



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

GB 50256-2014

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**Code for construction and acceptance of electric device of
crane electrical equipment installation engineering
(English Translation)**

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Table of Contents

- 1 General
- 2 Terms
- 3 Basic Regulations
- 4 Installation of trolley line, sliding connector and suspension flexible cable
- 5 Wiring
- 6 Electrical equipment and protective devices
- 7 Project Quality Acceptance

1 General

1.0.1

In order to ensure the construction and installation quality of crane electrical installations, promote the progress of construction and installation technology, and ensure the safe operation of equipment, this specification is formulated.

1.0.2

This specification is applicable to the construction and acceptance of electrical installations and trolley wire installations of various cranes and electric hoists with a rated voltage of 10kV and below in construction projects.

1.0.3

The construction and acceptance of crane electrical installations shall not only comply with this specification, but also comply with the current relevant national standards.

2.0.1 Trolley line and slip connector

A feeder used to supply power to mobile equipment consists of two parts. trolley line-sliding line guide rail and slider-collector.

2.0.2 Signal cable signal cable

Cables for devices with a rated voltage of AC 500V or DC 1000V and below for transmitting digital signals, analog signals, audio signals or automatic signals.

2.0.3 Raceway

A grooved channel specially designed for laying and fixing wires or cables.

2.0.4 Resistor

An electrical appliance made of resistive material, with a certain structural form, capable of limiting the passage of current in a circuit or converting electrical energy into heat, etc., consists of three parts. a resistor body, a skeleton and a lead-out terminal.

2.0.5 Brake device brake

A device that has the functions of decelerating, stopping or keeping a moving part (or moving machinery) in a stopped state.

2.0.6 Travel limit switch limit switch

The control electrical appliances that use the collision of the moving parts of the production machinery to make the contacts move to connect or break the control circuit to achieve a certain control purpose.

2.0.7 Rail clamp

A safety device that locks the rail-mounted crane on the track for wind, slide, and overturning.

2.0.8 Controller

In the electrical transmission device, a device that opens and closes the contacts according to a certain logical relationship to achieve the purpose of issuing commands or interlocking and switching with other control circuits, also known as the master switch.

2.0.9 Variable-frequency drive

A power converter in a motion control system is a control device that uses the on-off function of a power semiconductor device to convert a commercial frequency power supply into another frequency electric energy.

2.0.10 Programmable logic controller (PLC) programmable logic controller

An electronic device specially designed for digital operations in industrial environments. It uses a memory that can be programmed to store instructions for performing operations such as logic operations, sequential operations, timing, counting, and arithmetic operations, and can control various types of devices through digital or analog inputs and outputs. machinery or production process.

2.0.11 Touch screen touch panel

An inductive liquid crystal display device capable of receiving input signals such as touch and having a human-computer interaction function. When the graphic buttons on the display are touched, the tactile feedback system on the display can drive various linking devices according to the pre-programmed program, which can replace the mechanical button panel.

3 Basic Regulations

3.0.1

The installation of crane electrical installations should be carried out according to the approved design and product technical documents.

3.0.2

The transportation and storage of the electrical equipment of the crane shall meet the requirements of the product technical documents.

3.0.3

The equipment and equipment used should have qualified certificates. The equipment should have a nameplate mark. After the equipment and equipment arrive at the site, the following acceptance checks should be done.

- 1 The packaging should be complete, and the seal should be well sealed;
- 2 Open the box for inspection and inventory. The model and specification should meet the design requirements, and the accessories and spare parts should be complete;
- 3 The technical documents of the product should be complete;
- 4 Visual inspection should be free of damage, deformation and rust.

3.0.4

Safety technical measures should be formulated for installation and construction.

3.0.5

The construction of construction projects related to the installation of crane electrical installations shall comply with the following regulations.

- 1 The construction engineering quality of buildings (structures) related to the installation of crane electrical installations shall comply with the relevant provisions of the current national standard "Unified Standards for Construction Quality Acceptance of Construction Engineering" GB/T 50300. When there are special requirements for equipment and design, special requirements should still be met.
- 2 Before the equipment is installed, the construction project shall meet the following conditions.

- 1) The roof waterproofing of the upper part of the crane should be qualified for acceptance;
- 2) The mounting holes for trolley line brackets reserved on the concrete beams and the embedded parts and reserved holes for the tensioning device of the suspension type flexible cable terminal shall be located correctly, the holes shall not be blocked, and the embedded parts shall be firm;
- 3) Before the sliding contact line is installed, the interior decoration work of related buildings (structures) should be completed.

3.0.6

The non-live metal parts such as the framework of the crane electrical installation, steel pipes, trolley wire brackets, etc., should be coated with anti-corrosion paint or galvanized.

3.0.7

The fasteners used for equipment installation, except the anchor bolts, should be galvanized.

3.0.8

Insulation Cranes should be provided with three insulations for the hook and the pulley, the hoisting mechanism and the trolley frame, and the trolley frame and the cart. The resistance value of each insulation measured with a 1000V megohmmeter at normal temperature should be greater than or equal to 1Mohm. In the non-working state, the induced voltage on the trolley frame should not exceed the safe voltage value (36V).

3.0.9

The grounding of the non-live metal parts of the crane shall comply with the following regulations.

- 1 When the grounding sliding connector is installed, the sliding connector should be in reliable contact with the track or the grounding sliding contact line.
- 2 When the driver's cab and the crane body are connected by bolts, electrical crossover must be carried out; the crossover points should not be less than two.
3. Multi-strand annealed copper wire should be used for cross-connection, and its cross-sectional area should not be less than 16mm². The crimped terminals at both ends should be fixed with galvanized bolts. When round steel or flat steel is used for cross-connection, the diameter of the round steel should not be less than 12mm. The width and thickness of the flat steel section shall not be less than 40mmx4mm.

4 Installation of trolley line, sliding connector and suspension flexible cable