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

GB/T 5590-2024

Replacing GB/T 5590-2008

**Low voltage explosion protection electromagnetic starter for
mining**

矿用防爆低压电磁起动器

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Table of Contents

Preface	III
1 Scope	1
2 Normative references	1
3 Terms, definitions and symbols	2
3.1 Terms and Definitions	2
3.2 Symbols	2
4 Classification and naming	2
4.1 Classification	2
4.2 Naming	3
5 Features	3
5.1 Rated values and limit values of main circuits	3
5.2 Category of use	3
5.3 Control Circuit	4
5.4 Auxiliary circuit	4
5.5 Protection function	4
6 Normal working conditions	4
7 Technical Requirements	5
7.1 General requirements	5
7.2 Explosion-proof safety requirements	5
7.3 Performance Requirements	8
8 Test methods	17
8.1 Verification of explosion-proof safety methods	17
8.2 Verification Performance Methods	17
9 Inspection Rules	18
9.1 Inspection categories	18
9.2 Type inspection	18
9.3 Periodic Inspection	19
9.4 Factory Inspection	19
10 Marking, packaging, transportation and storage	21
10.1 Logo	21
10.2 Packaging	22
10.3 Transportation and storage	22

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 is required.

This document replaces GB/T 5590-2008 "Explosion-proof low-voltage electromagnetic starter for mining". Compared with GB/T 5590-2008, except for the structure In addition to adjustments and editorial changes, the main technical changes are as follows.

Changed the scope (see Chapter 1, Chapter 1 of the 2008 edition); - The terms and definitions of pilot circuits (see 3.1.1 of the 2008 edition) have been deleted; - The provisions on code names have been deleted (see 3.3 of the 2008 edition); - Added the categories of fan starters, flameproof starters, flameproof and intrinsically safe starters, and other explosion-proof starters (see 4.1);

Changed the use category requirements (see 5.2, 5.7 of the 2008 edition); - Changed the control circuit requirements (see 5.3, 5.9 of the 2008 edition); - Changed the protection function requirements (see 5.5.2, 6.5 of the 2008 edition); - Changed the mechanical environmental conditions requirements (see Table 2, Table 2 of the 2008 edition); - Added general requirements (see 7.1); - Changed the structural requirements (see 7.2.1, 8.1.1 of the 2008 edition); - The electrical clearance in the main cavity has been changed (see Table 3, Table 3 of the 2008 edition); - Changed the intrinsically safe structure requirements (see 7.2.1.14, 8.1.7 and 8.1.8 of the 2008 edition); - The temperature rise requirements have been changed (see 7.3.1, 8.2.1 of the 2008 edition); - Changed the making and breaking capacity requirements (see 7.3.4, 8.2.4.1 of the 2008 edition); - Changed the no-load operating performance (operating characteristic range) requirements (see 7.3.5.1, 8.2.5.1 of the 2008 edition); - Changed the life requirements (see 7.3.6, 8.2.6 of the 2008 edition); - Changed the requirements for the overload current capability of the contactor (see 7.3.7, 8.2.7 of the 2008 edition); - Added reset mode requirements for overload protection performance, phase failure protection performance, and short circuit protection performance (see Table 17, Table 19, Table 22);

Added requirements for starter control functions for fans (see 7.3.15); - Added communication function requirements (see 7.3.22); - The test method has been changed (see Chapter 8, Chapter 9 of the 2008 edition); - Changed the inspection rules (see Chapter 9, Chapter 10 of the 2008 edition). - 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 Explosion-proof Electrical Equipment (SAC/TC 9).

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The previous versions of this document and the documents it replaces are as follows.

First published in 1985 as GB 5590-1985; - First revised in 2008;- This is the second revision. - Explosion-proof low-voltage electromagnetic starter for mining

1 Scope

This document specifies the classification and naming, characteristics, normal working conditions and technical requirements of explosion-proof low-voltage electromagnetic starters for mining, and describes the relevant It specifies the corresponding test methods, inspection rules, and requirements for marking, packaging, transportation and storage.

This document is applicable to the control of three-phase squirrel cage asynchronous power in coal mines with rated frequency of 50 Hz and voltage of 1 140 V or less.

The motor can be started and stopped locally or remotely, reversed and double-speed, and the mining explosion-proof low-voltage electromagnetic starter can protect the motor and related circuits at the same time.

Design, manufacture and inspection of starters (hereinafter referred to as "starters").

The provisions of this document concerning overload protection (see 7.3.10 and 8.2.12) do not apply to embedded overheating protection devices installed inside the motor. device.

2 Normative references

GB/T 191

GB/T 762

GB/T 2423.4

GB/T 2423.5

GB/T 2423.10

GB/T 2900.18

GB/T 2900.35

GB/T 3836.1-2021

GB/T 3836.2-2021

GB/T 3836.3-2021

GB/T 3836.4-2021

GB/T 4205

GB/T 4208-2017

GB/T 10111

GB/T 14048.1-2023

GB/T 14048.4-2020

GB/T 14048.5