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

GB 18209.1-2010

Replacing GB 18209.1-2000

**Electrical safety of machinery -- Indication, marking and
actuation -- Part 1: Requirements for visual, acoustic and tactile
signals**

机械电气安全 指示、标志和操作 第1部分：关于视觉、听觉和触觉信号的要求
(English Translation)

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Foreword

All the technical contents of this standard is mandatory.

GB 18209 "Electrical safety of machinery - Indication, marking and operation" into parts intended publication, has released the following sections.

--- Part 1. Requirements for visual, auditory and tactile signals;

--- Part 2. Requirements for marking;

--- Part 3. Actuator location and operational requirements.

This is Part 1 GB 18209's.

This section drafted in accordance with GB/T 1.1-2009 given rules.

This Part replaces GB 18209.1-2000 "Safety of machinery - Indication, marking and actuation - Part 1. Requirements for visual, auditory and tactile Requirements "signal, as compared with GB 18209.1-2000 The main technical changes are as follows.

--- Standard name changed to "Electrical safety of machinery - Indication, marking and actuation - Part 1. To visual, auditory and tactile signals begging";

--- Chapter 4 4.2.5 new "safety signs and auxiliary signs", part of which comes from the original Chapter 7;

--- Chapter 5 New "Table 6 encoding meaning";

--- Original Chapter 6 to Appendix A (informative) "on the operation of the actuator graphic symbols";

--- Deletion of the original Chapter 7, in which the original part is incorporated 4.2.5.

This section uses the translation method is equivalent to using IEC 61310-1:2007 "Safety of machinery - Indication, marking and actuation - Part 1. Depending on it requires sleep, auditory and tactile signals. " Consistency correspondence between this part of

international documents and normative references of our files are as follows.

GB/T 2893.1-2004 Graphical symbols - Safety colors and safety signs - Part 1. workplaces and public areas safety standards
Blog design principles (ISO 3864-1:2002, MOD) GB/T 4025-2003 people - basic safety rules and operation of the indicator and machine interface, marking and identification coding rules (IEC 60073:1993, IDT) GB/T 5465.2-2008 Graphical symbols for electrical equipment - Part 2. Graphical symbols (IEC 60417DB.2007, IDT) GB/T 16273.1-2008 equipment graphic symbol index and outline (ISO 7000:2004, NEQ) GB 16754-2008 Safety of machinery - Emergency stop design principles (ISO 13850:2006, IDT) this part made the following editorial changes.

--- Standard name changed to "Electrical safety of machinery - Indication, marking and actuation - Part 1. To visual, auditory and tactile signals begging";

--- Delete international standards preface;

--- Change the title of Chapter 3 "Terms and Definitions";

--- Increase the informative appendix NA "sign features and dimensions" to guide and user-friendly.

This part is proposed by China Machinery Industry Federation.

The electrical system in part by the National Machinery Industry Standardization Technical Committee (SAC/TC231) centralized.

This section is mainly drafted by. measuring Detection Technology Co., Ltd., Beijing Machine Tool Research Institute, Beijing KND CNC Technology Co., the company, Hangzhou Machine Tool Group Co., Ltd.

Introduction

For there is no specific product or product family standard machinery, the supplier shall use this part of the implementation of this section shall also be begging. For example, the mechanical standard or proprietary product portfolio standard by the Technical Committee of mechanical products, the normative documents as references, when product family standard or special product standards, which requires priority.

To expose staff and operator safety and monitoring the use of machinery, subject to human interface transfer warning and danger signals associated security implications.

In an open loop system (see Figure 1) the operator via the man-machine interface to communicate with mechanical or processing. Machine interface by the actuator device and instructions Composition, the operator via the interface and start receiving information. Many applications using encoded signals represent information encoded signal using a special set of regulations the encoder, the operator in accordance with the rules of interpretation of these signals. Different types of coding such as color, shape, or time is

usually used as the operator's work instruction.

Use reason codes.

--- Allow centralized control station spaced mechanical and space;

In order to increase the amount of information may sense --- indicator are, for example, each display area unit, per unit of time;

--- In order to reduce the operator and/or exposed persons mental burden.

1 Open-loop control, operation and information systems

Electrical safety of machinery - Indication, marking and operation Part 1. Requirements for visual, auditory and Requirements tactile signals

1 Scope

This section provides the human interface exposed persons with visual, auditory and tactile methods of indicating safety information requirements.

This section provides color, safety signs, tags and other warning methods for indicating a dangerous state, to deal with accidents and health hazards Designed. In order to promote the safe use of machinery and monitoring also provides a visual indicator and coding used by the actuator, auditory and tactile signals method.

This part of IEC 60073 based color coding and replacement method, but not limited to the field electrician.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 1251.1-2008 Ergonomics public places and work areas - Auditory danger signals danger signals (ISO 7731.

2003, IDT)

GB 5226.1-2008 Safety of machinery - Electrical machinery and electrical equipment - Part 1. General requirements (IEC 60204-1:2005, IDT) ISO 3864-1:2002 Graphical symbols - Safety colors and safety signs - Part 1. workplaces and public areas of safety signs Design Principles (Graphicalsymbols-Safetycoloursandsafetysigns-Part 1.

Designprinciplesforsafety signsinworkplacesandpublicareas) ISO 7000:2004 Graphical symbols for equipment - Index and outline (Graphicalsymbolsforuseonequipment-Index andsynopsis) Use 2003 Graphical symbols - Safety colors and safety signs in public places and workplaces safety signs. ISO 7010

(Graphical symbols - Safety colours and safety signs - Safety signs used in workplaces and public areas) ISO 13850 Safety of machinery - Emergency stop design principles (Safety of machinery - Emergency stop - Principles for design) IEC 60073:2002 people - the basic safety rules and operation of the indicator and coding rules machine interface, marking and identification (Basic and safety principles for man-machine interface, marking and identification - Coding principles for indicators and actuators) IEC 60417 devices with graphic symbols (Graphical symbols for use on equipment)

3 Terms and Definitions

The following terms and definitions apply to this document.

Operated actuator Applying an external member on the device manually effect.

Note 1: The actuator that can be employed in the form of handles, knobs, pedals, buttons, scroll wheel, putting, mouse, light pen, keyboard, touch screen and so on.

Note 2: rewrite GB 5226.1-2008, the definition of 3.1.

Depending on the brightness of brightness and a light emitting surface to show how many corresponding visual properties.

[IEV845-02-28]

Coding

With another set of system-specific signals or signal values, said this representation shall comply with a set of defined rules.

Contrast (contrast)

a) the significance of perception. The field of view seen simultaneously or sequentially to see two or more part of the performance evaluation of the difference.

Note 1: For example. contrast types of brightness contrast, color contrast, simultaneous contrast, when following the contrast and the like.

b) a physical sense. usually related to the amount of contrast and brightness by a plurality of the formula for a formula to define. These formulas have been test Taking into account the incentive brightness.

Note 2: For example. use $\Delta L/L$ close to the brightness threshold or $L1/L2$ corresponding to a given higher brightness contrast.

Note 3: rewrite IEC 845-02-47.

Exposed personnel exposed person all or part of the people in the danger zone.

Graphical symbols graphical symbol Visual graphics have a special meaning, generally does not rely on language to convey information.