

ICS 29.020
CCS K 07



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

GB/T 41998-2022

**Electrical safety of machinery - Safe technical requirements of
mechanical wireless control system interface**

Issued on: October 12, 2022

Implemented on: May 1, 2023

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

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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" drafting.

This document is equivalent to IEC 62745.2017 "Technical Requirements for Mechanical Safety Machinery Wireless Control System".

The following minimal editorial changes have been made to this document.

---The name of the standard was changed to "Technical Requirements for Wireless Control System of Mechanical Electrical Safety Machinery";

--- Added informative appendix A, and adjusted the structure of international standard IEC 62745.2017 informative appendix A to "logic of stop function series" (see 4.7.4).

Please note that some contents of this document may refer to patents. The issuing agency of this document assumes no responsibility for identifying patents.

Introduction

Wireless Control System (CCS) is widely used in various types of mechanical equipment and provides an operation interface for it. The function of CCS and the control of the whole machine

The method of system interface directly affects the safety of machinery.

This document provides information on the functional requirements of a CCS that is connected to or forms part of a machinery control system.

Based on the risk assessment of the machinery, it is important to select a CCS that provides suitable control functions and has appropriate safety integrity.

The purpose of this document is to.

---Guarantee the safety of personnel and equipment;

---Ensure that the machinery and its electrical equipment work reliably;

--- Facilitate the use and maintenance of machinery and its electrical equipment.

Mechanical Electrical Safety Mechanical Wireless

Control System Technical Requirements

1 Scope

This document specifies the functional and interface requirements for wireless (e.g. radio, infrared) control systems, which provide operator control stations and machine

Communication between mechanical control systems. Specific requirements are included in an operator control station that is portable by the operator.

Note. The part of the wireless control system that acts as the operator control station is sometimes called the "transmitter", while the part that interfaces with the machine control system is sometimes called the "receiver".

However, considering the possibility of two-way communication, this document refers to these separate parts as "remote station" and "base station", respectively.

This document does not address wireless communications between non-operator controlled stations.

It is not the purpose of this document to specify all the requirements necessary for the design and construction of wireless control systems. For example, it does not specify the communication protocol

In terms of protocol, frequency or bandwidth, it does not specify all construction requirements, such as impact resistance, ingress protection, electromagnetic compatibility, etc.

The provisions of this document apply to the requirements of GB 5226 series related electrical equipment.

2 Normative references

The contents of the following documents constitute the essential provisions of this document through normative references in the text. Among them, dated references

For documents, only the version corresponding to the date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to

this document.

GB/T 2423.7-2018 Environmental testing Part 2. Test method Test Ec. Shock caused by rough handling (mainly used for

Equipment type samples) (IEC 60068-2-31:2008, IDT)

GB/T 5226.1-2019 Electrical safety of machinery and electrical equipment - Part 1. General technical requirements (IEC 60204-1.

2016, IDT)

ISO 13849-1 Safety-related parts of machinery safety control systems - Part 1. General principles for design (Safety of ma-

ISO 13849-2 Safety-related parts of machinery safety control systems Part 2. Verification

(Safetyofmachinery-

Principles for design)

Note. GB 14048.5-2017 Low-voltage switchgear and control equipment Part 5-1.Control circuit appliances and switching elements Electromechanical control circuit appliances (IEC 60947-5-1:2016, MOD).

IEC 60947-5-5 Low-voltage switchgear and controlgear Part 5-5.Control circuit devices and switching elements with mechanical locks

IEC 61508 (all parts) Functional safety of electrical/electronic/programmable electronic safety-related systems (Functional safety of

IEC 62061 Functional safety of machinery safety-related control systems
(Safetyofmachinery-Functionalsafety