

Microcomputer Relay Protection Measuring Instruments



Overview

Test-330 three phase microcomputer protection relay test equipment is the highly efficient relay tester of our company.

Key Takeaways

Microcomputer relay protection testers are high-precision, multifunctional instruments used to test, calibrate, and diagnose relay protection devices in power systems.

Microcomputer relay protection measuring instruments are computer-controlled devices designed to evaluate the performance of protection relays in electrical power systems. They are widely used in industries such as electric power, petrochemical, metallurgy, railway, aviation, and military applications . These instruments combine industrial computer systems with DSP or FPGA architectures, providing high precision, programmability, and the ability to simulate complex fault conditions .

Key Functions

- **Protection Function Testing:** Verifies correct setting values, trip times, and output performance of relays, including overcurrent, overvoltage, undervoltage, short-circuit, and transformer differential protection .
- **Fault Simulation:** Can simulate various fault scenarios to test relay response under realistic conditions .



- **Timing and Harmonic Testing:** Measures action times and harmonic responses to ensure compliance with standards .
 - **Excitation and Metering Tests:** Supports testing of excitation systems and metering devices integrated with protection relays .
 - **Synchronization and Multi-Channel Testing:** Some models include GPS synchronization for simultaneous testing of multiple devices at different locations .
- Selection Criteria**
- **Test Object:** Identify the type and scale of relays to be tested, such as single-phase, three-phase, or six-phase devices .
 - **Measurement Range:** Ensure the tester covers the rated voltage, current, and frequency of the equipment .
 - **Accuracy:** Typical microcomputer relay testers offer 0.1% to 0.2% accuracy, suitable for precise calibration .
 - **Functional Requirements:** Choose testers based on required functions, including phase, frequency, time, and fault simulation capabilities .
 - **Ease of Operation:** User-friendly interfaces and intuitive controls are essential for efficient testing .
 - **Compliance with Standards:** Equipment should meet national and industry standards such as GB/T 7261-2016, DL/T 624-2010, and calibration regulations like JJG 1112-2015 .

Types of Instruments

- **Entry-Level Models:** Suitable for basic verification, teaching, or small-scale maintenance. Typically single-chip architecture with single-phase or 3V + 3A outputs and 0.2% precision .
- **Advanced Multi-Phase Testers:** Three-phase or six-phase testers with multiple voltage and current channels, capable of comprehensive testing including transformer differential protection, standby automatic switching, and fault recording .
- **Portable vs Fixed-Site:** Some testers are designed for field use with compact size, while others are larger and intended for substation or laboratory environments .

Practical Considerations

- **Grounding:** Both the tester and the protection device must share a common ground to ensure safety and accurate measurements .
- **Connection:** Voltage and current leads should connect to the primary side of instrument transformers to account for signal attenuation .
- **Calibration:** Annual calibration is recommended to maintain accuracy and compliance with standards .

- **Software Interface:** Many testers use Windows-based interfaces with recovery functions to prevent data loss and facilitate operation . Microcomputer relay protection measuring instruments are essential tools for ensuring the reliability, safety, and compliance of power system protection devices, offering precise, programmable, and versatile testing capabilities across a wide range of industrial applications .

Article Content

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Selection Guide for Three-phase and Six-phase Microcomputer Relay ...

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HMPR-1003 microcomputer protection and control device

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Relay And Protection Microcomputer Explained: Key Specifications ...

Types of Relay and Protection Microcomputers Relay and protection microcomputers play a vital role in modern

How to use the microcomputer relay protection tester correctly?

To use the microcomputer relay protection tester correctly, it is necessary to follow a series of operating steps and

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The CJE Microcomputer Relay Protection Test System 803 from Changjiang Electric is equipped with cutting-edge technology to

Protection Relay Tester

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Research of the system-on-chip-based relay protection ...

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