

ICS 97.120  
CCS K 32



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

**GB/T 43689-2024**

---

**Household and similar refrigerating appliances computer  
program controls**

家用和类似用途制冷器具电脑程序控制器

**Issued on: March 15, 2024**

**Implemented on: October 1, 2024**

---

**Issued by: State Administration for Market Regulation;  
Standardization Administration of the PRC**

## Table of Contents

|                                                                                                                                           |    |
|-------------------------------------------------------------------------------------------------------------------------------------------|----|
| Preface .....                                                                                                                             | I  |
| 1 Scope .....                                                                                                                             | 1  |
| 2 Normative references .....                                                                                                              | 1  |
| 3 Terms and Definitions .....                                                                                                             | 1  |
| 4 Classification and naming .....                                                                                                         | 1  |
| 5 Requirement .....                                                                                                                       | 2  |
| 6 Test methods .....                                                                                                                      | 4  |
| 7 Inspection Rules .....                                                                                                                  | 8  |
| 8 Marking, packaging, transportation and storage .....                                                                                    | 9  |
| Appendix A (Informative) Classification and naming of program controllers .....                                                           | 11 |
| Figure 1 Schematic diagram of program controller function module Figure 2 Schematic diagram of hot and cold shock temperature cycle ..... | 5  |
| Figure A.1 Naming rules for programmable controller models .....                                                                          | 11 |
| Table 1 Electrostatic discharge sensitivity .....                                                                                         | 6  |
| Table 2 Factory inspection items and random inspection judgment .....                                                                     | 8  |
| Table 3 Type test items .....                                                                                                             | 8  |
| Table A.1 Classification and code of programmable controllers .....                                                                       | 11 |

## 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" Drafting.

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

This document was proposed by the China Electrical Equipment Industry Association.

This document is under the jurisdiction of the National Technical Committee for Standardization of Household Automatic Controllers (SAC/TC212).

This document was drafted by: Hefei Midea Refrigerator Co., Ltd., China Electric Power Research Institute Co., Ltd., Hisense Rongsheng (Guangdong) Refrigerator Co., Ltd., Guangdong Zhongchuang Zhijia Science Research Co., Ltd., Hangzhou Xingshuaier Electric Appliance Co., Ltd., Zhejiang Puretech Environmental Equipment Co., Ltd., Kaos Chuangzhi IoT Technology Co., Ltd., Hangzhou Jinsong Younuo Electric Co., Ltd.,

Guangdong Dangjiaren Intelligent Electric Co., Ltd., Zhongshan Junguo Electric Co., Ltd., BSH Electric (Jiangsu) Co., Ltd., Shenzhen Shenlan Electronics Co., Ltd., Hefei Shiyan Electronics Technology Co., Ltd., Jiangsu Jintong Lingguang Nuclear Energy Technology Co., Ltd., Sanmen Kangchuang Electronic Technology Co., Ltd., Zhuhai Jintian Electronic Technology Co., Ltd.

Ltd., Shandong Xinbeiyang Information Technology Co., Ltd., Shenzhen Tuobang Co., Ltd., Zhiheng (Guangdong) Home Appliances Technology Co., Ltd.

Xiamen Hualian Electronics Co., Ltd., Zhejiang Zhiling Technology Co., Ltd., Aucma Co., Ltd., Hangzhou Qianjiang Refrigeration Compressor Group Co., Ltd., Huangshi Dongbei Compressor Co., Ltd., Shenzhen Toptech Technology Co., Ltd., Weikai Testing Technology Co., Ltd., Ningbo Yahui Intelligent Technology Co., Ltd., Guangdong Husky Refrigeration Technology Co., Ltd., Jiaxing Weike Testing Technology Co., Ltd., Zhongshan City Yuehai Electric Co., Ltd., Guangdong Tehua Technology Co., Ltd., Zhejiang Huacong Digital Technology Co., Ltd., Guangdong Liying Intelligent Technology Co., Ltd., Ningbo Silang Intelligent Technology Development Co., Ltd., Guangdong Yidu Technology Co., Ltd., Zhejiang Rujing Technology Co., Ltd., Guangdong Yisheng Testing Co., Ltd.

Company, Guangdong Qinghe Technology Co., Ltd., Shandong Yaosi Intelligent Technology Co., Ltd., and Guangdong Xueying Electric Co., Ltd.

The main drafters of this document are: Li Liang, Jing Yixin, Chen Xing, Zhuang Weiwei, Wu Hongbiao, Wang Mingquan, Cao Shiliang, Li Yongde, Liu Xianshan, Jiang Huixing, Li Chengzhi, Zhang Jun, Lin Minxin, Yin Bo, Qi Pengcheng, Qu Keyong, Liu Xiuyun, Jiang Tianxin, Ou Liang, Wang Zhesi, Chen Hao, Deng Huazhen, Lu Wencheng, Xu Yufeng, Zhang Bao, Yuan Qingqing, Liu Xiaoxiong, Xie Jianfei, Chen Naïen, Liu Yaxue, Zhang Yafei, Yan Jingen, Nan Lejin, Deng Daicong, Ding Chunyan, Shi Dongdong, Yin Songsong, Xiao Benchong, Wang Fengyan, Zhou Zixin, Li Ji, and Nie Hongxia.

Computer program controllers for household and similar refrigeration appliances

## 1 Scope

This document specifies the requirements for computer program controllers for household and similar refrigeration appliances, describes the corresponding test methods, and specifies the inspection rules, marking, packaging, transportation and storage, and provides product classification and naming to facilitate technical regulations.

This document applies to the design, production and inspection of computer program controllers (hereinafter referred to as "program controllers") for household and similar refrigeration appliances.

## 2 Normative references

GB/T 2423.10

GB/T 2423.17

GB/T 2828.1

GB 4343.1-2018

GB/T 4343.2-2020

GB/T 4677-2002

GB/T 4798.1-2019

GB/T 4798.2

GB/T 14536.1-2022

GB 17625.1-2022

GB/T 22685

### **3 Terms and definitions**

The terms and definitions defined in GB/T 14536.1-2022 and the following apply to this document.

#### **3.1 A programmable controller composed of data acquisition, driving, switch execution devices, etc**

With microprocessor as the core, electrical signal as the reference, thyristor or similar device as the execution switch, and peripheral circuit (such as signal

#### **3.2 steadystate**

After the refrigeration appliance is powered on, the compartment temperature reaches the set temperature and the temperature fluctuation does not exceed  $\pm 1\text{K}$ .

### **4 Classification and naming**

Manufacturers should classify and name programmable controllers according to the requirements of both the supplier and the buyer. The classification and naming of programmable controllers are shown in Appendix A.