% + 1°C)
resolution	0.1°C
Sensor size	Built into the insulating plug
Power supply method	Inductive power supply, no battery required, CT
Measurement cycle	The initial power-on time is less than 20 minutes, and the measurement cycle is less than 3 minutes.
Radio frequency standards	2.4GHz
Launch range	100M (in an open environment)
High pressure impact	10 times each for positive and negative voltages at 15kV
Pressure resistance	15kV/3min, normal
Local release	15kV, less than 10pc



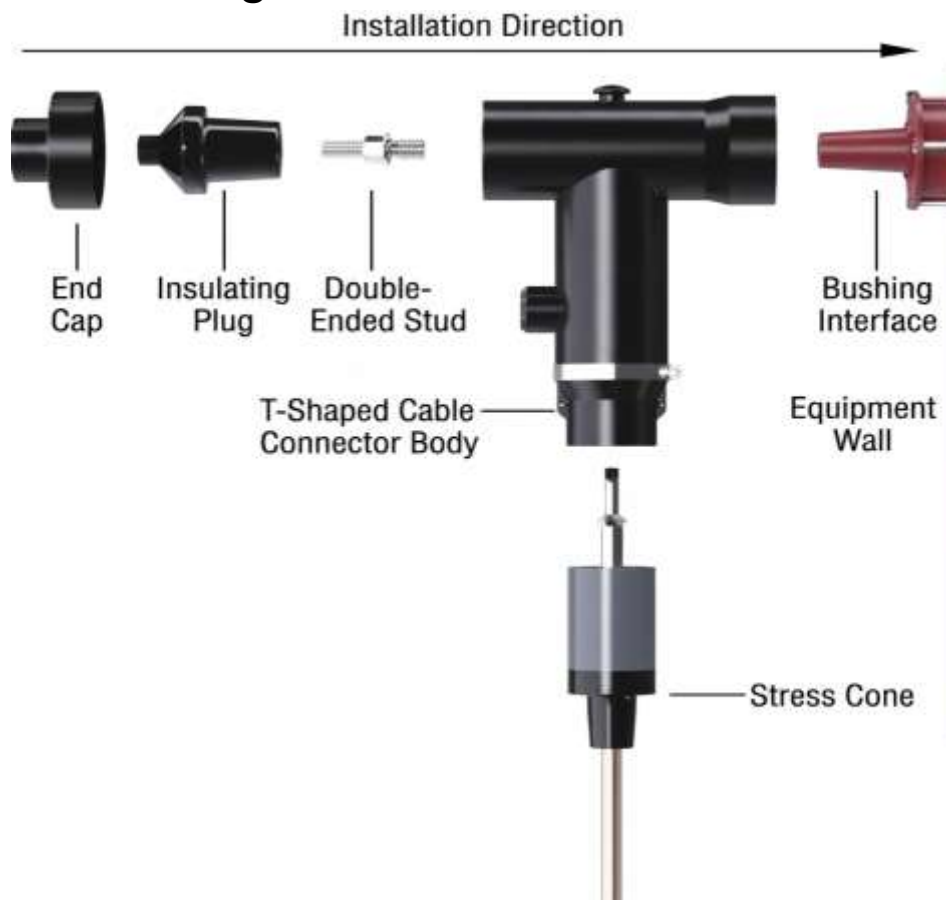
电缆附件的结构与产品

## V. Wireless Temperature Logger

Wireless temperature data loggers can receive, upload, manage, and forward data from temperature sensors within their range, facilitating on-site inspections and hazard location. Depending on temperature measurement requirements, they can be embedded in openings in switch cabinets, distribution cabinets, cable junction boxes, and other equipment. They can utilize short-range RS485 communication or long-range wireless communication via NB-IoT, 2G/3G/4G.

Parameters of Temperature acquisition device	
Number of manageable temperature sensors	3, 6, 9, 12, ..
show	TFT LCD with backlight
Communication interface	Modbus RTU Slave device, baud rate configurable
working power supply	AC 220V $\pm$ 20% or CT power supply
Power consumption	Less than 5W
Work environment	Temperature: -25 °C to 55 °C Humidity: 5%~95% (no condensation)
Storage temperature	-40 °C to 80 °C
Installation method	Embedded installation

## VI. Installation Diagram



## VII. On-site installation photos



Before and after installing the temperature-sensing insulator plug



Installed temperature-sensing insulator plug



Installed temperature-sensing insulated plug and back cover



The front of the installed Passive Wireless Online Temperature Monitoring System



The screen of the Passive Wireless Online Temperature Monitoring System  
(Multiple language feature is optional for clients)