



Online monitoring device for zinc oxide surge arresters in substations

DT801

变电站氧化锌避雷器在线监测系统

Smarter Monitoring.
Reliable Power.

四川亚辰电气有限公司
Sichuan Yachen Electric Co., Ltd.

Sichuan Yachen Electric 四川亚辰电气



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.

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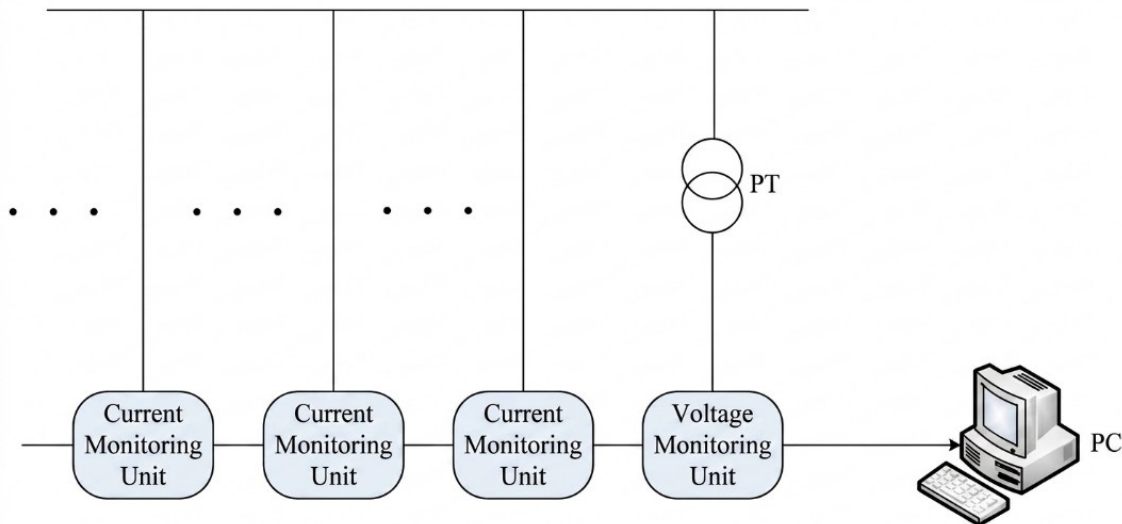
Online monitoring device for zinc oxide surge arresters in substations Applications



This online monitoring device is suitable for zinc oxide surge arresters in substations with voltage levels of 110kV and above.

The DT801 surge arrester online monitoring device can effectively monitor the total current and resistive current of zinc oxide surge arresters in substations in real time. It boasts advantages such as high accuracy, good stability, and powerful functionality. It can be integrated with electrical equipment condition assessment systems for condition-based maintenance, evaluation, early warning, and risk analysis, effectively improving the safe operation level of zinc oxide surge arresters in substations.

The DT801 system consists of a voltage monitoring unit and a current monitoring unit. This system adopts a distributed architecture, allowing for flexible configuration based on actual field monitoring conditions, thus improving system reliability and flexibility.



Schematic diagram of online monitoring device for surge arresters

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Online monitoring device for zinc oxide surge arresters in substations Features (1/2)



1) Flexible Configuration

Utilizing a node-based design, adding or removing monitoring equipment and items does not require altering the system structure. Different types and quantities of local monitoring units can be connected to the central early warning server as needed, enabling monitoring and diagnostics of various devices.

2) Simple Installation

Simply install the corresponding monitoring unit below the electrical equipment being tested, connecting it to the monitoring device's bus via a single cable.

3) Accurate Measurement

Employing high-precision and high-stability zero-flux current sensors, and employing advanced digital signal analysis and digital communication technologies, ensures accurate phase measurements, thus resolving issues related to the accuracy and stability of parameters such as dielectric loss, capacitive current, and resistive current.

4) Reliable Data

Each monitoring unit possesses comprehensive self-testing capabilities, promptly determining its operational status and uploading data to the server and users. All monitoring data is transmitted digitally, completely eliminating signal transmission problems caused by power frequency electromagnetic interference or other high-frequency interference, thereby improving the reliability of the monitoring system.

5) Simple Maintenance

All monitoring units adopt a modular design, possessing high versatility and interchangeability. Maintenance of all components, including sensors, can be performed without affecting equipment operation.

