



Smarter Monitoring.
Reliable Power.

Online Monitoring Device
for Grounding Current of Transformer Core/Grounding Clamp
DTE2100
变压器铁芯接地电流夹件接地电流在线监测装置



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

www.ycdqkj.com.cn

DTE2100



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.

1 Applications

2 Working principle

3 Features

4 Technical parameters

5 Configuration and installation

6 On-site photos

7 Operating Conditions

The DTE2100 Online Monitoring Device for Grounding Current of Transformer Core/Grounding Clamp is suitable for online monitoring of the core grounding current and clamping grounding current of transformers with voltage levels of 10kV and above.

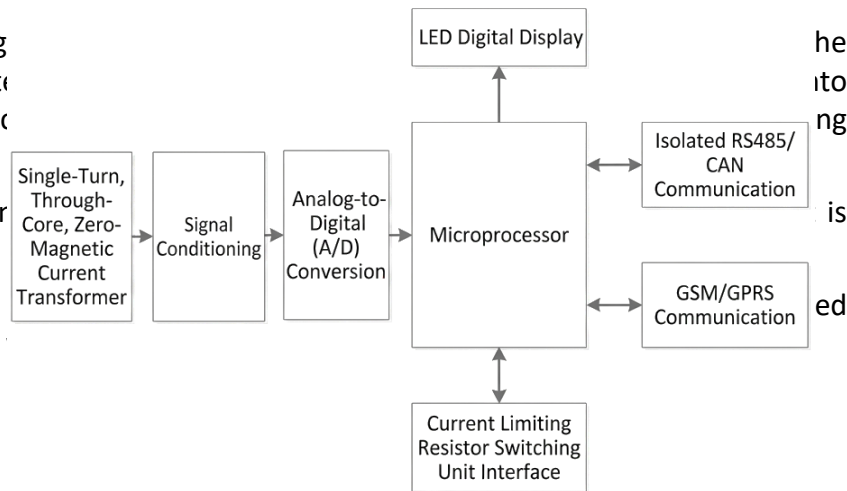
The DTE2100 Online Monitoring Device for Grounding Current of Transformer Core/Grounding Clamp can effectively monitor the core grounding current and clamping grounding current in real time. It has the advantages of high accuracy, good stability, and powerful functions. It can be combined with electrical equipment condition assessment systems for condition-based maintenance, evaluation, early warning, and risk analysis, effectively improving the safe operation level of transformers.

Working Principle

2

The online monitoring device for transformer core grounding current/clamping grounding current consists of a through-type current transformer, signal acquisition and processing circuits, communication and display interfaces, etc., as shown in the diagram below:

1. The transformer core grounding current/clamping grounding through-type current transformer. After signal conversion, filter a digital signal by an analog-to-digital converter. The microprocessor and calculation.
2. The local display interface can display the real-time grounding exceeded.
3. The device can communicate in real-time with a status RS485/CAN/GSM/GPRS communication interfaces (selectable).



1) Accurate and Reliable Monitoring Data

The DTE2100 employs a specially designed current transformer, high-precision analog circuitry, and advanced digital signal processing technology. It boasts a wide measurement range (1mA~30A), high accuracy ($\pm 1\%$), and excellent anti-interference performance.

2) Flexible Application Configuration

The DTE2100 features multiple communication interfaces, allowing integration into comprehensive electrical equipment monitoring systems or independent configuration via GSM SMS monitoring.

3) Easy Installation and Maintenance

The DTE2100 main unit and current transformer are independently designed. Dedicated clamps allow for flexible installation of the current transformer onto the core grounding wire, while the DTE2100 main unit can be flexibly installed in various locations depending on site conditions.

The DTE2100 possesses comprehensive self-testing functions, enabling timely status assessment and alarms.

All components, including the sensor (bypass core grounding wire), can be installed and maintained without affecting transformer operation.

4) Safe and Reliable

The through-type current transformer will not damage the grounding wire, nor will it affect the safe operation of the transformer; all components are manufactured according to industry standards and have good resistance to electromagnetic shock and temperature differences; the DTE2100 adopts a fully sealed design and has functions such as corrosion resistance, wind resistance, dust prevention, and electromagnetic interference resistance, and can adapt to harsh outdoor operating environments.

I. Monitoring Parameters

Detection Parameters	Measurement Range	Accuracy
Core/Clamping Grounding Current	1mA~10A	±1% 或 ±1mA

II. Communication Interface

1) RS485 Communication Interface

Baud Rate: 1200bps~19200bps, default 9600bps;

Isolation Voltage: 2500VRms;

Maximum Bus Nodes: 255;

2) CAN Communication Interface (RS485/CAN, specified when ordering)

Baud Rate: 10kbps~500kbps, default 10kbps;

Isolation Voltage: 2500VRms;

Maximum Bus Nodes: 110;

3) GSM/GPRS Interface (specified when ordering)

Operating Frequency Bands: 4 bands, 850 MHz/900 MHz/1800 MHz/1900 MHz;

GSM SMS (English and Chinese), 10 sender/receiver numbers;

GPRS class 10, maximum downlink speed of 85.6 kbit/s, maximum uplink speed of 42.8 kbit/s, supports TCP/IP, FTP and HTTP protocols.

III. Display

5-digit digital tube display of current

4-digit LED indicators for power supply, operation, communication, and alarm

IV. Operating Power Supply

Voltage: 85 ~ 264VAC

Frequency: 47 ~ 63Hz

Power: $\leq 5W$

V. Mechanical Characteristics

Device body dimensions: 252mm \times 164mm \times 71mm, weight: 1.8kg

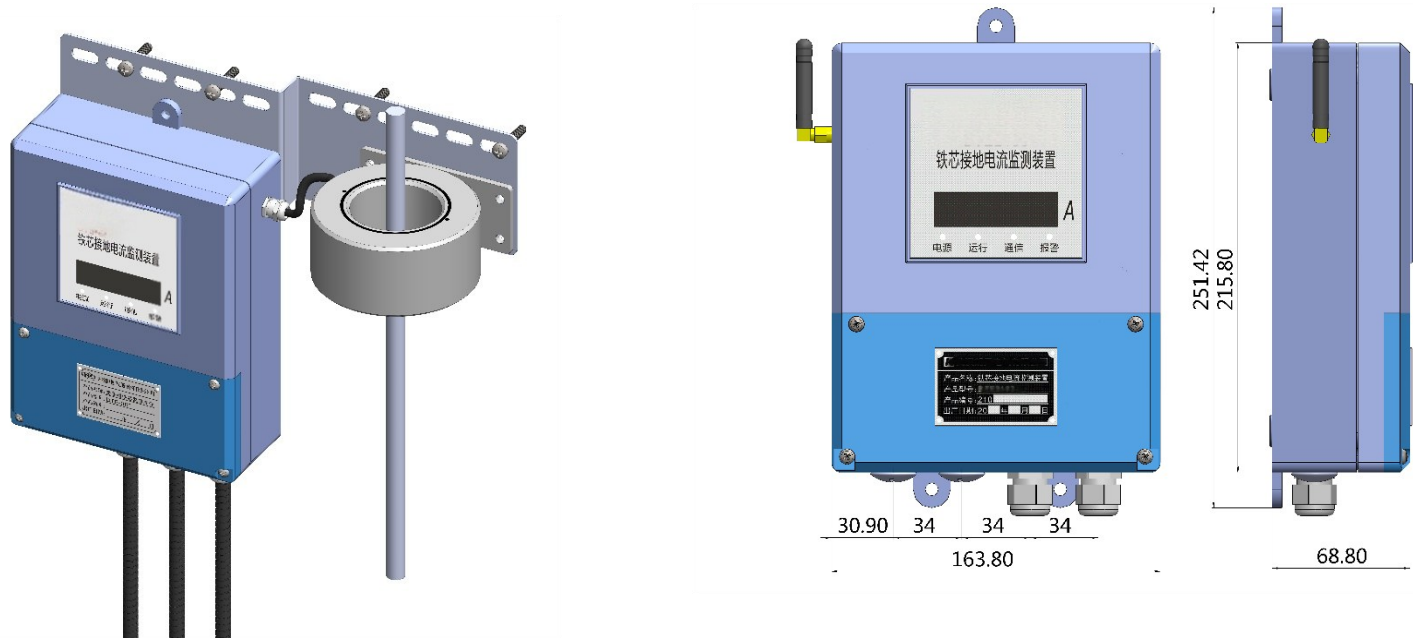
Through-core current transformer:

Without clamp: 114mm \times 114mm \times 52mm - aperture $\phi 55$ mm

With mounting clamp: 140mm \times 120mm \times 110mm Weight: 1.6kg

5

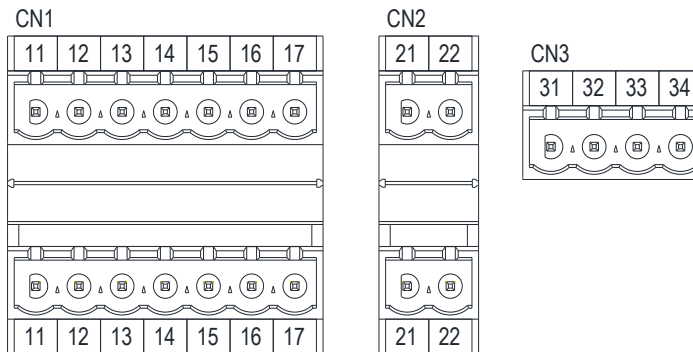
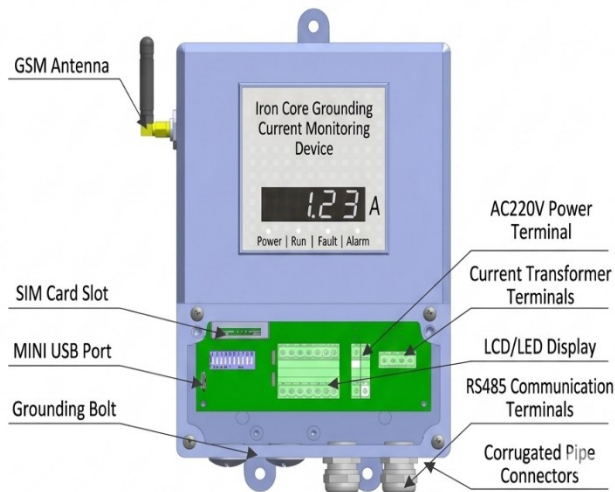
Product structure and dimensions



