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**Technical guide for smart protection equipment of microgrid**

智能微电网保护设备技术导则

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## Foreword

This instructional document has been drafted in accordance with the rules given in GB/T 1.1-2009. This guidance document is proposed by China Electrical Equipment Industry Association. This Guidance Document is governed by the National Technical Committee for

Standardization of Relays and Protective Equipment (SAC/TC154). The guidance of technical documents drafting unit Xu Ji Electric Co., Ltd., Xuchang Cape Electric Institute, Beijing Sifang Automation Automation Co., Ltd., Harbin Electric Group Acheng Relay Co., Ltd., Nanjing NARI Insurance Electric Co., Ltd., State Grid Zhejiang Power Power Company, State Grid Hebei Power Company, State Grid Henan Power Company, Jicheng Electronic Co., Ltd., State Power Nanjing Automation Co., Ltd. Company, Evergreen Shenzhen Rui Bao Automation Co., Ltd., Xuchang Cape Detection Technology Co., Ltd., China Electric Power Research Institute, Beijing Ziguang Measurement and Control Co., Ltd., Yunnan Power Grid Co., Ltd. Electric Power Research Institute, State Grid Electric Power Research Institute, Jicheng Energy Co., Ltd., ABB (in Country) Co., Ltd., Hebei North Heng Electric Technology Co., Ltd., Jiangsu Kim Chi Technology Co., Ltd. The main drafters of this technical document are Li Ruisheng, Guo Baofu, Li Zhiyong, Li Jisheng, Yang Xu, Xu Guangfu, Zhou Fuqiang, Zhang Hong, Zhang Taisheng, Wang Linxian, Li Yuping, Xu Yongjun, Li Quanxi, Yang Guosheng, Hu Jiawei, Yan Yuting, Li Weiliang, Yuan Wenguang, Li Yan, Tian Jianjun, Gao Liang. Smart micro-grid protection equipment technical guidance

## 1 Scope

GB/Z 34161-2017 is the Chinese national standard on technical guide for smart protection equipment of microgrid, in the field of electrical engineering. The /Z suffix marks it as a guiding technical document: it does not prescribe requirements that can be certified against, but sets out the technique, the method or the state of the art that the standards bodies recommend following. It was issued on 7 September 2017 by the State Administration for Market Regulation; Standardization Administration of China. As a guiding technical document it carries no separate date of entry into force: it applies from publication. Classification: ICS 29.240.01, CCS K45. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This Guidance Technical Document specifies the general requirements for intelligent micro-grid protection equipment, technical requirements, protection configuration, test methods and other requirements. This Guidance Document is applicable to grid-connected and independent power supply AC micro-grids that are connected to 35kV and below voltage distribution networks Grid system, as a product design, manufacture, inspection and operation of the basis.

## 2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version applies to this article Pieces. For undated references, the

latest edition (including all amendments) applies to this document. General specifications for computerized premises GB/T 2887-2011

GB/T 7261 protection and safety automatic device basic test methods

GB/T 9361 computer site safety requirements

GB/T 11287-2000 Electrical relays - Part 21. Vibration, shock, bump and earthquakes of measuring relays and protection devices Test Part 1. Vibration test (sine) Technical specifications for relay protection and safety automatic devices Shock and collision tests for measuring relays and protection equipment

GB/T 14598.24-2017 Measuring relays and protection equipment - Part 24. Power system transient data exchange (COMTRADE) Common format

GB/T 25387.1-2010 Wind turbine generator full power converter Part 1. Technical conditions

GB/T 25387.2-2010 Wind turbines full power converters Part 2. Test methods

GB/T 25388.1-2010 Wind turbine generator double-fed converter Part 1. Technical conditions

GB/T 25388.2-2010 Wind turbines - Double-fed converters - Part 2. Test methods  
Regulation of operation setting of relay protection device for 3kV ~ 110kV power grid DL/T 667 Telecontrol equipment and systems Part 5. Transmission protocol Part 103. Relay equipment Information Interface supporting standards DL/T 860 (all parts) Substation communication networks and systems Battery storage power control system technical conditions Technical Specification for Photovoltaic Grid - connected Inverters

### 3 Terms and definitions

The following terms and definitions apply to this document.

3.1 Microgrid By the distributed generation, electricity load, monitoring, protection and automation devices (including energy storage if necessary), is a can be achieved within the basic Ministry of power supply balance of small power supply network. Micro-grid into grid-based micro-grid and independent micro-grid. Note that grid-connected microgrid refers to the microgrid connected to the grid, which can run both in grid and grid, and can operate independently from the grid. Independent micro-grid refers to not big  
Grid-connected microgrids can independently guarantee the stability of power generation and supply in the microgrid. Generally, they refer to outlying areas where conventional power grids can not radiate.