6) Safe and Reliable

All modules are manufactured to industrial standards, possessing excellent resistance to electromagnetic shock and temperature fluctuations. The device is corrosion-resistant, windproof, and dustproof, suitable for high-altitude field conditions. The device uses a high-grade waterproof enclosure with a fully enclosed design and electromagnetic interference protection.

1, Main monitoring parameters of surge arrester online monitoring device

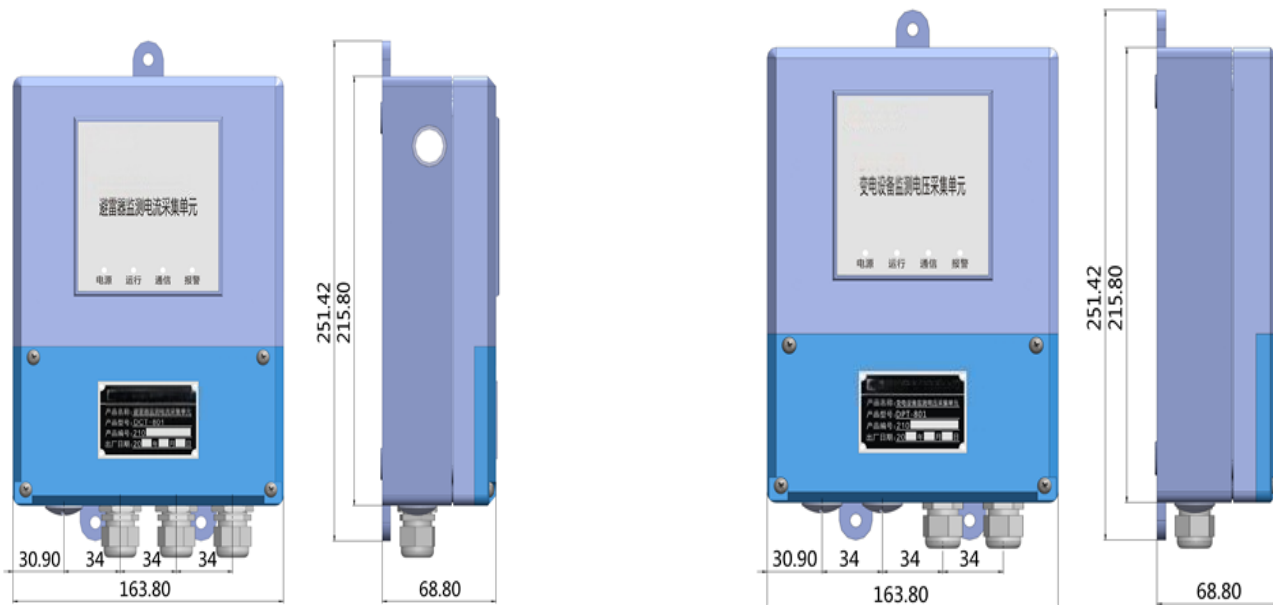
| Monitoring Parameters | Measurement Range | Measurement Accuracy |
|-----------------------|-------------------------|--|
| Total Current | 100 μ A \sim 50mA | \pm (Standard Reading \times 5%+5 μ A) |
| Resistive Current | 10 μ A \sim 10mA | \pm (Standard Reading \times 5%+5 μ A) |

2, Other monitoring parameters

| Monitoring Parameters | Measurement Range | Measurement Accuracy |
|-----------------------|--|------------------------|
| Bus voltage: | 35kV \sim 1000kV | \pm 0.5% |
| System frequency | 45Hz \sim 65Hz | \pm 0.01Hz |
| Harmonic current | 3rd, 5th, 7th, 9th orders | \pm 5% |
| Harmonic voltage | 3rd, 5th, 7th, 9th orders | \pm 5% |
| Ambient temperature | -40 $^{\circ}$ C \sim +80 $^{\circ}$ C | \pm 0.5 $^{\circ}$ C |
| Ambient humidity | 0 \sim 100%RH | \pm 2% |

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Online monitoring device for zinc oxide surge arresters in substations Product photos





(以前采用不锈钢机箱)





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Yc®
亚辰电气

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Yc[®]
亚辰电气

Britop
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More to come

Yc®
亚辰电气

Britop
博越达

THANK YOU

Smarter Monitoring, Reliable Power.

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