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GB/T 43964-2024

**Over-the-air technical requirements of automatic electrical
controls for household and similar use**

家用和类似用途电自动控制器空中下载（OTA）技术要求

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Foreword

This document is in accordance with the provisions of GB/T 1:1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents"

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1 Scope

GB/T 43964-2024 covers updating household controllers over the air. The automatic control in a boiler, an air conditioner or a water heater is a safety component: it is what limits temperature and pressure, and it was certified in a specific software version. Making it updatable over the network solves real problems - bugs get fixed, features arrive - and creates a new one, because the certified behaviour can now be changed remotely, potentially by someone who is not the manufacturer. The failure modes are specific to the

setting: an update interrupted by a power cut must leave the controller working rather than bricked, an update must not be installable by an unauthenticated party, and the safety-related functions must remain within their certified behaviour whatever the update does. This document specifies the classification, requirements and specifications for over-the-air downloading in automatic electrical controls for household and similar use. Under ICS 97.120 and CCS K32, it is written for controller and appliance manufacturers, for the cloud platform providers delivering the updates, and for the certification bodies that must decide what a type approval covers once the software can change.

This document specifies the classification, requirements and specifications of Over-the-Air (OTA) downloading of automatic electrical controllers for household and similar purposes (hereinafter referred to as "controllers"): The relevant test methods are described: This document applies to controllers for home and similar purposes with over-the-air download capability: This document does not apply to controllers for audio, video and information products such as televisions, mobile phones, computers, etc:

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document: For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document:

GB/T 14536:1-2022 Electric automatic controllers Part 1: General requirements

GB/T 35273-2020 Information security technology Personal information security specification

GB/T 41387-2022 Information security technology General security specification for smart home

3 Terms and definitions

The following terms and definitions apply to this document 3:

1 Software The code, data, and files of a specific application or system component running on the controller: 3:

2 Firmware Software that is burned and stored on hardware (chip, controller) to enable it to run and control corresponding functions: 3:

3 Over-the-air; OTA A method and method for transmitting data such as software and firmware from a remote server to a controller via a network for updating, installing or configuring process: 3:

4 Firmware over-the-air; FOTA The process of remotely upgrading the firmware in a controller over a network: 3:

5 Software over the air; SOTA The process of remotely upgrading the software in a controller via a network:

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