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GB/T 46715-2025

**Electricity metering equipment - Embedded software - General
requirements**

电能测量设备 嵌入式软件 通用要求

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1.Structure and Drafting Rules of Standardization Documents". Drafting. Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed by the China Machinery Industry Federation. This document is under the jurisdiction of the National Technical Committee on Standardization of Electrical Instruments and Meters (SAC/TC104). This document was drafted by: Harbin Electrical Instrument Research Institute Co., Ltd., China Southern Power Grid Electric Technology Co., Ltd., and Shenzhen Kelun. Electronic Technology Co., Ltd., Zhejiang Hengye Electronics Co., Ltd., Zhejiang Chentai Technology Co., Ltd., Guangdong Power Grid Co., Ltd. The company's metrology center, Zhejiang Chint Instruments Co., Ltd., China Southern Power Grid Science Research Institute Co., Ltd., and Yantai Dongfang Weiston. Electric Co., Ltd., Wasion Group Co., Ltd., Hangzhou Haixing Electric Power Technology Co., Ltd., KELU International Technology Co., Ltd., and Huali Technology. Joint-stock limited company, State Grid Chongqing Electric Power Company Marketing Service Center, Shenzhen Jiangji Industrial Co., Ltd., Xuji Group Co., Ltd., Ningbo Samsung Medical Electric Co., Ltd., Chengdu Great Wall Development Technology Co., Ltd., Jiangsu Linyang Energy Co., Ltd., China Metrology Universities, Shenzhen Sida Instrument Co., Ltd., China Southern Power Grid Digital Grid Group Co., Ltd., and State Grid Xinjiang Electric Power Co., Ltd. Marketing Service Center Xin, State Grid Shandong Electric Power Company Marketing Service Center (Metering Center), Henan Xuji Instrument Co., Ltd., Yidimai Instrument (Shenzhen) Co., Ltd. Company, China Electric Equipment Shandong Electronics Co., Ltd., Aerospace Liangli Electric Co., Ltd., Wuhan Shengfan Electronics Co., Ltd., Hangzhou Xilizhi Energy Technology Co., Ltd., Zhongnan Instrument Co., Ltd., Zhejiang Songxia Instrument Co., Ltd., Keda Intelligent Technology Co., Ltd., Beijing Yu Bang Electric Technology Co., Ltd.,

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1 Scope

GB/T 46715-2025 is the Chinese national standard covering the firmware inside a meter - the separation of the legally relevant metering code from everything else, the integrity checking and the version identification, the conditions under which an update may be applied in the field, and the audit trail it must leave. First edition, in force from 1 May 2026. Issued on 31 October 2025, it has been in force since 1 May 2026.

This document specifies the software composition and technical requirements of embedded software for power measurement equipment, and describes the corresponding verification methods. This document applies to the design, research and development, maintenance, upgrading, and testing of embedded software for power measurement equipment (hereinafter referred to as "instrument software"). Activity. This document is not applicable to.

---Electrical energy measurement equipment and testing device;

---A measurement system consisting of multiple devices that are physically separate from each other;

---Portable power measurement device.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 11457 Terminology for Information Technology Software Engineering

GB/T 17215.3 (all parts) Particular requirements for AC measuring equipment

GB/T 42555-2023 General requirements for control software of measuring instruments

3 Terms and Definitions

The terms and definitions defined in GB/T 11457 and the following terms and definitions apply to this document.

3.1 Embedded software Software that runs as microinstructions embedded in hardware devices.

3.2 User Interface An interface medium for transmitting information between the operator and the measuring instrument or its hardware and software components.

Note. Such as switches, keyboards, mice, displays, monitors, printers, touch screens, and software windows on the screen (including the software that generates the windows).

[Source: GB/T 42555-2023, 3.58]

3.3 Protective interface Preventing unauthorized interference involves software related to legal and metrological management, as well as software modules that control data flow.

[Source: GB/T 42555-2023, 3.41]

3.4 software module The entire system consists of several relatively independent program units, each of which completes and implements a relatively independent software function.