

ICS 17.220
CCS A 55

JJF

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

JJF 1882-2020

**Specification of Metrology Testing for Energy Efficiency of 3.6
kV~40.5 kV Alternating Current Switchgears
(English Translation)**

Issued on: November 26, 2020

Implemented on: May 26, 2021

Issued by: State Administration for Market Regulation

Table of Contents

Introduction (II)	
1 Scope (1)	
2 Reference documents (1)	
3 Terms and measurement units (1)	
3.1 Switchgear (1)	
3.2 Main circuit (of switchgear) (1)	
3.3 Operating mechanism (1)	
3.4 Main circuit loss (1)	
3.5 Loss of operating mechanism (1)	
4 Overview (2)	
5 Test conditions (2)	
5.1 Environmental conditions (2)	
5.2 Test equipment (2)	
6 Test items and methods (3)	
6.1 Energy consumption test (3)	
6.2 Original record (5)	
6.3 Data processing (5)	
7 Test report (5)	
Appendix A Test Method for Main Circuit Loss of Switchgear (6)	
Appendix B Test Method for Loss of Switchgear Operating Mechanism (8)	
Appendix C Measurement Uncertainty Evaluation Example of Switchgear Energy Efficiency Measurement Test Results (9)	
Appendix D 3:6kV~40:5kV Switchgear Energy Efficiency Measurement Test Original Record Format (13)	
Appendix E 3:6kV~40:5kV Switchgear Energy Efficiency Measurement Test Report Format (16)	

3 Terms and measurement units (1)

3.1

Switchgear (1)

3.2

Main circuit (of switchgear) (1)

3.3

Operating mechanism (1)

3.4

Main circuit loss (1)

3.5

Loss of operating mechanism (1)

5 Test conditions (2)

5.1

Environmental conditions (2)

5.2

Test equipment (2)

6 Test items and methods (3)

6.1

Energy consumption test (3)

6.2

Original record (5)

6.3

Data processing (5)

7 Test report (5)

Appendix A Test Method for Main Circuit Loss of Switchgear (6)

Appendix B Test Method for Loss of Switchgear Operating Mechanism (8)

Appendix C Measurement Uncertainty Evaluation Example of Switchgear Energy Efficiency Measurement Test Results (9)

Appendix D 3:6kV~40:5kV Switchgear Energy Efficiency Measurement Test Original Record Format (13)

Appendix E 3:6kV~40:5kV Switchgear Energy Efficiency Measurement Test Report Format (16)

Introduction

In order to standardize the energy efficiency measurement test work of 3.6kV~40.5kV AC switchgear, according to JJF 1071-the:2010 "National Metrology and Calibration Standards Compilation Rules" requirements are formulated:

This specification is released for the first time:

3.6kV~40.5kV AC switchgear Energy efficiency measurement test specification

1 Scope

This specification specifies AC switchgear with rated frequency of 50 Hz and rated voltage of 3.6 kV to 40.5 kV (hereinafter abbreviated as Called switchgear) energy efficiency measurement test methods and test reports:

This specification applies to the energy efficiency measurement test of the main circuit and operating mechanism of switchgear, excluding heaters, fans, etc:

Energy efficiency measurement test of auxiliary equipment:

2 Reference documents this specification refers to the following documents:

JJF 1059.1-2012 Measurement Uncertainty Evaluation and Expression GB/T 2900.20-2016 Electrical terminology high-voltage switchgear and control equipment GB/T 11022-2011 Common technical requirements for high-voltage switchgear and control equipment standards for dated reference documents, only the dated version applies to this specification; for undated references the latest version (including all amendments) is applicable to this specification:

3 Terms and units of measurement the following terms and definitions apply to this specification:

3.1 Switching device A device used to close and/or disconnect one or more circuits:

[GB/T 2900.20-2016,6:1] 3.2 (switching device) main circuit (ofaswitchingdevice) all conductive parts in the switching circuit that transmits electrical energy:

[GB/T 2900.20-2016,7:2]

3.3 Operating device A device that operates switchgear to close and divide:

[GB/T 2900.20-2016,7:101] 3:4 main circuit loss for three-phase switchgear, the output terminal is shorted, when the rated current flows into the switchgear from the main circuit input terminal of the switchgear:

The unit of measurement is W for the active power drawn by the switchgear and switchgear:

For single-phase switchgear, when the rated current flows into the switchgear from the main circuit input terminal of the switchgear, and flows through the main circuit the circuit also

flows out of the switching device through the output terminal, and the active power drawn by the switching device: The unit of measurement is W:

3.5 Operating device loss in accordance with the specified operating procedures, use the rated power of the opening and closing devices and auxiliary and control circuits under no-load conditions:

The energy absorbed by the switchgear when the source voltage opens, closes and stores the switchgear: unit of measurement for J: