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

GB/T 39673.3-2020

**Home and building electronic systems (HBES) and building
automation and control systems (BACS) - Part 3: Electrical
safety requirements**

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Foreword

GB/T 39673 "Home and Building Electronic System (HBES) and Building Automation and Control System (BACS)" intends to publish the following parts:

- Part 1: General requirements;
- Part 2: Environmental conditions;
- Part 3: Electrical safety requirements;
- Part 4: Functional safety;
- Part 5: EMC requirements;
- Part 51: EMC requirements, conditions and test arrangements;
- Part 52: EMC requirements for HBES and BACS used in residential, commercial and light industrial environments;
- Part 53: EMC requirements for HBES and BACS used in industrial environments;
- Part 6: Planning and installation of HBES:

This part is Part 3 of GB/T 39673:

This section was drafted in accordance with the rules given in GB/T 1:1-2009:

This part uses the redrafting law to amend and adopt IEC 63044-3:2017 "Housing and Building Electronic System (HBES) and Building Automation

And Control System (BACS) Part 3: Electrical Safety Requirements:

The technical differences between this part and IEC 63044-3:2017 and the reasons are as follows:

---Regarding normative reference documents, this section has made adjustments with technical differences to adapt to my country's technical conditions and adjustments:

The situation is collectively reflected in Chapter 2 "Normative Reference Documents", and the specific adjustments are as follows:

- * Replace IEC 60038:2009 with GB/T 156-2017 modified to adopt international standards;
- * Replace IEC 60364 (all parts) with GB/T 16895 (all parts) equivalent to adopting international standards;
- * Replace IEC 60364-5-52 with GB/T 16895:6 equivalent to the international standard;
- * Replace IEC 60664-1 with GB/T 16935:1 equivalent to the international standard;
- * Replace IEC 61180 (all parts) with GB/T 17627 (all parts) equivalent to international standards;
- * Replace IEC 63044-1 with GB/T 39673:1 modified to adopt international standards:

This section has made the following editorial changes:

---According to the relevant regulations of GB/T 1:1-2009, in Chapter 1 "Scope", "This part of GB/T 39673 provides

Electrical safety requirements for home and building electronic systems (HBES) and building automation and control systems (BACS)";

---Added in Appendix A the product standards for residual current operated protective devices (RCD) and arc fault protective devices (AFDD)

List:

This part was proposed by China Electrical Equipment Industry Association:

This part is under the jurisdiction of the National Electrical Accessories Standardization Technical Committee (SAC/TC67):

Drafting organizations of this section: Weikai Testing Technology Co., Ltd., Jiangsu Tongling Technology Co., Ltd., Feidiao Electric Group Co., Ltd., Hangzhou Hong

Yan Electric Co., Ltd., Guangdong Midea HVAC Equipment Co., Ltd., Bull Group Co., Ltd., Simon Electric (China) Co., Ltd., Zhejiang

Youmoo Technology Co., Ltd., Guangdong Xinruan Technology Co., Ltd., China National Electrical Equipment Research Institute Co., Ltd., Zhuhai Gree Electric

Co., Ltd., Dongguan Ruijing Electrical Technology Co., Ltd., Xiamen Keli Electronics Co., Ltd., Xiamen Meike Security Technology Co., Ltd., Xiamen Kexin

Electronics Co., Ltd., Xiamen Wanming Electronics Co., Ltd., Shaanxi Yatney Electronics Co., Ltd., Xiamen Kunjin Electronic Technology Co., Ltd., Zhejiang De

Lixi International Electrical Co., Ltd., Huizhou Xidun Industrial Development Co., Ltd., Jiangxi Gumei New Testing Technology Co., Ltd:

Introduction

GB/T 39673 involves the development and testing of home and building electronic systems (HBES) and building automation and control systems (BACS):

This section involves the electrical safety requirements of HBES/BACS:

This part is based on the idea that equipment that is considered electrical safety according to appropriate product safety standards, when connected to the network

It also needs to be safe: In addition to the specified product standards, this part also specifies the HBES/BACS equipment connected to the network

The electrical safety requirements necessary to maintain safety under normal and single fault conditions of the HBES/BACS network, and at the same time under normal and single fault conditions

One or more HBES/BACS devices connected to the HBES/BACS network under certain conditions: This includes preventing overcharge on the network

To prevent the danger caused by connecting different types of circuits, limit the influence of contact current on the network, and prevent the communication line from overheating:

HBES/BACS network is any interconnection between HBES/BACS products: HBES/BACS network can be

The ICT network with interfaces divided by IEC 62949 can also be a dedicated network divided by grid power, ELV, FELV, SELV or PELV circuits

The internet:

For HBES/BACS products connected to ICT networks, the requirements in IEC 62949 apply:

For HBES/BACS products connected to a dedicated HBES/BACS network, the circuit between the device and the network is specified

The electrical isolation requirements between (see Table 1): These regulations on electrical isolation follow the basic safety publication GB/T 16935:1 and

The principles given in GB/T 17045 meet the installation requirements of GB/T 16895: The

following compromises were used:

---According to the principle of GB/T 16935:1, the rated pulse voltage used for isolation should be the pulse voltage on the network and connected to the network

The higher value of the rated pulse voltage of the equipment circuit;

---The overvoltage category considered by GB/T 16935:1 refers to the overvoltage directly drawn from the power supply;

---Overvoltage from other sources (such as capacitive coupling) is not specified in GB/T 16935:1: GB/T 16935:1 Recommendation

The technical committee shall specify the overvoltage category or rated impulse voltage as appropriate:

For the purpose of this section, the following pulse voltages have been specified:

---For the network (FELV, SELV or PELV circuit) electrically isolated from the main, the pulse overvoltage from the isolated network side is fixed

The installation network limit is 2.5kV: The limit on the detachable network is 1.5kV;

---For ICT networks, there are special requirements (see 6:3:2:1):

Automation and Control System (BACS)

Part 3: Electrical safety requirements

1 Scope

This part of GB/T 39673 specifies the electrical power of residential and building electronic systems (HBES) and building automation and control systems (BACS):

Gas safety requirements:

This section applies to electrical safety related to HBES/BACS networks, in addition to product safety standards for HBES/BACS equipment

Claim:

This section also applies to equipment that does not have a specific HBES/BACS product safety standard in the HBES/BACS network:

In addition, this section defines the device interface expected to be connected to an HBES/BACS network: This section does not apply to connecting to other

The interface of the network:

In addition, this section also determines the security requirements for the device interface expected to be connected to the HBES/BACS network: This section does not apply to