ICS 29.020
CCS K09

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 9089.2-2023

Electrical installations for outdoor sites under heavy conditions - Part 2: General protection requirements

户外严酷条件下的电气设施 第2部分：一般防护要求

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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" drafting: This document is the second part of GB/T 9089 "Electrical installations under severe outdoor conditions": GB/T 9089 has issued the following part:

--- Part 1: Terminology;

--- Part 2: General protection requirements;

--- Part 3: General requirements for equipment and accessories;

--- Part 4: Device requirements;

--- Part 5: Operational requirements: This document replaces GB/T 9089:2-2008 "Electrical Installations Under Severe Conditions Part 2: General Protection Requirements", and Compared with GB/T 9089:2-2008, except for structural adjustment and editorial changes, the main technical changes are as follows:

a) The scope has been changed (see Chapter 1, Chapter 1 of the:2008 edition);

b) Deleted Table 1 (see 4:2:1, 4:2:1 of the:2008 edition);

c) The insulation degree of protection by insulation is changed (see 4:3:2, 4:3:1 of the:2008 edition);

d) Changed some protection requirements beyond the reach of the arm (see 4:4, 4:4 of the:2008 edition);

e) Added the requirement to set up barriers to achieve partial protection (see 4:5, 4:5 of the:2008 edition);

f) Deleted the safety distance for the operation and maintenance access of indoor facilities

(see 4:6:1 of the:2008 edition);

g) Changed the protective conductor protection measures (see 5:1:5, 5:1:4 of the:2008 edition);

h) Changed the identification of conductors (see 5:1:8, 5:1:7 of the:2008 edition);

1 Scope

GB/T 9089.2-2023 covers electrical safety where the conditions are against it. The protection concepts of ordinary indoor installations assume things that outdoor heavy-duty sites - construction, quarrying, mining, port and yard operations - do not provide: dry surroundings, insulating floors, cables that stay where they were laid, and equipment that is not moved. Outdoors the ground is wet and conductive, so a person is well earthed and the touch voltage that would be harmless indoors is lethal; trailing cables are dragged and crushed; equipment is relocated daily. This part specifies the protection required for electrical equipment and systems under such conditions, in normal operation and under fault, covering protection against direct contact and protection against indirect contact for AC systems, together with the associated requirements. It is the part of the GB/T 9089 series that establishes the general protection principles the other parts build on. Under ICS 29.020 and CCS K09, it is written for the electrical designers of temporary and heavy-duty outdoor installations, for site electrical supervisors, and for the safety inspectorates that examine them.

This document specifies the electrical equipment and systems for outdoor harsh conditions, in normal operation and fault conditions, to ensure personal safety from contact Electrical direct contact protection and indirect contact protection (AC), as well as the selection of protective devices and systems: This document is suitable for use in severe outdoor conditions (including open-pit mines, quarries, stockyards and similar places), with a rated voltage of 1000V and All electrical installations below and 1000V to 252kV:

Note: The working conditions of electrical facilities under harsh outdoor conditions are relatively special: They work in open places and undertake heavy-duty transportation and stacking tasks: At this The electrical facilities used in this occasion have the following characteristics:

---The location of equipment and systems should be changed frequently;

---The working area is large and continuously extended;

---The impact of special environment:

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 9089:

3 Terms and Definitions

The terms and definitions defined in GB/T 9089:1 apply to this document:

4 Basic protection (protection against electric shock under normal working conditions) 4:

1 General requirements Basic protection mainly refers to the protection against direct contact of all facilities with a voltage of 1000V and below and 1000V to 252kV Require: The basic protection shall meet the requirements of one of 4:2~4:5 and 4:6: When a safety extra-low voltage below 25V is used, it is considered that the basic protection can be guaranteed (see GB/T 16895:21): When the neutral conductor and protective conductor are installed in accordance with the requirements of 5:1:2, 5:3:6, 5:4:2 and 5:5:3, it is considered that the basic protection can be guaranteed: