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

GB/T 17215.304-2017

**Electricity metering equipment (AC) - Particular requirements -
Part 4: Static meters connected via electronic transformers**

交流电测量设备 特殊要求 第4部分：经电子互感器接入的静止式电能表

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Table of Contents

- 1 Scope
- 2 Normative references
- 3 Terms and definitions

Foreword

GB/T 17215.3 "AC measuring equipment special requirements" is divided into the following sections.

- GB/T 17215.301 Multifunction Energy Meter;
- GB/T 17215.302 static harmonic active watthour meter;
- GB/T 17215.303 digital meter;
- GB/T 17215.304 by the electronic transformer access to the static watt-hour meter;
- GB/T 17215.311 Electromechanical active watthour meter (0.5 level, level 1 and level 2);
- GB/T 17215.321 stationary active watthour meter (level 1 and level 2);
- GB/T 17215.322 Static active watthour meter (0.2S level and 0.5S level);
- GB/T 17215.323 static reactive energy meter (Level 2 and Level 3);
- GB/T 17215.324 static fundamental frequency reactive energy meter (0.5S level, 1S level and 1 level);
- GB/T 17215.352 symbol. This section GB/T 17215.3 Part 4. This section drafted in accordance with GB/T 1.1-2009 given rules. This section and GB/T 17215.211-2006 "AC measuring equipment, general requirements, test and test conditions Part 11. Test Quantity equipment "together form the type test requirements for stationary watt-hour meters accessed via electronic transformers. Please note that some of this document may be patentable. The issuing agencies of this document do not bear the responsibility of identifying these patents. This part is proposed by China Machinery Industry Federation. This part of the National Electrical Instrumentation Standardization Technical Committee (SAC/TC104) centralized. This part of the drafting unit. Harbin Institute of Electrical Instrumentation, Langfang High Mountain Electronic Technology Co., Ltd., State Grid Nanjing Power Company, China Power Power Science Research Institute, Shenzhen Branch Lu Electronic Technology Co., Ltd., Zhejiang Chint Instrument Co., Ltd., Yantai East

Weisidun Electric Co., Ltd., Holley Technology Co., Ltd., Weisheng Group Co., Ltd., Ningbo Samsung Medical Electric Co., Ltd., Jiangsu Lin Yang Energy Co., Ltd., Shandong CIB Electric Co., Ltd., State Grid Chongqing Electric Power Company Electric Power Research Institute, State Grid Jiangsu Electric Power Division of Electric Power Research Institute, Shenzhen Aerospace Terry Jie Electronics Co., Ltd., Shandong Institute of Metrology, Shenzhen Xinglong Technology Co., Ltd. Limited, State Grid Hubei Electric Power Company Electric Power Research Institute, Zhejiang Wansheng Intelligent Technology Co., Ltd., Shijiazhuang Colin Electric shares Co., Ltd., Delixi Group Instrument Co., Ltd., State Grid Henan Electric Power Research Institute of Electric Power Measurement Center, Hangzhou, 100 Power Sub-Technology Co., Ltd., Shenzhen Galaxy Meter Co., Ltd., Guizhou Electric Power Research Institute, Hangzhou Haixing Power Technology Co., Ltd. Secretary, Shenzhen Jiang Industrial Co., Ltd., State Grid Sichuan Electric Power Company Measurement Center, Zhangzhou Branch can Electric Co., Ltd. State Grid Zhejiang Power Company Electric Power Research Institute, Shenzhen Long Electric Co., State Grid Jiangxi Electric Power Research Institute, Shenzhen Hao Ningda Instrument shares Co., Ltd., South Instrument Co., Ltd., Qingdao stem Cheng Technology Co., Ltd., Liyang Huapeng Electric Instrument Co., Ltd., Wuxi City, Hengtong Co., Ltd., State Grid Hubei Provincial Power Company, Zhejiang Sunny Electronics Co., Ltd., Wuhan Sheng Fan Electronics Co., Ltd. Ningxia Longkinen Light Instrument Co., Ltd., Wuhan Adix Electronic Co., Ltd. The main drafters of this section. Chen Kechang, Xie Xiaozhong, Yuan Huibao, Hu Haoliang, Liu Dexin, Wang Wenguo, Rong Bo, Mu Xiaoxing, Chen Wenxin, Zhang Deng Qing, Zhou Zhongxiang, Xu Gaosheng. This section participates in the drafting of the drafting. Ma Xuefeng, Huang Jianzhong, Li Jiacheng, Zhao Yantao, Shen Li, Ou Xi Yang, Zhang Qiuyan, Peng Jianzhong, Han Dong, Li Zhao Gang, Li Jiangtao, Zhao Dongxu, Yao Guojun, Liu Jian, Yao Li, Liu Zhong, Cai Fanghui, Xu Huifeng, Yang Aijun, Zhang Chunqiang, Shi Huochuan, Fan You, Pei Maolin, Wan Zhongbing, Chen Yuming, Lin Xiaolong, Chen Hongyu, He Peidong, Tao Qin, Li Jianwei, Hu Xichun, Peng Xiang, Hu Meng, Liu Yanhong. AC measuring equipment special requirements Part 4. Access to electronic transformers Static meter

1 Scope

China's national requirements for static electricity meters whose inputs come from electronic instrument transformers as small analogue signals rather than from conventional 5 A and 100 V secondaries. It specifies the terms and definitions, the classification, the technical requirements, the accuracy classes and the test methods for such meters, applies to newly manufactured meters installed on 50 Hz or 60 Hz networks with small-signal analogue inputs, and covers their type testing. It does not apply to meters with digital inputs. Electronic voltage and current transformers - optical, Rogowski coil, low-power resistive dividers - replace the iron and copper of conventional instrument transformers with a sensor and an electronic output, and they solve real problems: no saturation, no ferroresonance,

no risk from an open current-transformer secondary, far less weight and far more bandwidth. What they change for the meter is the input itself. Instead of amperes and volts the meter receives a small voltage proportional to the primary quantity, at a level where the input impedance, the burden, the common-mode rejection and the noise floor of the meter now matter directly, and where the cable between the sensor and the meter is part of the measuring chain. This part therefore restates the whole set of requirements for that condition: the standard electrical values and the meter classification, the mechanical and marking requirements, the climatic conditions, the electrical requirements including the effect of short-duration overvoltage on the current input, the insulation and the electromagnetic compatibility, and then the accuracy limits - the error caused by variation of the current-circuit voltage, the errors caused by all the other influence quantities, clock and demand accuracy where those functions exist, the starting and creep tests, the meter constant and the conditions under which accuracy is tested. A normative annex covers harmonic testing. Issued on 31 July 2017 and in force since 1 February 2018.

GB/T 17215.3 provisions of this section by the electronic transformer access static meter (hereinafter referred to as instrument) terms and definitions, Classification, technical requirements, level of accuracy and test methods. This section only applies to newly manufactured, installed in the reference frequency of 50Hz or 60Hz power grid to measure AC power, small (signal) mode The input meters are to be metered, and only for their type test. This section applies to measuring units and displays and other components enclosed in the same case of the instrument. Only in the current line using small (signal) analog input instrument, refer to the use. This section does not apply to digital input instruments. NOTE Transformers to which the meter is intended to be connected can be found in GB/T 20840.7-2007, GB/T 20840.8-2007, DL/T 1155-2012.

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.

GB/T 15284-2002 multi-rate watt-hour meter special requirements

GB/T 17215.211-2006 AC measuring equipment - General requirements, test and test conditions - Part 11. Measuring equipment

GB/T 17215.322-2008 AC measuring equipment - Particular requirements - Part 22. Static active watt-hour meter (0.2S level and 0.5S level)

GB/T 17215.323-2008 AC measuring equipment - Specific requirements Part 23. Static reactive energy meter (level 2 and 3 level)

GB/T 17215.421-2008 AC measurement rates and load control - Part 21 - Particular requirements for time switches

GB/T 17626.4-2008 Electromagnetic compatibility test and measurement technology
Electrical fast transient burst immunity test

GB/T 17626.11-2008 electromagnetic compatibility test and measurement techniques
voltage dips, short interruptions and voltage variations immunity test

GB/T 17626.29-2006 Electromagnetic compatibility test and measurement techniques DC
power input port voltage sags, short interruptions and Immunity test for voltage variations
Transformers - Part 2. Supplementary technical requirements for current transformers

GB/T 20840.2-2014 Transformers

GB/T 20840.3-2013 Part 3. Electromagnetic voltage transformer supplementary technical
requirements Transformers - Part 7. Electronic voltage transformers Transformers - Part 8.
Electronic current transformers Non-traditional transformer technical conditions

3 Terms and definitions

GB/T 17215.211-2006 defined and the following terms and definitions apply to this
document.