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**INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

DL/T 1073-2019

Replacing DL/T 1073-2007

**General specifications for high speed transfer equipment for
the power supplies for auxiliary equipment in power plant
(English Translation)**

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Foreword

This standard is compiled in accordance with the rules given in GB/T 1.1-2009.

This standard replaces DL/T 1073-2007 "General Technical Requirements for Fast Switching Devices of Auxiliary Power Supply in Power Plants", and DL/T 1073-2007 in comparison, with the exception of editorial changes, the main technical changes are as follows.

--The name of the standard was revised to "General Technical Requirements for Fast Switching Devices for Stationary Power in Power Plants";

--Update the reference standards and update the corresponding technical parameters;

--Standard 3 terms and definitions, adding the terms "target power" and "long delay switching";

--According to DL/T 478-2013 "General Technical Requirements for Relay Protection and Safety Automatic Devices", the outline and content of the original standard have been

greatly expanded Range modification and supplement;

--Standard 4.7 The main functions of the device, adding the requirements of post-acceleration protection, decoupling function and phase angle compensation function;

--Standard 4.7 The main functions of the device, modify and supplement the requirements for fault recording, communication and time synchronization functions;

--Standard 4.8 The main technical requirements of various functions, the content of fixed value setting is deleted;

--Standard 4.8 The main technical requirements for various functions, adding the requirements for low-voltage bus start switching and clock accuracy;

--Standard 4.8 The main technical requirements of various functions, and the condition requirements for the same phase switching are modified;

--Standard 6 inspection rules, adding factory inspection requirements;

- Standard 8 "Others", merge the original standard "8 Others" and the original standard "9 Product accompanying documents".

This standard was proposed by the China Electricity Council.

This standard is under the jurisdiction of the Power Industry Relay Protection Standardization Technical Committee.

1 Scope

This standard specifies the technical requirements, inspection methods, and inspection rules for fast switching devices for auxiliary power supplies in power plants (hereinafter referred to as "devices") and the requirements for marking, packaging, transportation and storage.

This standard applies to fast switching devices for auxiliary power supplies in power plants as the basis for the design, production, testing and operation of the devices.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this document.

For undated references, the latest version (including all amendments) applies to this document.

GB/T 2423.3-2016 Environmental Test Part 2: Test Method Test Cab. Constant Damp Heat Test
GB/T 2887-2011 General Specification for Computer Site
GB/T 2900.1-2008 Basic terminology for electrical engineering
GB/T 2900.17-2009 Electrotechnical terminology

measuring relay GB/T 2900.49 Electrician Terminology Power System Protection GB/T 7261-2016 Basic test methods for relay protection and safety automatic devices GB/T 11287-2000 Electrical Relay Part 21: Measuring the vibration, shock, collision and earthquake of relays and protection devices Test Part 1: Vibration Test (Sine) GB/T 14537 Impact and collision test for measuring relays and protection devices GB/T 14598.3-2006 Electrical Relay Part 5: Insulation coordination requirements and tests for measuring relays and protection devices GB/T 14598.24-2017 Measuring Relays and Protection Devices Part 24: Power System Transient Data Exchange (COMTRADE) Common format GB/T 14598.26-2015 Measuring Relays and Protection Devices Part 26: Electromagnetic Compatibility Requirements GB/T 14598.27-2017 Measuring Relays and Protection Devices Part 27: Product Safety Requirements GB/T 17626.8-2006 Electromagnetic compatibility test and measurement technology Power frequency magnetic field immunity test GB/T 17626.9-2011 electromagnetic compatibility test and measurement technology pulse magnetic field immunity test GB/T 17626.10-2017 Electromagnetic compatibility test and measurement technology Damped oscillation magnetic field immunity test GB/T 17742-2008 China Earthquake Intensity Table GB/T 19520.12 Mechanical Structure of Electronic Equipment 482.6mm (19in) Series Mechanical Structure Dimensions Part 3-101.Sub-box and Plug-in GB/T 19582.1-2008 Industrial Automation Network Specification Based on Modbus Protocol Part 1: Modbus Application Protocol DL/T 478-2013 General technical requirements for relay protection and safety automatic devices DL/T 667 Telecontrol Equipment and System Part 5: Transmission Protocol Part 103: Supporting Standards for Information Interface of Relay Protection Equipment DL/T 860 (all parts) substation communication network and system DL/T 995-2016 Inspection Regulations for Relay Protection and Power Grid Security Automatic Devices

3 Terms and definitions

The following terms and definitions defined in GB/T 2900.1, GB/T 2900.17, and GB/T 2900.49 apply to this document.

Target power supply

The power supply that supplies power to the bus after the device performs switching.

Parallel transfer

Turn on the standby power circuit breaker first, and then open the working power circuit breaker, or close the working power circuit breaker first, and then open the standby power circuit breaker.

Switching method of router.

Series switching

Open the working power circuit breaker first, and then close the standby power circuit

breaker, or first open the standby power circuit breaker, and then close the working power circuit breaker.

Switching method of router.

Switch simultaneously Simultaneously issue the switching mode of trip command and closing command.

Fast transfer

Before the bus residual voltage and the target power voltage are reversed for the first time, closing the target power circuit breaker is a kind of shortest delay and closing shock the switching method with the least current.

In-phase transfer

After the bus residual voltage and the target power supply voltage are reversed for the first time, when the two are in the same phase, the target power circuit breaker is closed, which is a time delay.

Long switching mode.

Residual voltage transfer when the bus voltage decays below the residual voltage switching setting value, the target power circuit breaker is closed, which is a switching method with a long delay.

Long-time transfer

Fast, same-phase and residual voltage switching modes did not send out the target power circuit breaker closing pulse, and closed after a long delay.

Two-way switching

Including switching from the working power source to the standby power source and from the standby power source to the working power source.

4.1.1 Normal working atmospheric conditions

The normal working atmospheric conditions of the device are as follows.

- a) Ambient temperature. $-10^{\circ}\text{C}\sim+55^{\circ}\text{C}$;
- b) Relative humidity. 5%~95% (there is neither condensation nor freezing inside the device);
- c) Atmospheric pressure. 80kPa~106 kPa.

4.1.2 Normal test atmospheric conditions

The normal test atmospheric conditions of the device are as follows.

- a) Ambient temperature. $15^{\circ}\text{C}\sim35^{\circ}\text{C}$;