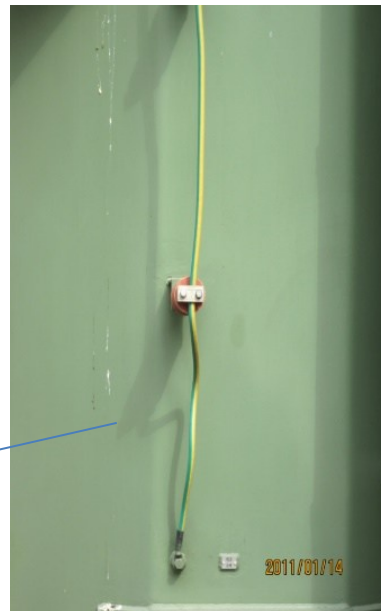


5

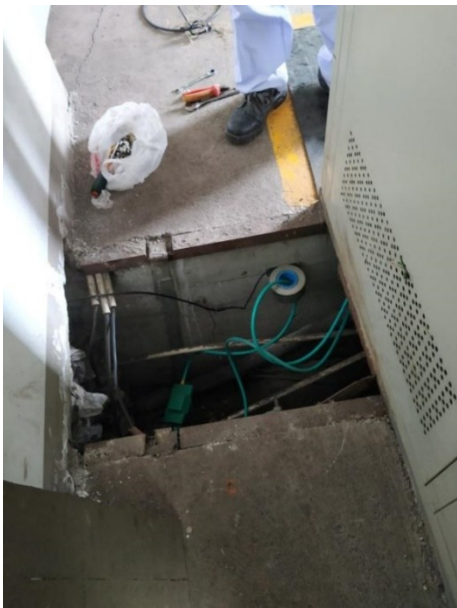
II. Interface Description



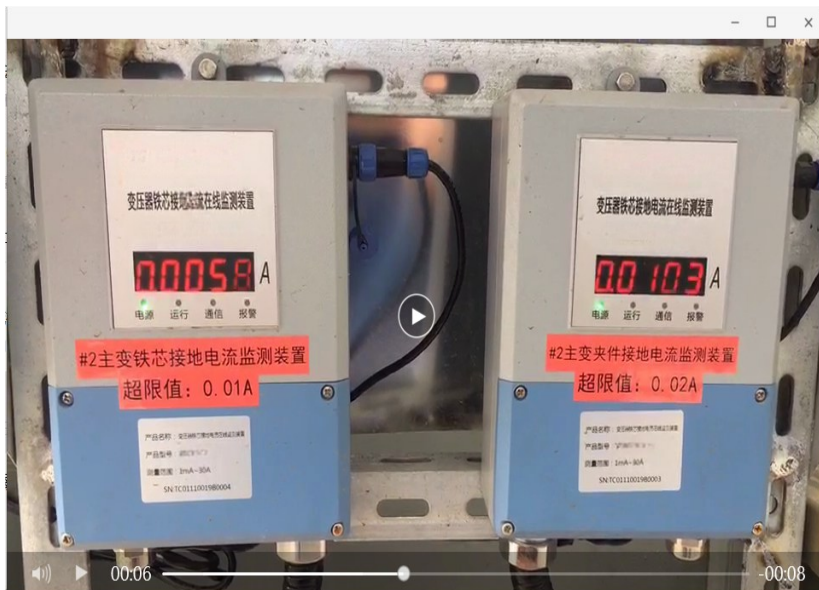
CN1: RS485 interface (Two rows of terminals connected in parallel)		CN2: AC220V power interface (Two rows of terminals connected in parallel)		CN3 : Current Transformer Interface	
11	RS485-A	twenty one	Power supply L	31	I* -Blue
12	RS485- Ground	twenty two	Power supply N	32	I- Gray
13	RS485-B			33	Outer shell - black
14	null			34	Shielding layer
15	null				
16	null				
17	chassis ground				













Currently, the products have been installed in power plants, hydropower stations, power grid company substations, and 10kV transformers in high-voltage rooms of coal mining enterprises, and have been operated well.

More to come



THANK YOU

Smarter Monitoring, Reliable Power.

(For China market):
Sichuan Yachen Electric Co., Ltd.

Homepage:	http://www.ycdqkj.com.cn
Contact:	Mr. Xu
Tel (Wechat):	+86 13088269292
Technical:	+86 816 6394499
Commercial:	+86 816 2311298

For international sale, please contact:
Qingdao Britop International Trading Co., Ltd.

Website:	https://qdbritop.com
Contact:	Bright Meng
Email:	britop@qdbritop.com
Tel (Wechat):	+8613811458455